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Department:  
Health

**REPUBLIC OF SOUTH AFRICA**

# **SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY 2003**

## **Full Report**



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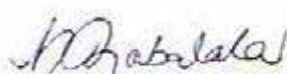
## **PREFACE**

The 2003 South African Demographic and Health Survey (SADHS) is the second survey of its kind in South Africa. The findings of the survey enable us to track the changes in the health status of our population, identify risk factors, access and utilisation of key health services for the five year period since the 1998 survey.

The results of the SADHS provide valuable information for addressing important areas such as antenatal care for mothers during pregnancy and assistance at the time of delivery, child health, infant feeding practices, and the prevalence and treatment of diarrhoeal disease among children. Information on adult health conditions, women's reproductive intentions, fertility levels, knowledge about contraception and use thereof are also included in the findings.

We are pleased to note that this survey has shown that there have been a number of areas where some advances have been made in health development. In the area of adult health the rate of smoking among men has dropped from 42 percent in 1998 to 35 percent in 2003 and for women from 11 percent to 10 percent. The proportion of women who reported that their last live birth occurred in a health facility increased to 89 percent from the 83 percent reported in the 1998 survey. A few other areas, such as the fact that less than 30 percent of children were reported to have received vitamin A supplement in the last 6 months, point us to areas that will require special attention in the current and coming strategic period.

The successful completion of a project of this nature was dependant on the collaboration of a number of dedicated people and organisations. I would like to extend a special word of appreciation to collaborating Departments, Science Councils, the research teams and the communities whom so gracefully participated in the survey.



**DR M E TSHABALALA-MSIMANG**  
**MINISTER OF HEALTH**

## ACKNOWLEDGEMENTS

I am pleased to present the results of South African Demographic and Health Survey (SADHS) that was initiated in 2003.


Firstly I would like to acknowledge the ongoing support of the Members of Executive Councils (MECs) and Provincial Heads of Health Departments and all staff who participated so tirelessly in this DHS.

I would also like to thank staff at the National Department of Health: Dr L Makubalo: Chief Director: Health Information, Evaluation and Research, Ms P Netshidzivani, Project Manager; Ms R du Plessis, Project co-ordinator and Mr P Sekwati. Thank you to Dr Debbie Bradshaw of the Medical Research Council for technical support throughout the project and Mr Johan van Zyl from the Human Sciences Research Council's for the data processing and analysis.

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The Department would like to further acknowledge efforts of all members of the project management committee, in particular representatives from the Departments of Social Development and Statistics South Africa, University of the Witwatersrand (Reproductive Health Research Unit), Medical Research Council, University of Stellenbosch, ORC MACRO International, Maryland, USA for providing technical assistance to the project as part of its international Demographic and Health Surveys programme, and the United States Agency for International Development (USAID)/South Africa for technical assistance to the project.

Finally we extend our gratitude to Department of National Treasury for additional support in ensuring the full funding of the Demographic and Health Survey.

  
**MR. THAMSANQA MSELEKU**  
**DIRECTOR-GENERAL: HEALTH**

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## ACRONYMS AND ABBREVIATIONS

ACT	Artemisinin combination therapy
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
ANHMRC	Australian National Health and Medical Research Council
ARI	Acute respiratory infections
ART	Anti-retroviral therapy
ASRC	Africa Strategic Research Corporation
ASSA	Actuarial Society of South Africa
AsGISA	Accelerated and shared Growth Initiative of South Africa
ATC	Anatomical therapeutic chemical classification
AUDIT	Alcohol Use Disorders Identification Test
BP	Blood pressure
BMI	Body mass index
CAGE	Cut down, Annoy, Guilt, Eye-opener (Alcohol dependence)
CARe	Centre for Actuarial Research
CMR	Child mortality rate
CDAW	Convention for the elimination of All Forms of Discrimination Against Women
COPD	Chronic obstructive pulmonary disease
CSPro	Census and Survey Processing System
DALY	Disability adjusted life year
DDT	Dichlorodiphenyltrichloroethane
DHIS	District Health Information System
DoH	Department of Health
DPT	Diphtheria-pertussis-tetanus
EAs	Enumeration areas
EC	Emergency contraception
EDL	Essential drug list
ETS	Environmental tobacco smoke
FFQ	Food frequency questionnaire
GEAR	Growth, Employment and Redistribution
GOLD	Global Initiative for Chronic Obstructive Lung Disease
GPAQ	Global Physical Activity Questionnaire
GPS	Global positioning system
HBV	Hepatitis B
HGOI	Health Goals, Objective and Indicators
HIV	Human immunodeficiency virus
HSRC	Human Sciences Research Council
HS	Home solution
ICPD	International Conference on Population and Development
IHD	Ischaemic heart disease
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant mortality rate
IPAQ	International Physical Activity Questionnaire
IUD	Intra-uterine device
kg/m <sup>2</sup>	Kilogram per metre squared
Kg	Kilogram
m	Metre
METs	Multiples of resting metabolic rate
mmHg	Millimeters of mercury
MOS	Measure of size
MRC	Medical Research Council
MTCT	Mother-to-child transmission
NDoH	National Department of Health
N-Index	Nutrition Index
NHIS/SA	National Health Information System of South Africa
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PEFR	Peak expiratory flow rate
PHC	Primary health care

PMTCT	Prevention of mother-to-child transmission programme
RDA	Recommended dietary allowance
RDP	Reconstructive and development programme
PPS	Probability proportional to size
SADC	Southern African Development Community
SADHS	South African Demographic and Health Survey
SD	Standard deviation
SE	Standard error
Stats SA	Statistics South Africa
STI	Sexually transmitted infection
TB	Tuberculosis
TBA	Traditional birth attendant
TFR	Total fertility rate
U-5MR	Under-five mortality rate
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing
WHO	World Health Organisation
WHR	Waist/hip ratio
YRBS	Youth Risk Behaviour Survey



## REPUBLIC OF SOUTH AFRICA

### Provinces



## KEY FINDINGS OF THE SURVEY

Maternal and child health indicators	1998	2003
<b>Infant and child mortality (preceding 5 years)</b>		
Infant mortality rate per 1 000 live births	45 (37; 48)	43* (29; 57)
Under-5 mortality rate per 1 000 live births	59 (51; 63)	58* (43; 73)
Child mortality rate per 1 000 live births	15 (12; 19)	16* (10; 22)
<b>Fertility of women 15-49 yrs (preceding 3 years)</b>		
Total fertility rate: children per woman	2.9 (2.7; 3.1)	2.1* (1.9; 2.3)
Ideal number of children	2.9 (2.8; 2.9)	2.5* (2.4; 2.5)
Percent women who want no more children	44 (42; 45)	61 (58; 64)
<b>Modern contraceptive-use prevalence rate: Sexually active women</b>		
Percent currently using a modern method	61 (60; 63)	65 (63; 67)
<b>Attended antenatal care: % of births in last 5 years</b>		
Mothers attended antenatal care during pregnancy	94 (93 – 95)	92 (90 – 93)
<b>Assistance during delivery: % of births in last 5 years</b>		
Mothers received medical care at delivery	84 (82; 86)	91 (89; 93)
<b>Vaccination and supplementation in children 12-23 months old</b>		
Percent of children with vaccination cards, seen	75 (71; 78)	71 (65; 77)
Percent children fully immunized	63 (59; 68)	52 (45; 59)
Percent children received Vitamin A supplementation		29 (24; 34)
<b>Exclusive breastfeeding: % of infants</b>		
< 6 months	6.8 (4.1; 9.5)	8.3 (3.1; 13.4)
6-9 months	0.2 (0.0; 0.4)	0.4 (0.0; 1.2)
<b>Diarrhoea in children</b>		
Child had diarrhoea in last two weeks	13.2 (12.0; 14.4)	7.9 (6.5; 9.4)
* Data quality checks suggest that fertility and childhood mortality estimates are not reliable. See report text for details.		

## KEY FINDINGS OF THE SURVEY

<b>Sexual behaviour and HIV related indicators</b>	<b>1998</b>	<b>2003</b>
<b>Sexual activity: % of men 15-59 and women 15-49 yrs</b>		
Had two or more sexual partners in last 12 months: Men (not in union)	-	19 (16; 21)
Had two or more sexual partners in last 12 months: Women (not in union)	3.9 (3.3; 4.5)	3.1 (2.4; 3.8)
Had higher-risk sex in last 12 months: Men	-	65 (62; 68)
Had higher-risk sex in last 12 months: Women	-	58 (56; 60)
Had first sex before age 18: Men	-	45 (43; 48)
Had first sex before age 18: Women	46 (45; 48)	42 (40; 44)
<b>Abstinence among youth 15-24 yrs never in union</b>		
Percent never had sex: Men 15-24	-	38 (34; 42)
Percent never had sex: Women 15-24	40 (37; 42)	42 (39; 44)
<b>Condom use: % of sexually active men and women</b>		
Condom use at last higher-risk sex: Men 15-59	-	69 (66; 72)
Condom use at last higher-risk sex: Men 15-24	-	72 (66; 77)
Condom use at last higher-risk sex: Women 15-49	-	46 (44; 49)
Condom use at last higher-risk sex: Women 15-24	-	52 (48; 56)
<b>HIV: % of men 15-59 and women 15-49 yrs</b>		
Had HIV test and received results in last 12 months: Women	-	8.5 (7.5; 9.5)
Ever had HIV test and received results: Men	-	20 (18; 22)
Accepting attitudes towards people with HIV: Women	-	38 (37; 40)
<b>Never had HIV test : % men and women 15-24 yrs</b>		
Never tested: Men 15-19	-	87 (83; 90)
Never tested: Women 15-19	-	81 (79; 84)
Never tested: Men 20-24	-	77 (72; 83)
Never tested: Women 20-24	-	60 (56; 63)
<b>Knowledge and beliefs about HIV: % men and women 15-24 yrs</b>		
Have heard of AIDS: Men 15-19	-	93 (91; 96)
Have heard of AIDS: Women 15-19	95 (94; 96)	93 (91; 95)
Have heard of AIDS: Men 20-24	-	94 (91; 97)
Have heard of AIDS: Women 20-24	98 (97; 98)	93 (92; 95)
Using condoms prevents HIV infection: Men 15-19	-	80 (76; 84)
Using condoms prevents HIV infection: Women 15-19	79 (76; 81)	70 (67; 73)
Using condoms prevents HIV infection: Men 20-24	-	87 (83; 90)
Using condoms prevents HIV infection: Women 20-24	87 (85; 89)	72 (69; 75)
A healthy-looking person can have the HI virus: Women 15-19	28 (26; 31)	76 (73; 79)
A healthy-looking person can have the HI virus: Women 20-24	30 (28; 33)	77 (74; 80)
A person cannot become infected by sharing food with HIV infected person: Women 15-19	67 (64; 69)	74 (71; 77)
A person cannot become infected by sharing food with HIV infected person: Women 20-24	74 (71; 76)	75 (72; 78)
<b>Circumcision: % of men 15-59 yrs</b>		
Percent circumcised	-	45 (42; 48)

## KEY FINDINGS OF THE SURVEY

Adult health indicators	1998	2003
<b>Smoking prevalence: % of adults 15+ and of adolescents 15-19 yrs</b>		
Currently smoking: Adult men	42 (41; 44)	35 (33; 38)
Currently smoking: Adolescent men	14 (12; 17)	16 (12; 20)
Currently smoking: Adult women	11 (9; 12)	10 (9; 12)
Currently smoking: Adolescent women	5.8 (3.6; 8.0)	5.4 (2.8; 8.0)
<b>Abstinence of alcohol intake: % of adults 15+ yrs and of adolescents 15-19 yrs</b>		
Never consumed alcohol: Adult men	42 (40; 44)	52 (49; 54)
Never consumed alcohol: Adolescent men	75 (71; 78)	68 (64; 73)
Never consumed alcohol: Adult women	74 (73; 76)	78 (76; 81)
Never consumed alcohol: Adolescent women	85 (82; 88)	83 (79; 87)
<b>Micro-nutrient intake: % of adults 15+ yrs</b>		
Adequate micro nutrient intake: Adult men	-	33 (30; 36)
Adequate micro nutrient intake: Adult women	-	35 (32; 38)
<b>Overweight and obesity: % of adults 15+ yrs</b>		
Overweight: Adult men	20 (19; 22)	21 (19; 23)
Overweight: Adult women	27 (26; 28)	28 (26; 29)
Obesity: Adult men	6.9 (6.1; 7.8)	8.8 (7.2; 10.3)
Obesity: Adult women	29 (28; 31)	27 (26; 29)
<b>Physical inactivity: % of adults 15+ yrs</b>		
Insufficiently active: Adult men	-	76 (75; 79)
Insufficiently active: Adult women	-	86 (85; 87)
<b>Hypertension (blood pressure <math>\geq</math> 140/90 mmHg and/or medication): % of adults 15+ yrs</b>		
Prevalence of hypertension: Adult men	13 (12; 14)	8.7* (7.0; 10.4)
Prevalence of hypertension: Adult women	16 (15; 17)	14* (12; 15)
<b>Respiratory conditions: % of adults 15+ yrs</b>		
Prevalence of symptoms of asthma: Adult men	6.7 (5.7; 7.6)	7.2 (6.1; 8.3)
Prevalence of symptoms of asthma: Adult women	8.6 (7.8; 9.4)	8.1 (7.1; 9.0)
Prevalence of symptoms associated with chronic bronchitis: Adult men	2.3 (1.8; 2.8)	2.3 (1.7; 3.0)
Prevalence of symptoms associated with chronic bronchitis: Adult women	2.8 (2.3; 3.2)	2.0 (1.5; 2.4)
Prevalence of abnormal peak flow: Adult men	4.0 (3.4; 4.7)	7.9 (6.7; 9.2)
Prevalence of abnormal peak flow: Adult women	4.1 (3.5; 4.7)	10.9 (9.5; 12.3)
<b>Violence: % of adults 15+ yrs</b>		
At least one physical attack in past 12 months: Adult men	-	12.8 (10.5; 15.0)
At least one physical attack in past 12 months: Adult women	-	7.2 (5.7; 8.7)

\* Data quality checks suggest that prevalence of hypertension estimate is not reliable. See report text for details.

## **SUMMARY**

### **S.1 Characteristics of the survey**

The 2003 South African Demographic and Health Survey is the second national health survey to be conducted by the Department of Health, following the first in 1998. Compared with the first survey, the new survey has more extensive questions around sexual behaviour and for the first time included such questions to a sample of men. Anthropometric measurements were taken on children under five years, and the adult health module has been enhanced with questions relating to physical activity and micro-nutrient intake, important risk factors associated with chronic diseases. The 2003 SADHS has introduced a chapter reporting on the health, health service utilisation and living conditions of South Africa's older population (60 years or older) and how they have changed since 1998. This has been introduced because this component of the population is growing at a much higher rate than the other age groups. The chapter on adolescent health in 1998 focussed on health risk-taking behaviours of people aged 15-19 years. The chapter has been extended in the 2003 SADHS to include indicators of sexual behaviour of youth aged 15-24 years.

A total of 10 214 households were targeted for inclusion in the survey and 7 756 were interviewed, reflecting an 85 percent response rate. The survey comprised a household schedule to capture basic information about all the members of the household, comprehensive questionnaires to all women aged 15-49, as well as anthropometry of all children five years and younger. In every second household, interviews of all men 15-59 were conducted and in the alternate households, interviews and measurements of all adults 15 years and older were done including heights, weights, waist circumference, blood pressure and peak pulmonary flow. The overall response rate was 75 percent for women, 67 percent for men, 71 percent for adults, and 84 percent for children. This is slightly lower than the overall response rate for the 1998 SADHS, but varied substantially between provinces with a particularly low response rate in the Western Cape.

Over the past decade, South Africa has initiated several activities to extend and improve the population-based health and demographic data in the country. The SADHS makes an important contribution towards these endeavours. The SADHS is a central element of monitoring coverage of government programmes and evaluating their outcomes on population health and forms a part of the national statistical system.

### **S.2 Mortality and fertility**

Comparison with other data sources shows that both the estimates of the fertility rates and the child mortality rates are implausibly low, and there is no obvious way in which these estimates could be reliably adjusted to allow for the data inadequacies in a consistent manner. The data from KwaZulu-Natal consistently show up as being problematic which then leads to a distortion of the national estimates of many indicators. However, these inadequacies in the data are not confined to this province alone.

Child mortality rates are a key health indicator, measuring not only mortality in children, but also the level of development and well-being of a community or country. While the overall level does not appear correct, the historical trend in this survey points to an increasing trend to an under-five mortality rate of 58 per 1 000 live births in 5 years preceding the survey. This highlights the importance and urgency to identify the determinants contributing to the increase in child mortality

so that efforts can be directed towards reaching the Millennium Development Goal of reducing child mortality.

### **S.3 Reproductive and sexual health**

Teenage pregnancy rates, sexual behaviour and contraception use are also key indicators in Demographic and Health Surveys. Careful interpretation of these results is needed as some of these indicators are affected by the low number of births reported, and by poor data from KwaZulu-Natal. In addition, the results are also influenced to some extent by the over-representation of urban areas and Africans.

#### ***Teenage pregnancy***

Compared to the 1998 SADHS, teenage pregnancy and motherhood rates decreased. By the age of 19 years, 27 percent of women had begun childbearing in 2003 compared with 35 percent in the 1998 SADHS. Rates dropped particularly in non-urban areas: currently 14 percent compared with 21 percent in 1998. The figure in KwaZulu-Natal of 2 percent--compared with 17 percent in 1998—is implausible.

#### ***Contraceptive use***

Modern contraceptive use is still high, and appears to have increased since the last survey. Sexually active women report a noticeable increase in the use of the male condom as a contraceptive. The proportion of women using this method has increased from 2 percent in the 1998 SADHS to 8 percent in 2003. A more than four-fold increase from 4 percent to 18 percent in the 15-19 age group indicates a particular improvement in acceptance, accessibility or availability of the method in younger people, pointing additionally to possible promising behaviour change regarding the risk of HIV-transmission. The female condom has gained some usage with 53 percent of all women 15-49 years knowing about the method and 3 percent reporting ever using it. Oral contraceptive use has decreased slightly while injectable contraceptive use has increased slightly from 30 percent to 33 percent, with young women preferring the 2-monthly, and older women the 3-monthly injectables. The shift to the two-monthly method has some cost implications in the public health sector in terms of product cost and increase in the number of client visits per year of use.

There is an increase in the use of dual protection, but emergency contraceptive use is very low. It is also of concern that despite the relatively high levels of contraceptive prevalence, the proportion of women who have knowledge about the fertile period in their cycle is very low (12 percent) and has not improved since the last survey. Family planning visit programmes should use the opportunity to educate women about conception, fertility, pregnancy and the risks of HIV and other STIs.

#### ***HIV and AIDS***

Knowledge of HIV and AIDS is almost universal in South Africa. However, it is disconcerting that the proportion of young women who have ever heard of AIDS has declined since 1998. Among women aged 20-24 years, an extremely high risk age category, the proportion of women who respond that they had heard of AIDS declined from 97 percent in 1998 to 93 percent in 2003.

The survey included questions on beliefs about transmission of HIV and attitudes towards those infected with HIV as these can affect behaviour. The survey shows that there are reasonably good levels of awareness, but identifies some gaps in knowledge that need to be addressed in future awareness campaigns. Knowledge of condom use and having sex with an uninfected partner as HIV prevention methods are known by approximately three-quarters of men (76 percent) and slightly

less women. Around three-quarters of women (77 percent) believe a healthy looking person can be infected with the HIV virus, a considerable increase compared to the 1998 survey where only 55 percent agreed that a healthy looking person could be infected. Although there has been an increase in understanding that infection is not possible through mosquito bites, it was only rejected by 57 percent of women. Knowledge that HIV can be transmitted from mother to child was known by less than half of men (48 percent) and slightly more women (57 percent).

There is a willingness to care for family members with HIV and AIDS (85 percent among women), however at the same time only 60 percent of female respondents reported that they would not necessarily want the HIV positive status of a family member to remain a secret. This indicates that families are facing up to HIV, but have reservations about disclosing. Reasons for this need to be investigated.

Voluntary counseling and testing (VCT) has been identified as an important strategy to reduce the spread of HIV. In 2003, 19 percent of women and 20 percent of men reported they had been tested for HIV and had received the results. Testing rates were in fact higher, but a proportion of men and women who had been tested had never received the test results. In 2003, HIV testing in the voluntary counseling and testing (VCT) and Prevention of Mother-to-Child Transmission (PMTCT) programmes was not yet universally available. While this may partly explain why the overall rates for testing observed in the survey were low, the results do indicate that there is a need to ensure that counseling and follow-up systems are adequate to ensure that those tested go on to receive their results. Fear of being found HIV positive may mean that people do not come back for results or deny that they received their results. This raises the need to address fear and stigmatisation as key components of the HIV related programmes. Discussion of HIV and AIDS prevention was reported by 80 percent of women during antenatal visits for the births in the 3 years preceding the survey. In the context of the extensive epidemic in South Africa and the risks of infecting the baby, this opportunity should always be utilized.

Circumcision as a strategy to reduce transmission of STIs and HIV has received a great deal of interest internationally with increasing evidence that circumcision reduces the risk of STIs and HIV among men, including a trial conducted in South Africa (Auvert *et al.*, 2006). In 2003 almost half of men (45 percent) reported being circumcised. The scope for introducing a programme to promote safe circumcision needs to be considered urgently. Such a programme must be accompanied by a strong awareness campaign to ensure that people understand that circumcision confers partial protection and must be used only in conjunction with other proven prevention measures such as abstinence, mutual monogamy, reduced number of sexual partners, and correct and consistent condom use.

### ***Sexual behaviour***

The median age of first intercourse appears to have remained fairly consistent across the age groups in women aged 20 to 44 ranging from 18.4 to 18.6 years. In the 25-29 age group the median age is 18.3 years; for the same age group in the 1998 survey the figure was 18.1. In 2003, 42 percent of women reported that they had sex before the age of 18 years compared with 46 percent in 1998, and indicating a slight increase in women delaying age of first intercourse which is important for prevention of STIs or HIV and teenage pregnancy.

Reducing the number of sexual partners is an important HIV prevention strategy. In 2003, few women in a union (2 percent) and slightly more women not in a union (3 percent) report more than one partner in the last year. There has been little change since the 1998 survey, with a slight reduction in two or more partners among sexually active women not in a union. In 2003, men were also asked about how many partners they had had in the past year. In total, 7 percent of married and

cohabiting men report two or more partners in the last year. Among men who are not in a union, this figure rises to 19 percent and men aged 20-34 years who are not in a union report rates of around 25 percent. The proportion of men with two or more partners follows a U-shape with education, being highest among the unmarried men with no education and those with an education beyond matric. Educated men probably have greater employment opportunities and disposable incomes which may affect their behaviour. In contrast, this pattern is not seen among educated women. Prevention strategies need to ensure that men of all educational backgrounds are targeted.

## **S.4 Maternal and child health**

### ***Maternal health***

The survey reflects good coverage of antenatal care with women reporting such care for 92 percent of births in the preceding 5 years. Delivery in a health facility has increased to 89 percent compared to the 84 percent observed in the previous survey. Much of this increase has occurred in the non-urban areas with an increase from 74 percent in 1998 to 89 percent in 2003. In addition, efforts are needed to provide a post-natal check-up to women who did not deliver in a health facility. Amongst women who delivered their last baby outside of a health facility, 80 percent report receiving no post-natal check-up, and only 13 percent received a check-up within 2 days.

Maternal mortality rates are very difficult to measure as extremely large surveys are required to obtain sufficient numbers of events through a household survey; even using the sibling methodology. This survey failed to measure the level of maternal mortality due to data quality concerns as more than half of the sibling death data had missing details. This is unfortunate as routine cause of death statistics also fail to measure this important indicator because maternal causes are often unrecorded on the death notification. The confidential enquiry of maternal deaths that occur in health facilities provides valuable information and ideally such data should be linked to vital statistics. However, this system fails to provide a reliable estimate of the maternal mortality ratio as deaths that occur outside of the facilities are under-represented. Given the lack of reliable data on the maternal mortality rate, it is important that the elements of the maternal health programme be monitored closely and suitable programme indicators such as access to health services be used.

### ***Child health***

Exclusive breastfeeding for the first six months of life and regular supplementation with Vitamin A are two effective interventions to improve child survival but the survey shows that the coverage of these two interventions is still sub-optimal. While the Prevention of Mother to Child Transmission form the backbone of the child health programmes, the Expanded Programme for Immunisation, the Integrated Management of Childhood Illnesses, the Integrated Nutrition Programme and, the results of the 2003 SADHS suggest that there is much scope, to improve the health programmes for child health. Only 8 percent of infants under six months are exclusively breastfed, and only 19 percent are fully breastfed (i.e., supplemented with water only)—indicating no change since 1998. Furthermore, a significant minority of babies (29 percent) is still being given pre-lacteal feeds and 39 percent are not initiating breastfeeding immediately after birth. Both of these behaviors have important negative impacts on child survival.

Breastfeeding in the context of HIV infection is not straight-forward. The National Department of Health guidelines, adapted from WHO/UNICEF guidelines, indicate that women known to be HIV positive should avoid all breastfeeding if replacement feeding is acceptable, feasible, affordable, sustainable and safe. Otherwise exclusive breastfeeding for the first months of life is recommended, followed by early breastfeeding cessation as soon as feasible and conditions for safe



replacement feeding can be met. Breastfeeding should be actively promoted among women who are known to be HIV negative. The low rates of exclusive breastfeeding observed in both the 1998 and the 2003 SADHS show that there is an urgent need to strengthen programmes to promote and support breastfeeding.

With respect to vitamin A supplementation, less than 40 percent of children are reported to have received such supplementation in the last six months. This intervention has been shown to reduce mortality by about 25 percent in children. The fortification of key cereals and foods will go a long way towards addressing the challenge of micronutrient deficiency in South Africa, but significant numbers of children remain vulnerable to micronutrient deficiencies and the vitamin A supplementation programme needs to be strengthened.

Immunisation rates show a marked drop since 1998. This survey found that only 55 percent of 1-year old children were fully immunised compared to 63 percent in 1998. These results, however, do not tally with other data sources and need further investigation. Nonetheless, they do point to concerns about the child health programmes.

The reported prevalence of diarrhoea and respiratory infections among children are generally unexpectedly lower than in 1998. The particularly low rates observed in KwaZulu-Natal raise questions about data quality.

Nutritional status of children has been included for the first time into the SADHS. The results show that the proportion of children who are underweight is 12 percent, and the proportion stunted is 27 percent. The prevalence of undernutrition is slightly higher than the levels observed in earlier surveys such as the Vitamin A survey.

## **S.5 Adult health**

A recent Lancet series acknowledges that developing countries with stressed health systems may be faced with a difficult task to address the escalating demands of chronic disease and their risk factors, but also argues that every country, regardless of the level of its resources, has the potential to make improvements in preventing and controlling chronic disease (Epping-Jordon *et al.*, 2005). South Africa, like several other developing countries, has been highlighted as experiencing a unique demographic moment to focus on introducing policies that will reduce the future impact of chronic disease, and to minimise the rise in cardiovascular disease in particular (Leeder *et al.*, 2004). Steps towards this have been initiated in South Africa, including the incorporation of an adult health module in the SADHS.

The SADHS includes information on risk factors for chronic diseases, utilisation of health services, use of medication and selected adult health outcomes. The survey was designed to use hypertension and chronic respiratory disease as indicator conditions to monitor the programmes for managing and preventing chronic diseases.

### ***Risk factors for chronic diseases***

The data show that smoking has declined in men age 15 and above (42 percent in 1998 compared to 35 percent in 2003) but not in women (11 percent in 1998 compared to 10 percent in 2003). The overall decline in prevalence of smoking is supported by other data and may reflect government's strong tobacco control initiatives. Disturbingly, the prevalence has not changed among young people.

The survey also collected data on consumption of alcohol. Alcohol consumption is difficult to measure accurately in household surveys and these results should probably be considered a minimum level. Although large proportions of the population report no drinking, as in 1998, the drinking pattern shows high proportion of drinkers who drink excessively, particularly over weekends. Rates of alcohol use in the seven days before the survey are slightly lower than reported in 1998; in the case of men it was 30 percent in 2003 compared to 45 percent in 1998 and in the case of women it was 10 percent in 2003 compared to 17 percent in 1998. The proportion with signs of alcohol problems has gone down (28 percent to 21 percent for men, and 10 percent to 7 percent for women). However no change is evident in the younger adults. There is a clear need to encourage people who do drink alcohol, to consume moderate amounts in a regular pattern and not a risky pattern.

Overweight and obesity has not changed since 1998 and remains particularly high for women. Fifty-five percent of women and 30 percent of men age 15 and above are overweight or obese. The prevalence of obesity among white women has declined slightly, and the extent of underweight among Indian women has declined slightly. There is considerable evidence of health problems associated with excess bodyweight. There is a need to promote healthier environments and lifestyles among all ages.

Physical activity has been measured for the first time in the SADHS, and, compared to other countries, shows very high levels of inactivity. The survey found that 48 percent of men and 63 percent of women are inactive. The prevalence of inactivity is higher in the urban setting than in the non-urban. Urgent attention is needed to understand and change these behaviours and avoid the consequential burden of disease.

Questions concerning the micro-nutrient intake of adults were introduced into this survey for the first time. The results show that there are marked variations according to particular nutrients. There is a generally low calcium intake which is reflected across all groups of adults. Vitamin A intake in adults is generally good, whereas intakes of Vitamin E, Folic acid, Magnesium, Thiamine and Zinc tend to be low. In terms of micro-nutrients, whites and urban Africans have the best quality diet. Food fortification can be expected to influence the micro-nutrient intake in the future and the questionnaire for the next SADHS will have to be adapted to capture the improved intake.

The survey had limited information about dietary intake. However, it found that fat intake varied by population group, being lowest among whites and Indians. African women and coloured people eat salty foods the most often.

### ***Respiratory conditions and hypertension***

The data on respiratory conditions are difficult to interpret, and will require additional data to confirm morbidity trends:

- The proportion of adults who reported that they have ever had TB has gone down. While TB registration data suggest that TB has increased, in keeping with the HIV and AIDS epidemic, it is not clear whether the prevalence has decreased due to increased mortality from TB.
- Chronic bronchitis has declined markedly among older women, but there has been little change in the prevalence of smoking; yet abnormal peak flow has gone up significantly. A difference in the measurement procedures for peak flow may have reduced some errors in the previous survey and contributed to this apparent increase.
- The lower prevalence of chronic respiratory disease with improved education is also striking. Detailed analysis of the 1998 data has shown that the protective effect of education was independent of other risk factors such as smoking, occupational exposure and past

tuberculosis. If it is assumed that education level reflects the cumulative effect of one's social position throughout life, the implication is that public health action to produce optimal lung health in adulthood is needed across the whole life course.

Hypertension results in the 2003 SADHS are puzzling. Prevalence of hypertension based on medication remains the same as in 1998 for all ages and sex groups. The diastolic blood pressure is systematically too low for men and older women in this survey, resulting in much lower proportions of people with hypertension, yet investigation into changes in risk factors can offer no explanation.

The survey does show that the lifestyle risk factors for hypertension (obesity, high salt and alcohol intake) are still very common in those persons with hypertension, and emphasizes the urgency to implement the planned national policy to promote a healthy lifestyle and the national guidelines for managing hypertension in primary health care facilities. In addition, consideration needs to be given to recent research that has shown benefit of lowering salt in commonly used foods in reducing blood pressure levels.

### ***Health service utilisation and satisfaction***

The proportion of adults who attended health services in the previous 30 days increased slightly between 1998 and 2003, but was higher for women than men. The most frequently attended health care facility type was public health services (20 percent) followed by the private health care services (15 percent).

Generally the survey showed that adult patients are not happy with the services rendered, both in the private and public sector. Dissatisfaction with public hospitals and community health centres is highest in the provinces of Gauteng and Eastern Cape. It is more frequently expressed by people living in urban areas than those in non-urban areas. The major reason for dissatisfaction in the public sector hospitals and community health centres are long waiting times, staff attitudes, prescription medication not available and staff shortages. Long waiting times, staff attitude, and doctors and pharmacists being too expensive were the main reasons for dissatisfaction with private sector facilities and short consultations and cost were the most common reasons cited in the case of private doctors. Women aged 15-49 years living in non-urban areas experienced more problems with costs, distance and transport in reaching health services than those in urban settings. This was reported most frequently in Limpopo.

Medical aid was available only to 14 percent of adults. Non-urban Africans and people with low levels of education had the least access to medical aid. Medical aid schemes expenditure on men's chronic drugs (23 percent) was higher than for women's drugs (12 percent). However, fewer men (7 percent) than women (12 percent) had regularly prescribed drugs for one of the following conditions: tuberculosis, asthma or chronic bronchitis, diabetes, hypertension, hyperlipidaemia, arthritis, osteoporosis, epilepsy or other atherosclerosis or stroke related conditions. Of the respondents who were taking drugs at the time of the survey, about two-thirds were taking two or more different drugs for their chronic conditions. Approximately a third of men and almost half of the women using chronic disease drugs received their drugs from the public sector facilities, and only about a quarter paid for their drugs by themselves. Patients who received their drugs from the public sector were more likely to report using two or more drugs than private sector patients, suggesting either that fewer drugs are used if the patient or their medical aid scheme has to pay for the drugs or that patients are forced to get public assistance if they require many drugs.

Of the people taking chronic disease drugs, the most frequent condition being treated was hypertension (6.6 percent), followed by arthritis (2.3 percent), diabetes (1.7 percent) and asthma and

chronic bronchitis (1.5 percent). The rate of reported drug use for tuberculosis was low. Although patients would only take such medication for a 6-month period, the low rates are of concern as routine facility data sources show marked increase in tuberculosis cases, caseloads and mortality in the country. Estimated treatment of diabetes based on drugs identified during the survey, has remained the same between 1998 and 2003 despite the fact that increased prevalence of diabetes is predicted for the South African population. The rate of treatment of hyperlipidaemia remains extremely worrying as it is estimated that there are 5.7 million people in this country with an abnormal lipid profile. A marked reduction in the use of inhaled steroids, which is the first line treatment recommended for asthma and chronic bronchitis was reported in the survey.

Utilization of drugs to treat hypertension was slightly higher in 2003 (7 percent) compared to 1998 (6 percent). The data collected on the levels of hypertension control in the 2003 data base were inadequate to establish if this emerging trend was indicative of better disease control mechanisms or not. Further analysis shows that in 2003 ACE inhibitors had replaced diuretics among men as the most frequently used anti hypertensive drug compared to 1998 and that use of methyldopa and reserpine had decreased dramatically among women. The increased use of ACE inhibitors, especially among men may be due to the increased availability of generic and cheaper ACE inhibitors. However, diuretics are still the recommended first line treatment. Finally, prescription of aspirin for patients after suffering a heart attack or stroke or for those having angina is known to reduce the chances of further attacks, however, the 2003 SADHS shows that prevalence of this prescription practice is still very low.

The additional three conditions for which data were collected in 2003 are arthritis, osteoporosis and epilepsy. Arthritis drugs were taken more frequently by women (3 percent) than men (1 percent) and consisted almost exclusively of non-steroidal anti-inflammatory agents. For osteoporosis mostly calcium supplements were recorded. For epilepsy, hydantoin and carboxamide derivatives were mostly used.

The findings about prescribed medications in the 2003 SADHS are similar to those in the 1998 SADHS. The public sector continues to be the main provider of chronic medicine, especially for the disadvantaged. Strengthening the public health system remains a critical prerequisite to achieve health for all in South Africa and in the management of chronic conditions.

## ***Violence and injuries***

Self-reported injury rates for adult men were similar in 2003 to those observed in 1998, but injury rates for women increased from about 800 per 100 000 population to about 1 100 per 100 000 population based on reported injuries in the preceding 30 days. The increase has occurred particularly among women living in the non-urban areas. Injury rates among men were generally higher than those among women especially in the 35-44 year age group for whom the rate reached nearly 3 000 injuries per 100 000 men. In this age group, the unintentional injury rate was four times higher among men than women.

Questions about physical violence were included in the SADHS because the prevention of violence has become a national priority. The survey shows that 13 percent of men and 7 percent of women experienced a physical attack in the preceding 12 months. While the majority of men were attacked in a public road (53 percent), for women, the most attacks occurred at home (48 percent).

Questions about rape and other forms of intimate partner violence were not repeated in the 2003 SADHS as they are not suitable for multi-faceted household questionnaire.

## ***Oral health***

The adult health questionnaire included questions on perceptions of oral health problems, utilisation of oral health services, satisfaction of services, loss of natural teeth and oral health practices. As the questions have been reviewed it is difficult to compare the results between the 1998 and 2003 surveys. However, this survey finds 16 percent of adults reporting oral problems (10 percent are related to teeth, and 4 percent to the gums). Twenty five percent and 28 percent of the respondents reported brushing and rinsing respectively, this was low, particularly in Free State. Overall, 65 percent reported visiting a dentist/dental therapist or oral hygienist at least once a year. The proportion of adults reporting satisfaction with the overall quality of a dentist visit was relatively high.

The findings suggest that there is a need to strengthen the Department of Health's programme that promotes healthy lifestyles and aims to reduce the common risk factors (such as sugar, alcohol and tobacco) that arise from environmental, economic, social and behavioural causes. This must be accompanied by the development of oral health systems that equitably improve oral health outcomes.

## **S.6 Adolescent (15-19 years) and Youth (15-24 years) Health**

Monitoring the health related behaviours of young people and the extent to which they have adopted unhealthy lifestyles is extremely important in relation to the spread of HIV and other STIs on the one hand and the emergence of chronic diseases such as cardiovascular and respiratory conditions on the other.

The 2003 SADHS shows that 12 percent of men and 6 percent of women aged 15-24 years had experienced their sexual debut by age 15. Although low proportions of young people are married, more than half of the unmarried young men and 49 percent of unmarried young women had sex in the last 12 months. There has been a significant shift towards the acceptance of condom use in relationships with 75 percent of men and 53 percent of women reporting that they used a condom at last sex. This represents a huge increase compared to the 1998 SADHS, which observed that 20 percent of unmarried women aged 15-24 years used a condom at last sex. In six of the nine provinces, the proportions of teenage women who have ever been pregnant are lower in the 2003

survey than in the 1998 survey. Overall, 27 percent of 19 year old women had begun childbearing compared to 35 percent found in the 1998 SADHS.

Among sexually active women, 18 percent in the 15-19 age group and 15 percent in the 20-24 age group were currently using male condoms as their contraceptive method. In the 1998 SADHS only 4 percent of sexually active women (15-19) used condoms as a form of contraception. Use of oral contraceptives among sexually active women (15-19) has dropped from 9 percent in 1998 to 5 percent in 2003.

Although the majority of young men and women (93 percent) have heard of AIDS, less know about HIV prevention methods. Just under 70 percent of young women and just over 70 percent of young men know that using condoms and limiting sex to one uninfected partner can reduce the chances of HIV infection. When questioned about the beliefs about AIDS, there was some uncertainty about mosquito bites with only around 60 percent agreeing with the statement that HIV cannot be transmitted by mosquito bites and around 75 percent agreeing that a person with HIV can look healthy. Only 50 percent of young women rejected both misconceptions about the transmission of HIV. Approximately half of young women and men are aware that HIV can be transmitted through breast-feeding.

Few young people in the 15-19 age groups have had an HIV test and received the results, probably due to the high proportion that had not had sex in this age group. Although the testing rates increased in the 20-24 age group to 16 percent for women and 13 percent for men, there is clearly a need to find ways to encourage young people who are sexually active to be tested.

The report includes the prevalence of risk factors for chronic diseases among adolescents aged 15-19 years. It is essential to monitor this age group as it is during this period that life-long habits are initiated. Trends in these indicators serve as an early warning of future health impacts and can assist in directing the efforts to intervene with health promotion activities.

Tobacco smoking in adolescents has increased slightly. Twenty percent of boys and 10 percent of girls have ever used tobacco products in the 2003 survey, compared to 17 and 9 percent respectively for boys and girls in the 1998 survey. The increase in this age group contrasts sharply with the general decrease observed across the other age groups of men, and highlights the public health importance of countering the consumer promotion efforts that target young people. As in the case of adult smokers, the proportion of smokers who use manufactured cigarettes in 2003 is lower than in 1998 and may indicate that the increase in prices and taxing of manufactured cigarettes has partially resulted in a move towards young smokers buying loose tobacco and rolling their own cigarettes.

Twenty-eight percent of male adolescents and 14 percent of female adolescents (15-19 years old) acknowledge that they have consumed alcohol in the past 12 months, a finding which is comparable with the prevalence observed in 1998. This is substantially less than for adult men but only two percent less than for adult females, and may be indicative of a trend towards higher alcohol use by the younger generation. Despite these relatively low reported drinking rates, the data indicate high levels of risky drinking (especially over weekends) by both males and females who are current drinkers of alcohol, and interventions are especially needed to reduce high levels of drinking over weekends.

The anthropometry of young people does not appear to have changed between 1998 and 2003. The mean weight, height and BMI of men and women in the two surveys are very similar. Both surveys show marked gender differences in anthropometric status. Underweight is a concern among young men with 29 percent having a BMI below 18.5 compared to 12 percent of young women. In

contrast, young women have much higher levels of overweight and obesity than young men. In 2003, 24 percent of adolescent women are overweight or obese compared to 9 percent of adolescent men. Urban women are more prone to being overweight or obese than non-urban women and African urban women have the highest average BMI (24 kg/m<sup>2</sup>) while African non-urban women have the lowest average BMI (22 kg/m<sup>2</sup>). Young urban women have larger waist circumferences than their non-urban counterparts.

Overall, 32 percent of adolescent men and 47 percent of women reported they were physically inactive. The gender difference in inactivity appears to increase with age and is higher for women older than 15 years old. The high levels of physical inactivity could in part explain patterns of overweight and obesity among adolescent men and women. The data highlight the need for interventions to increase opportunities for physical activity for adolescents and school leavers, with a view to increasing lifetime participation in physical activity, and with special recognition for vulnerable groups such as girls and young women.

Micro-nutrient intake has been measured for the first time in the 2003 SADHS. There are no major differences in nutrient intake between age groups for young men and women, but there are large variations within the country. For all nutrients, African young people show a higher prevalence of deficiency than white youth. Calcium intake, however, is deficient in all population groups. Urban respondents have significantly better micronutrient scores, 21 in men and 20 in women compared with non-urban respondents (25 in men and 25 in women). The mean micronutrient scores are significantly better in Gauteng and in KwaZulu-Natal and poorest in Mpumalanga, the Northern Cape, and Limpopo. The introduction of food fortification in 2003 can be expected to improve the micro-nutrient intake in all areas.

The indicators related to respiratory conditions and hypertension need to be interpreted carefully as a result of the small sample size and concerns about the quality of field work. However, the results do suggest that between 1998 and 2003 there may have been an increase in the prevalence of asthma related conditions among youth in urban areas. Chronic bronchitis is not a common condition in this age group. However, both surveys suggest that African women, particularly those living in non-urban areas experience a higher prevalence of this condition than other sub-groups, suggesting that this group of young women may have higher exposures to indoor air smoke.

## **S.7 Health of Older Persons**

A new chapter on the health of older persons (defined as those age 60 years or older) has been introduced into the SADHS report. An ageing population is usually associated with growing health care needs, contributing to a rise in health care costs, making it very important to monitor the health and service utilization patterns of this age group.

Living conditions of older persons have generally improved between 1998 and 2003. However, several findings highlight remaining barriers that prevent optimal health status, living conditions and health service delivery, particularly in the non-urban areas. About 40 percent of older persons have no education, with non-urban levels being double the urban levels, and extremely high levels of approximately 70 percent in older women in Limpopo and Mpumalanga. The low levels of education among older persons have several implications, including scope to fully participate in community life. Older persons' level of education may also present particular challenges to effective health promotion and disease management. Health education materials developed for these purposes need to take the low levels of formal education into account when targeting the older population.

Access to piped water for drinking continues to be limited for non-urban (11 percent) and urban (64 percent) older persons. There has been limited improvement in terms of all types of sanitation facilities but no change in access to a flush toilet. Similar to 1998, 15 percent of urban and 95 percent of non-urban older persons had no access to a flush toilet in 2003. The limitations in access to piped water and sanitation facilities pose a number of challenges to older persons whose mobility and physical strength generally decline with increasing age. The urban/non-urban gap in access to electricity has been reduced since 1998, but nearly half of the non-urban older persons still have no access to electricity.

Urban access to an own phone (51 percent) is considerably higher than non-urban access (6 percent). Between the two surveys, no improvement in access to a phone is shown in either urban or non-urban areas. Access to a phone can be useful in participating in various domains of societal life and so contribute to the maintenance of personal well-being. It can also be critical in sickness, emergency or loneliness. Having a radio or television facilitates access to information and some form of leisure or recreation. Given the large proportion of older persons without formal education, these media have an important purpose in disseminating visual and audio health information. Increased access to a phone, radio and television, and the promotion of reduced costs and rates for older persons may therefore indirectly promote health and well-being in the older population.

The 2003 results indicate that, similar to 1998, high blood pressure is by far the most commonly reported chronic condition among older persons, with a large differential between men (24 percent) and women (44 percent). Arthritis presents in both men (14 percent) and women (18 percent) as the second-most commonly reported chronic condition. Chronic illness prevalence in the older population is generally considerably higher than in the total adult population, and co-morbidities are more prevalent in older persons than younger members of the adult population. This illustrates the need to ensure that health care services explicitly address and manage chronic conditions in older persons, and the need for chronic care services to plan and prioritize for increased numbers of older clients. It also points to the need for geriatric services to be strengthened.

The data suggest that medical aid coverage over age 45 declines with increasing age, dropping from 18 percent among persons 35-44 years, to 13 percent among those  $\geq 60$  years, to 8 percent of those  $\geq 80$  years. This means that, at a time when a person is likely to have increasing medical expenses, access to medical aid is declining, and on the other hand, this implies that the state will have to bear increasing costs.

Of people 60 years and older, about 5 percent report being physically attacked in the past 12 months. The protection of older persons is prominent in the recently-passed Older Persons Act, but the safety of older persons needs insistent attention and a strong political will at all levels of governance, spread over different sectors, as well as a community sensitive to the particular needs and vulnerabilities of the older population.

## **S.8 Population policy**

Sustainable human development is now the central theme and organizing principle of South Africa's population policy. This policy is implemented by integrating population factors into all policies, plans, programmes and strategies aimed at enhancing the quality of life of people, and promoting multi-sectoral interventions to address major national population concerns. The seven national strategies in the area of population and human development include: poverty reduction; environmental sustainability; health, mortality and fertility; gender, women, youth and children; education; employment; migration and urbanisation. The SADHS provides useful data to monitor trends in aspects of population policy, most noticeably around the intersection of health, mortality



and fertility with gender, women, youth and children. It also provides information regarding South Africa's progress towards meeting the Millennium Development Goals.

The current lack of reliable national estimates of key demographic indicators such as total fertility and child mortality requires urgent attention as these are crucial to monitor the progress of national population policies. Although the 2003 SADHS has not provided reliable estimates for some key indicators, some interesting trends can be discerned that indicate progress in the implementation of the population policy.

There are indications of improvements in living conditions with higher proportions of people having access to electricity. Currently, three-quarters of South African households have access to electricity compared to less than two-thirds in the previous survey. Three-quarters of households use electricity as their main source of energy for cooking compared to just over half in 1998. However, the survey indicates that there are still high proportions of people without access to piped water and sanitation in the residence. This is particularly marked in non-urban areas where households are about five times less likely than urban households to have piped water in the dwelling, and about a quarter of non-urban households still rely on an open, outside water source for drinking water.

A key indicator of poverty is the nutritional status of children, particularly child stunting. Historical data on child anthropometry are sparse, making it difficult to assess trends. However, the effects of undernutrition displayed by underweight and stunting of children do not show signs of improvement over the last decade. Recent research conducted in KwaZulu-Natal has demonstrated that access to the child grant reduced the extent of stunting among young children who receive it. In addition, the data from SADHS show that mother's education is strongly associated with children's nutritional status. These emphasise the importance of government programmes in reducing undernutrition.

Orphans are known to be a particularly vulnerable group of any population. The survey shows that the proportion of orphans has grown. The proportion of children under 15 years who had lost both their parents increased from 0.8 to 2.4 percent while the proportion of children who had lost a father only, increased from 8 to 11 percent.

Social security plays a vital role in the alleviation of poverty for children, women, older persons and people with disabilities and their families. The survey shows that social support grants are widely received. Government has committed itself to ensuring that this vital source of income for the most vulnerable sector of the community continues to contribute to development and a more equitable distribution of resources. The Government's continued social grant support is reflected by the high proportion of older persons who receive a grant. This is commendable, but also reflects the magnitude of monetary poverty among the older population, and points to the enormous challenge to eradicate poverty in older age as envisaged in both the International Plan of Action on Ageing and the African Union Policy Framework and Plan of Action on Ageing.

Decision making, an indicator of empowerment, shows interesting trends. Compared with 1998, there has been a polarisation in women's decision making around use of earnings. While the proportion of women who make their own decision has remained fairly high (71 percent), the proportion who make these decision jointly with their partner has declined from 21 to 2 percent. The proportion whose partner makes these decisions increased from 3 to 13 percent. In a decision making index spanning health care, purchases, cooking and visiting, it was found that 43 percent of women have a say in all four domains while 18 percent have no say in any domain. In contrast only 2 percent of men reported that they were excluded from decision making in (finances, purchases, visiting, number of children). Gender relations are a fundamental issue to population policy. There

is a need for further analysis of the trends in decision making and the influence that this has on population dynamics.

## **S9. Study Limitations and Recommendations**

Comparison of the socio-demographic characteristics of the sample with the 2001 Population Census shows an over-representation of urban areas and the African population group, and an under-representation of whites and Indian females. It also highlights many anomalies in the ages of the sample respondents, indicating problems in the quality of the data of the 2003 survey. Careful analysis has therefore been required to distinguish the findings that can be considered more robust and can be used for decision making. This has involved considering the internal consistency in the data, and the extent to which the results are consistent with other studies.

Some of the key demographic and adult health indicators show signs of data quality problems. In particular, the prevalence of hypertension, and the related indicators of quality of care are clearly problematic and difficult to interpret. In addition, the fertility levels and the child mortality estimates are not consistent with other data sources. The data problems appear to arise from poor fieldwork, suggesting that there was inadequate training, supervision and quality control during the implementation of the survey. It is imperative that the next SADHS is implemented with stronger quality control mechanisms in place. Moreover, consideration should be given to the frequency of future surveys. It is possible that the SADHS has become overloaded – with a complex implementation required in the field. Thus it may be appropriate to consider a more frequent survey with a rotation of modules as has been suggested by the WHO.



# CHAPTER 1

## INTRODUCTION

### 1.1 History, Society and the Economy

#### *Ten years of democracy*

At the time of this survey South Africa had enjoyed 10 years of democracy following the historic break from its past of racial discrimination and social disruption. The first decade of democracy has resulted in pervasive institutional transformation in line with the new democratic constitution. Efforts to deal with the legacy of Apartheid have been instituted in all sectors of society. Sound fiscal management has resulted in steady real economic growth for a record six straight years and the country's economy is now seen as one of largest and most popular emerging economies of the world. However, the tight fiscal policies have not led to an increase in the number of jobs and the high rates of unemployment continue to create a major social and economic challenge. A range of government programmes have been introduced to redress the imbalances between the rich and the poor including access to free basic health services to pregnant women and children under six, education, shelter and clean water. Much has been achieved during the first ten years of democracy but there are many areas in which service delivery needs to be improved. Establishing efficient local government is critical in this regard.

#### *The People of South Africa*

The people of South Africa have diverse origins. For thousands of years, the ancestors of the Khoisan lived in the southern African region as hunter-gatherers. Bantu-speaking people moved from West Africa to southern Africa in about 300-500 AD, bringing the Iron Age to the region. European explorers came to South Africa during the 15<sup>th</sup> century and an outpost was established in the Cape, providing fresh provisions to the passing sea trade. As European settlers in the Cape moved inland, a series of wars followed which lead to the invasion of the Xhosa and Zulu peoples and a dispossession of land. The great small-pox epidemic of 1713 decimated the Khoikoi who had little resistance to this disease that was imported by the settlers.

South Africa's economic and socio-political path was changed forever by the discovery of diamonds in 1867 and gold in 1871. The development of the rail system, electricity, urban concentrations, commercial farming and manufacturing interests followed from the interests in mining. Labourers were recruited in India when it became clear that local people were not interested to work under difficult and unrewarding conditions of the sugar plantations of Natal. Agreement was reached with labourers from Calcutta and given the option of a passage to India or a small donation of land at the end of the contract. In addition to indentured labourers, merchants, known as "passenger" Indians also came to South Africa. Currently, people of Indian descent account for just under 2 percent of the South African population.

#### *Apartheid and political changes*

Policies of racial separation go back as far as the Act of Union in 1910 which was negotiated without involving Africans. The "Native Land Act" of 1913, set aside only 7.3 percent of South African territory as reservations for Africans and barred them from buying land outside these areas. This act divided South Africa into "White" and "Black" areas forming the cornerstone of Apartheid.

The Black population was deprived of the right to vote or strike and they had no means of political influence. The political power of the Afrikaners grew and in 1948, Afrikaner nationalism was born and a series of restrictive laws were introduced to benefit the White minority. The Population Registration Act of 1950 classified people according to race and the Group Areas Act determined where people could or could not live. "Homelands" were formed out of non-urban "black" areas and created separate "nation states" for the different ethnic groups. A resistance movement spearheaded by South Africans living in exile culminated in a negotiated settlement which led to the first national election in South Africa on 27 April 1994. Today, South Africa is a democratic nation divided into 9 provinces under a semi-federal system. Pretoria is the administrative capital; Cape Town the legislative capital and Bloemfontein the judicial capital.

### ***Population groups***

The Population Registration Act identified groups as White, Indian, Black and Coloured. The Coloured group included people of Khoisan, Malaysian, Griqua, Indian and Chinese origin and was sometimes described as people of mixed decent. Classification of the population on the basis of race has had profound economic and social impacts under Apartheid. Although the Population Registration Act was repealed in 1991 and people are no longer registered by population group, it is necessary to collect selected statistical data according to self-reported classification of these population groups in order to monitor the progress that has been made in reducing the social and economic inequalities between population groups. In this report, African is used for African/Black.

### ***Culture and religion***

South Africa's rich social heritage has resulted in huge cultural diversity. Under the new constitution, everyone has the right to foster their own religion and culture. South Africa is a religiously pluralistic society with Christianity as the majority religion. In addition to Christianity, Hinduism, Islam and Judaism, a "traditionalist" belief system is also practiced. There are 11 official languages, with English generally being used in business and public official activities.

### ***Gender***

The experiences of men and women in South African society differ significantly resulting in many gender based inequalities. Since the first democratically elected government came to power in 1994, gender equality has been placed higher on the development agenda through a range of government policies, and gender equality is guaranteed under the South African Constitution. Mechanisms to promote women's rights and monitor the impact of government spending on women's lives were among a wide range of initiatives that were initiated. In 1995, the government signed the international Convention for the elimination of All Forms of Discrimination Against Women (CEDAW). The Gender Commission was set up as an independent body to promote gender equity in society. An Office of the Status of Women was established by the President's Office to ensure that gender issues are incorporated in policy and programmes. While much has been achieved, gender inequalities are pervasive and rural African women remain the poorest and most disadvantaged people in South Africa.

### ***Economy***

South Africa is a middle income country with a modern infrastructure and has the largest economy in Africa. The formal sector is well developed and is based on mining, manufacturing, services, and agriculture. There is a growing informal economy. Economic growth has reached levels of about 4 percent per annum. However, there are high levels of unemployment and wealth inequalities. In

1996, the Growth, Employment and Redistribution (GEAR) policy was introduced and stressed the country's commitment to open markets. This new policy extended the Reconstruction and Development Programme (RDP) that had focused on development and redistribution. In February 2006, plans to foster economic development through funding selected programmes were launched as the Accelerated and Shared Growth Initiative of South Africa (AsgiSA). These plans promise to create more jobs and address the Millennium Development Goal to halve poverty by 2014 (Bell 2006).

## **1.2 Geography**

South Africa, situated in the sub-tropical region at the southern tip of the African continent, covers 1.2 million sq. km. Most of the country is on a plateau that rises above the 1000 m sea level. Most parts of the country experience rainfall during the summer months but this is unreliable and water remains scarce excepting along the east coast. The country experiences long periods of drought and the western part has encroaching desert and semi-desert regions. One tenth of the land can be described as arable. Agriculture has been supported with irrigation schemes. The south western Cape has a Mediterranean climate with winter rainfall which supports the production of wheat, fruit and wine. Durban and Cape Town house the main seaports. The mining and industrial hinterland is served by these ports together with five other ports and a well-developed rail and road transport system. All nine provinces have an airport and an extensive highway system.

Swaziland and Lesotho are two land-locked countries encompassed by South Africa. They are also economically dependent on South Africa. Mozambique, Zimbabwe, Botswana and Namibia are South Africa's neighbours and share a long and diverse history of violation and dependence. A new period of cooperation within the region has emerged and the Southern African Development Community (SADC) was formed in 1992 to promote development and alleviate poverty in the region (IDASA, 2006). Member states are Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

## **1.3 Demographic Data and Population Policies**

The availability and quality of population data have improved enormously since 1994. The first census of 1996 and the 1998 South African Demographic and Health Survey (SADHS) laid an important foundation. The findings of these have been amplified by data from Census 2001, and the introduction of a number of new studies by Statistics South Africa, including the General Household Survey and the Labour Force Survey. Much has been done during this period to improve the quality of vital statistics data and there has been an increase in the registration of births and deaths.

South Africa's population policy was adopted by parliament in April 1998 and expresses South Africa's commitment to the Programme of Action of the International Conference on Population and Development (ICPD) adopted in Cairo in 1994. The ICPD Programme of Action emphasises linkages between population trends and development objectives, and focuses on realizing the rights of individual women and men. A strong element of the ICPD approach is to empower women by providing them with more choices, through expanded access to education and health services, and by promoting skills, development and employment. Its inception represents a radical move away from previous programme intention to meet set demographic targets to a policy that prioritises individual human needs (Department of Social Development, 2006).

Sustainable human development is now the central theme and organizing principle of South Africa's population policy. The needs of the present generation and improving their quality of life is to be done without destroying the environment or depleting non-renewable natural resources so as to avoid compromising the ability of future generations to meet their own needs. The policy forms

an integral part of national strategies aimed at reducing past inequities and enhancing the quality of life of the population and is compatible with the Millennium Development Goals adopted by the United Nations in 2000.

The objectives of the South African population policy are:

- to promote the systematic integration of population factors into all policies, plans, programmes and strategies aimed at enhancing the quality of life of people,
- to promote a coordinated, multi-sectoral, interdisciplinary and integrated approach in designing and implementing programmes and interventions that affect major national population concerns, and
- to underpin the above two objectives with reliable and up-to-date information on population and human development, to inform policy-making and programme design, implementation, monitoring and evaluation.

The policy outlines 7 national strategies in the area of population and human development including:

- poverty reduction
- environmental sustainability
- health, mortality and fertility
- gender, women, youth and children
- education
- employment
- migration and urbanisation.

The policy also outlines strategies for developing policy implementation capacity that include:

- co-ordination and capacity building for integrating population and development planning,
- advocacy and population information, education and communication (IEC), and
- data collection and research.

The policy has been evaluated twice since its inception, and results have shown that awareness of population issues have improved markedly and that population matters are increasingly integrated across government programmes. It is also evident that the greater availability of data is increasingly making it possible to base policy decisions on facts rather than guesswork or ideological preconceptions, as was the case ten years ago. The provision of reliable up to date data, at all levels, as well as the integration thereof into policies, plans, programmes and strategies, however, remains incomplete and a number of challenges remain, not least being the assessment of the impact of HIV and AIDS on the size and structure of the South African population.

## **1.4 Health Policy Goals, Priorities and Programmes**

The South African Government has made strides to address the fragmentation and gross inequalities in health infrastructure and health services since 1994. The Department of Health continuously aims to ensure that the health status of all the citizens of South Africa is improved. In this regard several pieces of legislation have been passed since 1994. The Health Act (Act No 63 of 1977) outlined the priority programmes that needed to be focussed on e.g. HIV and AIDS, tuberculosis, maternal

health, child health, nutrition, improvement of access to public health facilities and health care, increasing access to medicines, provision of free primary health care for pregnant women and children under the age of six, improvement of childhood nutrition and the management of communicable diseases. The Health Act has subsequently been replaced by the National Health Act, 2003 (Act No 61 of 2003) that provides a legal framework for the new health system that has been put in place since 1994.

The mission of the national Department of Health is “to improve health status through prevention of illness and the promotion of healthy lifestyles and to consistently improve the health care delivery system by focusing on access, equity, efficiency, quality and sustainability.” In the five years between the first SADHS in 1998 and the second SADHS in 2003, the Department of Health continued with an extended programme of legislative and policy development to address health priorities. To ensure that services are rendered in previously neglected areas the Pharmacy Amendment Act (Act No. 1 of 2000) for instance makes provision for the performance of community service by persons registering for the first time as pharmacists. In an attempt to limit the use of tobacco, the Tobacco Products Control Amendment Act of 1999 (Act 12 of 1999) amongst others, prohibits the free distribution of tobacco products. In 2000, a comprehensive plan for HIV and AIDS was launched. This provided a framework for a multi-sectoral response and included several priority areas: (1) prevention, (2) treatment, care and support, (3) research, monitoring and surveillance and (4) human and legal rights. In 2003, an operational plan for comprehensive HIV and AIDS care, management and treatment was developed.

The review of several acts was undertaken and the following amendment acts were passed: Medical Schemes Amendment Act (Act 62 of 2002), Medicines and Related Substances Amendment Act (Act 59 of 2002), Dental Technicians Amendment Act (Act 24 of 2004), Choice on Termination of Pregnancy Amendment Act (Act 38 of 2004) and the Sterilisation Amendment Act (Act 3 of 2005). Legislation that is currently being processed includes the following: Nursing Amendment Act 2004, Health Professions Amendment Act, 2004, South African Medical Research Council Amendment Act 2004, Pharmacy Amendment Act, 2003, Medicines and Related Substances Control Amendment Act 2004 and Tobacco Products Control Amendment Act 2004. The purpose of reviewing legislation is to ensure that all the legislation contributes to the promotion of health of all South Africans.

A Strategic Framework for 2004-2009 has been adopted that includes to promote healthy lifestyles, to contribute towards human dignity by improving quality of care, to improve management of communicable diseases and non-communicable illnesses, to strengthen primary health care, Emergency Medical Services and hospital service delivery systems. Planning, budgeting and monitoring and evaluation are also included in the strategic framework.

## **1.5 Objectives and Organisation of the 2003 South Africa Demographic and Health Survey**

In 1995 the National Health Information System of South Africa (NHIS/SA) committee identified the need for improved health information for planning services and monitoring programmes. The first South African Demographic and Health Survey (SADHS) was planned and implemented in 1998. At the time of the survey it was agreed that the survey had to be conducted every five years to enable the Department of Health to monitor trends in health services.

Information on a variety of demographic and health indicators were collected. The results of these surveys are intended to assist policy makers and programme managers in evaluating and designing



programmes and strategies for improving health services in the country. In addition to the aspects covered in the 1998 SADHS, information on the following additional aspects was included in the 2003 SADHS:

- Information on children living in households where the biological mother is not staying in the household i.e. mother is dead, etc.
- Child anthropometric data
- Information on reproductive health and sexual behaviour of men
- Information on malaria
- Information on pensions/grants received by members of the household.

The primary objective of the 2003 SADHS was to provide up-to-date information on:

- Characteristics of households and respondents
- Fertility
- Contraception and fertility preferences
- Sexual behaviour, HIV and AIDS
- Infant and child mortality
- Maternal and child health
- Infant and child feeding
- Adolescent health
- Mortality and morbidity in adults
- Utilisation of health services
- Adult health: hypertension, chronic pulmonary disease and Asthma
- Risk factors for chronic diseases
- Oral health
- Health of older persons

### ***Organisation of survey***

A project of the magnitude of the SADHS involves a large number of players. The Department of Health (DOH) commissioned, co-ordinated and funded the study together with the financial contribution from the Department of Social Development. The fieldwork was commissioned to a research company: Africa Strategic Research Cooperation and they appointed the fieldwork personnel who conducted the interviews. The Human Sciences Research Council (HSRC) provided technical input throughout the survey, and was responsible for quality control of the survey. They were also responsible for the capturing, processing and preliminary analysis of the data. The Medical Research Council (MRC) also provided technical input and did further analysis of the data and co-ordinated the compilation of the final report. ORCMACRO, funded by USAID, provided technical support in questionnaire design, sample design, field staff training, data processing and analysis. Statistics South Africa (Stats SA) provided the sampling frame and drew the sample of households for inclusion in the survey. Apart from USAID, representatives from each of the organisations mentioned in this paragraph served in a management committee responsible for the overall management of this study.

### ***Sample design and implementation***

The SADHS sample was designed to be a nationally representative probability sample of approximately 10 000 households. The country was stratified into the nine provinces and each province was further stratified into urban and non-urban areas. The sampling frame for the SADHS was provided by Statistics South Africa (Stats SA) based on the enumeration areas (EAs) list of

approximately 86 000 EAs created during the 2001 census. Since the Indian population constitutes a very small fraction of the South African population, the Census 2001 EAs were stratified into Indian and non-Indian. An EA was classified as Indian if the proportion of persons who classified themselves as Indian during Census 2001 enumeration in that EA was 80 percent or more, otherwise it was classified as Non-Indian. Within the Indian stratum, EAs were sorted descending by the proportion of persons classified as Indian. It should be noted that some provinces and non-urban areas have a very small proportion of the Indian population hence the Indian stratum could not be further stratified by province or urban/non-urban. A sample of 1 000 households was allocated to the stratum. Probability proportional to size (PPS) systematic sampling was used to sample EAs and the proportion of Indian persons in an EA was the measure of size. The non-Indian stratum was stratified explicitly by province and within province by the four geo types, i.e. urban formal, urban informal, rural formal and tribal. Each province was allocated a sample of 1 000 households and within province the sample was proportionally allocated to the secondary strata, i.e. geo type. For both the Indian and Non-Indian strata the sample take of households within an EA was sixteen households. The number of visited households in an EA as recorded in the Census 2001, 09 Books was used as the measure of size (MOS) in the Non-Indian stratum.

The second stage of selection involved the systematic sampling of households/stands from the selected EAs. Funds were insufficient to allow implementation of a household listing operation in selected EAs. Fortunately, most of the country is covered by aerial photographs, which Statistics SA has used to create EA-specific photos. Using these photos, ASRC identified the global positioning system (GPS) coordinates of all the stands located within the boundaries of the selected EAs and selected 16 in each EA, for a total of 10 080 selected. The GPS coordinates provided a means of uniquely identifying the selected stand. As a result of the differing sample proportions, the SADHS sample is not self-weighting at the national level and weighting factors have been applied to the data in this report. A total of 630 Primary Sampling Units (PSUs) were selected for the 2003 SADHS (368 in urban areas and 262 in non-urban areas). This resulted in a total of 10 214 households being selected throughout the country<sup>1</sup>. Every second household was selected for the adult health survey. In this second household, in addition to interviewing all women aged 15-49, all adults aged 15 and over were eligible to be interviewed with the adult health questionnaire. In every alternate household selected for the survey, not interviewed with the adult health questionnaire, all men aged 15-59 years were also eligible to be interviewed. It was expected that the sample would yield interviews with approximately 10 000 households, 12 500 women aged 15-49, 5 000 adults and 5 000 men. The final sample results are shown in Table 1.1.

### ***Questionnaires***

The survey utilised five questionnaires: a Household Questionnaire, a Women's Questionnaire, a Men's Questionnaire, an Adult Health Questionnaire and an Additional Children Questionnaire. The contents of the first three questionnaires were based on the DHS Model Questionnaires. These model questionnaires were adapted for use in South Africa during a series of meetings with a Project Team that consisted of representatives from the National Department of Health, the Medical Research Council, the Human Sciences Research Council, Statistics South Africa, National Department of Social Development and ORC Macro. Draft questionnaires were circulated to other interested groups, e.g. such as academic institutions. The Additional Children and Men's

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<sup>1</sup> Interviewers were instructed to include any second household residing on the selected stand.

Questionnaires were developed to address information needs identified by stakeholders, e.g. information on children who were not staying with their biological mothers. All questionnaires were developed in English and then translated in all 11 official languages in South Africa (English, Afrikaans, isiXhosa, isiZulu, Sesotho, Setswana, Sepedi, SiSwati, Tshivenda, Xitsonga and isiNdebele).

The Household Questionnaire was used to list all the usual members and visitors in the selected households. Basic information was collected on the characteristics of each person listed, including age, sex, education and relationship to the head of the household. Information was collected about social grants, work status and injuries experienced in the last month. An important purpose of the Household Questionnaire was to identify women, men and adults who were eligible for individual interviews. In addition information was collected about the dwelling itself, such as the source of water, type of toilet facilities, material used to construct the house and ownership of various consumer goods.

The Women's Questionnaire was used to collect information from women aged 15-49 in all households. These women were asked questions on the following topics:

- Background characteristics (age, education, race, residence, marital status, etc.)
- Reproductive history
- Knowledge and use of contraceptive methods
- Antenatal, delivery, and postnatal care
- Breastfeeding and weaning practices
- Child health and immunisation
- Marriage and recent sexual activity
- Fertility preferences
- Adult and maternal mortality
- Knowledge of HIV and AIDS
- Husband's background and respondent's work

In every second household, all men and women aged 15 and above were eligible to be interviewed with the Adult Health Questionnaire. The respondents were asked questions on:

- Recent utilisation of health services, family medical history,
- Clinical conditions
- Dental health
- Occupational health
- Medications taken
- Habits and lifestyles
- Anthropometric measurements, and
- Blood pressure and lung function test.

In every second household in addition to the women, all men aged 15-59 were eligible to be interviewed. The Men's Questionnaire collected similar information contained in the Woman's Questionnaire but was shorter because it did not contain questions on reproductive history, maternal and child health, nutrition, and maternal mortality.

In households in which there was a child under six years of age whose biological mother was either not alive or did not live in the household, information about the child was collected from a guardian using the Additional Child's Questionnaire. The level of child fostering is relatively high in South Africa and data on children's health collected only from biological mothers might be incomplete.

The SADHS questionnaires were pre-tested (in two languages) in July 2003, using the “behind the glass”<sup>2</sup> technique. The questionnaires were then adapted to take into account the suggested changes for questions that were misunderstood or were not clear. Subsequently four teams of interviewers (one for each of four main language groups) were formed; the household, male, female and adult health questionnaires were tested in 4 identified areas. The lessons learnt from the two exercises were used to finalise the survey instruments. The questions were translated and produced in all official languages in South Africa (English, Afrikaans, isiXhosa, isiZulu, Sesotho, Setswana, Sepedi, SiSwati, TshiVenda, Xitsonga and isiNdebele).

### ***Training and Fieldwork***

A tender for the implementation of the field work for the survey was issued by the National Department of Health. The contract for the field work was awarded to Africa Strategic Research Corporation (ASRC), a private firm based in Johannesburg. ASRC organised a 2-week training course from September 15-30, 2003 at a centre outside of Pretoria. The training of field workers was conducted by personnel from the MRC, the HSRC, National Department of Health and ORC Macro as well as staff and consultants appointed by ASRC. Training consisted of plenary sessions on more general issues like interviewing techniques, survey administration, and explaining the questionnaire and how to complete it, as well as smaller sessions to practice the anthropometric measurements and interviewing in local languages. The training included mock interviews between participants and two written tests. A practice session was arranged one Saturday to give trainees experience with interviewing actual households living around Pretoria and Johannesburg. ASRC was unable to recruit a sufficient number of interviewers of the required racial and gender groups for the first training. Consequently, a second training for an additional 49 trainees was arranged for October 6-11. In order to further balance the ethnic group and gender composition of the teams as well as to make up for attrition of field staff, some additional fieldworkers were trained in February 2004. 192 candidates were recruited for field work. The fieldworkers were organised into teams consisting of varying numbers of female and male interviewers and headed by a supervisor. Each province had 1 or 2 fieldwork supervisors and at least one editor who were responsible for the logistics and first round of checking of questionnaires. Each province had at least one team of interviewers consisting of different numbers of female and male members. This allowed for the teams to interview different members in households simultaneously, e.g. whilst the woman was interviewed by the female team member, the male team member interviewed the men. Due to political sensitivity and language problems teams were constructed in such a manner to be sensitive for the demographics of a specific area. This resulted in a team of white interviewers who where circulated between different provinces to do interviews in predominantly white areas. In each province there was a provincial manager who was an overall supervisor of the fieldwork operations. Staff from HSRC and the DoH conducted periodic quality control visits during fieldwork. Fieldwork commenced in mid-October 2003 and was completed in August 2004.

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<sup>2</sup> This refers to a process in which interviewers’ interview respondents using the questionnaires, being observed by a team of experts, from behind a one-way window. The experts are not visible to the interviewer/interviewee. Once the interview is finalised, it is discussed by the interviewer, respondent, and the team of experts to determine if any questions were not clear, etc. Changes to the questions are then suggested.

## *Quality control*

In the course of the fieldwork quality control measures were instituted at three levels. Firstly, field team leaders and editors were trained to identify the enumerator areas included in the sample and guide interviewers in the selection of dwellings for interviews. Secondly, a team consisting of staff from the HSRC carried out independent quality control visits to check questionnaires for errors, quality of identification and interviews at the enumerator area and dwelling levels. A team of staff members from the NDoH also carried out independent quality control visits to check questionnaires for errors, quality of identification and interviews at the enumerator area and dwelling levels. An independent consultant was appointed by the NDoH in January 2004 to assist ASRC with the implementation and fieldwork management after problems in this regard were identified.

## *Data processing*

A preliminary round of data processing of the SADHS questionnaires was started in November 2003 so as to provide some feedback to field teams. The actual data processing did not start until January 2004, after a contract was arranged with the HSRC in Pretoria. Completed questionnaires were returned periodically from the field to ASRC, which in turn submitted them to HSRC, where they were entered and edited by data processing personnel specially trained for this task. Data were entered using programmes written in CSpPro by ORC Macro. All data were entered twice (100 percent verification). The data processing of the survey was completed in October 2004.

## *Response rate*

Of the total 630 PSUs that were selected, fieldwork was not implemented in nine PSUs. The data file contained information for a total of 621 PSUs. A total of 10 214 households were selected for the sample and 7 756 were successfully interviewed.

**Table 1.1 Response rates, South Africa 2003**

<b>Households</b>	
Households selected	10 214
Households occupied	9 181
Households interviewed	7 756
Household response rate	84.5
<b>Women's interviews</b>	
Number of eligible women	7 966
Number of women interviewed	7 041
Eligible women response rate	88.4
<b>Men's interviews</b>	
Number of eligible men	3 930
Number of men interviewed	3 118
Eligible men response rate	79.3
<b>Adults' interviews</b>	
Number of eligible adults	9 614
Number of adults interviewed	8 115
Eligible adult response rate	84.4

The shortfall was primarily due to refusals and to dwellings that were vacant or in which the inhabitants had left for an extended period at the time they were visited by interviewing teams. Of the 9 181 households occupied 85 percent were successfully interviewed. In these households, 7 966 women were identified as eligible for the individual women's interview (15-49) and interviews were completed with 7 041 or 88 percent of them. In the one half of the households that were selected for inclusion in the adult health survey 9 614 eligible adults age 15 and over were identified of which 8 115 or 84 percent were interviewed. In the other half of the households that were selected for the men's questionnaire to be completed 3 930 eligible men aged 15-59 were identified of which 3 118 or 79 percent were interviewed. The principal reason for non-response among eligible women and men was the failure to find them at home despite repeated visits to the household.

## CHAPTER 2

### CHARACTERISTICS OF HOUSEHOLDS AND RESPONDENTS

#### 2.1 Distribution of Household Population by Age and Sex

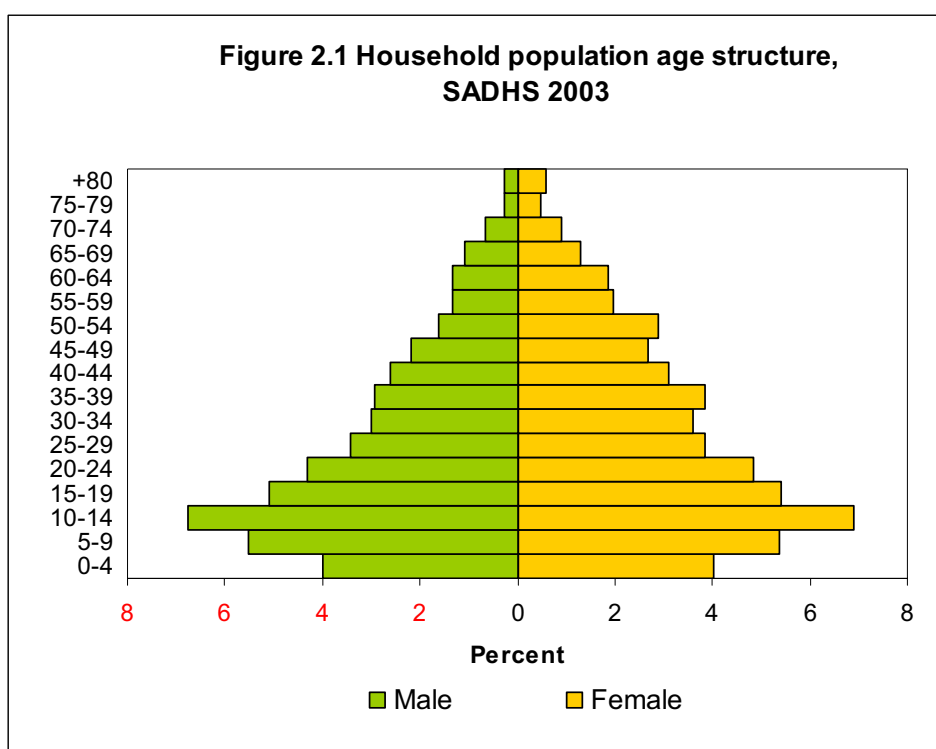
The 2003 SADHS collected information on the demographic and social characteristics of the *de jure* residents (persons who usually live in the selected household), as well as the *de facto* residents (persons who do not usually live at the selected residence, but who have spent the night preceding the interview there).

Table 2.1 indicates the distribution of the SADHS *de facto* household population by five-year age groups according to sex, and urban/non-urban residence. A third (33 percent) of the household population are younger than 15 years, 62 percent are 16-64 years, and 5.6 percent are 65 years or older. Non-urban households report higher proportions of younger (38 percent) and older persons (6.7 percent) than the urban households (29 and 4.8 percent, respectively). Fifty-four percent of the household population are females and 46 percent are males, showing some deviation from the 2001 Population Census proportions of 52 percent female and 48 percent male.

Table 2.1 Household population by age, sex and residence									
Percentage distribution of the <i>de facto</i> household population by five-year age groups, according to age-sex and residence, South Africa 2003									
Age group	Urban			Non-urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	8.4	7.7	8.0	8.9	7.0	7.9	8.6	7.5	8.0
5-9	10.5	8.9	9.6	14.2	11.8	12.9	11.9	10.0	10.9
10-14	11.8	11.3	11.6	19.2	15.4	17.1	14.6	12.9	13.7
15-19	10.1	9.7	9.9	12.4	10.8	11.5	11.0	10.1	10.5
20-24	10.2	9.5	9.9	7.8	8.0	7.9	9.3	9.0	9.1
25-29	8.0	7.6	7.8	6.3	6.6	6.5	7.4	7.2	7.3
30-34	7.9	7.6	7.8	4.1	5.1	4.7	6.5	6.7	6.6
35-39	7.4	8.0	7.7	4.3	5.9	5.2	6.3	7.2	6.8
40-44	6.7	6.7	6.7	3.9	4.2	4.1	5.6	5.8	5.7
45-49	5.2	5.6	5.4	3.8	4.0	3.9	4.7	5.0	4.8
50-54	3.9	5.2	4.6	2.8	5.6	4.3	3.5	5.4	4.5
55-59	3.0	3.4	3.2	2.8	4.1	3.5	2.9	3.7	3.3
60-64	2.4	3.3	2.9	3.7	3.9	3.8	2.9	3.5	3.3
65-69	2.1	2.1	2.1	2.6	2.9	2.7	2.3	2.4	2.3
70-74	1.3	1.3	1.3	1.7	2.2	2.0	1.4	1.7	1.6
75-79	0.4	0.8	0.6	1.0	1.1	1.0	0.6	0.9	0.8
80+	0.6	1.0	0.8	0.6	1.3	1.0	0.6	1.1	0.9
Missing	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	8 590	9 741	18 333	5 060	6 075	11 140	13 651	15 816	29 473

Note: Total includes six persons for whom sex is missing.

Figure 2.1 shows the age-sex structure of the 2003 SADHS household population, reflecting a relatively young population with large youth cohorts as typically found in developing nations. However, the structure shows markedly erratic or rugged side edges, with a particularly heavy load of females in the cohorts 50-54 to 60-69 years, and a particular over-representation of males in the cohorts 60-64 to 70-74 years. Both male and female cohorts aged 10-14 years seem extraordinary large, while both male and female cohorts aged 0-4 years seem surprisingly small. While some of this can be explained by sampling variation, indications of age heaping are observed.



The broad age structure of the 1998 SADHS and the 2003 SADHS are compared with the 1996 and 2001 censuses in Table 2.2. The population living in institutions are excluded from both census and SADHS counts. With respect to the broad age groups, there seems to be better consistency between the 2003 survey and the recent census, compared to the 1998 survey and the 1996 census. However, Figure 2.1 shows clearly how misleading aggregate figures can be, and one needs to keep in mind the inconsistencies between the 2001 census and the 2003 SADHS as seen in the difference in single five-year cohorts.

Table 2.2 Comparison of broad age structures				
Percentage distribution of population in broad age groups and median age from 1996 Census, 2001 Census, 1998 and 2003 surveys				
Broad age groups	Comparative Surveys (%)			
	SADHS 1998	Census 1996*	SADHS 2003	Census 2001*
Less than 15	37.9	33.9	32.4	32.0
15-64	56.3	60.2	62.0	63.0
65+	5.7	4.7	5.6	5.0
Missing	0.2	1.2	0.0	0.0
Total	100.0	100.0	100.0	100.0
Median age	21.2	-	23.7	-
* Source: Statistics South Africa.				

The median age of the sample is 23.7 years, showing a substantial increase from 21.2 years in 1998 (Table 2.2). Further analysis is needed to get clarity whether this is a true effect of an ageing population, or whether the higher median is a consequence of the way individuals were selected into the sample, or possibly both.

## 2.2 Household Composition

Similar to the situation in the 1998 survey, women head 42 percent of South African households (Table 2.3). In non-urban areas women head almost half of households, compared to 39 percent of households in the urban areas. This higher proportion in the non-urban areas may partly relate to the absence of males within the family due to labour migration to urban areas. However, urban areas also show a general trend towards women headed households.

Table 2.3 Household composition			
Percentage distribution of households by sex of head of household and household size, according to residence, South Africa 2003			
Characteristic	Urban	Non-urban	Total
<b>Household headship</b>			
Male	61.2	51.3	57.6
Female	38.8	48.7	42.4
<b>Number of usual members</b>			
0	0.4	0.3	0.3
1	11.4	11.6	11.5
2	20.4	15.4	18.6
3	19.3	17.5	18.7
4	19.4	20.6	19.8
5	12.0	13.3	12.5
6	7.9	9.9	8.6
7	3.9	4.9	4.2
8	2.2	2.9	2.4
9+	3.3	3.6	3.4
Total	100.0	100.0	100.0
Number of households	4 952	2 804	7 756
<b>Mean size</b>	3.7	4.0	3.8
<b>Percent with foster children<sup>1</sup></b>	13.4	28.7	19.0

Note: This table is based on the *de jure* household members, i.e. the usual residents.

<sup>1</sup> "Foster children" are children under the age of 15 years living in households with neither their biological mother or father present.

The average number of persons per household is 3.8, compared to 4.2 persons in the 1998 SADHS. The modal household size in non-urban areas is 4.0 persons per household, compared to an urban mode of 2.0 persons per household. In non-urban households, the average household size is 4.0 persons, noticeably smaller than 4.7 persons found in the 1998 SADHS. This decline between the two SADHS surveys is probably related to the increase in the number of houses that has been observed between the two censuses.

Table 2.4 provides information about fosterhood and orphanhood of children under the age of 15. It can be seen that about one-third of children live with both parents while just over one-third live with their mother but not father, while only 2.3 percent live with their father and not mother. Just over 21 percent of children live in households with neither parent. This pattern is fairly similar to that observed in 1998, reflecting a high proportion of children living with adults other

than their parents. One of the possible reasons for this high rate of fosterhood could relate to the practice among some mothers of sending their children to the children's grandmother for care to enable the mothers to engage in the formal labour market. It may also relate to the increased numbers of deaths of young men and women over the past few years, as may be indicated by the finding that of those children living with neither parent, 0.8 percent in 1998 versus 2.4 percent in 2003 have lost both parents to death. However, this needs further analyses as the data also indicate that the proportion living with neither parent has declined somewhat since 1998 from 25 percent to 21 percent in 2003.

Table 2.4 shows that 2.4 percent of children are dual orphans, with high levels shown in KwaZulu-Natal (4.9 percent), Gauteng (2.7 percent), and Free State (2.6 percent). Just less than 2 percent have lost their mother only, and 11.2 percent have lost their father only. Taking into account the dual orphans 4.3 percent are maternal orphans and 14 percent are paternal orphans. A relatively high proportion of children have missing information about the vital status of their parents (7.7 percent) and thus the proportion of children who are orphans may be higher as there is likely to be a bias towards orphanhood amongst those children with missing information. Similar percentages of orphans were found in the Statistics South Africa analysis of household survey and census data that they have collected. Anderson and Phillips (2006) found that in 2003, 4.4 - 4.5 percent of children under 15 years were maternal orphans and 11.6-12.8 percent were paternal orphans.



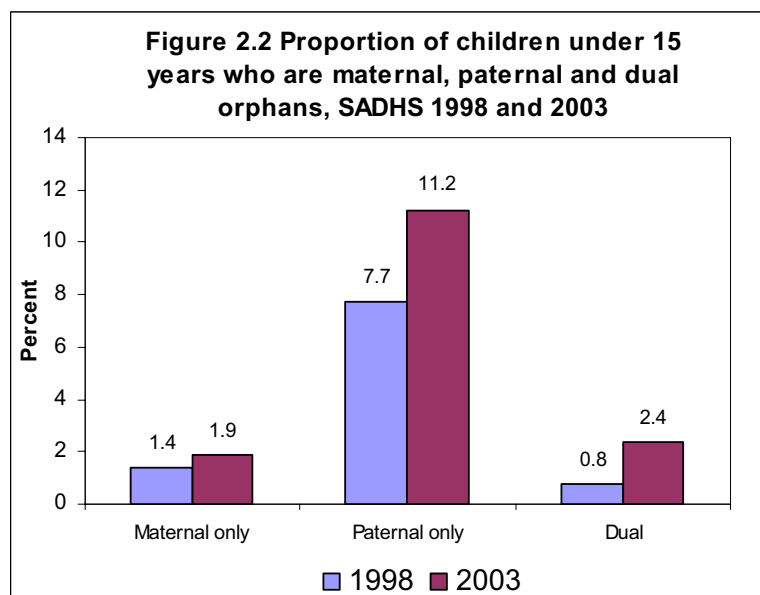
Table 2.4 Fosterhood and orphanhood

Percentage distribution of *de jure* children under age 15, by survival status of parents and children's living arrangements, according to child's age, sex, residence and province, South Africa 2003

Background characteristic	Living with both parents		Living with mother but not father		Living with father but not mother		Not living with either parent				Missing information on father/mother	Total	Number of children
			Father alive	Father dead	Mother alive	Mother dead	Both alive	Father only alive	Mother only alive	Both dead			
<b>Age</b>													
<=2	34.0	44.8	6.3	0.7	0.1	0.1	6.9	0.6	0.3	0.3	6.1	100.0	1 379
3-5	35.8	32.8	6.0	1.4	0.2	0.2	13.2	1.1	1.8	1.3	6.4	100.0	1 451
6-9	33.5	25.7	8.6	2.1	0.6	0.6	15.4	1.2	3.0	1.7	8.3	100.0	2 715
10-14	33.1	20.1	9.0	1.6	1.2	1.2	16.4	1.5	4.7	4.0	8.4	100.0	4 037
<b>Sex</b>													
Male	33.6	26.3	8.4	1.9	0.7	0.7	14.4	1.3	3.0	2.2	8.1	100.0	4 781
Female	33.9	28.1	7.7	1.3	0.7	0.7	14.2	1.1	3.3	2.5	7.3	100.0	4 799
<b>Residence</b>													
Urban	41.4	25.7	8.6	1.5	0.3	0.3	10.3	1.1	2.3	2.4	6.4	100.0	4 781
Non-urban	24.0	29.0	7.3	1.7	1.2	1.2	19.4	1.4	4.2	2.4	9.4	100.0	4 799
<b>Province</b>													
Western Cape	57.9	22.8	4.9	0.8	0.1	0.1	7.2	0.5	1.0	1.9	3.0	100.0	1 011
Eastern Cape	20.3	25.8	10.1	1.7	1.3	1.3	19.9	1.4	5.0	1.5	13.0	100.0	1 439
Northern Cape	33.0	29.8	6.5	2.8	1.2	1.2	16.5	2.3	3.2	1.8	3.0	100.0	179
Free State	28.9	24.9	6.8	2.2	0.6	0.6	13.7	2.0	3.5	2.6	14.9	100.0	594
KwaZulu-Natal	35.7	17.9	8.7	3.0	2.3	2.3	15.4	1.2	4.0	4.9	6.9	100.0	1 521
North West	19.7	37.1	6.8	1.5	0.0	0.0	22.6	1.1	2.6	1.8	7.0	100.0	824
Gauteng	48.9	23.7	10.9	0.7	0.1	0.1	6.2	1.1	1.5	2.7	4.2	100.0	1 973
Mpumalanga	22.9	39.2	5.6	1.4	0.4	0.4	18.0	1.9	4.1	1.7	4.8	100.0	712
Limpopo	21.9	36.0	6.0	1.6	0.1	0.1	17.2	1.0	3.9	1.1	11.3	100.0	1 328
Total	33.7	27.2	8.0	1.6	0.7	0.7	14.3	1.2	3.2	2.4	7.7	100.0	9 582
Note: By convention, foster children are those who are not living with either biological parent. This includes orphans, i.e. children with both parents dead. Total includes two children for whom sex is missing.													

Note: By convention, foster children are those who are not living with either biological parent. This includes orphans, i.e. children with both parents dead. Total includes two children for whom sex is missing.

The high level of paternal orphans has been observed in other studies too, including the previous SADHS and the recent South African National HIV/AIDS Survey (Shisana *et al.*, 2005). Compared to the 1998 SADHS, there has been a rapid growth (from 0.8 to 2.4 percent) in the percentage of dual orphans. Figure 2.2 shows that there has also been a consistent growth in all mentioned categories of orphans, a matter affecting the lives and well being of thousands of children, and requiring sustained policy attention and action. Anderson and Phillips (2006) show that the increase in the proportion of children who are orphans occurred among African children, and is particularly marked in KwaZulu-Natal.



## 2.3 Educational Level of Household Members

Table 2.5 shows the highest education level of the household population six years and older, and the median number of years of education completed. Males' education level is on average higher than females' education level. About ten percent of males have never been to school, compared to 12 percent of females. A slight improvement is suggested compared to SADHS 1998, which showed that 11 percent of males and 14 percent of females had never been to school. Slightly more men (16 percent) than women (15 percent) completed Grade 12, and slightly more men (7 percent) than women (6 percent) have a tertiary qualification. SADHS 2003 shows that people who reside in urban areas have about three times the level of achieved tertiary qualifications compared to those living in non-urban areas. This may be a reflection of residential differences related to access to tertiary institutions, affordability, post-study employment opportunity, and possibly also reflects the higher proportions of older persons living in the non-urban areas, as well as the fact that older persons have considerably lower levels of education.

Figure 2.3 shows the proportion of men and women who have Grade 12 or a higher qualification in the 2003 SADHS, compared with the 1998 SADHS. There has been a consistent increase in these proportions, indicating a cohort effect as the younger people get higher levels of education. However, in some categories, such as women 35-39 years, the increase from the early age group in the previous survey is greater than the cohort effect that is seen in other groups. It is not clear whether this increase is a result of adult learning, selective mortality, or bias in the samples.

**Figure 2.3 Proportion of adult men and women with Grade 12 or higher education, SADHS 1998 and 2003**

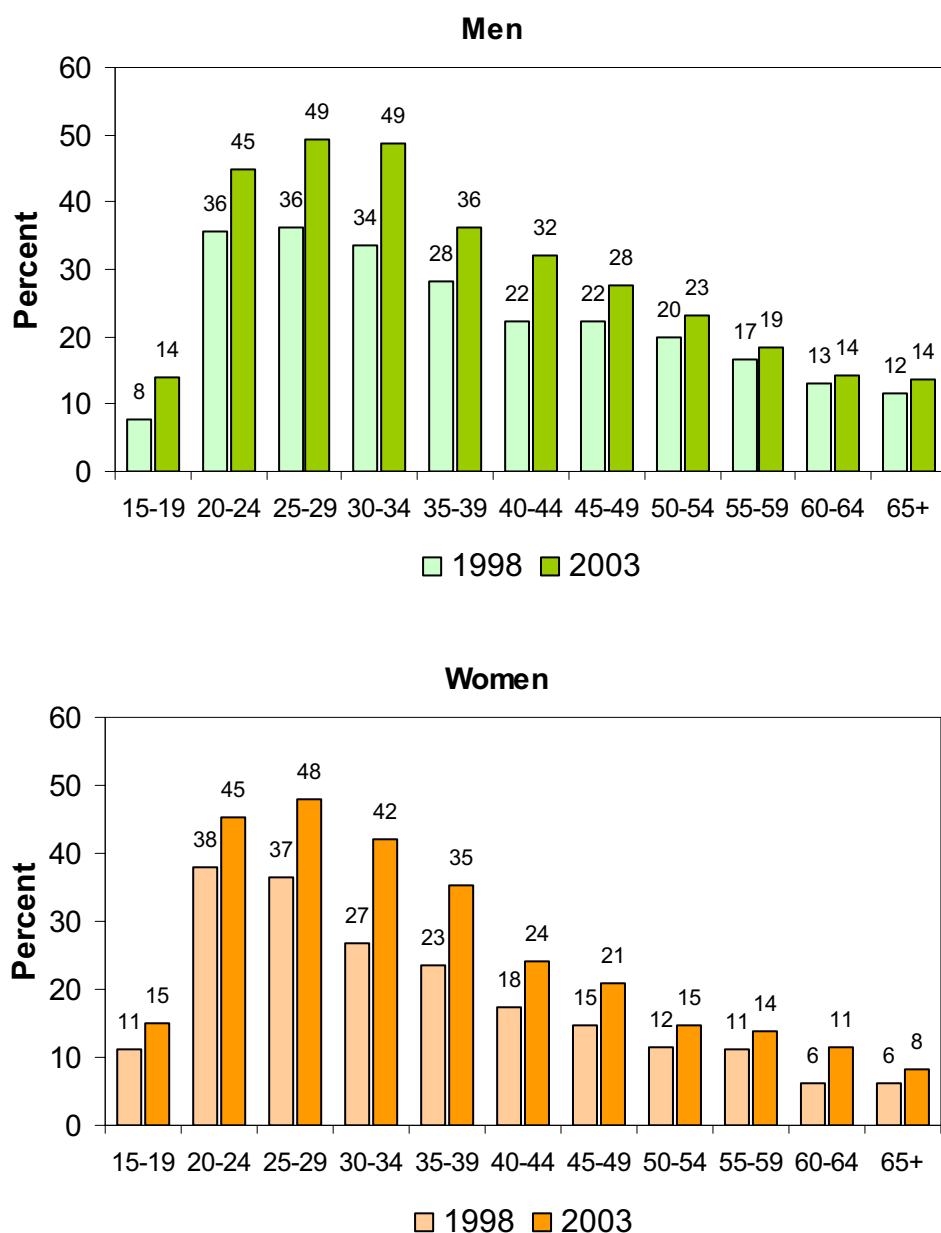


Table 2.5 Educational level of male and female household population

Percentage distribution of the *de facto* female and male household population age six and over by highest level of education completed, and median number of years of schooling, according to selected background characteristics, South Africa 2003

Median number of years of schooling, according to selected background characteristics, South Africa 2009										
Background characteristic	Level of Education								Number of males/ females	Median number of years of schooling
	No education	Grades 1-5	Grades 6-7	Grades 8-11	Grade 12	Higher	Unknown	Total		
	MALE									
Age										
6-9	23.8	74.3	1.3	0.1	0.0	0.0	0.5	100.0	1 368	0.9
10-14	2.6	48.6	30.8	17.6	0.0	0.0	0.4	100.0	1 986	4.9
15-19	1.5	6.7	12.2	65.3	11.1	3.0	0.4	100.0	1 499	8.9
20-24	1.4	3.3	5.9	44.3	34.0	10.8	0.4	100.0	1 274	10.7
25-29	5.6	4.3	6.6	33.6	37.5	11.9	0.5	100.0	1 008	11.0
30-34	4.1	5.5	9.9	30.1	34.2	14.5	1.7	100.0	891	11.0
35-39	6.3	7.5	13.1	36.2	27.6	8.6	0.7	100.0	855	9.6
40-44	8.5	12.9	13.5	32.0	19.1	13.1	1.1	100.0	769	9.1
45-49	7.8	14.6	14.0	34.3	17.1	10.4	1.7	100.0	638	8.1
50-54	13.2	14.5	14.9	33.0	15.3	8.0	1.1	100.0	471	7.5
55-59	17.0	15.3	9.3	38.9	11.7	6.8	1.0	100.0	399	7.4
60-64	24.1	21.5	13.5	24.9	6.8	7.4	1.8	100.0	399	5.5
65+	42.4	18.0	7.1	17.1	6.7	7.1	1.6	100.0	673	2.7
Residence										
Urban	7.5	18.6	11.2	33.2	19.6	9.1	0.9	100.0	7 709	8.5
Non-urban	13.6	30.4	15.3	27.5	10.1	2.6	0.6	100.0	4 520	5.7
Province										
Western Cape	5.6	20.6	13.8	35.3	17.1	6.5	1.1	100.0	1 321	7.9
Eastern Cape	11.9	33.7	14.3	25.0	9.0	4.5	1.7	100.0	1 490	5.5
Northern Cape	14.3	21.7	14.7	33.1	10.3	5.5	0.5	100.0	211	6.9
Free State	11.8	25.4	14.2	29.6	13.0	5.1	0.9	100.0	726	6.8
KwaZulu-Natal	6.9	18.4	11.1	33.4	23.7	6.4	0.1	100.0	2 609	9.0
North West	14.5	27.5	14.1	27.3	11.8	4.8	0.1	100.0	878	6.1
Gauteng	7.9	17.4	10.2	33.9	19.3	10.2	1.1	100.0	3 044	8.8
Mpumalanga	13.2	25.8	14.9	29.1	11.1	5.6	0.4	100.0	777	6.5
Limpopo	14.7	30.2	15.8	26.3	7.9	4.2	0.9	100.0	1 172	5.6
Total	9.7	23.0	12.7	31.1	16.1	6.7	0.8	100.0	12 229	7.5
FEMALE										
Age										
6-9	23.9	75.0	1.0	0.0	0.0	0.0	0.2	100.0	1 361	1.0
10-14	1.8	40.7	37.5	19.8	0.1	0.0	0.2	100.0	2 039	5.4
15-19	1.5	2.5	9.0	72.1	13.0	1.9	0.0	100.0	1 604	9.3
20-24	2.3	2.8	4.0	45.4	34.3	11.1	0.0	100.0	1 416	10.7
25-29	3.0	3.2	7.1	39.0	35.5	12.3	0.0	100.0	1 143	10.9
30-34	6.2	6.3	9.4	35.8	29.9	12.3	0.2	100.0	1 056	10.3
35-39	5.9	8.6	13.7	35.8	25.5	9.7	0.8	100.0	1 143	9.4
40-44	11.8	11.3	16.8	35.2	15.3	8.8	0.7	100.0	913	7.9
45-49	11.3	15.0	15.8	36.2	13.9	7.1	0.7	100.0	784	7.6
50-54	22.4	18.4	13.2	28.7	9.6	5.1	2.6	100.0	848	6.2
55-59	25.5	17.7	14.4	25.6	7.7	6.2	3.0	100.0	580	5.8
60-64	33.8	18.4	11.9	23.6	6.5	4.9	1.0	100.0	560	4.4
65+	46.8	16.7	11.9	15.1	4.4	3.7	1.4	100.0	963	1.3
Residence										
Urban	8.9	16.8	12.8	35.1	17.7	8.0	0.8	100.0	8 860	8.3
Non-urban	17.6	25.0	15.0	28.8	10.8	2.5	0.3	100.0	5 556	6.1
Province										
Western Cape	5.6	16.3	13.6	41.0	17.2	5.7	0.6	100.0	1 572	8.2
Eastern Cape	15.0	25.2	14.9	32.7	7.2	4.6	0.4	100.0	1 962	6.4
Northern Cape	15.1	21.3	16.0	32.0	10.2	4.8	0.7	100.0	256	6.7
Free State	12.2	24.6	15.9	29.6	12.0	5.6	0.2	100.0	908	6.7
KwaZulu-Natal	8.7	19.9	14.0	31.6	21.1	4.6	0.1	100.0	2 698	7.8
North West	15.3	25.0	16.5	28.0	11.5	3.7	0.1	100.0	1 131	6.2
Gauteng	9.4	13.4	11.3	34.1	20.5	9.7	1.6	100.0	3 294	9.1
Mpumalanga	18.3	23.5	12.0	30.3	10.7	5.0	0.1	100.0	921	6.5
Limpopo	20.6	22.0	13.9	30.1	8.6	4.3	0.5	100.0	1 673	6.1
Total	12.2	19.9	13.7	32.7	15.0	5.9	0.6	10.0	14 416	7.4

Note: Total includes one man and five women for whom age is missing.

## 2.4 School Attendance

Table 2.6 presents school attendance by age group, sex, and residence for the population aged 6-24 years. There has been a decrease in the proportions of older children attending school compared with 1998 SADHS. Almost 90 percent of children aged 6-15 years are currently attending school, which is slightly lower than the 92 percent observed in SADHS 1998. School attendance in the age group 16-20 years has dropped from 71 percent in 1998 to 65 percent in 2003, and attendance in the age group 21-24 years has dropped from 27 to 20 percent. The percentage of children aged 6-10 years attending school in urban areas is slightly lower than the percentage in non-urban areas. Nearly 65 percent of the 16-20 year age group and 20 percent of the 21-24 year age group are attending school with slightly higher proportions of males than females, but similar proportions of urban and non-urban respondents in school.

Table 2.6 School attendance									
Percentage of the <i>de facto</i> household population aged 6-24 years in school, by age, sex and residence, South Africa 2003									
Age	Male			Female			Total		
	Urban	Non-urban	Total	Urban	Non-urban	Total	Urban	Non-urban	Total
6-10	86.5	87.3	86.9	85.3	89.7	87.3	85.9	88.4	87.1
11-15	90.3	92.6	91.4	93.8	92.4	93.2	92.2	92.5	92.3
6-15	88.5	90.0	89.2	90.0	91.1	90.5	89.3	90.6	89.9
16-20	65.3	68.6	66.6	64.0	60.5	62.6	64.7	64.5	64.6
21-24	20.1	24.0	21.2	19.1	17.9	18.7	19.6	20.6	19.9

## 2.5 Grants and Pensions, Injuries and Disabilities

The percentage of males and females receiving a government grant or pension is indicated in Table 2.7. Grants are defined as alimony, compensation for injuries, and state pensions. The proportion of the girl population aged 6-9 years that receives a grant has increased significantly from 2 percent in 1998 to 27 percent in 2003. Increases of a similar magnitude are reported for boys of the same age group. These increases can be ascribed to the higher uptake of the Child Support Grant for children under the age of 9, with slight increases in the uptake in the age group 10-14 years. The proportion receiving some kind of grant increases rapidly after age 50. Of women aged 65 year or older, the proportion receiving a grant has increased from 81 percent in 1998 to 87 percent in 2003. Among men 65 years or older, the proportion has increased from 66 percent to 71 percent. The magnitude of increase between the 1998 and 2003 SADHS are hence much smaller in older persons than in young children. It is clear that a larger proportion of the population receives grants in non-urban areas. It is therefore not surprising to note that the largest proportional uptake of social grants or pensions take place in the more rural provinces, i.e. Eastern Cape, Northern Cape, North West and Limpopo.

The injury data as included in Table 2.7 are described separately for children and adults in Chapters 7 and 10, respectively. Readers are referred to Sections 7.9 and 10.5 for a short discussion of the data.

The percentage of male and female household members with reported sight, hearing, physical, intellectual or emotional disability is shown in Table 2.8. The proportion of the population with some kind of disability increases with age. The increase is particularly pronounced from age 55 where about one-tenth of the population indicated some kind of disability. This proportion increases to about 16 percent for the age group 80 years and over. The proportion is relatively stable across provinces and population groups, and compared to other education groups, only slightly higher for people with no education.

Table 2.7 Grants and pensions, and recent injuries

Percentage distribution of the *de facto* male and female household population, by whether receiving a government grant or pension, and whether injured in the 30 days preceding the survey, South Africa 2003

Background characteristic	Receiving grant/pension			Had any injury			Total	Number of women/men
	Yes	No	Missing	Yes	No	Missing		
MALE								
Age								
6-9	26.3	71.6	2.1	1.6	97.2	1.2	100.0	1 368
10-14	2.6	96.0	1.4	1.8	97.2	1.1	100.0	1 986
15-19	1.4	96.9	1.7	0.9	98.0	1.1	100.0	1 499
20-24	1.4	97.6	1.0	1.3	97.9	0.9	100.0	1 274
25-29	3.5	95.8	0.8	1.5	98.3	0.2	100.0	1 008
30-34	3.6	95.5	0.9	2.1	97.5	0.4	100.0	891
35-39	3.0	96.3	0.6	3.9	95.9	0.2	100.0	855
40-44	5.3	93.4	1.3	2.7	96.3	1.0	100.0	769
45-49	4.9	94.4	0.7	2.2	97.1	0.6	100.0	638
50-54	10.7	89.1	0.1	0.7	99.2	0.1	100.0	471
55-59	14.1	84.5	1.4	3.4	95.4	1.2	100.0	399
60-64	33.7	65.1	1.2	1.5	97.3	1.3	100.0	399
65+	70.7	29.2	0.1	2.1	97.4	0.5	100.0	673
Residence								
Urban	9.1	90.0	0.9	2.0	97.3	0.6	100.0	7 709
Non-urban	14.0	84.5	1.6	1.5	97.4	1.0	100.0	4 520
Province								
Western Cape	8.4	90.5	1.0	1.7	97.4	0.9	100.0	1 321
Eastern Cape	16.5	82.7	0.8	1.6	97.6	0.8	100.0	1 490
Northern Cape	16.7	82.0	1.3	2.0	97.5	0.5	100.0	211
Free State	14.1	84.4	1.5	1.9	97.6	0.5	100.0	726
KwaZulu-Natal	8.8	90.3	0.9	0.9	98.6	0.4	100.0	2 609
North West	14.1	85.2	0.7	1.4	98.2	0.4	100.0	878
Gauteng	7.2	91.5	1.4	2.9	95.7	1.4	100.0	3 044
Mpumalanga	11.0	87.8	1.2	1.5	98.2	0.3	100.0	777
Limpopo	15.3	82.8	1.9	2.2	97.3	0.5	100.0	1 172
Total	10.9	88.0	1.2	1.9	97.4	0.8	100.0	12 229
FEMALE								
Age								
6-9	27.4	71.3	1.3	0.3	98.9	0.7	100.0	1 361
10-14	2.7	95.9	1.5	0.8	98.7	0.5	100.0	2 039
15-19	1.1	97.6	1.3	0.3	98.9	0.7	100.0	1 604
20-24	2.6	95.8	1.6	1.1	98.3	0.6	100.0	1 416
25-29	2.8	95.6	1.6	0.6	99.0	0.3	100.0	1 143
30-34	2.9	95.7	1.3	1.3	97.6	1.1	100.0	1 056
35-39	3.7	94.6	1.7	0.9	98.0	1.1	100.0	1 143
40-44	6.2	92.9	0.8	0.9	98.9	0.3	100.0	913
45-49	7.5	91.7	0.8	1.3	98.3	0.4	100.0	784
50-54	13.8	85.5	0.7	1.8	97.8	0.3	100.0	848
55-59	22.8	77.1	0.1	2.3	97.1	0.6	100.0	580
60-64	64.9	35.1	0.0	1.5	98.5	0.0	100.0	560
65+	87.4	12.3	0.4	2.5	96.4	1.1	100.0	963
Residence								
Urban	13.0	85.9	1.2	1.1	98.3	0.6	100.0	8 860
Non-urban	18.2	80.7	1.2	1.1	98.3	0.7	100.0	5 556
Province								
Western Cape	11.6	86.8	1.6	1.1	97.7	1.2	100.0	1 572
Eastern Cape	22.8	76.7	0.5	1.0	98.8	0.3	100.0	1 962
Northern Cape	19.6	79.2	1.2	1.3	98.3	0.3	100.0	256
Free State	17.5	80.4	2.1	1.5	98.0	0.5	100.0	908
KwaZulu-Natal	13.6	85.7	0.7	0.9	98.8	0.3	100.0	2 698
North West	18.3	81.1	0.6	0.8	98.8	0.4	100.0	1 131
Gauteng	9.2	89.2	1.6	1.2	97.5	1.3	100.0	3 294
Mpumalanga	15.6	83.2	1.3	0.6	99.2	0.2	100.0	921
Limpopo	18.0	80.8	1.2	1.3	98.3	0.5	100.0	1 673
Total	15.0	83.9	1.2	1.1	98.3	0.6	100.0	14 416

Note: Total includes four men and five women for whom age is missing.

Table 2.8 Disability prevalence

Percentage of male and female household members with reported sight, hearing, physical, intellectual, or emotional disability, South Africa 2003

Background characteristic	Males										Females									
	None					Total					None					Total				
	Sight	Hearing	Speech	Physical	Intellect	Emotional	Missing	Number of men			Sight	Hearing	Speech	Physical	Intellect	Emotional	Missing			Number of women
<b>Age</b>																				
0-4	97.7	0.3	0.0	0.0	0.0	0.0	1.4	100.0	1 188	98.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.9	100.0	1 202
5-9	97.2	0.2	0.0	0.0	0.1	0.2	1.2	100.0	1 637	98.5	0.3	0.1	0.1	0.3	0.0	0.2	0.0	0.6	100.0	1 592
10-14	98.3	0.3	0.1	0.0	0.1	0.0	0.7	100.0	2 013	98.3	0.5	0.0	0.0	0.7	0.0	0.0	0.0	0.5	100.0	2 066
15-19	98.2	0.2	0.0	0.1	0.5	0.3	0.1	0.6	1 517	98.2	0.4	0.1	0.0	0.6	0.1	0.0	0.0	0.6	100.0	1 622
20-24	97.3	0.6	0.2	0.0	0.8	0.1	0.7	100.0	1 298	98.0	0.2	0.3	0.0	0.0	0.6	0.1	0.0	0.3	100.0	1 440
25-29	96.0	0.5	0.4	0.3	1.9	0.4	0.4	100.0	1 024	96.2	0.2	0.3	0.2	1.7	0.5	0.1	0.0	0.8	100.0	1 170
30-34	96.0	0.5	0.1	0.3	1.5	1.1	0.2	0.3	1 000	91.0	0.6	0.1	0.1	0.9	0.7	0.1	0.0	0.9	100.0	1 070
35-39	95.2	0.3	0.1	0.1	1.7	1.0	1.5	100.0	878	95.8	0.6	0.4	0.1	1.6	0.5	0.1	0.0	0.8	100.0	1 153
40-44	95.2	0.7	0.0	0.0	2.0	1.0	0.5	0.5	1 000	77.5	0.6	0.7	0.2	1.7	0.4	0.5	0.5	0.5	100.0	925
45-49	93.8	0.3	1.1	0.1	2.9	0.4	0.3	1.1	1 000	64.9	0.9	0.1	0.1	1.7	0.8	0.8	0.3	0.3	100.0	801
50-54	96.1	1.1	0.4	0.2	1.6	0.0	0.1	0.4	1 000	48.3	0.9	0.6	0.0	4.0	1.0	0.3	0.7	0.0	100.0	860
55-59	90.1	1.4	0.4	0.1	6.5	0.2	0.5	0.7	1 000	40.8	1.4	0.7	0.0	4.1	0.1	0.4	0.0	0.0	100.0	584
60-64	90.8	1.4	0.7	0.2	5.4	0.7	0.4	0.6	1 000	40.0	1.4	0.3	0.0	4.0	0.0	0.0	0.5	0.5	100.0	567
65-69	93.1	0.7	0.3	0.7	3.5	0.8	0.3	0.6	1 000	31.1	3.5	0.3	0.0	1.6	0.0	0.0	1.1	1.0	100.0	387
70-74	90.6	2.2	0.5	0.0	2.1	0.0	0.5	4.2	1 000	20.5	2.0	0.7	0.0	5.0	0.0	0.0	0.5	0.5	100.0	266
75-79	92.8	1.1	1.6	0.0	3.9	0.3	0.0	0.3	1 000	8.9	2.6	4.4	0.0	4.2	0.0	0.8	0.0	0.0	100.0	142
80+	83.6	2.9	6.1	0.0	5.7	0.0	1.2	0.4	1 000	8.1	4.7	1.9	0.0	6.3	0.0	1.0	1.9	0.0	100.0	182
<b>Residence</b>																				
Urban	96.5	0.3	0.2	0.1	1.4	0.5	0.1	0.9	1 000	8 756	96.6	0.5	0.2	1.5	0.3	0.2	0.8	0.0	100.0	9 912
Non-urban	95.7	0.8	0.4	0.1	1.7	0.3	0.3	0.7	1 000	5 110	96.2	1.0	0.3	1.4	0.3	0.2	0.4	0.0	100.0	6 122
<b>Province</b>																				
Western Cape	96.5	0.3	0.3	0.1	1.2	0.2	0.1	1.3	1 000	1 584	96.4	0.4	0.0	1.3	0.1	0.1	1.5	0.0	100.0	1 807
Eastern Cape	96.1	0.1	0.4	0.0	1.4	1.0	0.1	0.9	1 000	1 700	95.4	0.5	0.5	1.4	1.1	0.3	0.8	0.0	100.0	2 145
Northern Cape	93.2	1.6	0.5	0.1	2.9	0.4	0.2	1.1	1 000	248	93.8	1.1	0.5	2.3	0.6	0.2	1.4	0.0	100.0	291
Free State	95.5	0.4	0.2	0.2	2.1	0.2	0.7	0.8	1 000	838	95.7	0.4	0.3	2.3	0.1	0.4	0.6	0.0	100.0	1 021
KwaZulu-Natal	98.2	0.0	0.1	0.0	1.2	0.1	0.1	0.2	1 000	2 736	98.2	0.3	0.0	1.0	0.2	0.0	0.2	0.0	100.0	2 800
North West	94.6	1.4	0.5	0.1	2.1	0.6	0.1	0.7	1 000	1 023	94.2	1.7	0.7	2.0	0.6	0.2	0.4	0.0	100.0	1 287
Gauteng	96.7	0.3	0.1	0.0	1.2	0.3	0.1	1.3	1 000	3 420	97.6	0.2	0.2	1.0	0.1	0.1	0.7	0.0	100.0	3 724
Mpumalanga	96.2	0.5	0.0	0.4	1.5	0.7	0.1	0.6	1 000	904	97.7	1.0	0.1	0.6	0.2	0.1	0.2	0.0	100.0	1 049
Limpopo	93.0	2.2	0.6	0.3	2.2	0.4	0.5	0.8	1 000	1 414	94.1	2.1	0.4	2.5	0.2	0.4	0.3	0.0	100.0	1 909
<b>Education</b>																				
No education	94.0	0.6	0.5	0.2	1.9	0.9	0.3	1.5	1 000	2 630	94.8	1.1	0.4	1.8	0.6	0.2	1.0	0.0	100.0	3 182
Grades 1-5	96.5	0.5	0.2	0.1	1.8	0.3	0.2	0.5	1 000	2 859	96.4	0.8	0.3	1.6	0.4	0.2	0.3	0.0	100.0	2 920
Grades 6-7	95.4	0.6	0.3	0.1	2.1	0.2	0.3	1.0	1 000	1 577	95.9	1.1	0.4	1.9	0.1	0.2	0.5	0.0	100.0	2 000
Grades 8-11	96.9	0.7	0.2	0.0	1.2	0.3	0.1	0.5	1 000	3 846	97.0	0.5	0.2	1.3	0.3	0.2	0.5	0.0	100.0	4 771
Grade 12	98.4	0.2	0.0	0.0	0.7	0.1	0.0	0.5	1 000	2 011	97.5	0.3	0.3	1.0	0.2	0.0	0.6	0.0	100.0	2 199
Higher	97.3	0.1	0.2	0.1	0.4	0.7	0.0	1.2	1 000	835	97.9	0.3	0.0	0.0	0.5	0.0	1.2	0.0	100.0	869
Unknown	83.7	0.0	0.0	0.7	8.1	1.2	0.0	6.4	1 000	108	92.8	2.8	0.0	0.0	0.2	4.1	0.0	0.0	100.0	93
<b>Population group</b>																				
African	96.2	0.6	0.3	0.1	1.5	0.4	0.2	0.8	1 000	11 203	96.5	0.8	0.3	1.4	0.3	0.2	0.5	0.0	100.0	13 216
Afr. urban	96.5	0.4	0.2	0.1	1.3	0.5	0.1	0.9	1 000	6 328	96.7	0.5	0.2	1.4	0.3	0.2	0.7	0.0	100.0	7 352
Afr. non-urban	95.8	0.8	0.4	0.1	1.6	0.3	0.3	0.7	1 000	4 875	96.2	1.0	0.3	1.4	0.3	0.2	0.4	0.0	100.0	5 865
Coloured	96.3	0.4	0.4	0.0	1.1	0.3	0.2	1.3	1 000	1 219	95.6	0.6	0.1	1.6	0.5	0.1	1.4	0.0	100.0	1 387
Indian	94.5	0.0	0.1	0.0	3.1	0.5	0.0	1.7	1 000	303	94.2	0.1	0.2	4.3	0.1	0.1	0.9	0.0	100.0	317
White	97.2	0.1	0.1	0.0	1.6	0.2	0.3	0.5	1 000	1 097	97.1	0.4	0.6	1.1	0.3	0.1	0.4	0.0	100.0	1 074
Other/missing	89.3	0.0	0.0	0.0	7.4	0.0	0.0	3.3	1 000	44	96.8	0.0	0.0	2.9	0.0	0.0	0.3	0.0	100.0	41
<b>Total</b>	<b>0.8</b>	<b>96.2</b>	<b>0.5</b>	<b>0.3</b>	<b>0.1</b>	<b>1.5</b>	<b>0.4</b>	<b>0.2</b>	<b>100.0</b>	<b>13 866</b>	<b>0.6</b>	<b>96.4</b>	<b>0.7</b>	<b>0.3</b>	<b>0.1</b>	<b>1.4</b>	<b>0.3</b>	<b>0.2</b>	<b>100.0</b>	<b>16 034</b>

Note: Total includes one man and seven women for whom age is missing.

## 2.6 Housing Characteristics

### *Type of housing*

Table 2.9 Housing Characteristic

Percentage distribution of households by housing characteristic, according to residence, South Africa, 2003

Characteristic	Residence		Total
	Urban	Non-urban	
<b>Electricity</b>			
Yes	87.7	57.4	76.7
No	12.3	42.6	23.3
Total	100.0	100.0	100.0
<b>Fuel used for cooking</b>			
Electricity	87.2	56.8	76.2
LPG, natural gas	0.2	0.5	0.3
Biogas	0.0	0.0	0.0
Kerosene	3.7	11.4	6.5
Charcoal	0.5	0.5	0.5
Firewood, straw	0.1	0.4	0.2
Dung	0.1	0.0	0.0
Other	0.0	0.2	0.1
Missing	8.3	30.2	16.3
Total	100.0	100.0	100.0
<b>Source of drinking water</b>			
Piped into dwelling	58.2	11.0	41.2
Piped into yard/plot	30.5	16.6	25.5
Public tap	9.5	36.5	19.3
Open well in dwelling	0.1	3.3	1.3
Protected well in dwelling	0.2	4.8	1.9
Spring	0.0	1.6	0.6
River, stream	0.1	17.6	6.4
Pond, lake	0.0	0.8	0.3
Pool/stagnant water	0.1	0.2	0.1
Dam	0.0	1.8	0.7
Rainwater	0.0	1.1	0.4
Tanker truck	0.7	3.4	1.7
Bottled water	0.0	0.7	0.3
Other	0.1	0.2	0.1
Missing	0.5	0.5	0.5
Total	100.0	100.0	100.0
<b>Time to water source</b>			
<15 minutes	95.7	51.0	79.6
<b>Sanitation facility</b>			
Flush toilet (connected to sewage)	74.8	5.5	49.7
Flush toilet (with septic tank)	6.3	1.5	4.6
Traditional pit toilet	14.7	70.0	34.7
Ventilated improved pit latrine	0.9	3.8	2.0
No facility, bush, field	2.3	18.5	8.1
Other	0.0	0.0	0.0
Missing	1.0	0.7	0.9
Total	100.0	100.0	100.0
<b>Main floor material</b>			
Earth, sand	8.1	28.1	15.3
Wood planks	1.3	0.3	0.9
Parquet, polished wood	4.3	2.3	3.6
Vinyl, linoleum	7.8	4.0	6.4
Ceramic tiles	22.8	3.9	15.9
Cement	31.1	53.5	39.2
Carpet	23.9	7.3	17.9
Other	0.0	0.0	0.0
Missing	0.7	0.7	0.7
Total	100.0	100.0	100.0

	Urban	Non-urban	Total
<b>Main wall material</b>			
Plastic/cardboard	4.9	1.3	3.6
Mud	1.8	21.2	8.8
Mud and cement	7.7	19.5	11.9
Corrugated iron/zinc	10.9	4.0	8.4
Prefab	0.4	0.2	0.3
Bare brick or cement block	16.3	19.0	17.3
Plaster/finished	56.1	33.7	48.0
Other	0.5	0.3	0.4
Missing	1.5	0.9	1.3
Total	100.0	100.0	100.0
<b>Persons per room</b>			
1-2	90.9	93.4	91.8
3-4	6.4	4.4	5.7
5-6	1.5	1.1	1.4
7+	0.4	0.2	0.3
Missing	0.8	0.9	0.8
Total	100.0	100.0	100.0
Mean	1.3	1.2	1.2
Total	4 952	2 804	7 756

The household characteristics of the sample are shown in Table 2.9. Not only do these characteristics reflect the socio-economic status of the households but they also have environmental health implications. There are currently 77 percent of South African households with access to electricity. This is 12 percentage points more than the 1998 SADHS. It is also higher than the 2001 census (71 percent). Although there is still a significant difference in access to electricity between urban and non-urban households, the gap has narrowed when compared to the 1998 SADHS. In 1998, 84 percent of urban and 37 percent of non-urban households had access to electricity, compared now to 88 and 57 percent, respectively.

Three-quarters (76 percent) of households use electricity as their main source of energy for cooking compared to 52 percent in 1998. The proportion of households using electricity for cooking has grown particularly in the non-urban areas where it has more than doubled to 57 percent compared to 23 percent in 1998. There has been a general drop in other fuels used for cooking in both non-urban and urban areas.



The main flooring material in South Africa is cement followed by ceramic tiles and earth/sand. Thirty nine percent of households have cement as the main flooring material compared to 33 percent in 1998. Households using ceramic tiles as main flooring material have more than doubled from 7 percent in 1998 to 16 percent in 2003. The increases occurred in both urban and non-urban areas. Other than cement and ceramic tiles, there has been little change compared to 1998.

Forty-eight percent of South African households have plaster as the main wall material, compared to 51 percent in 1998. The proportion with mud walls decreased from 14 percent to 9 percent.

Most households (92 percent) reported a population density of one to two people per room. This figure cannot be compared to the 1998 data in which an assessment was made of the number of persons per room that is used for sleeping.

## **2.7 Water and Sanitation**

Compared with access to electricity, there has been less change in access to piped water when compared to the 1998 SADHS. Two-thirds of households have access to piped water, 41 percent in the dwelling and a further 26 percent in the yard (Table 2.9). Given that the censuses show that there has been a growth in the number of households between 1996 and 2001, this would suggest that the actual number of households with access to piped water has grown. In addition, there has been a drop in dependence on dams, rivers, streams and springs (8 percent in 2003 compared with 12 percent in 1998). It is noticed that non-urban households still need time to catch up with their urban counterparts. Non-urban households are about five times less likely than urban households to have piped water in the dwelling, and about a quarter of non-urban households still rely on an open, outside water source for drinking water.

Almost 80 percent of the households take less than 15 minutes to a water source, compared to 79 percent in the 1998 survey. Fifty-one percent of rural households take less than 15 minutes to a water source, compared to 55 percent in 1998, implying that in 2003 there were more rural households than in 1998 that take more than 15 minutes to a water source.

The majority of urban households (75 percent) have flush toilets connected to sewage and a further 6 percent have flush toilets connected to a septic tank. In contrast, the majority of the non-urban households (70 percent) depend on traditional pit latrines. The profile with regard to sanitation has not changed much compared to the 1998 SADHS. Given that the number of households has grown, this likely indicates an increase in the number of households with access to sanitation. However, there are still 8 percent of households with no sanitation facility, which has dropped from 12 percent in 1998. The decrease is more marked in the non-urban areas where 19 percent have no toilet facility compared to 26 percent in 1998. Given the importance of clean, safe water and proper sanitation in health—in particular child and infant health—improvements from the previous survey are commendable, but non-urban households are in particular need of improvements.

## 2.8 Household Durable Goods

Table 2.10 shows the distribution of durable goods among households. A radio is owned by 76.4 percent of households, and a television by 62.3 percent. Compared with 1998, there has been an increase in both urban and non-urban households owning a television. There has also been an increase from 50 to 59 percent of households owning a refrigerator. Households owning a computer have increased from 6 to 11 percent. The increase of computer ownership is mostly in urban households.

Ownership of goods such as a refrigerator, a computer, a motor vehicle, as well as a telephone, sets the households in urban areas apart from those in non-urban areas. In contrast, the live-stock assets are mostly in non-urban areas.

With regard to telephone access, 24 percent of South African households have their own telephone, and 27 percent have access to a public telephone nearby. Cell phones are owned by 55 percent of households. In the urban areas, 34 percent of households have their own phone and 63 percent have a cell phone. In contrast, in the non-urban areas, 6 percent have their own phone and 41 percent have a cell phone. About 40 percent of households have no access to a phone.

Table 2.10 Household durable goods

Percentage of households possessing selected durable goods, by residence, South Africa 2003

	Residence		Total
	Urban	Non-urban	
Household goods			
<b>Durable goods</b>			
Radio	80.3	69.4	76.4
Television	74.6	40.6	62.3
Refrigerator	71.2	37.1	58.9
Bicycle	15.6	14.8	15.3
Motorcycle/scooter	3.9	1.2	2.9
Car/truck	31.8	12.2	24.7
Computer	15.9	2.0	10.9
Donkey/Horse	0.3	4.1	1.7
Sheep/Cattle	1.1	22.4	8.8
Telephone	34.0	5.7	23.8
Cell phone	63.4	41.3	55.4
None of above	6.4	13.5	8.9
<b>Phone access</b>			
Own phone	34.0	5.7	23.8
At a neighbour nearby	3.0	5.4	3.9
At a public telephone nearby	23.2	33.8	27.0
Somewhere else nearby	1.1	13.5	5.6
No access	38.6	41.5	39.7
Number of households	4 952	2 804	7 756

## 2.9 Characteristics of Men Aged 15-59 and Women Aged 15-49 Years

### Age distribution

Table 2.11 presents the age distribution by five-year age groups of women aged 15-49 according to the 1996 and 2001 censuses and the 1998 and 2003 SADHS. Additionally, it reflects the age distribution of men aged 15-59 years according to the 2001 census and the 2003 SADHS. During the SADHS 2003, a total of 7 041 women aged 15-49 and 3 118 men aged 15-59 were interviewed. Table 2.11 shows consistency between the two censuses and surveys in terms of growth and decline of age cohorts within these age ranges.

Table 2.11 Age distribution of women and men

Percentage distribution of women aged 15-49 years and men aged 15-59 years, South Africa, 1996, 1998, 2001 and 2003

Age group	WOMEN 15-49				MEN 15-59	
	1996	1998	2001	2003	2001	2003
	Census*	SADHS	Census*	SADHS	Census*	SADHS
15-19	19.5	19.2	20.0	19.8	18.9	19.3
20-24	18.9	17.7	17.3	17.6	16.2	16.9
25-29	16.9	15.8	16.1	14.4	14.6	13.3
30-34	14.7	14.1	13.8	13.0	12.3	11.2
35-39	12.5	13.9	13.0	14.1	11.1	10.9
40-44	10.1	11.0	10.9	11.5	9.5	10.4
45-49	7.1	8.3	8.9	9.5	7.4	7.2
50-54	NA	NA	NA	NA	5.9	5.9
55-59	NA	NA	NA	NA	4.2	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: NA = not applicable.

\*Source: Statistics South Africa.

## Background characteristics

The percent distribution, weighted and unweighted numbers of women aged 15-49 and men aged 15-59, and weighted proportions from the 2001 census, are presented in Table 2.12 by selected background characteristics. The proportions in each age group decline more rapidly in men than in women, with increasing age, probably due to higher mortality among males than females across the age groups. While there is general consistency in the comparability between the age distributions of the 2001 census and the 2003 survey regarding these age ranges, a rather large decline is seen in the 2003 survey in both men and women from the age group 20-24 to 25-29, as well as an unusually larger proportion of women 35-39 than those 30-34.

Table 2.12 Selected background characteristics of respondents						
Percentage distribution of women aged 15-49 and men aged 15-59, by selected background characteristics, South Africa 2003						
Background characteristic	WOMEN 15-49			MEN 15-59		
	Weighted percent	Weighted	Unweighted	Weighted percent	Weighted	Unweighted
<b>Age</b>						
15-19	19.8	1 395	1 450	19.3	603	649
20-24	17.6	1 242	1 227	16.8	527	517
25-29	14.4	1 015	1 019	13.3	416	397
30-34	13.0	918	901	11.2	348	334
35-39	14.1	991	972	10.9	340	338
40-44	11.5	812	782	10.4	323	292
45-49	9.5	668	690	7.2	224	233
50-54	-	-	-	5.9	184	197
55-59	-	-	-	5.0	155	161
<b>Residence</b>						
Urban	66.4	4 678	4 095	69.0	2 151	1 874
Non-urban	33.6	2 363	2 946	31.0	967	1 244
<b>Province</b>						
Western Cape	12.7	892	715	12.2	379	237
Eastern Cape	11.4	804	505	10.0	313	192
Northern Cape	1.8	125	777	1.9	59	374
Free State	6.3	443	796	6.4	199	361
KwaZulu-Natal	16.7	1 177	1 219	22.5	701	702
North West	7.4	523	749	6.9	216	330
Gauteng	26.3	1 854	722	26.1	815	346
Mpumalanga	6.4	451	776	6.7	208	346
Limpopo	11.0	772	782	7.3	228	230
<b>Marital status</b>						
Never married	54.3	3 821	3 701	55.7	1 738	1 704
Married	27.9	1 966	2 115	29.9	931	951
Living together	9.8	692	655	9.1	284	274
Widowed	2.5	175	167	1.0	32	38
Divorced	1.7	121	118	1.7	54	70
Not living together	3.8	266	285	2.0	62	66
Missing	-	-	-	0.5	17	15
<b>Education</b>						
No education	4.3	302	337	4.5	141	170
Grades 1-5	6.2	438	497	7.3	227	252
Grades 6-7	10.2	721	790	10.2	316	349
Grades 8-11	46.7	3 285	3 263	43.8	1 367	1 358
Grade 12	23.9	1 683	1 555	25.2	787	699
Higher	8.7	609	598	9.0	279	290
Unknown	0.0	3	1	-	0	0
<b>Population group</b>						
African	82.8	5 831	5 234	81.5	2 540	2 327
African urban	61.5	3 586	2 553	63.5	1 613	1 188
African non-urban	38.5	2 246	2 681	36.5	927	1 139
Coloured	9.4	665	933	8.5	264	348
White	5.7	402	274	7.4	229	156
Indian	2.0	141	596	2.6	79	282
Other/missing	0.0	2	4	0.2	5	5
<b>Total</b>	100.0	7 041	7 041	100.0	3 118	3 118

Similar to the 2001 census, a sex difference is reflected in the urban proportions interviewed in the SADHS 2003, both datasets showing a higher proportion of men than women living in urban areas. However, considering the SADHS 2003 data on its own, an urban bias is reflected for both men and women. Provincial proportions, too, vary according to sex. While it is expected that the economically less developed provinces would house relatively more women than men, and vice versa, resulting from more male than female labour migration to economically more developed provinces with better employment prospects, the distribution for the Western Cape, KwaZulu-Natal in particular, Gauteng, and Mpumalanga diverge from the expected pattern.

It is believed that provincial populations are experiencing considerable circular migration patterns and are therefore not static. However, it needs mentioning that the Western Cape and Gauteng had higher proportions of men and women in 2003 than reported in 2001, particularly higher for women in Gauteng. Whereas Table 2.12 reflects a considerable decrease of women from the time of the 2001 census to the 2003 survey in KwaZulu-Natal, it reflects a large increase of men in the same period, a situation seeming unusual and needing further investigation.

Small sex differentials are generally observed regarding educational attainment, population group, and marital status, except for widowhood that is reported to be more than twice as high among women compared to men. However, when comparing the SADHS 2003 percentage distributions of these characteristics with those of the 2001 census, some larger differences are clear, including that the proportions of men and women married are lower in the SADHS 2003 than in the 2001 census; the percentage of men and women with no education are to a large extent lower in the 2003 SADHS than reported in the 2001 census; the percentage of men and women with primary school education are to some extent lower in 2003 than reported in the 2001 census, whereas the percentage of men and women with secondary school education are considerably higher in 2003 compared to 2001; in the 2003 SADHS, African men and women as a proportion of the total population, are considerably larger compared to the 2001 census, whereas the proportion of white men and women is noticeably smaller; and for both men and women, the urban/non-urban distribution of the African population group reflects a very large over-sample of urban Africans, and a large under-sample of non-urban Africans.

### ***Educational level***

Table 2.13 shows that about one-third of women and men have completed Grade 12 or higher, men having a slightly higher proportion than women. The women's data reflect a considerable increase from the 1998 SADHS when it was reported that 24 percent had similar qualifications. Some caution needs to be exercised regarding this observed increase, as the reported 130 percent increase in the matriculated women of the most populous province, KwaZulu-Natal, (from 17 percent in 1998 to 39 percent in 2003) seems unlikely.

Similar to the situation in the 1998 SADHS, the proportion of women with no education increases with age in the 2003 survey. The 2003 SADHS shows a similar but disrupted pattern for men. Similar proportions of men (4.5 percent) and women (4.3 percent) had received no education. The proportion of all women with no education dropped from 7 percent in 1998 to 4 percent in 2003, reflecting a sizeable decline. Again some caution is called for, taking into account that the proportion of women with no education in KwaZulu-Natal reflects a 400 percent decrease from 1998 (11 percent) to 2003 (2 percent).

Table 2.13 Level of education

Percentage distribution of women aged 15-49 years and men 15-59 years by the highest level of education completed and population group, according to selected background characteristics, South Africa 2003

Background characteristic	Highest level of education completed						Population group					
	No education	Grades 1-5	Grades 6-7	Grades 8-11	Grades 12	Higher	African	Coloured	White	Indian	Other	
											Total	Number
WOMEN 15-49												
Age												
15-19	0.6	2.3	8.6	73.9	12.8	1.9	87.0	8.0	3.5	1.5	0.0	100.0
20-24	1.0	2.4	4.1	45.8	34.9	11.5	85.2	10.1	3.4	1.3	0.0	100.0
25-29	1.9	3.1	6.8	39.7	36.5	12.0	83.1	9.0	5.8	2.1	0.1	100.0
30-34	4.1	5.9	8.9	39.4	30.3	11.5	80.8	10.0	7.6	1.6	0.0	100.0
35-39	5.9	9.7	14.7	36.8	23.6	9.4	82.8	8.7	5.4	3.0	0.1	100.0
40-44	11.8	11.0	17.5	36.0	14.3	9.4	77.9	10.4	9.6	2.0	0.0	100.0
45-49	10.6	15.6	16.8	39.6	10.9	6.5	77.9	11.2	7.6	3.5	0.0	100.0
Residence												
Urban	3.7	4.3	9.1	46.9	25.3	10.6	76.7	12.2	8.1	3.0	0.0	100.0
Non-urban	5.5	10.0	12.4	46.3	21.1	4.8	95.0	4.0	0.9	0.1	0.0	100.0
Province												
Western Cape	1.7	6.1	8.6	54.0	23.0	6.7	38.5	53.0	7.2	1.2	0.1	100.0
Eastern Cape	3.1	9.7	12.3	52.5	14.0	8.4	94.6	3.2	1.8	0.4	0.0	100.0
Northern Cape	8.5	7.1	13.7	48.0	15.3	7.5	32.2	60.7	6.3	0.6	0.3	100.0
Free State	4.4	8.2	16.6	44.7	18.9	7.3	92.7	3.1	3.8	0.4	0.0	100.0
KwaZulu-Natal	2.0	5.6	7.4	37.9	39.4	7.7	82.4	3.9	5.1	8.7	0.0	100.0
North West	6.9	9.3	14.7	42.3	19.7	7.1	98.1	0.2	1.7	0.0	0.0	100.0
Gauteng	5.5	2.3	8.1	45.9	26.4	11.7	86.6	1.4	10.8	1.2	0.0	100.0
Mpumalanga	5.8	8.5	10.9	48.3	18.0	8.5	95.1	0.9	3.7	0.2	0.1	100.0
Limpopo	5.7	8.4	11.9	50.2	16.3	7.5	98.3	0.0	1.7	0.0	0.0	100.0
Total	4.3	6.2	10.2	46.7	23.9	8.7	82.8	9.4	5.7	2.0	0.0	100.0
MEN 15-59												
Age												
15-19	1.2	4.7	11.2	69.0	10.9	3.0	83.8	8.0	6.2	2.0	0.0	100.0
20-24	1.2	2.5	4.7	47.3	33.9	10.5	87.8	7.2	3.8	1.2	0.0	100.0
25-29	4.8	3.8	7.4	31.5	38.8	13.7	84.8	5.2	7.8	2.3	0.0	100.0
30-34	2.1	3.6	10.0	35.0	36.8	12.6	83.8	6.9	6.9	2.4	0.0	100.0
35-39	4.8	7.7	14.0	37.3	28.3	8.0	79.1	12.2	6.1	2.6	0.0	100.0
40-44	8.1	15.7	10.5	34.2	21.3	10.3	75.8	10.9	9.9	2.2	1.2	100.0
45-49	8.3	12.2	11.7	38.0	20.0	9.9	73.6	13.3	7.8	5.4	0.0	100.0
50-54	12.7	19.6	17.5	30.8	13.6	5.9	75.7	6.9	12.2	5.3	0.0	100.0
55-59	10.8	11.2	12.6	45.8	12.2	7.4	72.0	8.4	14.9	3.7	1.1	100.0
Residence												
Urban	4.0	5.6	8.9	43.1	27.8	10.7	75.0	10.9	10.2	3.7	0.3	100.0
Non-urban	5.8	11.0	13.0	45.6	19.6	5.0	95.8	3.1	1.0	0.1	0.0	100.0
Province												
Eastern Cape	2.1	9.1	10.1	46.1	21.7	11.0	41.6	46.3	8.6	2.3	1.3	100.0
Free State	3.9	9.3	12.7	46.4	18.7	8.9	88.5	2.6	8.9	0.0	0.0	100.0
Gauteng	7.7	7.3	13.1	49.3	14.6	7.9	37.5	52.5	9.4	0.3	0.3	100.0
KwaZulu-Natal	7.5	12.8	14.8	39.6	17.0	8.3	90.7	2.8	5.3	1.2	0.0	100.0
Mpumalanga	2.1	4.2	5.1	42.3	37.2	9.2	79.8	3.8	7.9	8.5	0.0	100.0
Northern Cape	9.2	9.2	13.7	37.2	21.8	9.0	100.0	0.0	0.0	0.0	0.0	100.0
Limpopo	5.6	4.9	9.1	44.3	28.0	8.2	86.9	1.7	10.4	1.1	0.0	100.0
Northwest	5.7	9.3	15.1	43.3	17.4	9.3	95.4	1.7	2.6	0.0	0.3	100.0
Western Cape	4.4	11.2	13.4	48.9	14.2	8.0	97.0	0.0	3.1	0.0	0.0	100.0
Total	4.5	7.3	10.1	43.8	25.2	8.9	81.5	8.5	7.4	2.5	0.2	100.0

Given that only about one-third of women 15-49 and men 15-59 had completed their secondary school education, it is important to consider the reasons provided by respondents for leaving school. Table 2.14 presents such reasons for respondents aged 15-24 years who stopped attending school. As in 1998, two reasons predominate among women 15-24, viz financial reasons and falling pregnant. The proportion of all young women who left school due to pregnancy declined from 10 percent in 1998 to 7 percent in 2003, but the proportion who left school due to financial reasons, increased from 13 to 19 percent. "Could not pay school fees" is reported by one in three women (33 percent) who failed to complete their primary education, and by 10 percent who failed to complete their secondary education. Overall, 1.6 percent of young women indicate that getting married is the reason for not completing their education, down from 2.1 percent in 1998. Compared to 1998, more than double the proportion of women reported in 2003 that they left school because they needed to take care of younger children, and the situation seems to have worsened particularly among women with incomplete primary education among whom the proportion increased over three times from 1998 (0.9 percent) to 2003 (3.2 percent). It is interesting to note that "Did not like school" increased slightly overall from 2 percent in 1998 to 2.4 percent in 2003, but among women who failed to complete their primary school education, it almost tripled from 4.3 to 12.3 percent.

**Table 2.14 Reasons for leaving school**

Percentage distribution of men and women aged 15-24 years by school attendance and reason for leaving school, according to highest level of education completed, South Africa 2003

Reason stopped attending school	Highest level of education						Total
	No education	Incomplete primary	Complete primary	Incomplete secondary	Complete secondary	Higher	
WOMEN 15-24							
Currently attending	11.2	27.6	57.7	64.9	26.7	57.8	53.3
Got married	0.0	2.9	1.2	1.7	1.5	0.4	1.6
Care for younger children	0.0	3.2	1.7	2.4	0.7	0.9	1.9
Family needed help	0.0	0.5	0.0	0.1	0.0	0.0	0.1
Could not pay school fees	0.0	32.7	19.6	9.7	24.4	3.3	14.0
Needed to earn money	0.0	1.8	0.5	2.1	15.3	5.8	5.3
Graduated/had enough school	0.0	0.0	1.2	0.6	17.8	22.2	5.9
Did not pass entrance exam	0.0	1.6	0.1	1.8	0.7	0.0	1.3
Did not like school	0.0	12.3	2.2	2.8	0.3	0.0	2.4
School not accessible	0.0	0.1	0.0	0.1	0.5	0.0	0.2
Got pregnant	0.0	5.0	10.4	9.7	2.7	3.0	7.4
Other	0.0	11.2	2.2	3.0	2.6	0.5	3.0
Don't know	0.0	1.2	1.7	0.9	1.7	1.1	1.1
Missing	88.8	0.0	1.6	0.3	5.1	5.0	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	21	111	122	1 599	612	169	2 637
MEN 15-24							
Currently attending	0.0	59.4	56.0	69.7	24.8	67.5	57.6
Care for younger children	0.0	3.7	0.0	0.1	0.5	0.0	0.4
Family needed help	0.0	0.5	0.0	0.6	0.5	0.0	0.5
Could not pay school fees	0.0	17.8	14.6	11.8	23.1	4.8	14.1
Needed to earn money	0.0	9.0	10.7	7.4	14.8	4.0	9.0
Graduated/had enough school	0.0	0.0	0.0	0.2	17.9	16.6	5.1
Did not pass entrance exam	0.0	0.8	0.0	1.3	1.8	1.5	1.3
Did not like school	0.0	3.0	4.4	3.9	2.9	0.0	3.3
School not accessible	0.0	0.0	0.9	0.5	1.1	0.0	0.6
Other	0.0	0.7	8.4	2.4	2.4	0.6	2.5
Don't know	0.0	0.2	1.7	0.3	1.9	0.0	0.7
Missing	100.0	4.9	3.3	2.0	8.3	4.9	4.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	13	70	64	665	244	73	1 130

Note: 3 women and 1 man with unknown highest level of education have been omitted.

Table 2.15 Literacy

Percentage distribution of women and men by level of schooling and by level of literacy, and percent literate, according to selected background characteristics, South Africa 2003

Background characteristic	WOMEN 15-49										MEN 15-59									
	Percentage with					Percentage with					Percentage with					Percentage with				
	secondary school or higher	Cannot read at all	Able to read parts of sentence	Able to read whole sentence	No card with required language	secondary school or higher	Cannot read at all	Able to read parts of sentence	Able to read whole sentence	No card with required language	secondary school or higher	Cannot read at all	Able to read parts of sentence	Able to read whole sentence	No card with required language	secondary school or higher	Cannot read at all	Able to read parts of sentence	Able to read whole sentence	No card with required language
Age																				
15-19	88.5	0.8	1.0	97.3	0.0	0.9	100.0	1 395	82.9	2.4	2.0	94.8	0.0	0.8	100.0	603				
20-24	92.2	1.7	1.2	96.7	0.0	0.4	100.0	1 242	91.7	1.7	1.5	96.4	0.1	0.3	100.0	527				
25-29	88.3	2.4	1.4	95.2	0.0	1.1	100.0	1 015	84.0	5.2	2.6	92.0	0.2	0.0	100.0	416				
30-34	81.1	4.4	2.9	90.8	0.8	1.1	100.0	918	84.3	2.7	1.1	94.4	0.2	1.6	100.0	348				
35-39	69.7	7.3	4.7	85.6	0.2	2.1	100.0	991	73.5	6.2	5.3	87.3	0.0	1.3	100.0	340				
40-44	59.7	12.9	6.5	77.8	0.6	2.2	100.0	812	65.8	11.0	7.0	81.4	0.0	0.6	100.0	323				
45-49	56.9	14.2	5.3	76.5	0.3	3.7	100.0	668	67.8	6.7	4.9	87.4	0.0	1.0	100.0	224				
50-54	-	-	-	-	-	-	-	-	50.3	14.7	14.6	69.5	0.0	1.1	100.0	184				
55-59	-	-	-	-	-	-	-	-	65.4	14.3	9.2	75.6	0.0	0.9	100.0	155				
<b>Residence</b>																				
Urban	82.8	3.9	2.0	92.7	0.1	1.3	100.0	4 678	81.6	5.1	3.2	90.9	0.0	0.8	100.0	2 151				
Non-urban	72.1	7.9	4.7	85.2	0.4	1.9	100.0	2 363	70.2	6.8	6.1	86.3	0.1	0.6	100.0	967				
<b>Province</b>																				
Western Cape	83.6	2.3	2.4	94.3	0.0	1.0	100.0	892	78.7	5.7	2.3	92.1	0.0	0.0	100.0	379				
Eastern Cape	74.9	6.0	2.5	90.5	0.0	0.9	100.0	804	74.1	4.5	4.5	90.1	0.0	0.9	100.0	313				
Northern Cape	70.8	9.0	4.3	86.1	0.0	0.6	100.0	125	71.8	9.5	3.5	86.3	0.0	0.8	100.0	59				
Free State	70.9	6.0	6.1	85.3	0.5	2.1	100.0	443	64.9	10.0	7.3	82.4	0.0	0.3	100.0	199				
KwaZulu-Natal	85.0	3.7	3.3	91.1	0.2	1.7	100.0	1 177	88.6	1.8	3.0	94.4	0.0	0.8	100.0	701				
Northwest	69.1	8.1	5.0	85.3	0.5	1.1	100.0	523	67.9	9.6	5.2	84.9	0.3	0.0	100.0	216				
Gauteng	83.9	5.0	1.3	92.2	0.3	1.1	100.0	1 854	80.5	6.3	4.1	88.3	0.0	1.3	100.0	815				
Mpumalanga	74.9	6.5	3.7	87.8	0.0	2.0	100.0	451	70.0	9.1	4.7	84.9	0.3	1.0	100.0	208				
Limpopo	74.0	7.2	3.0	86.8	0.3	2.7	100.0	772	71.0	4.7	5.3	88.5	0.3	1.1	100.0	228				
Total	79.2	5.2	2.9	90.2	0.2	1.5	100.0	7 041	78.0	5.6	4.1	89.4	0.1	0.8	100.0	3 118				

In the case of men, financial reasons were the main concern for stopping education. Almost one-quarter (23 percent) of men could not pay their school fees, or needed to earn money. It is interesting to note that “Got married” was not included as a potential reason in the men’s questionnaire. Fifty eight percent of men aged 15-24 years and 53 percent of women aged 15-24 were still attending school at the time of interview.

### ***Literacy***

Table 2.15 presents literacy levels of women 15-49 and men 15-59. The adult population of South Africa is mostly able to read with about 90 percent being able to read a sentence presented during the interview. The proportions of adults who are able to read a complete sentence decreases with age to 70 percent of men 50-54 years, and 77 percent of women 45-49 years. A higher proportion of adults in the non-urban areas are unable to read a complete sentence.

### ***Marital status***

Current marital status is reflected in Figure 2.4 and by age group in Table 2.16. About 55 percent of men and women in the respective age range report that they were never married. The proportion of women in the never married category has increased from 48.3 percent in the 1998 survey to 54.3 percent in 2003. Correspondingly, the proportion of women who report being married declined from 33.7 percent in 1998 to 27.9 percent in 2003, possibly pointing to a considerable change in female marriage patterns, or change in reporting on the subject over the five year period in between, or other influencing factors like those described below. These changes among women, when analysed by five-year age groups, are generally consistent between the surveys. Fifty six percent of men aged 15-59 years have never married with 29.9 percent who are currently married. Less than 2 percent of men and women, respectively, are divorced, but more than double the proportion of women (2.5 percent) compared to men (1 percent) are widowed.

Budlender *et al.* (2004) highlight the challenges of collecting and interpreting statistical data regarding marital status in South Africa, resulting from the cultural and religious diversity in the forms of marriage, as well as the language issues around translation of questionnaires. They note that surveys and censuses reflect perceptions of marriage, and point out that the customary practice of *lobola* (bridewealth) could introduce complexity to the perceptions of marriage as such marriage takes place over an extended period of time. It is therefore possible that the two parties may perceive the timing of marriage differently. Budlender *et al.* (2004) furthermore highlight that changes in legislation in 1998 with the passing of the Recognition of Customary Marriage Act, giving new legal status to customary marriages, may affect perceptions differently from before. While this Act would improve the property rights of African women in particular, it is difficult to assess what impact it would have on reporting of marital status. Budlender *et al.* (2004) demonstrate gender differences in reporting of marriage, with more men reporting to be married than women. They also suggest that cohabitation is also likely to be reported differently by different people. It is important to keep these issues in mind when interpreting the findings.



**Figure 2.4 Current marital status of women and men, South Africa 2003**

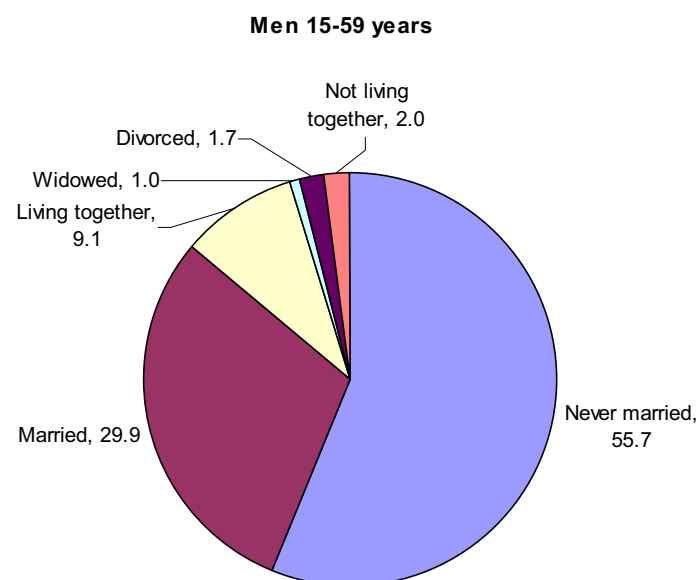
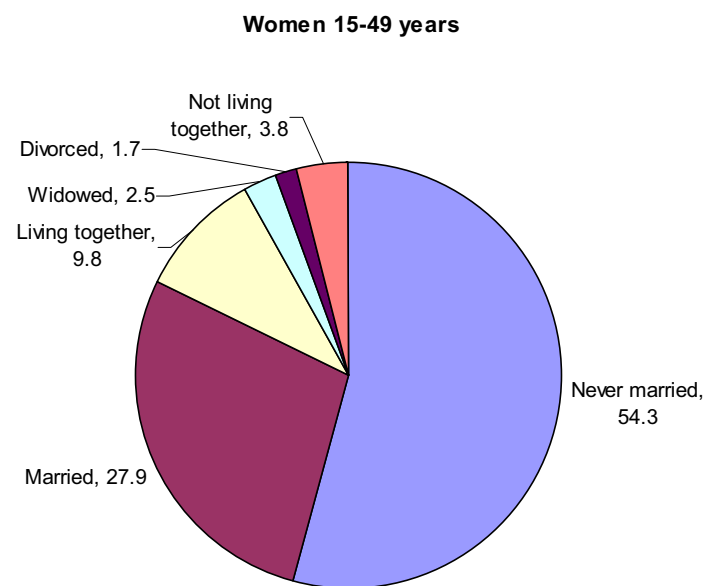


Table 2.16 Current marital status

Percent distribution of women 15-49 years and men 15-59 years, by current marital status by age, South Africa 2003									
Age groups	Never married	Married	Living together	Widowed	Divorced	Not living together	Missing	Total	Number
WOMEN 15-49									
15-19	95.6	1.3	2.3	0.0	0.0	0.8	0.0	100.0	1 395
20-24	79.4	8.3	10.8	0.0	0.2	1.3	0.0	100.0	1 242
25-29	55.4	25.3	13.4	0.7	0.6	4.7	0.0	100.0	1 015
30-34	36.8	40.1	14.6	1.7	2.1	4.7	0.0	100.0	918
35-39	31.0	47.1	9.7	4.0	2.7	5.4	0.0	100.0	991
40-44	21.7	49.9	12.4	5.5	4.3	6.2	0.0	100.0	812
45-49	17.7	52.0	8.6	10.3	4.7	6.7	0.0	100.0	668
Total	54.3	27.9	9.8	2.5	1.7	3.8	0.0	100.0	7 041
MEN 15-59									
15-19	97.6	0.2	1.8	0.0	0.0	0.2	0.2	100.0	603
20-24	88.2	2.8	7.6	0.0	0.0	1.2	0.2	100.0	527
25-29	72.7	10.3	13.6	0.0	0.7	2.6	0.0	100.0	416
30-34	44.9	33.6	15.6	0.1	0.9	4.0	0.9	100.0	348
35-39	32.9	46.7	14.9	0.3	2.6	2.0	0.8	100.0	340
40-44	10.7	66.5	10.3	2.7	6.7	2.3	0.8	100.0	323
45-49	17.8	66.1	6.7	3.3	3.7	1.6	0.8	100.0	224
50-54	9.4	68.4	8.7	3.6	2.6	5.1	2.2	100.0	184
55-59	14.8	70.3	5.0	5.1	3.1	1.5	0.2	100.0	155
Total	55.7	29.9	9.1	1.0	1.7	2.0	0.5	100.0	3 118

### Age at first marriage

In the 2003 SADHS, the median age at first marriage for women 25-49 has increased considerably to 27.0 years from 24.2 years in the 1998 SADHS (Table 2.17). Data presented by Budlender *et al.* (2004) suggest that in the late 1990's the mean age at marriage for South Africans was around 25 years; higher than the ages reported for most other African countries. The observed extreme increase between the two SADHS surveys however, needs to be interpreted carefully. It can be noticed that the 1998 median age at first marriage ranged from 22.6 for women aged 45-49 to 24.7 for women 30-34, while the 2003 median ranges from 25.7 years to 27.0 for women of the same age groups—showing a full year's difference between 1998's highest and 2003's lowest median age. This suggests either unusual dynamics in South African marriage patterns, or peculiarities in reporting such data. The constant decline from 1998 to 2003 in the proportion of women 15-49 who were first married by each of the indicated exact ages given in Table 2.17, suggest that women from all age groups are either waiting longer to marry (which may correlate in part to findings in other sections indicating that more women report to stay longer in school and enter the work force in larger numbers), or that issues of measurement of marital status mentioned by Budlender *et al.* (2004) influence the findings. For women aged 20-49 and 25-49, the proportion who had never married has increased considerably from the previous survey till the current, with 19 percent more and 30 percent more, respectively, who had never married. Further investigation into changes over time in the proportion of cohabiting, divorced, widowed or never-in-union women could shed light on contributing reasons for such dramatic change in these social patterns. Age at first marriage was not asked in the men's questionnaire.

Data on contraception are often reported only for men and women who are married. Given the late age of marriage in South Africa and the relatively high proportions of cohabitation, such statistics are not likely to be meaningful. For this reason, the data on fertility and contraception will generally be presented for people who are in union (married or cohabiting) or for people who are sexually active.

**Table 2.17 Age at first marriage**

Percentage of women aged 15-49 years who were first married by exact ages, and median age at first marriage, by current age, South Africa 2003

Current age	Percent who were first married by exact age					Percentage who had never married	Number of women	Median age at first marriage
	15	18	20	22	25			
15-19	0.4	NA	NA	NA	NA	95.6	1 395	a
20-24	0.8	5.6	12.6	NA	NA	79.4	1 242	a
25-29	2.1	8.0	14.9	23.0	34.7	55.4	1 015	a
30-34	2.6	10.6	21.3	30.5	42.6	36.8	918	27.0
35-39	1.5	12.0	24.1	32.1	46.5	31.0	991	26.6
40-44	1.9	11.8	26.7	37.8	50.2	21.7	812	24.9
45-49	4.1	14.5	25.6	35.4	46.5	17.7	668	25.7
Median for women 20-49	2.0	9.9	20.0	NA	NA	44.1	5 646	b
Median for women 25-49	2.3	11.1	22.1	31.2	43.7	34.1	4 404	27.0

Note: NA = Not applicable

a = less than 50 percent of respondents in age group x to x+4 were married by age x

b = not calculated due to censoring

**Table 2.18 Median age at first marriage**

Median age at first marriage among women age 25-49, by current age and selected background characteristic, South Africa 2003

Background characteristic	Current age					Women aged 25-49
	25-29	30-34	35-39	40-44	45-49	
<b>Residence</b>						
Urban	a	26.4	27.4	25.8	25.8	27.0
Non-urban	a	32.4	24.3	23.0	25.3	26.9
<b>Province</b>						
Western Cape	27.0	24.7	24.4	24.0	26.7	25.1
Eastern Cape	a	a	27.8	25.2	25.2	26.9
Northern Cape	25.7	26.6	26.9	26.5	26.7	26.4
Free State	28.8	25.7	24.1	21.7	23.9	25.2
KwaZulu-Natal	a	a	33.7	23.6	26.7	32.0
North West	a	a	29.3	26.7	25.6	37.7
Gauteng	a	26.4	27.7	27.4	26.4	27.5
Mpumalanga	27.7	28.5	21.2	26.2	25.9	25.8
Limpopo	26.6	24.1	21.6	22.1	19.2	23.0
<b>Education</b>						
No education	a	28.6	23.9	26.7	21.5	25.1
Grades 1-5	27.4	24.1	23.7	26.9	24.4	25.0
Grades 6-7	28.0	26.6	24.2	22.7	26.9	24.8
Grades 8-11	a	26.6	25.4	25.6	25.4	26.5
Grade 12	a	27.8	28.6	24.6	27.4	29.7
Higher	27.4	27.5	26.7	25.8	27.3	27.0
<b>Population group</b>						
African	a	28.2	28.1	26.1	25.8	28.5
African urban	a	27.7	30.3	28.4	26.2	28.9
African non-urban	a	a	24.4	22.9	25.2	27.2
Coloured	28.2	24.1	25.0	24.2	27.5	25.8
White	23.3	22.1	21.5	20.6	21.5	21.6
Indian	23.2	23.1	23.2	21.1	23.7	22.9
Total	a	27.0	26.6	24.9	25.7	27.0

Note: a = less than 50 percent of respondents in age group x to x + 4 were first married by age x.

The median age at first marriage differs by population group, being youngest for white and Indian women and oldest for African women (Table 2.18). The median age at first marriage for each of the population groups is 21.6, 22.9 and 28.5 years respectively. This population group pattern was also observed in the 1998 SADHS, albeit at slightly younger ages for African women. Women from North West and KwaZulu-Natal report the oldest ages at first marriage while Limpopo women report the youngest. Age at first marriage tends to increase with higher levels of education, but is very similar for urban and non-urban residence.

## Polygyny

Table 2.19 shows the percentage of in-union men and women who currently are in a polygynous union by selected background characteristics. Approximately four percent of in-union women and men are in polygynous relationships. While considering the remarks of Budlender *et al.* (2004) elsewhere in this chapter, it is noted that the women's proportion has declined drastically over the five-year period from 6.8 percent in 1998 to 3.9 percent in 2003. As in 1998, polygyny is more prominent among women in the non-urban areas. The non-urban proportion has declined more (10 percent in 1998 to 5 percent in 2003) than the urban proportion (4.4 percent to 3.5 percent). Polygyny generally increases with increasing age for both men and women. Among women, Limpopo and Mpumalanga, and among men, Northern Cape and KwaZulu-Natal are leading in the levels of polygyny. Polygyny is more common among Africans with 6 percent of non-urban African in-union men and 5 percent of non-urban African in-union women in polygynous marriages.

Table 2.19 Polygyny

Percentage of women 15-49 and men 20-59 currently in a polygynous union, by age and selected background characteristics, South Africa 2003

Background characteristic	Percentage polygyny	Number of women	Percentage polygyny	Number of men
<b>Age</b>				
15-19	2.5	51	*	12
20-24	3.9	238	(0.0)	54
25-29	3.6	393	3.6	99
30-34	2.5	503	3.1	171
35-39	2.9	563	3.4	209
40-44	5.7	506	3.2	248
45-49	5.5	405	5.2	163
50-54	-	-	8.5	142
55-59	-	-	5.9	116
<b>Residence</b>				
Urban	3.5	1 852	3.7	899
Non-urban	5.0	806	5.8	316
<b>Province</b>				
Western Cape	1.7	404	3.5	106
Eastern Cape	4.0	236	2.4	207
Northern Cape	1.3	51	10.8	56
Free State	2.7	167	1.4	78
KwaZulu-Natal	2.1	387	9.1	78
North West	2.6	146	7.9	61
Gauteng	4.1	788	0.0	25
Mpumalanga	6.1	178	4.3	228
Limpopo	9.3	300	3.9	376
<b>Education</b>				
None - Grade 7	8.0	727	8.4	350
Grades 8-11	2.9	1 065	2.3	439
Grade 12+	1.8	862	3.0	426
<b>Population group</b>				
African	4.8	1 976	5.0	879
African urban	4.4	1 234	4.4	582
African non-urban	5.4	742	6.2	297
Coloured	1.3	315	2.3	142
White	1.7	275	1.9	140
Indian	1.8	90	1.6	48
<b>Total</b>	<b>3.9</b>	<b>2 658</b>	<b>4.3</b>	<b>1 215</b>

A negative relationship between polygynous unions and educational level is generally shown for both women and men. For women, the only province that does not show a prominent decline since 1998 in this practice, is the Eastern Cape. A particularly large decline over the five years is seen in KwaZulu-Natal women, from 12 percent to 2 percent. Cultural and demographic change in a population usually occur at a slow pace. While the extreme decline observed in KwaZulu-Natal may reflect data problems, there are consistent indications across the background variables that polygyny is declining in South Africa.

## Employment

Information was collected from women regarding their current employment status and their current employer. Table 2.20 shows the findings by the usual background characteristics. Overall, 36 percent of women were employed at the time of the survey, which is somewhat higher than the 32 percent employed at the time of the 1998 survey. These proportions are an average over the different age groups, which are lowered by the small proportions of employed women in the age groups 15-19 and 20-24, which in part is due to the fact that

many of the younger respondents are still attending school or are furthering their education at tertiary institutions. Generally, a positive relationship is seen between employment and age. The level of employment among urban women (42 percent) is considerably higher than among non-urban women (25 percent). The level of employment among Western Cape women (55 percent) is considerably higher than that of the remaining provinces, followed by Gauteng (41 percent), while the lowest levels are in Limpopo and the Eastern Cape where about a quarter of women are employed.

Table 2.20 Employment								
Percentage distribution of currently employed women aged 15-49 by employer according to selected background characteristics, South Africa 2003								
Background characteristic	Percentage women currently employed	Number of women	Currently employed				Total	Number of women employed
			Self-employed	Employed by a non-relative	Employed by a relative	Missing		
<b>Age</b>								
15-19	6.2	1 395	10.5	72.9	13.7	3.0	100.0	86
20-24	22.6	1 242	10.5	79.0	9.2	1.3	100.0	281
25-29	39.4	1 015	17.7	75.9	5.0	1.3	100.0	400
30-34	47.6	918	16.4	77.9	4.5	1.2	100.0	437
35-39	50.9	991	15.1	79.3	4.6	1.0	100.0	504
40-44	56.0	812	16.4	75.9	6.8	0.8	100.0	455
45-49	53.3	668	18.8	75.2	4.3	1.6	100.0	356
<b>Residence</b>								
Urban	41.5	4 678	15.5	77.3	5.8	1.3	100.0	1 940
Non-urban	24.5	2 363	16.8	76.3	5.7	1.1	100.0	580
<b>Province</b>								
Western Cape	55.2	892	17.3	73.3	8.6	0.8	100.0	492
Eastern Cape	25.0	804	20.3	75.5	4.1	0.0	100.0	201
Northern Cape	36.1	125	8.3	88.6	2.3	0.8	100.0	45
Free State	33.6	443	17.5	75.4	5.1	2.0	100.0	149
KwaZulu-Natal	34.4	1 177	11.5	84.1	4.0	0.4	100.0	405
North West	29.8	523	19.0	77.2	3.5	0.4	100.0	156
Gauteng	40.5	1 854	14.2	77.0	6.6	2.2	100.0	751
Mpumalanga	31.7	451	10.3	85.2	3.3	1.2	100.0	143
Limpopo	23.2	772	25.7	65.8	6.5	2.1	100.0	179
<b>Education</b>								
No education	32.8	302	18.0	73.7	7.3	0.9	100.0	99
Grades 1-5	34.2	438	10.4	79.8	6.9	2.9	100.0	150
Grades 6-7	33.0	721	15.1	77.5	4.9	2.4	100.0	238
Grades 8-11	26.7	3 285	19.4	73.9	6.2	0.5	100.0	877
Grade 12	44.2	1 683	15.7	77.8	4.9	1.6	100.0	744
Higher	67.8	609	10.4	82.0	6.5	1.1	100.0	413
<b>Population group</b>								
African	30.9	5 831	17.4	76.3	4.8	1.6	100.0	1 804
Afr. urban	35.8	3 586	17.3	76.5	4.5	1.8	100.0	1 284
Afr. non-urban	23.2	2 246	17.7	75.6	5.6	1.2	100.0	520
Coloured	56.1	665	11.1	79.7	8.7	0.5	100.0	373
White	65.5	402	14.1	77.3	8.6	0.0	100.0	263
Indian	54.5	141	7.8	84.8	7.0	0.4	100.0	77
<b>Total</b>	<b>35.8</b>	<b>7 041</b>	<b>15.8</b>	<b>77.1</b>	<b>5.8</b>	<b>1.3</b>	<b>100.0</b>	<b>2 520</b>

No clear pattern overall shows up regarding women's employment and their education. Considerably less African women (31 percent) are employed than women of other population groups of whom more than half are employed. Of the women who are currently employed, the majority (77 percent) are employed by a non-relative, 16 percent are self-employed, and a small proportion is employed by a relative. Compared to other provinces, self-employment is more prominent among women from Limpopo and the Eastern Cape, and compared to other population groups, this is more prominent among African women.

## *Occupation*

Table 2.21 shows the percent distribution of employed women 15 to 49 years and employed men 15 to 59 years by occupation. There are about equally large proportions of women who work in professional/technical/management (19 percent), clerical (20 percent), household/domestic (23 percent), and manual occupations (20 percent). Much smaller proportions are involved in sales, services and agricultural occupations. Among women with no education, the household/domestic field dominates, followed by agricultural and unskilled manual occupations. Among women with Grade 12 or higher, the largest proportions are in professional/technical/management and clerical jobs. It is noted that 13 percent of the women with Grade 12, and just over 1 percent with higher education, are working in the household/domestic field. Among African women, the household/domestic sector dominates; among coloured women, the clerical and household/domestic sectors; among white and Indian women, the clerical and professional/technical/management sectors. The 1998 and 2003 surveys' occupation data do not allow much comparison, but an improvement in women's occupational status is seen with the overall proportion engaged in professional/technical/management jobs having increased from 14 percent in 1998 to 19 percent in 2003. In non-urban areas this increase is even more prominent, from 9 percent in 1998 to 16 percent in 2003. Except for coloured women, the proportions of women holding such positions have increased for all population groups from the 1998 to the 2003 SADHS, with particularly steep increases among Indian and non-urban African women.

The second part of Table 2.21 presents the distribution of men aged 15 to 59 years by occupation by selected background characteristics. Almost 45 percent of men are employed in manual occupations, the majority of these in skilled manual occupations. Almost one-fifth are in the professional/technical/management sector, and much smaller proportions are involved in the sales, agricultural and household/domestic fields. The great majority of men with a post-school qualification are in professional/technical/management and skilled manual posts. These posts dominate too among those with Grade 12, followed by posts in the clerical and services sectors. Men with no education are mainly employed in the agricultural and household/domestic sector, and a surprisingly high proportion of such men (35 percent) work as skilled manual workers. The largest urban/non-urban differences are seen among men in the professional/technical/management and agricultural fields. Among men of all population groups, the skilled manual field dominates, followed by the professional/technical/management field. Among white and Indian men, these fields hold more or less equally large weight. Among African men, the proportions in the skilled manual field are about twice as common as the professional/technical/management field, and among coloured men, the skilled manual field are over three times more commonly reported as the professional/technical/management field.

Comparing the occupation data by gender, the findings show that similar proportions of men and women are employed in professional/technical/management occupations. Proportionally, moderately more men than women are employed in the agricultural and services fields; significantly more men than women are employed in skilled manual occupations; slightly more women than men are employed in unskilled manual posts; and significantly more women than men are employed in sales, clerical and household/domestic occupations. The largest gender differences are seen in the skilled manual and household/domestic occupations.

Table 2.21 Occupation

Percentage distribution of women aged 15-49 and men aged 15-59 by occupation, by selected background characteristics, South Africa 2003

Background characteristic	Prof/tech Manage- ment	Clerical	Sales	Agriculture	Household/ Domestic	Services	Skilled manual	Unskilled manual	Total	Number of women
<b>WOMEN 15-49</b>										
<b>Age</b>										
15-19	6.0	20.6	12.9	8.3	6.7	14.5	12.0	19.0	100.0	86
20-24	11.5	25.9	10.0	6.6	17.1	9.1	8.2	11.7	100.0	281
25-29	21.1	27.8	7.3	3.0	15.0	8.2	5.7	11.7	100.0	400
30-34	20.6	23.1	7.8	2.8	20.7	4.8	7.4	12.9	100.0	437
35-39	22.2	16.5	7.7	5.2	25.3	5.5	6.4	10.5	100.0	504
40-44	22.3	12.8	8.4	3.2	29.7	3.9	7.7	11.8	100.0	455
45-49	16.7	14.0	6.2	5.5	31.1	5.1	10.9	10.5	100.0	356
<b>Residence</b>										
Urban	20.1	21.3	8.7	1.6	22.1	6.5	8.5	11.1	100.0	1 940
Non-urban	16.4	13.9	5.8	13.6	25.7	5.1	5.2	14.1	100.0	580
<b>Province</b>										
Western Cape	13.2	18.7	10.1	7.2	23.3	8.6	10.4	8.3	100.0	492
Eastern Cape	23.7	18.0	5.9	1.4	23.7	6.9	7.7	12.9	100.0	201
Northern Cape	19.6	21.5	4.3	6.5	25.0	8.0	7.0	8.0	100.0	45
Free State	12.1	10.0	4.3	5.2	34.3	2.4	10.7	21.0	100.0	149
KwaZulu-Natal	26.8	26.5	7.2	3.4	18.2	2.6	7.2	8.1	100.0	405
North West	16.4	11.8	3.9	9.7	25.3	8.3	7.5	16.7	100.0	156
Gauteng	20.1	23.5	9.2	0.8	22.1	7.3	6.5	10.2	100.0	751
Mpumalanga	22.6	10.6	9.5	10.3	27.2	5.2	6.4	8.2	100.0	143
Limpopo	15.9	13.2	7.7	6.4	20.0	4.0	6.0	26.8	100.0	179
<b>Education</b>										
No education	4.1	3.7	6.4	18.5	44.0	0.7	8.1	14.6	100.0	99
Grades 1-5	4.2	3.7	0.0	16.0	51.2	2.0	8.0	14.9	100.0	150
Grades 6-7	2.6	9.6	3.8	7.1	47.9	5.4	8.6	15.0	100.0	238
Grades 8-11	6.0	14.9	9.0	5.1	27.4	9.6	10.4	17.2	100.0	877
Grade 12	21.2	32.2	11.0	0.8	13.2	6.2	6.6	8.4	100.0	744
Higher	62.3	22.2	6.2	0.0	1.4	2.0	3.3	2.5	100.0	413
<b>Population group</b>										
African	17.9	15.9	7.3	4.4	27.2	5.9	7.4	14.0	100.0	1 804
African urban	18.0	16.7	8.2	1.7	27.3	6.2	8.2	13.5	100.0	1 284
African non-urban	17.6	13.8	5.0	11.1	26.7	5.2	5.2	15.2	100.0	520
Coloured	11.2	21.8	9.5	7.7	20.7	10.8	10.2	7.7	100.0	373
White	35.1	38.3	10.4	0.7	3.6	2.1	6.1	3.6	100.0	263
Indian	36.1	31.5	9.6	0.0	1.0	5.0	10.4	6.5	100.0	77
<b>Total</b>	<b>19.2</b>	<b>19.6</b>	<b>8.0</b>	<b>4.4</b>	<b>22.9</b>	<b>6.2</b>	<b>7.7</b>	<b>11.8</b>	<b>100.0</b>	<b>2 520</b>

Background characteristic	Prof/tech Management	Clerical	Sales	Agriculture	Household/ Domestic	Services	Skilled manual	Unskilled manual	Total	Number of men
MEN 15-59										
<b>Age</b>										
15-19	0.0	0.8	0.8	4.3	18.9	38.8	33.3	3.1	100.0	23
20-24	17.3	10.4	1.2	8.1	6.6	13.4	30.0	12.9	100.0	138
25-29	15.2	10.1	3.3	8.2	8.1	11.6	38.0	5.5	100.0	197
30-34	25.4	9.4	5.8	5.2	5.5	11.3	30.3	7.1	100.0	213
35-39	19.9	11.7	2.7	6.5	4.4	8.6	39.3	6.9	100.0	199
40-44	23.1	8.0	6.0	4.0	8.4	3.5	42.0	4.9	100.0	220
45-49	18.6	4.6	4.8	6.4	4.6	9.3	43.8	7.9	100.0	160
50-54	17.3	9.3	4.5	3.2	5.6	6.3	42.4	11.4	100.0	99
55-59	23.9	15.6	2.7	7.6	5.5	6.6	28.2	9.9	100.0	87
<b>Residence</b>										
Urban	21.9	10.1	4.2	2.4	6.6	9.5	37.2	8.1	100.0	1 052
Non-urban	12.6	6.8	3.4	19.6	5.9	9.2	36.8	5.6	100.0	285
<b>Province</b>										
Western Cape	14.9	5.5	3.0	8.9	12.0	9.3	40.2	6.2	100.0	237
Eastern Cape	33.4	3.1	8.5	5.1	6.5	10.4	27.1	5.8	100.0	91
Northern Cape	20.2	5.0	2.2	16.9	8.0	7.6	29.7	10.4	100.0	25
Free State	17.1	8.0	5.2	14.5	9.7	4.7	31.6	9.2	100.0	89
KwaZulu-Natal	20.6	10.9	4.6	3.2	2.0	10.7	42.0	6.0	100.0	307
North West	19.3	5.0	4.4	15.3	5.8	2.7	36.2	11.3	100.0	71
Gauteng	19.7	15.1	3.4	0.7	6.2	10.4	35.2	9.3	100.0	392
Mpumalanga	17.3	4.6	2.5	11.5	7.7	9.1	39.8	7.4	100.0	74
Limpopo	25.1	3.5	2.8	12.9	1.8	12.7	36.0	5.3	100.0	50
<b>Education</b>										
No education	8.3	2.2	6.7	25.0	14.7	1.0	34.9	7.3	100.0	59
Grades 1-5	0.6	2.6	2.7	13.2	15.4	8.3	46.2	11.1	100.0	95
Grades 6-7	0.8	5.7	3.1	11.8	14.0	7.1	39.8	17.8	100.0	131
Grades 8-11	8.7	7.4	4.4	6.0	6.2	9.4	48.1	9.9	100.0	449
Grade 12	25.4	14.4	4.1	2.8	4.1	14.3	30.5	4.3	100.0	415
Higher	61.2	11.3	3.4	0.1	0.0	3.8	19.6	0.6	100.0	188
<b>Population group</b>										
African	17.2	9.3	3.8	7.3	7.7	9.9	35.9	8.9	100.0	931
Afr. urban	19.3	10.1	4.0	3.1	8.2	9.8	35.4	10.1	100.0	673
Afr. non-urban	11.9	7.4	3.4	18.2	6.3	10.0	37.2	5.6	100.0	259
Coloured	13.1	10.4	2.0	7.0	8.2	7.4	46.3	5.6	100.0	166
White	36.4	7.2	4.5	0.8	0.4	11.4	36.6	2.6	100.0	178
Indian	30.1	12.6	12.2	0.4	1.3	3.0	34.5	6.0	100.0	55
<b>Total</b>	<b>19.9</b>	<b>9.4</b>	<b>4.0</b>	<b>6.1</b>	<b>6.5</b>	<b>9.4</b>	<b>37.1</b>	<b>7.6</b>	<b>100.0</b>	<b>1 336</b>
Note: Total includes six men and two women for whom population group is missing. Five women have missing information on occupation.										



### *Decision on use of earning*

The percent distribution of currently employed women aged 15-49 by person who decides on the use of earnings, is presented in Table 2.22. Seventy-one percent of women make the decision themselves, while the partners of 13 percent of them make such decisions. It is noted that there is a very small difference in the proportion of urban and non-urban women who make these decisions themselves. Over three-quarters of African women reported that these decisions are made by themselves, compared to 61 percent of coloured, 63 percent of Indian, and 54 percent of white women. From the previous to the 2003 SADHS, there has been a slight increase from 67 to 71 percent in the proportion of women who make the decision themselves, but a considerable increase from just under 3 to 13 percent of women whose husband/partner make these decisions, and a considerable decrease from 21 percent to 2 percent of women who make these decisions jointly with their husband/partner. These questions were not included in the men's questionnaire.

**Table 2.22 Decision on use of woman's earnings**

Percentage distribution of women aged 15-49 who are currently employed, by person who decides on use of earnings, according to selected background characteristics, South Africa 2003

Background characteristic	Self only	Husband/partner	Jointly with husband/partner	Someone else	Jointly with Someone else	Missing	Total	Number of women
<b>Age</b>								
15-19	70.4	3.8	3.0	0.0	9.4	13.4	100.0	86
20-24	80.4	3.9	5.0	0.8	3.6	6.3	100.0	281
25-29	70.7	12.0	1.5	7.3	2.8	5.7	100.0	400
30-34	64.5	15.2	1.7	9.3	2.3	7.1	100.0	437
35-39	70.6	13.8	1.6	9.8	0.5	3.7	100.0	504
40-44	66.6	18.1	1.3	8.1	0.0	5.8	100.0	455
45-49	75.9	12.0	1.9	5.0	0.0	5.3	100.0	356
<b>Residence</b>								
Urban	70.5	13.4	2.1	6.9	1.6	5.5	100.0	1 940
Non-urban	71.3	11.0	1.7	7.2	1.9	6.9	100.0	580
<b>Province</b>								
Western Cape	64.5	16.1	1.9	11.0	2.1	4.4	100.0	492
Eastern Cape	68.4	15.3	2.8	2.9	9.4	1.2	100.0	201
Northern Cape	74.7	13.6	1.7	2.9	3.9	3.2	100.0	45
Free State	76.2	8.1	3.0	2.5	0.7	9.6	100.0	149
KwaZulu-Natal	70.8	15.0	1.2	10.6	0.0	2.3	100.0	405
North West	76.4	8.7	1.4	8.5	0.0	5.1	100.0	156
Gauteng	73.9	12.7	2.3	4.6	0.8	5.7	100.0	751
Mpumalanga	77.1	4.7	1.2	10.5	0.5	6.1	100.0	143
Limpopo	61.0	10.2	2.7	2.7	2.1	21.3	100.0	179
<b>Education</b>								
No education	80.8	7.3	0.7	4.1	0.0	7.2	100.0	99
Grades 1-5	68.1	7.7	4.5	8.1	4.7	7.0	100.0	150
Grades 6-7	71.4	9.0	0.6	8.5	1.6	8.9	100.0	238
Grades 8-11	71.4	12.4	1.6	6.4	2.4	5.9	100.0	877
Grade 12	73.2	11.5	1.7	7.4	0.6	5.7	100.0	744
Higher	62.8	21.5	3.8	7.0	1.4	3.5	100.0	413
<b>Population group</b>								
African	75.4	7.5	1.7	6.8	1.6	7.1	100.0	1 804
African urban	76.2	6.8	1.6	7.0	1.4	7.0	100.0	1 284
African non-urban	73.5	9.2	1.9	6.3	1.9	7.3	100.0	520
Coloured	61.3	19.2	2.1	10.7	3.8	3.0	100.0	373
White	54.2	37.9	2.2	4.4	0.0	1.4	100.0	263
Indian	63.3	21.2	8.1	2.9	0.2	4.3	100.0	77
<b>Total</b>	<b>70.7</b>	<b>12.8</b>	<b>2.0</b>	<b>7.0</b>	<b>1.7</b>	<b>5.8</b>	<b>100.0</b>	<b>2 520</b>

Note: Total includes two women for whom population group is missing.

### *Participation in decision-making*

Table 2.23 hosts findings on women's and men's decision-making status in terms of having alone or jointly the final say in specified issues. The domains for women and men are not exactly the same. For women, questions were asked about health care, purchases, visiting and cooking. Overall 43 percent of women have a final say in all these domains while 18 percent have no say at all. Autonomy increased with age and is higher in urban than non-urban areas. Never-married women have the least autonomy compared with those who are married or widowed/separated/divorced. The data show that women with no education and those with the highest levels of education, as well as those who are employed have the most autonomy. Nearly three quarters of women have a say in their own health care. Only in three provinces, i.e. Western Cape, Northern Cape and KwaZulu-Natal, has over 80 percent of women a final say about their own health care, this proportion decreasing to just over half in Limpopo and the Eastern Cape. A large difference is visible between unemployed (66 percent) and employed (85 percent) women regarding health care decisions. A smaller differential applies to urban (76 percent) and non-urban (66 percent) women, though still a considerable difference. About half of women have a say in making large and daily purchases, with increased autonomy as age increases, and with higher autonomy in urban than non-urban areas. Women's autonomy in making purchases increases with parity, up to four children, where after autonomy shows a decrease. This decrease in autonomy at parity "5" is also reflected in own health care and family visitation issues. The generally erratic relationship with educational status, and the relative small differentials according to 'no education' and 'higher' educational status, is surprising.

The domains for men include finances (large scale and day-to-day purchases), visiting and how many children to have. Very few men, only 2 percent, feel excluded from decision-making. For every specified decision, making decisions alone or jointly increases with age. There are few differences between men in urban and non-urban areas. There are also no clear differences associated with level of education and employment status. Whereas about 90 percent of men indicate autonomy in making large purchases and family visitation, about half of women indicate autonomy in these two issues.

Table 2.23 Participation in decision making

Percentage of women 15-49 years and men 15-59 years who say that they alone or jointly have the final say in specific decisions, by selected background characteristics, South Africa, 2003

Background characteristic	Women alone or jointly have final say in:										Men alone or jointly have final say in:									
	Own health care	Making large purchases	Making daily purchases	Visits to family or relatives	What food to cook each day	All specified decisions	None of the specified decisions	Number of women	Making large purchases	Making daily purchases	Visits to family or relatives	Deciding what to do with money	Deciding how many children	All specified decisions	None of the specified decisions	Number of men				
Age																				
15-19	46.2	18.2	19.4	29.2	35.4	15.4	43.1	1 395	88.3	50.5	87.0	73.6	88.5	39.3	3.4	603				
20-24	67.0	32.6	38.2	51.0	59.5	29.5	20.0	1 242	88.9	55.4	91.1	78.2	91.5	41.7	2.6	527				
25-29	77.3	49.8	55.3	63.5	75.1	44.4	11.2	1 015	91.7	58.1	93.6	82.2	96.0	49.2	1.0	416				
30-34	81.2	58.8	66.5	68.1	77.5	52.2	11.4	918	93.3	51.1	95.2	72.8	96.1	41.8	1.3	348				
35-39	86.1	66.0	70.7	71.0	83.7	59.4	7.8	991	92.0	48.8	95.3	80.7	94.2	41.8	1.8	340				
40-44	83.2	67.8	75.5	74.0	85.5	63.8	8.0	812	89.5	57.2	92.0	79.8	93.8	48.0	1.1	323				
45-49	85.2	71.9	76.8	77.7	87.0	65.8	7.7	668	95.5	58.0	93.5	83.9	95.0	47.9	0.3	225				
									91.8	51.1	92.0	84.6	96.8	42.3	0.4	155				
Marital status																				
Never married	66.4	39.1	41.1	51.4	57.3	35.4	24.9	3 821	89.9	53.9	91.0	77.5	92.1	43.5	2.5	1 738				
Married/Living together	77.6	54.9	64.5	63.6	79.9	48.7	11.6	2 658	92.3	53.8	92.2	80.0	93.9	44.0	1.3	1 215				
Divorced/separated/widowed	90.0	77.8	80.9	85.1	88.7	73.0	5.4	562	86.4	51.6	92.2	79.4	91.8	44.1	1.7	148				
Residence																				
Urban	75.8	51.5	56.7	62.4	71.0	46.3	15.7	4 678	91.4	52.3	91.9	75.4	93.0	40.6	1.5	2 151				
Non-urban	66.0	41.4	46.0	51.5	63.1	37.6	22.4	2 363	89.3	57.3	90.8	85.6	92.2	50.7	3.0	967				
Number of living children																				
0	59.3	28.6	31.5	41.3	48.1	25.1	30.0	2 539	-	-	-	-	-	-	-	-				
1-2	79.3	54.4	61.0	66.0	77.3	49.3	11.6	2 771	-	-	-	-	-	-	-	-				
3-4	82.2	68.1	72.8	73.2	82.5	62.1	10.7	1 326	-	-	-	-	-	-	-	-				
5+	76.5	62.7	71.2	70.6	87.7	57.2	8.7	404	-	-	-	-	-	-	-	-				
Province																				
Western Cape	86.1	52.2	58.2	65.0	75.1	47.6	7.4	892	84.6	60.1	91.9	77.7	90.5	47.5	2.2	379				
Eastern Cape	54.7	43.7	46.6	50.2	65.2	39.8	29.0	804	83.4	41.5	86.9	74.1	91.8	31.0	1.5	313				
Northern Cape	82.1	53.0	58.1	69.2	68.4	46.6	11.9	125	89.3	50.5	93.1	84.9	93.2	43.2	0.3	59				
Free State	68.0	49.1	54.7	58.5	68.8	42.9	21.1	443	87.2	54.4	87.6	76.1	90.8	45.1	4.2	199				
KwaZulu-Natal	81.6	49.3	52.3	53.5	58.7	45.0	16.1	1 177	97.2	72.5	95.9	88.1	96.5	69.9	2.1	701				
North West	79.2	46.6	52.1	58.5	73.7	42.3	13.6	523	91.5	64.3	92.7	91.0	94.8	59.0	1.9	216				
Gauteng	73.9	51.5	57.6	63.9	72.1	46.3	16.9	1 854	93.2	39.5	92.1	67.9	93.0	24.1	1.6	815				
Mpumalanga	63.9	41.3	44.8	50.9	63.6	39.0	24.0	451	90.3	34.2	84.0	76.9	87.9	23.7	2.1	208				
Limpopo	59.7	41.9	48.8	59.4	68.1	36.2	22.4	772	85.1	62.7	90.5	85.1	89.8	47.3	1.8	228				
Education																				
No education	80.3	62.9	67.7	67.6	85.7	56.6	9.2	302	93.8	46.7	91.1	74.6	92.0	42.7	3.4	141				
Grades 1-5	71.9	57.0	61.6	63.7	74.7	52.5	18.2	438	83.0	51.5	87.3	84.7	88.8	39.6	2.9	227				
Grades 6-7	72.1	53.8	58.2	60.3	74.7	48.5	17.6	721	87.0	47.2	88.1	78.6	86.3	36.5	3.0	316				
Grades 8-11	66.3	41.9	46.2	53.2	62.3	38.1	22.8	3 285	90.8	53.6	90.7	78.6	92.5	43.0	2.2	1 367				
Grade 12	78.3	47.6	53.4	61.1	68.2	42.6	14.0	1 683	93.0	58.3	95.1	80.4	95.5	49.4	1.3	787				
Higher	86.6	62.7	70.3	71.9	80.3	55.4	6.9	609	92.9	55.7	93.0	70.1	97.1	43.2	0.2	279				
Employment																				
Unemployed	65.8	39.9	44.2	51.8	62.0	36.3	23.5	4 578	90.0	53.4	91.0	78.6	91.8	43.4	2.6	1 779				
Employed	85.0	63.4	69.7	71.7	80.1	56.7	7.6	2 463	91.6	54.4	92.2	78.5	94.1	44.1	1.2	1 336				
Total	72.5	48.1	53.1	58.7	68.3	43.4	17.9	7 041	90.7	53.8	91.5	78.6	92.8	43.7	2.0	3 118				

Note: Total includes three women's educational level, three men's employment status, and 17 men's marital status which are missing, but do participate in joint decision making.

Note: Total includes three women's educational level, three men's employment status, and 17 men's marital status which are missing, but do participate in joint decision making.

## **2.10 Characteristics of Adults Aged 15 Years or Older**

The background characteristics of the adult sample are shown in Table 2.24, which has the weighted percent as well as the weighted and unweighted numbers for each category. The table also presents the percent distribution of the background characteristics observed in the 2001 census. The adult sample displays the typical declining proportions with age. This is very smooth for the men, but more erratic in the case of the women with a marked heaping in the 35-39 and the 50-54 year age groups. About two thirds of the sample is urban with the proportion being higher for men than women (67 percent compared with 64 percent). Slightly more than a quarter have Grade 12 or higher (28 percent) while 11 percent have no education. This is higher for women (12 percent) than men (9 percent). The majority of the sample is African (83 percent), followed by coloured (8 percent) and white (6 percent). The Indian adult sample accounts for 2 percent.

As observed in the sample of women 15-49 years and the sample of men 15-59 years, the adult sample also over-represents the African urban group when compared with the census. Thus the adult sample also over-represents the urban areas as well as the African population group. The adult sample also has higher levels of education when compared with the census. In the case of adult men, KwaZulu-Natal and Gauteng appear to be over-represented while in the case of women; Western Cape and Gauteng appear to be over-represented.

## **2.11 Realization of Sample**

The response rate of 85 percent for households, and the overall response rate of 75 percent for women 15-49 years, 68 percent for men 15-59 years, 73 percent for children under 5 years, and 71 percent for adults needs to be borne in mind when interpreting the findings of the survey (see details in Appendix A).

When compared with the 2001 census, there is clear evidence that age misreporting occurred in the field. The high proportion of household members who are 10-14 years suggests that there may have been a systematic attempt by field-workers to avoid the additional fieldwork required to conduct the individual questionnaires. The high proportion of women aged 50-54 may have been a result of this as well. The low number of children under 5 years may have been a systematic attempt by field-workers to avoid taking the anthropometric measurements. Most surveys are subject to such problems, which can be minimised through rigorous training and supervision as well as ensuring that the payment for fieldwork does not incentivise omissions.

Comparison of the realised sample against the census on basic characteristics shows that SADHS 2003 tends to over-represent urban Africans and under represent non-urban Africans, whites and coloureds. In addition, the resultant sample tends to have slightly higher education. However, it is difficult to assess the impact that these distortions in the sample might have.

Table 2.24 Background characteristics of adults

Percentage distribution of adult men and women 15 years or older, according to selected background characteristics, South Africa 2003

Background characteristic	Men			Women			Total		
	Weighted percent	Weighted	Unweighted	Weighted percent	Weighted	Unweighted	Weighted percent	Weighted	Unweighted
<b>Age</b>									
15-19	18.8	642	651	14.0	657	684	16.0	1 299	1 335
20-24	14.0	479	439	12.8	599	602	13.3	1 078	1 041
25-29	11.7	400	381	10.5	491	495	11.0	891	876
30-34	9.8	335	316	10.4	488	475	10.1	823	791
35-39	9.4	323	308	10.9	512	481	10.3	836	789
40-44	7.9	269	253		371	376	7.9	640	629
				7.9					
45-49	7.5	256	236	7.1	334	352	7.3	590	588
50-54	5.3	182	191	8.1	380	406	6.9	562	597
55-59	4.7	162	165	5.4	254	245	5.1	416	410
60-64	3.9	135	132	4.9	229	251	4.5	364	383
65-69	3.0	104	104	3.4	159	154	3.2	263	258
70-74	2.3	78	84	2.3	109	136	2.3	186	220
75-79	1.0	33	39	1.1	54	62	1.1	87	101
80+	0.7	25	29	1.2	56	68	1.0	82	97
<b>Residence</b>									
Urban	66.9	2 289	1 947	63.8	2 995	2 694	65.1	5 285	4 641
Non-urban	33.1	1 133	1 381	36.2	1 697	2 093	34.9	2 830	3 474
<b>Province</b>									
Western Cape	9.9	337	243	12.2	573	405	11.2	910	648
Eastern Cape	10.7	367	251	12.0	562	393	11.5	929	644
Northern Cape	1.8	60	362	2.0	92	552	1.9	152	914
Free State	6.5	224	393	6.7	313	545	6.6	537	938
KwaZulu-Natal	22.8	781	731	18.9	888	909	20.6	1 669	1 640
North West	7.3	248	335	7.9	373	510	7.7	621	845
Gauteng	26.7	914	370	22.9	1 074	432	24.5	1 988	802
Mpumalanga	6.1	209	359	6.4	300	515	6.3	509	874
Limpopo	8.2	282	284	11.1	519	526	9.9	800	810
<b>Education</b>									
No education	8.7	296	340	12.3	578	677	10.8	874	1 017
Grades 1-5	9.8	335	351	9.5	448	507	9.6	783	858
Grades 6-7	11.2	384	424	10.7	501	570	10.9	884	994
Grades 8-11	39.9	1 366	1 323	39.9	1 873	1 842	39.9	3 239	3 165
Grade 12	20.5	703	613	19.7	923	842	20.0	1 626	1 455
Higher	9.0	309	255	7.3	344	332	8.0	653	587
Unknown	0.9	30	22	0.5	26	17	0.7	55	39
<b>Population group</b>									
African	82.9	2 838	2 543	82.2	3 857	3 538	82.5	6 695	6 081
African urban	61.6	1 747	1 251	58.3	2 250	1 625	59.7	3 997	2 876
African non-urban	38.4	1 091	1 292	41.7	1 607	1 913	40.3	2 698	3 205
Coloured	7.8	268	354	9.7	456	641	8.9	724	995
Indian	2.4	83	297	2.4	112	420	2.4	195	717
White	6.4	220	121	5.5	257	176	5.9	477	297
Other/missing	0.4	14	13	0.2	11	12	(0.3)	25	25
Total	100.0	3 422	3 328	100.0	4 693	4 787	100.0	8 115	8 115

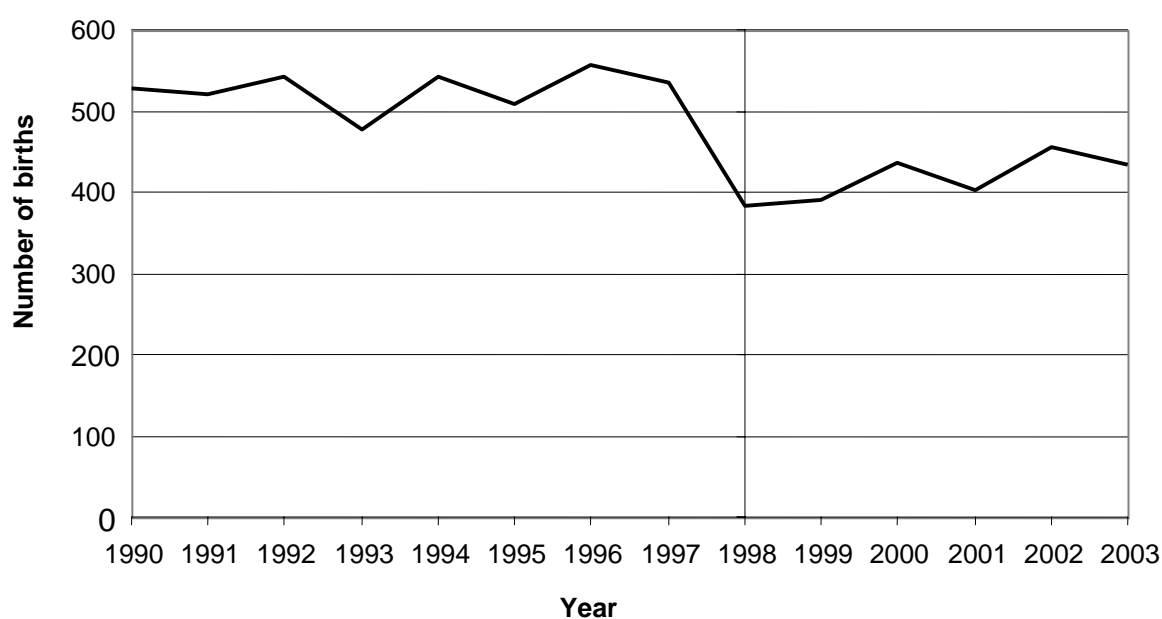
## CHAPTER 3

### FERTILITY

#### 3.1 Introduction

One of the most important objectives of the Demographic and Health Survey programme is to derive reliable and unbiased estimates of fertility using standardised questionnaires and to analyse the data following established procedures. Data quality issues in the 2003 SADHS appear to find particular expression in the fertility data collected, and in the rates and demographic trajectories implied by those data. Figure 3.1 shows that the number of births reported to women aged 15-49 in the years preceding the survey has a noticeable drop in the most recent five years. This suggests that there was a systematic bias in the reporting of births. Close inspection of the data suggests that the data on fertility (recent, or lifetime; levels, differentials or trends) collected in the 2003 SADHS should be read with caution.

**Figure 3.1 Number of births reported by year of birth, SADHS 2003**



Extensive and thorough efforts have been spent in assessing the data. In this regard, South Africa is fortunate: there is a wealth of demographic data that has been collected in the first ten years since its transition to democracy in 1994 – the 2003 SADHS is the second such survey to be conducted in that period – and two censuses have been conducted, in 1996 and 2001. Few other countries can draw on as extensive data against which to compare and contrast the results of a single DHS. In particular, the following analyses are drawn on extensively: analysis of the 1996 census and the 1998 SADHS, the published work by Moultrie and Timæus (2002; 2003), as well as the Final Report on the 1998 Demographic and Health Survey (Department of Health, 2002). In the case of the 2001 South Africa Census, results from that census presented here are drawn from the analysis prepared by Moultrie and Dorrington (2004) for Statistics South Africa.

## 3.2 Fertility Levels

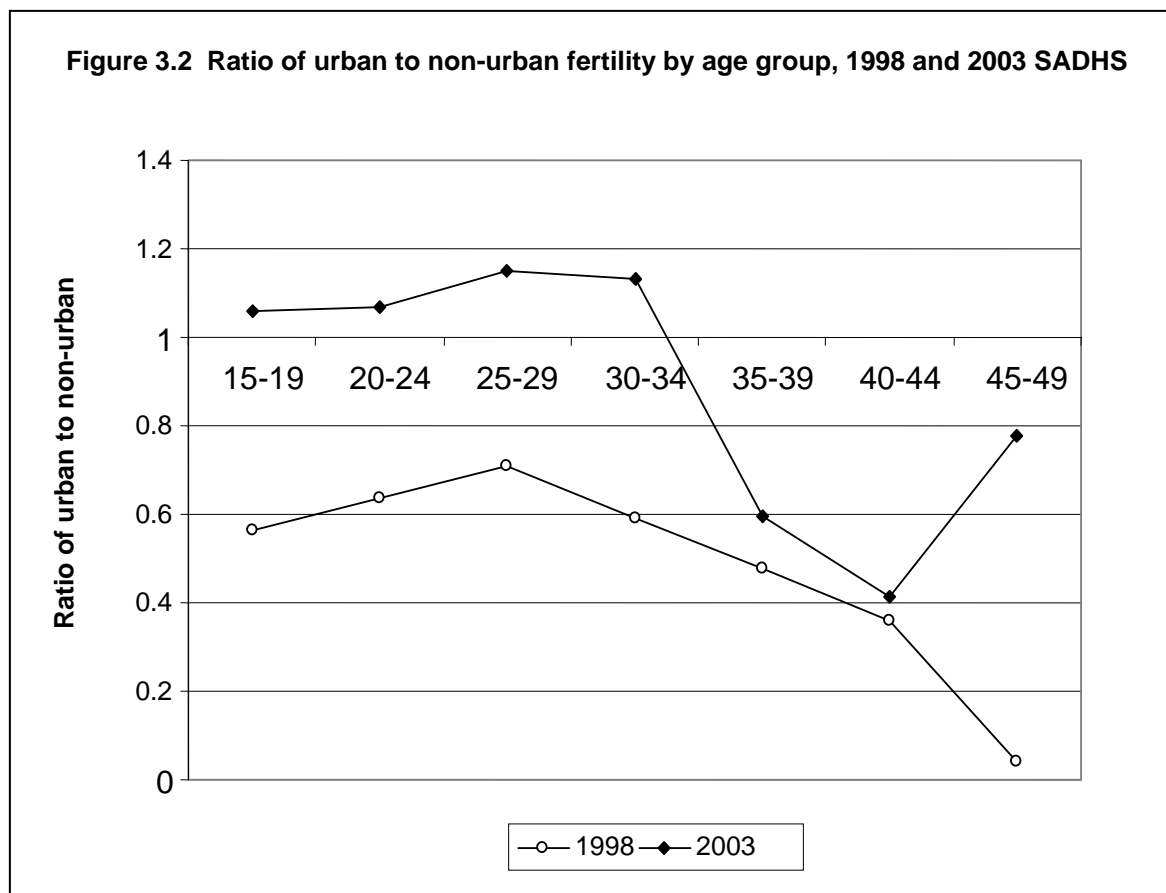
The fertility rates presented in Table 3.1 refer to a three-year period before the survey so as to derive more robust estimates. As a consequence, the estimates apply to a period centred approximately 18 months before the survey date. Fieldwork for the 2003 SADHS was conducted between October 2003 and August 2004, with four fifths of the interviews conducted before March 2004, and the median and mean interview month was February of the same year. Thus, three-year fertility rates derived from this survey are centred, approximately, on August 2002. The 2001 census estimates are derived from births in the year preceding the census, conducted in October 2001. Hence, estimates of fertility derived from the 2001 census apply to April 2001. Taking the timing and reference periods of the 2001 census and the 2003 SADHS into consideration then leads to the observation that estimates from the two data sources refer to two points in time approximately sixteen months apart.

Table 3.1 Current fertility			
Age-specific and cumulative fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by urban – non-urban residence, South Africa 2003			
Age group	Residence		Total
	Urban	Non-urban	
15-19	57	53	55
20-24	104	97	102
25-29	101	88	97
30-34	87	77	84
35-39	46	78	56
40-44	13	31	18
45-49	6	7	6
TFR	2.1	2.2	2.1
GFR	70	72	71
CBR	18.4	16.1	17.5
Note: TFR-Total fertility rate for ages 15-49, expressed per woman GFR-General fertility rate (births divided by the number of women aged 15-44), expressed per 1,000 women CBR-Crude birth rate, expressed per 1,000 population.			
Data should be read with caution. See text for detail			

The fertility levels indicated by the 2003 SADHS are not plausible. Taken at face value, the 2003 SADHS data imply a generalised collapse in South African fertility, and particularly so in non-urban areas, that is at variance with estimates derived from either of the last two censuses (in 1996 or 2001), or the previous Demographic and Health Survey conducted in 1998. In the three previous post-apartheid demographic data collection exercises, national levels of fertility were estimated at 3.2 children per woman (1996 census), 2.9 children per woman (1998 SADHS) and 2.9 children per woman (2001 census). There are some indications that the 1998 SADHS estimate was probably too low; the study was known to have a slight bias towards urban, educated women, who typically have lower fertility than their non-urban, less-educated counterparts (Moultrie and Timæus, 2002). In any event, the decline in fertility registered over the five years between the 1996 and 2001 censuses was of the order of ten percent. By contrast, the 2003 SADHS suggests that – over little more than a year between the 2001 census and the 2003 SADHS – fertility in the country fell by 27 percent.

Additionally, Table 3.1 suggests that fertility in urban areas of South Africa is now only marginally lower than in non-urban areas and that fertility levels in the country have declined to a level less than that required to sustain positive population growth in the long-term. Were these findings to be true, South Africa would be unique among developing countries on both counts. The report on the previous SADHS indicated urban fertility levels of 2.3 children per woman, and non-urban fertility levels of 3.9 children per woman. The data from the present survey suggest that urban fertility has fallen by 9 percent over the preceding five years while non-urban fertility is supposed to have fallen by a massive 44 percent over the same period.

The apparent precipitous fall in non-urban fertility over such a short period of time highlights a further anomaly in the 2003 SADHS data (Figure 3.2). In 1998, urban fertility was lower than non-urban fertility in all age groups, with the difference widening with increasing age beyond 30. In 2003, urban fertility was higher than non-urban fertility until age group 30-34. As will be discussed in the next section, given the concentration of the two lowest fertility population groups in urban areas, this finding is simply inconsistent with any semblance of South African reality.





### 3.3 Fertility Differentials

Estimates of fertility disaggregated by background characteristics are presented in Table 3.2.

Table 3.2 Fertility by background characteristic			
Total fertility rate for the three years preceding the survey, percentage of women 15-49 currently pregnant, and mean number of children ever born to women age 40-49 years, by background characteristic, South Africa 2003			
Background characteristic	Total fertility rate	Percentage currently pregnant	Mean number of children ever born to women age 40-49
Urban	2.1	2.8	3.0
Non-Urban	2.2	3.9	3.9
Western Cape	2.6	3.6	3.0
Eastern Cape	2.3	3.4	3.9
Northern Cape	2.8	3.5	3.2
Free State	2.0	3.6	3.3
KwaZulu-Natal	0.6	2.6	2.3
North West	2.5	3.9	3.5
Gauteng	2.3	2.8	3.1
Mpumalanga	2.3	2.5	3.8
Limpopo	2.7	3.9	4.5
None	2.4	3.0	4.4
Grades 1-5	2.9	2.0	3.7
Grades 6-7	2.5	3.1	3.6
Grades 8-11	2.2	3.2	3.1
Grade 12	1.6	3.8	2.3
Higher	1.8	2.6	2.6
African	2.1	3.4	3.5
Coloured	2.3	3.0	2.9
Indian	1.6	1.9	2.4
White	1.0	1.2	2.2
Total	2.1	3.2	3.3
Note: Data for white women 15-49 are derived from limited data, being based on a total of 401.6 person-years exposure across all age groups.			
Data should be read with caution. See text for detail.			

It is clear that particular problems were experienced with the fieldwork in KwaZulu-Natal. Nowhere are these problems more manifest than in the estimated level of fertility derived from the 2003 SADHS data. The reported total fertility rate in the province of 0.6 children per woman would, according to the United Nations' 2004 estimates, place the fertility in the province about 25 percent lower than that observed anywhere in the world, and more than half of that observed in any single country (United Nations 2004). While this observation points to significant flaws in the data for a single province, the ramifications for the interpretation of the 2003 SADHS data are far-reaching. In the first instance, not having data for one province makes the derivation from this survey of reliable national estimates of fertility – or indeed any other variable dependent directly or indirectly on the fertility data – impossible. Second, the data on fertility rates by province are not consistent with previous census and survey data collected in South Africa since 1996.

Table 3.3 presents Bonferroni-adjusted correlation coefficients between the total fertility rates observed among women of the African population group by province in the 1996 and 2001 censuses and the 1998 and 2003 Demographic and Health Surveys.

While there is a strong correspondence in the fertility rates observed by province in the two censuses and the 1998 SADHS, there is no evident correlation at all between the fertility levels observed by province in those three data collection exercises and the 2003 SADHS, and what correlation there is would appear to be negative. Correlation analysis based on Spearman's rank correlation method (i.e. examining the correlation between ordinal ranks, rather than observed fertility levels) leads to similar conclusions.

Further examination of the correlations indicates that the problem of poor data collection on fertility in the 2003 SADHS was not confined to KwaZulu-Natal. The second panel of Table 3.3 presents the correlation coefficients excluding the data for KwaZulu-Natal. The overall correlations between the three previous data series remain almost unchanged as a result of the exclusion of data from that province, while the correlations between the 2003 SADHS and those other studies evidently weakens (albeit towards a more typically positive relationship).

Table 3.3 Bonferroni-adjusted correlation coefficients				
Total Fertility Rates among African South Africans by province, various surveys				
	Census1996	SADHS1998	Census 2001	SADHS2003
All provinces				
Census1996	1.000			
SADHS1998	0.896*	1.000		
Census2001	0.914*	0.904*	1.000	
SADHS2003	-0.203	-0.336	-0.154	1.000
Excluding KwaZulu-Natal				
Census1996	1.000			
SADHS1998	0.902*	1.000		
Census2001	0.910*	0.916*	1.000	
SADHS2003	0.056	0.183	0.158	1.000
Note: * indicates significant correlation at the 1 percent level.				

The fertility data by other background characteristics, as shown in Table 3.2, are also implausible: fertility rates among coloured women are seemingly higher than those among Africans (the opposite is strongly apparent in the two previous censuses and the previous SADHS), while fertility among whites too would indicate a world-record low.

### 3.4 Fertility Trends

Given that the estimated fertility rates are implausibly low (be they nationally, provincially or by population group) it is not possible to derive useful information on fertility trends in South Africa from these data. However, because this survey was conducted roughly five years after the previous survey, insights into the errors introduced into the data arising from poor fieldwork can be gained by comparing period fertility rates for quinquennial periods calculated from both the 1998 SADHS and the 2003 SADHS. Table 3.4 shows the quinquennial period age-specific fertility rates<sup>1</sup> calculated from the retrospective fertility histories collected in the 2003 SADHS.

Table 3.4 Trends in fertility				
Fertility rates by age of mother at birth and five year periods before the survey, South African 2003				
Age group	0-4	5-9	10-14	15-19
15-19	55	73	88	75
20-24	101	129	167	165
25-29	103	139	163	161
30-34	77	107	120	[122]
35-39	56	67	[110]	
40-44	21	[43]		
45-49	[3]			
Note: Age-specific fertility rates per 1 000 women. Figures in parentheses are based on truncated data.				
Data should be read with caution. See text for detail.				

It is interesting to note that the estimates of fertility among women of the African population group covering the period 1993-1998 (the period 0-4 years before the 1998 SADHS and the period 5-9 years before the present SADHS) are strongly congruent. Cumulated fertility among women of the African population group aged 15-44 is estimated as 3.0 children per woman in the 1998 SADHS, and 2.9 children per women in the 2003 survey. The age-pattern of fertility is strikingly similar (Figure 3.3) and, confirms the estimates produced from the previous SADHS.

<sup>1</sup> Data are presented for all South Africans, but there is significant heterogeneity in fertility in South Africa by population group, and the composition of the South African population by population group as evinced by the 2003 SADHS is quite different to that in the 1998 survey. Hence, apparent changes in fertility over time may reflect differences in the population group composition of the two samples rather than actual changes in the fertility rates of the constituent population groups.

**Figure 3.3 Fertility rates by quinquennial period before the survey for equivalent aged women based on retrospective maternity histories, African South African women, 1998 SADHS and 2003 SADHS**

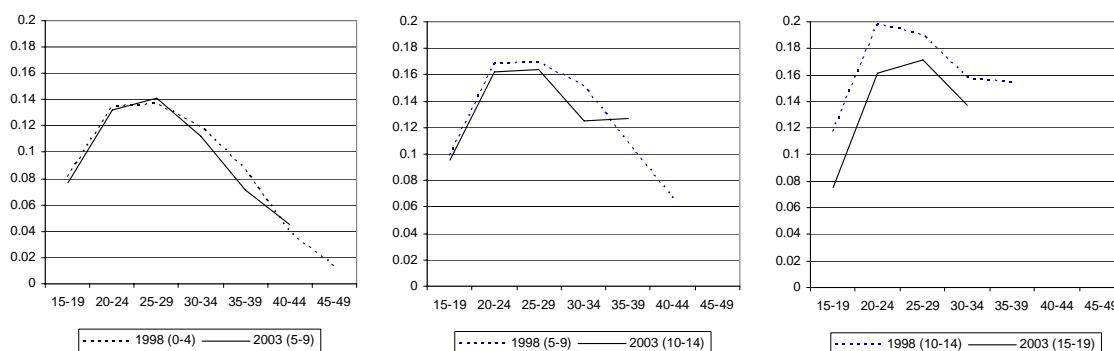


Figure 3.3 also explains why, by some metrics, the distribution of birth intervals in this SADHS do not look particularly odd in some time periods, despite the manifest problems with the data. Simply put, the problems with the data collection led particularly to the omission of births that occurred in the five years before the survey. This matter is discussed further in Section 3.6.

### 3.5 Children Ever Born and Living

Given the findings reported above, it is not surprising that average numbers of children ever born are not consistent between the current survey and the previous Demographic and Health Survey.

Typically, Demographic and Health Surveys present equivalent data for all women and currently married women separately. Fertility data are not analysed by marital status here since it is commonly accepted that marital status is a very weak predictor of childbearing in South Africa, not only because of the institutional legacies of apartheid in disrupting marriages and conjugal unions, but also because marriage in South Africa is not clear-cut, but processual (Budlender, Chobokoane and Simelane 2004).

Table 3.5 shows the distribution of women by age and parity, as well as the average numbers of children ever born and those still surviving by women's age.

**Table 3.5 Children ever born and living**

Percent distribution of all women by number of children ever born, and mean number of children ever born and mean number of living children, according to age group, South Africa 2003

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
15-19	90.4	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1 395	0.10	0.09
20-24	54.4	35.6	9.3	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1 242	0.56	0.54
25-29	27.7	38.2	23.5	8.7	1.5	0.4	0.0	0.0	0.0	0.0	0.0	100.0	1 015	1.19	1.13
30-34	12.4	23.0	31.9	22.3	7.8	2.0	0.5	0.1	0.0	0.0	0.0	100.0	918	1.99	1.89
35-39	6.0	16.8	26.2	25.7	15.1	6.2	2.2	0.9	0.4	0.4	0.0	100.0	991	2.64	2.52
40-44	5.9	12.5	20.8	26.8	14.3	9.3	4.4	2.7	2.0	0.6	0.6	100.0	812	3.12	2.95
45-49	4.8	11.8	20.7	19.1	15.1	11.6	7.8	5.4	1.3	1.4	0.9	100.0	668	3.46	3.20

Data should be read with caution. See text for detail.

The data from the 2003 SADHS indicate that just under five percent of women had not had children by the end of their reproductive years. However, further analysis of these data is probably spurious given the identified problem of underreporting of recent births. Amongst other things, this would have the effect of artificially depressing estimates of the extent of childbearing, particularly among younger women. Nonetheless, nearly one in ten women aged 15-19 are reported to have borne at least one child. This is most probably an underestimate: the equivalent figure in the 1998 SADHS was 13 percent, and adolescent fertility showed little evidence of decline between the 1996 and 2001 censuses.

The data on mean children ever borne and mean children still living in the last two columns of Table 3.5 are equally problematic for the same reasons.

Because the 1998 and 2003 SADHS surveys were almost exactly five years apart, it is possible to create synthetic cohorts, reflecting notionally the same group of women who would have been, for example, aged 40-44 in the more recent survey, and hence aged 35-39 in the 1998 study. As in Section 3.4, this correspondence can be used to examine the internal consistency of the parity data between the two surveys: the average parities of women in one age group in 1998 should not be higher than the average parities of the same cohort of women in the next age group in 2003<sup>2</sup>.

For younger cohorts, women report more children ever born on average in 2003 than women of the same birth cohort did in 1998. However, the data from the 2003 survey suggest that among women aged 40-44 and 45-49 in the 2003 SADHS (aged 35-39 and 40-44 respectively in the previous SADHS) have had the same or fewer children on average now than they did five years previously. This would imply zero or negative fertility rates in these cohorts; something not supported out by the rates presented in Table 3.4. Evidently, many births born to particularly, older women in the 2003 SADHS were not recorded by fieldworkers.

<sup>2</sup> The average parities in a cohort of childbearing women could, theoretically, decline over time if it were observed that high-parity women suffered differentially extraordinarily high mortality over the period relative to lower-parity women, and if fertility among these lower parity women was very low. There are neither grounds nor evidence for asserting that this was the case in South Africa in the early years of the 21<sup>st</sup> century.

Furthermore, the proportion of children ever born who are still living is higher in 2003 at almost every age than in 1998 suggesting that it is probable that fieldworkers recorded dead children even less often than still living children in this survey, thereby biasing the number of children borne down and hence the proportion of children reported as still living upwards. This error is of particular significance because it is through a manipulation of this ratio that indirect estimates of child mortality can be derived. The conclusion drawn, then, is that reliable estimates of child mortality can not be derived using this approach from this survey, while the failure to accurately count either living or dead children under age five has severe implications for the ability to derive direct estimates of child mortality [see Chapter 6].

### **3.6 Birth Intervals**

Data on birth intervals in previous South African studies have been comprehensively analysed by Moultrie and Timæus (2002). Using the retrospective birth history data from the 1987-9 unofficial SADHS and the 1998 SADHS, a pattern of increasing birth intervals over time was identified, with the trend in median birth intervals being, to a large measure, independent of women's age or parity. In very general terms, the data from the current SADHS corroborate these findings. Birth intervals appear to be long among both coloured and African South Africans.

However, strong caveats must be attached to the data presented in Table 3.6, as the data in this table refer only to births occurring in the five years before the survey. Given that a significant number of births occurring in the five years preceding the survey were omitted, this may consequently bias the results presented if these omissions are not proportionate across all variables studied.

**Table 3.6 Birth intervals**

Percent distribution of non-first births in the five years preceding the survey by number of months since preceding birth, according to background characteristics, South Africa 2003

Background characteristic	Months since preceding birth					Total	Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	36-47	48+			
15-19	NA	NA	NA	NA	NA	NA	0	NA
20-29	7.2	6.1	18.7	21.8	46.2	100.0	409	44.6
30-39	3.2	3.6	11.9	14.7	66.6	100.0	659	60.8
40-49	1.7	1.4	18.4	16.9	61.7	100.0	179	57.9
2-3	4.1	3.5	13.1	16.1	63.3	100.0	847	59.6
4-6	4.5	6.1	15.5	20.9	52.9	100.0	344	49.2
7+	6.4	2.2	41.9	15.1	34.3	100.0	55	34.3
Female	5.4	4.1	14.4	17.1	58.9	100.0	610	54.0
Male	3.2	4.2	15.6	17.6	59.4	100.0	636	55.8
Living	3.5	3.9	14.3	17.5	60.7	100.0	1 171	55.5
Dead	17.1	7.6	25.7	15.0	34.6	100.0	75	33.9
Urban	3.8	4.0	14.6	16.4	61.1	100.0	793	56.9
Non-urban	5.2	4.3	15.8	19.0	55.8	100.0	453	53.0
Western Cape	3.5	4.3	15.9	13.8	62.6	100.0	198	57.6
Eastern Cape	8.0	4.4	20.4	21.8	45.3	100.0	164	44.7
Northern Cape	3.5	4.5	12.8	16.7	62.5	100.0	27	55.4
Free State	5.2	4.3	12.9	20.0	57.6	100.0	66	56.3
KwaZulu-Natal	8.5	0.8	13.5	23.0	54.2	100.0	54	59.1
North West	4.4	3.1	9.8	15.8	66.9	100.0	108	63.2
Gauteng	2.4	3.9	13.8	16.8	63.2	100.0	343	59.6
Mpumalanga	4.1	5.3	18.2	18.2	54.2	100.0	110	52.1
Limpopo	4.1	4.9	14.3	16.4	60.4	100.0	175	54.0
None	0.9	4.7	11.7	21.7	61.0	100.0	80	53.8
Gr.1-5	8.3	3.8	24.5	18.6	44.8	100.0	123	40.0
Gr.6-7	3.0	3.1	14.8	18.0	61.1	100.0	166	54.0
Gr.8-11	4.5	5.1	15.3	17.3	57.9	100.0	543	54.8
Gr.12	4.5	3.0	11.7	17.5	63.3	100.0	242	59.6
Higher	2.9	3.3	12.9	11.0	70.0	100.0	92	62.0
African	4.5	3.7	13.8	17.9	60.2	100.0	1 036	55.4
Coloured	4.4	6.9	16.2	16.3	56.2	100.0	149	54.8
Indian	4.2	4.9	33.0	15.1	42.7	100.0	20	39.9
White	0.0	4.7	33.3	9.6	52.4	100.0	41	47.5
Total	4.3	4.1	15.0	17.4	59.2	100.0	1 246	55.1

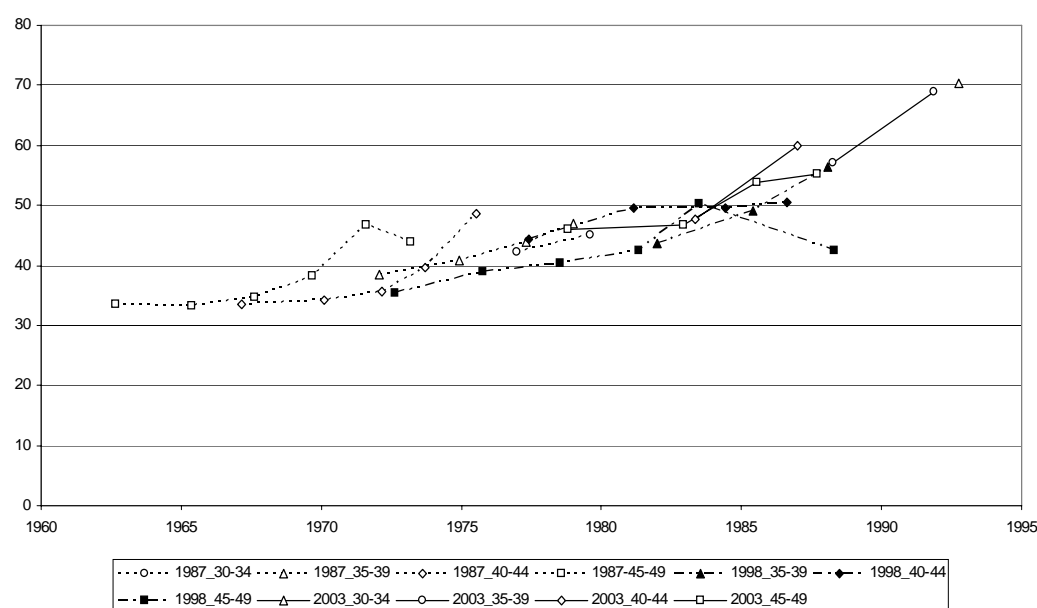
Note: First-order births are excluded, as are all multiple births other than the first reported in each confinement.

NA=Not applicable.

Data should be read with caution. See text for detail.

Figure 3.3 showed that the reporting of births among African South Africans in the 5-9 years before the 2003 SADHS strongly correlated with that observed in the five years before the 1998 SADHS. Using Aoun's variant of the Brass-Juárez approach to birth interval analysis (Aoun 1989; Brass and Juárez 1983), projected median birth intervals from the 2003 SADHS for African South African women can be calculated similar to those presented by Moultrie and Timæus (2002) using the two previous Demographic and Health Surveys. These projected median birth intervals are shown in Figure 3.4

**Figure 3.4 Projected median intervals by cohort, parity and median date of child's birth for African South African women, 1987-9, 1998 and 2003 SADHS**



The consistency between all three surveys is clear for the years before 1990, although the consequences of having too few births reported in the most recent quinquennial period is indicated by it not being possible to calculate a median birth interval for several age and parity combinations, and the rapid indicated rise in median birth intervals after 1990.

### 3.7 Age at First Birth

The final investigation conducted in this chapter is on age of mother at the commencement of childbearing.

**Table 3.7 Age at first birth**

Percentage of all women who have given birth by exact age, and median age at first birth by current age, South Africa 2003-2004

Current age	Percentage who gave birth by exact age					Percentage who have never given birth	Number of women	Median age at first birth
	15	18	20	22	25			
15-19	0.9	na	na	na	na	90.4	1 395	a
20-24	1.1	15.0	30.1	na	na	54.4	1 242	a
25-29	1.7	15.3	33.2	47.1	63.4	27.7	1 015	22.5
30-34	2.4	17.5	40.9	59.4	74.9	12.4	918	21.0
35-39	2.8	18.0	36.6	57.3	75.5	6.0	991	21.3
40-44	3.5	20.3	43.2	59.4	75.9	5.9	812	20.8
45-49	2.5	16.7	40.3	60.5	74.3	4.8	668	20.9

Note: na = Not applicable.

a = Omitted because fewer than 50 percent of women had a birth before reaching the beginning of the age group.

Data should be read with caution. See text for detail.

According to the findings, almost half of all women typically have their first birth before their 21<sup>st</sup> birthday (Table 3.7). Approximately one in seven South African women has a birth before her 18<sup>th</sup> birthday. Further analysis of fertility data, for example investigations into differentials in the median age at first birth by background characteristics or the correlates of teenage pregnancy and motherhood is futile given the problems identified in the data.

### **3.8 Conclusions**

For all practical purposes, the data on children ever born, living or dead from the 2003 SADHS cannot be used to form a reliable opinion on childbearing, fertility, child survival or any of their correlates in the five years before the survey. There are, however, aspects of the data – for example, fertility rates estimated for more distant time periods, and the length of birth intervals – which strongly correlate with data from previous surveys. However, enthusiasm in this regard must be tempered by the almost certain knowledge that were these data to be disaggregated by province, residence, education, or population group inconsistencies would be found. At 60 per cent of the size of the previous DHS, the sample size in the 2003 SADHS is simply too small to pursue such investigations. It is of particular concern that, given the centrality of the fertility data to the SADHS as a whole, a failure to be able to derive adequate measures of reproduction from these data means that all other related investigations using data from the study are equally problematic. The failure to find and enumerate children under the age of five has repercussions for the calculations of contraceptive use and family planning metrics that are contingent on women's parity or the identification of a woman's last-born child. In this regard, metrics such as wantedness of last pregnancy; and the standard division of motives for contraceptive use into stopping and spacing behaviours are severely compromised.



## CHAPTER 4

### CONTRACEPTION AND FERTILITY PREFERENCES

#### 4.1 Introduction

Contraception plays a key role in attaining women's health. Its strongest impact on reproductive health is when it is used to prevent pregnancies that are too early, too close, too late and too many. Contraceptive prevalence is an important reproductive health indicator for global monitoring and it is often used as an indicator for development (WHO, 2001), however, this indicator does not provide information on the appropriateness of the method used. In the Department of Health's Strategic Plans: Health Goals, Objectives and Indicators (HGOI) 2001-2005 one of the key objectives under the goal of reducing maternal mortality and morbidity is increasing the contraceptive prevalence rate (Department of Health, 2001). Barrier methods (male and female condoms) are also important in their dual role of pregnancy and STI/HIV prevention.

The SADHS collects information on knowledge and use of contraceptives among men and women. The survey also collects information on women's preferences for births (or for additional births for those who already have children) in the future. This enables the analysis of so-called fertility preferences by assessing the interrelatedness of fertility intentions (that is whether women desire more children or not) and actual fertility behaviour through the analysis of "needs met" and "needs not met" for contraceptive protection against unwanted or mistimed pregnancies. The notion "unmet need" therefore refers to a disconnection between a woman's fertility preferences and what she does about them. When this unmet need results in an unwanted or mistimed pregnancy, it is regarded as an unintended consequence of behaviour. Since preferences are essentially opinions, the reliability and validity of data on fertility intentions can be questioned. Nonetheless, they are used to indicate possible trends in fertility and assess health service gaps.

#### 4.2 Knowledge of Contraceptive Methods

Women and men were asked about methods of contraception that they know could be used to delay or avoid pregnancy. Almost all women (94 percent) and men (96 percent) have heard of at least one modern method of contraception (Table 4.1). This level of knowledge is similar to that seen in the 1998 survey. The methods most commonly known among both men and women are; injectables, pills and the male condom. The best known method for men is the male condom (94 percent).

For the first time, in the 2003 SADHS, the female condom (FC) and emergency contraception (EC) have been added to the list of methods asked about. The female condom was introduced into pilot sites in the South African public health sector in 1998. The method has been available in limited sites between 1998 and 2001. By 2003, 204 official sites stocked the female condom and further expansion will result in an estimated 249 sites providing the FC by the end of 2006. Through sub distribution mechanisms and referrals, approximately 15 percent of primary health care (PHC) facilities reported distribution of female condoms in 2002 (Ramkissoo *et al.*, 2004) and this will have contributed to increased knowledge of the method. The survey reports that by 2003 over half of the women (53 percent) and slightly more men (56 percent) have heard of the FC, indicating the success of the programme. Emergency Contraception knowledge is low amongst both women and men (2.3 percent and 3.6 percent respectively). The method is technically widely available in the public sector as repackaged oral contraceptive pills at no cost to the client. It is also available over the counter as a dedicated branded product in pharmacies across South Africa. Despite this technical availability, knowledge about the method's availability is still poor and uptake even

poorer. There are many reasons for this, including provider concerns around women discontinuing more reliable methods of contraception in favour of using EC and some concern that EC is an abortifacient (Mc Fadyen *et al.*, 2004). In addition, few community-based educational programmes provide information about the availability of the method. Moreover, entrance to public sector clinics outside of working hours so that EC can be obtained within the critical timeframe post unprotected sex presents another access problem.

Traditional methods are far less known among women (30 percent) and higher in men (46 percent). The mean number of contraceptive methods known is 5 for women and 5.6 for men, including both modern and traditional.

Unmarried women who have never had sex have high knowledge of contraceptive methods, with 83 percent knowing at least one method and a mean knowledge of 3.8 methods. Unmarried men who have never had sex have slightly lower knowledge about contraceptive methods (93 percent), compared to the sexually active men (99 percent).

Table 4.1 Knowledge of contraceptive methods

Table 4.1 Knowledge of contraceptive methods											
Percentage of all women/men, of women/men currently in union, of sexually active women/men not in union, of sexually inactive women/men not in union, and of women/men with no sexual experience who know any contraceptive method, by specific method, South Africa 2003											
Method	WOMEN 15-49						MEN 15-59				
	Not in union:			Not in union:			Not in union:			Not in union:	
	All women	Currently in union	sexually active in the past 4 weeks	not sexually active in the past 4 weeks	Not in union: never had sex	All men	Currently in union	sexually active in the past 4 weeks	not sexually active in the past 4 weeks	Not in union: never had sex	
Any method	93.4	95.6	96.8	93.7	83.1	96.3	95.9	99.1	95.5	92.9	
Any modern method	93.4	95.6	96.8	93.7	83.1	96.3	95.9	99.1	95.5	92.8	
Female sterilization	45.1	55.5	39.8	43.8	27.0	51.1	60.3	53.6	44.1	29.9	
Male sterilization	28.1	36.2	23.8	24.9	18.6	42.6	51.0	46.5	31.6	26.4	
Pill	78.1	82.0	79.2	77.6	67.1	67.1	70.4	74.1	58.0	56.2	
IUD	39.7	49.4	39.8	36.7	20.1	35.8	40.7	43.8	24.1	22.1	
Injectables	84.5	87.2	88.5	84.5	72.0	69.8	72.1	77.7	62.5	57.3	
Implants	9.0	12.2	7.1	8.3	4.6	16.0	19.3	17.6	9.2	12.5	
Male condom	79.9	79.7	84.4	79.3	76.0	94.4	93.4	98.3	93.9	89.6	
Female condom	53.2	53.9	56.6	51.6	50.5	56.3	52.0	67.9	47.5	56.7	
Emergency contraception	19.6	22.1	22.8	17.6	13.3	3.6	2.9	4.2	4.5	2.8	
Diaphragm/Foam/Jelly	9.6	13.3	8.2	7.8	5.5	16.2	20.1	15.8	12.4	11.1	
Any traditional method	26.4	32.4	28.7	24.1	12.7	45.5	51.8	52.5	38.4	23.4	
Periodic Abstinence	15.4	19.7	15.2	13.6	8.3	25.7	32.0	25.3	22.1	13.3	
Lactational amenorrhea (LAM)	9.9	13.3	7.7	9.4	4.2	14.3	16.9	15.5	10.5	9.1	
Withdrawal	21.7	26.9	24.9	19.4	9.1	42.8	49.3	49.2	35.4	21.8	
Number of women/men	7,041	2,658	1,253	2,127	1,003	3 118	1 215	882	567	442	
Mean number of methods known	5.0	5.6	5.1	4.8	3.8	5.6	6.1	6.1	4.8	4.2	
In union: married or living together.											

### 4.3 Ever Use of Contraception

Table 4.2 shows the methods of contraception women and men have ever used. The sexually active women category includes all sexually active women/men who had sex in the 4 weeks preceding the survey regardless of marital status. The women currently in union category includes married and cohabiting women/men only. Ever use of contraception by sexually active women and women in unions (married and cohabiting) is high (85 percent and 83 percent respectively). These figures are similar to the finding in the 1998 SADHS where 85 percent of women in a union had ever used a method of contraception. Looking at the five-year age groups the proportion that has ever used contraception is highest in the 20–24 year age group of the sexually active women at 89 percent. The age pattern of ever use of contraception for women in unions in 2003 is similar to the pattern reported in the 1998 survey.

Over half of sexually active women (56 percent) have ever used injectables and almost a third (29 percent) have ever used the pill. The male condom has ever been used by 38 percent of sexually active women but this figure falls to 28 percent in women in a current union. This figure is however considerably higher than found among women in a union in 1998 when 19 percent of women had ever used a male condom. As indicated in the previous section, the female condom was not included as a specific method in the 1998 survey. Ever use of female condoms, since its phased introduction in 1998, is 3 percent in sexually active women. Ever use of female condoms peaks at 4.8 percent in the 25-29 age group and is lowest in the youngest age group at 0.5 percent. Ever use of the male condom however, is highest in the youngest age group at 52 percent and shows, as might be expected, that the use of the female condom appear not to be taken up in the same pattern as the male condom. The female condom is only available directly from a health service provider and is therefore not as accessible as the male condom. The method is primarily targeted at women and the responsibility falls on a woman to introduce the method into her relationship. The partner may never have seen this device before. It is possible that older women are more confident in introducing the method to their partner than younger women. This may indicate a need to strengthen counseling to younger age groups and to men who are key targets for condom promotion.

Men interviewed in the SADHS were only asked about ever use of methods that are male-oriented, namely, male sterilization, male condom, lactational amenorrhoea method, periodic abstinence, withdrawal, and emergency contraception. Ever use of contraception by sexually active men is 83 percent. The ever use rate in those men aged 15-34 years is considerably higher than among older men, indicating a major shift in male use of contraception. The rate is highest in men in the 30-34 age group (90 percent) and lowest in men aged 50-54 years (44 percent). The majority of sexually active men aged 15-59 years have ever used male condoms, except those in the 50-54 age group. Ever use of traditional methods is higher in sexually active men (14 percent) compared to women (9 percent). Ever use of EC is mentioned by 1.9 percent of sexually active men. This is much higher than the ever use of EC reported by sexually active women (0.5 percent). Compared to the sexually active men, men in a union have much lower levels of ever use of contraception (55 percent). This is also reflected in lower condom use in all age groups.

Table 4.2 Ever use of contraception

Percent distribution of all women, of women currently in union, and of sexually active women by contraceptive method currently used, according to age, South Africa 2003

ALL WOMEN																	
Modern methods																	
Age	Any method	Any modern method	Female sterilization	Male sterilization	Pill	IUD	Injectables	Implants	Male condom	Female condom	Foam/Jelly	Lactational amenorrhea (LAM)	Periodic Abstinence	Emergency contraception	Traditional Method		
															Any traditional method	Withdrawal	Other methods
15-19	36.1	36.1	0.1	0.1	5.3	0.7	23.1	0.1	19.5	1.0	0.3	0.1	0.9	0.7	3.6	2.2	1.0
20-24	73.0	73.0	0.2	0.4	18.0	1.2	49.9	0.4	40.2	2.4	0.3	0.6	2.2	0.1	8.8	5.1	3.3
25-29	80.9	80.7	2.0	0.5	30.8	1.5	58.5	0.3	40.2	4.6	0.3	1.5	2.5	0.5	9.5	5.1	3.7
30-34	83.9	83.8	5.7	0.4	31.6	4.3	61.4	0.2	34.9	4.3	0.6	1.0	2.3	0.8	8.2	5.4	2.6
35-39	85.9	85.2	14.5	0.9	31.6	5.9	57.7	0.0	29.0	3.2	0.7	2.8	2.8	1.0	9.4	5.9	2.8
40-44	75.5	75.3	17.7	2.5	27.5	8.8	45.2	0.4	21.8	1.9	0.9	2.3	3.1	0.5	8.4	4.8	1.8
45-49	74.3	73.9	22.5	0.7	30.6	8.1	42.3	0.0	18.3	0.9	1.3	1.9	1.7	0.0	8.2	6.2	1.9
15-49	70.5	70.3	7.3	0.7	23.3	3.7	47.2	0.2	29.6	2.6	0.5	1.3	2.1	0.5	7.8	4.7	2.4
WOMEN CURRENTLY IN UNION																	
15-19	71.2	71.2	0.0	1.2	15.0	2.3	41.8	0.0	45.9	0.0	0.0	0.0	1.5	2.4	6.1	4.6	0.0
20-24	84.4	84.4	0.5	0.0	13.5	0.2	61.1	0.0	39.4	0.6	0.2	1.0	2.9	0.2	8.3	5.3	0.9
25-29	84.9	84.8	3.7	1.4	37.0	1.8	59.5	0.0	37.4	2.1	0.0	1.0	1.6	1.0	8.3	3.7	3.9
30-34	85.9	85.7	8.0	0.3	35.7	5.0	60.6	0.2	32.8	3.8	0.9	1.3	3.0	0.6	9.4	7.0	2.4
35-39	86.7	85.7	18.4	0.9	30.9	6.1	56.5	0.0	23.9	2.3	1.1	4.0	3.1	1.3	9.3	6.6	2.2
40-44	78.9	78.7	21.6	3.8	31.6	10.9	43.0	0.6	21.1	0.7	0.6	2.6	2.8	0.1	8.7	5.7	1.5
45-49	76.2	75.8	27.4	1.2	29.7	9.2	40.4	0.0	18.3	1.1	2.2	1.6	0.7	0.0	9.0	7.3	1.7
15-49	82.7	82.4	14.3	1.4	30.8	6.0	52.8	0.1	28.0	1.8	0.8	2.1	2.4	0.6	8.8	6.0	2.1
SEXUALLY ACTIVE WOMEN																	
15-19	84.2	84.2	0.0	0.2	9.7	2.4	56.0	0.0	51.9	0.5	1.2	0.2	1.2	0.2	8.4	6.5	3.2
20-24	89.4	89.3	0.5	0.1	22.4	1.2	60.6	0.5	50.9	2.4	0.6	1.0	2.6	0.0	10.5	7.4	4.7
25-29	85.3	85.1	1.8	0.5	35.8	1.5	60.6	0.0	44.4	4.8	0.0	1.5	2.3	0.8	9.6	5.9	4.9
30-34	86.7	86.7	7.3	0.4	34.6	5.2	62.5	0.2	39.2	3.8	0.6	0.8	3.1	0.4	8.3	6.6	3.1
35-39	87.7	87.2	14.9	1.3	32.5	7.0	57.4	0.0	32.1	4.4	1.0	3.6	3.2	0.9	9.1	6.7	3.5
40-44	80.9	80.9	20.7	3.8	30.2	8.7	45.4	0.6	26.0	1.9	0.3	2.7	3.6	0.6	6.7	4.9	2.7
45-49	79.2	78.9	29.2	1.6	28.2	9.8	42.1	0.0	24.7	0.9	0.9	1.3	0.8	0.0	8.6	7.9	1.1
15-49	85.4	85.2	10.1	1.1	29.2	5.0	56.0	0.2	38.4	3.0	0.6	1.8	2.6	0.5	8.9	6.5	3.5
ALL MEN																	
15-19	35.7	35.1	NA	1.2	NA	NA	NA	NA	32.0	NA	NA	0.0	1.8	1.8	4.1	3.7	0.8
20-24	71.9	70.4	NA	1.2	NA	NA	NA	NA	68.0	NA	NA	0.1	5.0	1.4	13.7	12.1	3.8
25-29	76.8	76.4	NA	0.6	NA	NA	NA	NA	74.2	NA	NA	1.6	6.9	1.4	16.2	14.4	4.0
30-34	72.9	71.2	NA	1.2	NA	NA	NA	NA	68.7	NA	NA	2.7	8.0	1.2	17.1	14.6	4.5
35-39	64.7	63.2	NA	1.6	NA	NA	NA	NA	61.8	NA	NA	2.6	6.7	0.9	14.8	14.1	4.6
40-44	53.9	52.3	NA	3.8	NA	NA	NA	NA	49.0	NA	NA	4.3	7.1	1.4	14.3	14.3	2.3
45-49	45.6	43.6	NA	5.7	NA	NA	NA	NA	39.4	NA	NA	2.2	3.5	2.6	13.1	12.7	1.0
50-54	40.9	38.3	NA	1.7	NA	NA	NA	NA	35.5	NA	NA	2.9	3.3	1.4	12.4	11.1	1.8
55-59	35.4	32.1	NA	0.9	NA	NA	NA	NA	28.3	NA	NA	3.0	10.4	0.7	21.2	20.7	2.2
15-59	57.5	56.1	NA	1.8	NA	NA	NA	NA	53.4	NA	NA	1.8	5.4	1.4	13.0	11.9	2.8

TABLE 4.2 Continued/....

MEN CURRENTLY IN UNION														
15-19	61.5	53.8	NA	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	7.7	7.7
20-24	66.5	62.3	NA	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	15.4	15.4
25-29	69.5	68.2	NA	0.0	NA	NA	NA	NA	NA	NA	NA	2.1	13.7	12.0
30-34	68.5	66.2	NA	1.9	NA	NA	NA	NA	NA	NA	NA	0.0	19.0	15.3
35-39	63.3	62.1	NA	2.6	NA	NA	NA	NA	NA	NA	NA	0.0	17.4	14.8
40-44	51.0	49.7	NA	4.9	NA	NA	NA	NA	NA	NA	NA	1.4	20.2	18.9
45-49	44.4	41.8	NA	6.6	NA	NA	NA	NA	NA	NA	NA	1.4	13.9	13.9
50-54	43.0	40.6	NA	2.2	NA	NA	NA	NA	NA	NA	NA	1.4	15.3	14.9
55-59	37.6	33.4	NA	1.3	NA	NA	NA	NA	NA	NA	NA	0.0	12.4	10.6
												1.0	27.0	26.3
15-59	54.8	52.6	NA	3.0	NA	NA	NA	NA	NA	NA	NA	1.0	17.2	15.8
														3.2
SEXUALLY ACTIVE MEN NOT IN A UNION														
15-19	88.6	87.0	NA	0.0	NA	NA	NA	NA	NA	NA	NA	2.7	10.0	10.0
20-24	86.6	85.3	NA	0.7	NA	NA	NA	NA	NA	NA	NA	1.7	15.0	14.1
25-29	89.7	89.4	NA	0.9	NA	NA	NA	NA	NA	NA	NA	1.0	18.2	17.0
30-34	90.4	90.2	NA	0.7	NA	NA	NA	NA	NA	NA	NA	2.3	16.5	14.9
35-39	70.7	67.7	NA	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	5.8	5.8
40-44	77.5	76.6	NA	0.0	NA	NA	NA	NA	NA	NA	NA	2.9	9.5	9.5
45-49	56.9	56.9	NA	4.9	NA	NA	NA	NA	NA	NA	NA	3.9	8.8	8.0
50-54	44.2	44.2	NA	0.0	NA	NA	NA	NA	NA	NA	NA	15.0	17.1	17.1
55-59	54.0	54.0	NA	0.0	NA	NA	NA	NA	NA	NA	NA	0.0	4.1	4.1
15-59	83.2	82.3	NA	0.7	NA	NA	NA	NA	NA	NA	NA	1.9	13.7	13.0
														3.4

NA = Not applicable.

In union: married or living together.

Sexually active: had sex in last 4 weeks.

## 4.4 Current Use of Contraception

The target in the Department of Health's Strategic Plans: Health Goals, Objectives and Indicators (HGOI) 2001-2005 is to increase the contraceptive prevalence from 62 percent to 65 percent in sexually active women by 2005. The definition of the contraceptive prevalence rate is the percentage of sexually active women of reproductive age (15-49 years) using contraceptive methods. The SADHS, which is carried out every 5 years, is one of the most accurate ways of measuring this indicator. Most of the current information on contraceptive use in South Africa was first collected in the 1998 SADHS. The contraceptive prevalence rate in all sexually active women in 2003 across all ages is approximately 65 percent, in line with the target set for 2005 (Table 4.3). This figure has risen from the 1998 SADHS where the comparable figure was 62 percent. Among sexually active women not in a union, the prevalence rate is even higher (68 percent, data not shown). The increase among sexually active women is seen across every age group except the 20-24 age group where it has remained stable at 68 percent. The HGOI target is clearly achievable.

Table 4.3 shows the prevalence of currently using different contraceptive methods. The female condom was added to the list of current use methods in the 2003 SADHS. However, EC was not included, as it is not advised as a regular method of contraception. The 2003 survey also introduced a breakdown of the hormonal injectable methods into the two brands used in South Africa: Depo-Provera<sup>®</sup> is a 3 monthly injection and Nuristerate is administered every 2 months. Figure 4.1 shows the prevalence of current contraceptive use among sexually active women aged 15-49 years in 1998 and 2003.

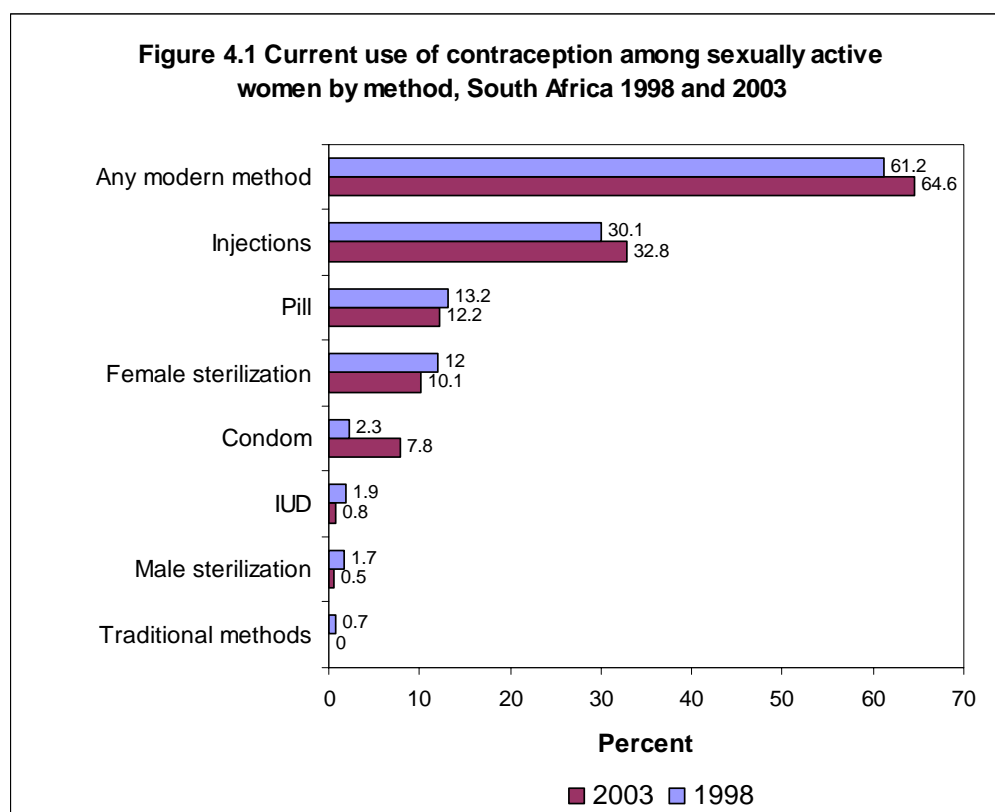


Table 4.3 Current use of contraception

Percent distribution of all women, of women currently in union, and of sexually active women by contraceptive method currently used, according to age, South Africa 2003

Age	Modern Method										Traditional Method					
	Any method	Any modern method	Female sterilization	Male sterilization	Pill	IUD	2-monthly injectable	3-monthly injectable	Male condom	Female condom	Lactational amenorrhea (LAM)			Periodic abstinence	Not using	Number of women
											Any traditional method					
ALL WOMEN																
15-19	26.5	26.5	0.1	0.1	2.8	0.3	13.2	4.0	6.0	0.0	0.0	0.0	0.0	73.5	1 395	
20-24	54.0	54.0	0.2	0.0	8.6	0.1	19.2	14.6	10.9	0.3	0.0	0.0	0.0	46.0	1 242	
25-29	58.8	58.8	2.0	0.1	14.2	0.5	13.3	21.8	6.5	0.5	0.1	0.1	0.0	41.2	1 015	
30-34	58.2	58.1	5.7	0.0	15.0	0.3	11.0	21.9	4.1	0.1	0.2	0.1	0.1	41.8	918	
35-39	62.4	62.4	14.5	0.5	12.4	0.9	6.8	23.2	3.6	0.4	0.0	0.0	0.0	37.6	991	
40-44	53.7	53.3	17.7	1.0	6.0	1.9	4.1	17.9	4.5	0.4	0.4	0.4	0.0	46.3	812	
45-49	46.1	46.1	22.5	0.4	4.9	0.7	1.4	12.3	3.9	0.0	0.0	0.0	0.0	53.9	668	
Total	50.2	50.1	7.3	0.3	9.0	0.6	10.9	15.8	6.0	0.2	0.1	0.1	0.0	49.8	7 041	
WOMEN CURRENTLY IN UNION																
15-19	47.0	47.0	0.0	1.2	11.9	1.1	12.5	10.6	9.7	0.0	0.0	0.0	0.0	53.0	51	
20-24	61.7	61.6	0.5	0.0	4.9	0.1	22.9	20.8	12.3	0.0	0.1	0.1	0.0	38.3	238	
25-29	60.2	60.1	3.7	0.2	15.5	0.5	11.0	23.9	5.4	0.0	0.1	0.1	0.0	39.8	393	
30-34	62.8	62.7	8.0	0.0	18.4	0.4	10.8	22.1	3.1	0.0	0.1	0.1	0.0	37.2	503	
35-39	65.4	65.4	18.4	0.9	11.9	1.0	7.0	23.6	2.6	0.0	0.0	0.0	0.0	34.6	563	
40-44	58.2	58.2	21.6	1.7	6.5	2.7	4.8	16.2	4.6	0.0	0.0	0.0	0.0	41.8	506	
45-49	51.0	51.0	27.4	0.7	4.9	0.8	0.8	13.2	3.3	0.0	0.0	0.0	0.0	49.0	405	
Total	59.9	59.8	14.3	0.7	10.9	1.0	8.5	19.9	4.6	0.0	0.0	0.0	0.0	40.1	2 658	
SEXUALLY ACTIVE WOMEN																
15-19	68.7	68.7	0.0	0.2	5.1	1.4	36.0	8.2	17.7	0.0	0.0	0.0	0.0	31.3	247	
20-24	68.2	68.2	0.5	0.0	12.1	0.1	26.2	14.8	14.5	0.2	0.0	0.0	0.0	31.8	542	
25-29	65.8	65.7	1.8	0.1	18.0	0.6	14.9	22.3	7.6	0.4	0.1	0.0	0.1	34.2	536	
30-34	64.1	64.1	7.3	0.0	18.5	0.5	12.7	20.9	4.0	0.2	0.0	0.0	0.0	35.9	552	
35-39	64.4	64.4	14.9	0.9	11.9	1.2	7.6	23.2	4.4	0.4	0.0	0.0	0.0	35.6	604	
40-44	63.1	63.1	20.7	1.8	6.9	2.1	4.7	20.5	5.7	0.6	0.0	0.0	0.0	36.9	465	
45-49	57.2	57.2	29.2	0.9	5.8	0.0	0.4	15.8	5.1	0.0	0.0	0.0	0.0	42.8	310	
Total	64.7	64.6	10.1	0.5	12.2	0.8	13.8	19.0	7.8	0.3	0.0	0.0	0.0	35.3	3 256	

Note: Zero reported current use of Diaphragm Foam/Jelly or Implants.

In union: married or living together.

Sexually active: had sex in last 4 weeks.



Injectable methods remain a common contraceptive. From Table 4.3 it can be seen that among sexually active women the two injectable methods combined are used by 33 percent of women and account for half of the total method use among women using contraception. Injectables accounted for 48 percent of method use among sexually women in 1998. In the younger age groups, however, the injectable use as a proportion of total contraceptive use has dropped since 1998 and the reduction appears to have been replaced by male condom use. Contraceptive pill use among sexually active women is 12 percent, which is slightly lower than the 13 percent observed in the 1998 survey. Male condom use has more than trebled in sexually active women, increasing from 2.3 percent in 1998 to 8 percent in 2003. The proportion among sexually active women not in a union is even higher (12 percent data not shown). Among married or cohabiting women, the proportion drops to 5 percent, suggesting that condom use is influenced by the stability of a relationship as reflected in the cohabitation status. The increase in male condom use can be seen across all age groups of sexually active women with a peak use of 18 percent in the youngest age group (15-19). This is double the male condom utilization rate reported in the 1998 survey and indicates a positive shift towards condom use among adolescents and young women.

While more than half of all women (53 percent) have knowledge of female condoms (Table 4.1), current use among sexually active women is very much lower at 0.3 percent (Table 4.3). This figure is highest among sexually active women aged 40-44 not in a union (3.3 percent, data not shown). Other surveys have also found that more women over the age of 20 use the female condom compared to younger women (Sly *et al.*, 1997). For the male condom this trend is reversed with the highest proportion of women currently using male condoms found in the 15-19 year age group (18 percent).

The three monthly injectable Depo-Provera<sup>®</sup> is overall more commonly used than Nuristerate. Nuristerate was introduced into South African family planning services later than Depo-Provera. It is predominantly offered to younger women by providers, related to the incorrect concern that giving younger women the 3 monthly Depo-Provera<sup>®</sup> injection may negatively impinge their return to fecundity when the method is discontinued. This method has increased in prevalence as these younger women have moved into their twenties and continued to choose Nuristerate. This is borne out by the pattern of use of these two methods in the different age groups (Table 4.3). Among the youngest age group over one-third of sexually active women are using Nuristerate (36 percent) compared to Depo-Provera<sup>®</sup> (8 percent). Among older women aged 45-49 years, this pattern is completely reversed with 16 percent of women using Depo-Provera<sup>®</sup> compared to less than 1 percent using Nuristerate. Should this shift in use of one brand over the other result in the proportion of women using Depo-Provera<sup>®</sup> declining further, there will be resource implications for the health service in terms of costs and human resources. The 2-monthly Nuristerate is not only more expensive but requires more family planning visits per year compared to Depo-Provera<sup>®</sup> (6 visits versus 4). In human resource constrained family planning services, family planning visits will have increased considerably as Nuristerate is now the most commonly used method in women aged 15-24 years.

IUD use in South Africa has always been low and has dropped further from 1.9 percent in sexually active women in 1998 to 0.8 percent in 2003. Female sterilization has also dropped slightly from 16 percent of currently in union women in 1998 to 14 percent in 2003. Traditional methods were only used by 1 percent of the sexually active women in 1998 and this has now dropped to almost zero.

## **4.5 Current Use of Contraception by Background Characteristics**

Contraceptive use by background characteristics is shown in Table 4.4. There have been some interesting changes since the 1998 survey. In 1998 there was a considerable difference in contraceptive prevalence between urban and non-urban women overall. The urban contraceptive prevalence of 67 percent was higher than the non-urban prevalence of 54 percent. It can be seen that in the 2003 survey, the difference in prevalence found in 1998 has almost disappeared, with the urban prevalence remaining stable over the two surveys and the gains seen entirely in the uptake of contraception in the non-urban population. In 2003 the urban and rural disparities in contraceptive prevalence have been reduced significantly with urban prevalence of 66 percent only 4 percent higher than the non-urban figure (62 percent). This can be seen among African women, as this population group had large enough numbers for analysis. The urban prevalence among African women was 63 percent in both surveys. However, the non-urban prevalence among African women has increased from 52 percent to 61 percent between the two surveys.

The urban and non-urban differences can also be seen operating at provincial level where some of the more predominantly rural provinces such as Limpopo, Mpumalanga and KwaZulu-Natal had contraceptive prevalence rates below 60 percent in 1998. In this survey only two provinces (Limpopo and Free State) have a prevalence rate below 60 percent. Limpopo province has increased from 55 percent in 1998 to 59 percent and therefore has made good progress in contraceptive uptake. Free State, however, had a prevalence of 69 percent in the 1998 survey but appears to have lost ground with prevalence falling to just under 60 percent in this survey. This large decrease in prevalence needs to be investigated further. Of all the provinces KwaZulu-Natal has seen the greatest increase in contraceptive prevalence with an increase of 19 percentage points across the two surveys and has the highest contraceptive prevalence of all the provinces in South Africa. Western Cape, Northern Cape, North West and Free State have all decreased since 1998. In two instances (Western Cape and North West) this decrease has been a difference of approximately 10 percent.

Education revealed the greatest disparities in contraceptive prevalence of all the background characteristics in the 1998 survey. This has continued to be the case in 2003 although there has been a narrowing of the gap over time. The contraceptive prevalence among women with no education increased from 35 percent to 38 percent but the prevalence among women with post-matric qualifications is still about twice as high (75 percent).

Table 4.4 Current use of contraception by background characteristics

Percent distribution of sexually active women (had sex in last 4 weeks) by contraceptive method currently used, according to background characteristics, South Africa 2003

Background Characteristic	Modern method										Traditional method			Total	Number of women
	Any method	Any modern method	Female sterilization	Male sterilization	Pill	IUD	2-monthly injectable	3-monthly injectable	Male condom	Female condom	Any traditional method	Periodic abstinence	Not currently using		
<b>Residence</b>															
Urban	65.8	65.8	12.0	0.7	13.0	1.1	12.9	17.9	7.8	0.4	0.0	0.0	34.2	100.0	2 299
Non-urban	61.9	61.8	5.5	0.1	10.3	0.2	16.0	21.7	8.0	0.1	0.1	0.1	38.2	100.0	957
<b>Province</b>															
Western Cape	63.4	63.4	21.6	1.9	13.5	0.3	9.2	14.1	3.0	0.0	0.0	0.0	36.6	100.0	413
Eastern Cape	62.4	62.4	6.9	0.0	8.5	0.0	20.8	18.3	6.5	1.5	0.0	0.0	37.6	100.0	305
Northern Cape	60.1	60.1	15.0	0.0	9.1	0.4	5.0	23.8	6.8	0.0	0.0	0.0	39.9	100.0	49
Free State	59.7	59.7	8.1	0.0	13.1	0.7	6.9	24.0	6.9	0.0	0.0	0.0	40.3	100.0	167
KwaZulu-Natal	76.8	76.8	7.6	0.5	14.0	0.9	13.4	29.3	11.1	0.0	0.0	0.0	23.2	100.0	583
North West	60.5	60.5	7.0	0.0	13.4	0.4	12.6	18.6	8.5	0.0	0.0	0.0	39.5	100.0	227
Gauteng	63.1	63.1	10.5	0.6	12.9	1.2	13.1	16.7	7.8	0.3	0.0	0.0	36.9	100.0	973
Mpumalanga	62.3	62.1	8.8	0.6	11.6	0.7	15.6	16.0	8.6	0.3	0.2	0.2	37.7	100.0	229
Limpopo	58.6	58.6	5.1	0.0	8.6	1.4	20.9	13.5	8.9	0.3	0.0	0.0	41.4	100.0	309
<b>Education</b>															
No education	38.0	37.9	9.7	0.0	4.7	0.0	2.2	16.9	3.9	0.6	0.0	0.0	62.1	100.0	167
Grades 1-5	49.6	49.6	11.3	0.0	4.0	1.5	6.0	25.3	1.5	0.0	0.0	0.0	50.4	100.0	188
Grades 6-7	59.2	59.2	12.3	0.0	8.0	0.3	6.6	29.4	2.6	0.0	0.0	0.0	40.9	100.0	325
Grades 8-11	63.1	63.1	9.1	0.5	8.4	0.4	16.9	19.2	8.1	0.5	0.0	0.0	37.0	100.0	1 364
Grade 12	73.5	73.4	9.6	0.6	18.4	1.3	16.0	18.0	9.5	0.1	0.1	0.1	26.5	100.0	861
Higher	74.8	74.8	12.9	1.7	24.3	1.8	13.2	9.2	11.9	0.0	0.0	0.0	25.2	100.0	349
<b>Population Group</b>															
African	62.2	62.2	6.3	0.0	9.9	0.7	16.0	20.4	8.5	0.3	0.0	0.0	37.8	100.0	2 631
Afr. Urban	62.7	62.7	7.4	0.0	9.5	0.9	15.6	19.9	8.8	0.5	0.0	0.0	37.3	100.0	1 721
Afr. non-urban	61.1	61.1	4.3	0.0	10.5	0.2	16.8	21.3	7.9	0.1	0.1	0.1	38.9	100.0	910
Coloured	70.0	69.9	21.6	2.2	15.6	0.7	7.2	21.0	1.8	0.0	0.0	0.0	30.0	100.0	288
White	80.9	80.9	30.7	3.4	27.4	2.0	3.2	6.0	8.3	0.0	0.0	0.0	19.1	100.0	251
Indian	75.2	75.2	27.9	1.2	30.4	1.8	0.5	8.8	4.4	0.2	0.0	0.0	24.8	100.0	84
<b>Number of living children</b>															
0	58.2	58.2	0.5	0.1	10.8	0.4	20.3	9.7	15.8	0.5	0.0	0.0	41.8	100.0	788
1-2	66.9	66.9	7.4	0.5	14.2	1.2	14.9	21.4	7.1	0.4	0.0	0.0	33.1	100.0	1 505
3-4	68.6	68.6	21.7	1.2	11.7	0.8	7.6	23.2	2.5	0.0	0.0	0.0	31.4	100.0	771
5+	57.4	57.4	24.2	0.0	4.9	0.0	4.0	22.2	2.1	0.0	0.0	0.0	42.6	100.0	193
<b>Total</b>	64.7	64.6	10.1	0.5	12.2	0.8	13.8	19.0	7.8	0.3	0.0	0.0	35.3	100.0	3 256

Note: If more than one method is used, only the most effective method is considered in this tabulation.

2 women had unknown population group and 3 women had unknown education.

## 4.6 Current Use of Contraception by Woman's Status

Table 4.5 shows current contraceptive prevalence among sexually active women according to indicators of women's status. Each interviewed woman was asked for the number of decisions between herself and her partner in which she participated in the final say. These included decisions on healthcare, household purchases, choice of food cooked and visiting relatives. It is interesting to see that women who reported they had no decision making powers in a relationship, have a contraceptive prevalence slightly higher than women who report greater decision making powers. This indicates that women may still have areas of decision-making power, in particular in family planning decisions, a finding that has been reported in other studies (Orji *et al.*, 2007). In the 1998 SADHS these questions were not asked but there were questions on attitudes of couples to family planning. Over two-thirds of sexually active women reported there was joint approval of family planning with their partner.

The actual method of choice may be affected by decision making as the proportion of women using injectable methods of hormonal contraception is much higher in the group reporting lower decision making power (40 percent). This prevalence is higher than for women who reported the highest levels of decision-making (31 percent). This may indicate that women are choosing an "invisible" method of contraception where there is no evidence of method use at home such as taking a contraceptive pill. Male condom use was slightly higher in women who had higher decision-making powers (11 percent).

Women were also asked in which particular situations a woman is justified in refusing to have sex with her partner. These reasons included: if the husband/partner had other partners, if the husband/partner had sex with other wives/partners, if the husband/partner had a sexually transmitted infection, if the woman had recently delivered and if the woman was tired or did not feel in the mood for sex. In this question, women who gave more reasons for refusing to have sex were more likely to have a higher contraceptive prevalence. Women who reported the maximum of 5 reasons for refusing to have sex for the circumstances given in the questionnaire have the highest contraceptive prevalence of 68 percent compared to 57 percent among those who gave no reasons for refusal.

Women were given a number of circumstances where a partner may be angered by his wife and asked whether they considered it acceptable. These included arguing with their partner, neglecting children, refusing sex, burning food and going out without informing the partner. Women were asked if it was acceptable for a husband to beat, kick or push his wife in these circumstances. Women who agreed that it was acceptable for a man to beat his wife for every reason given reported a lower contraceptive prevalence (59 percent) compared to those who said there was no reason, in any of the circumstances mentioned, for a man to beat his wife (65 percent).

Table 4.5 Current use of contraception by women's status

Percent distribution of sexually active (had sex in last 4 weeks) women by contraceptive method currently used, according to selected indicators of women's status, South Africa 2003

Women's status, South Africa 2000														
Women's status indicators	Any method	Any modern method	Modern method						Traditional method		Not currently using	Total	Number of women	
			Female steriliza-tion	Male sterili-zation	Pill	IUD	2-monthly injectable	3-monthly injectable	Male condom	Any traditional method				Periodic abstinence
Number of decisions in which woman has final say <sup>1</sup>														
0	64.3	64.3	7.6	0.0	9.3	0.8	18.7	20.3	7.3	0.0	0.0	35.7	100	652
1-2	62.9	62.9	9.7	0.5	12.8	0.6	15.0	17.6	6.6	0.0	0.0	37.1	100	1 255
3-4	70.6	70.6	15.4	1.8	15.1	0.5	11.6	18.3	7.7	0.0	0.0	29.4	100	671
5	62.3	62.3	8.1	0.0	11.2	1.5	9.3	21.2	10.6	0.0	0.0	37.7	100	679
Number of reasons where it justified to refuse sex														
0	56.9	56.9	6.9	0.0	8.3	0.6	15.9	18.0	7.3	0.0	0.0	43.1	100	755
1-2	66.1	66.1	9.1	0.0	17.2	0.7	14.0	21.8	1.5	0.0	0.0	33.9	100	139
3-4	60.7	60.7	6.9	0.4	10.7	1.5	13.3	17.4	10.5	0.0	0.0	39.3	100	341
5	68.1	68.1	11.9	0.8	13.6	0.8	13.1	19.5	8.0	0.0	0.0	31.9	100	2 021
Number of reasons wife beating is justified														
0	64.7	64.7	10.6	0.6	12.8	0.9	13.3	18.6	7.8	0.0	0.0	35.3	100	2 729
1-2	66.6	66.5	8.2	0.5	11.0	0.9	18.0	19.2	8.5	0.0	0.0	33.5	100	359
3-4	59.4	59.4	5.2	0.0	4.5	0.0	15.4	26.2	8.2	0.0	0.0	40.6	100	131
5	59.4	59.4	11.1	0.0	13.3	0.0	9.9	23.2	1.9	0.0	0.0	40.6	100	38
Total	64.7	64.6	10.1	0.5	12.2	0.8	13.8	19.0	7.8	0.0	0.0	35.3	100	3 256

Note: If more than one method is used, only the most effective method is considered in this tabulation.

Of modern methods there was no reported use of diaphragm/foam/jelly, female condoms or implants.

Of traditional methods, there was no reported use of lactational, amenorrhea, withdrawal or other methods.

<sup>1</sup> Either by herself or jointly with others.

## 4.7 Number of Children at First Use

Use of contraception prior to childbearing indicates whether a woman has chosen to delay her first birth. Table 4.6 includes all women who have ever used contraception by the point in their fertility history at which they started using a method of contraception. It can be clearly seen that younger women are far more likely to have used a method prior to the birth of their first child compared to women in the older age groups. The majority of women in the 15-19 age group who have ever used contraception (86 percent) have used a method of contraception before their first birth. This figure decreases in every increasing five-year age group. In this regard, in the oldest age category of women (45-49) less than a quarter (23 percent) reported using a method prior to their first child. A similar pattern can be seen in the men with a similar decrease in proportion of contraceptive users with increasing age. The 1998 survey only reported on ever-married women for the same variable and in the youngest age group the figure for those having used contraception before their first birth was 52 percent and also decreased in every increasing age group. As the 2003 data include all women and not only the ever-married women, we would expect this figure to be higher. Nonetheless, it may also show that more women are using a method of contraception prior to child bearing.

Table 4.6 Number of children at first use of contraception										
Percentage of all women/men who have never used contraception and the percentage distribution of all women/men who have ever used contraception by number of living children at the time of first use of contraception, according to current age, South Africa 2003										
Current age	Never used contra-ception	Number of living children at time of first use of contraception						Total	Number of women/men	Median number of children at first use
		0	1	2	3	4+	Missing			
WOMEN										
15-19	33.8	86.3	11.2	1.3	0.0	0.0	1.3	100.0	504	0.0
20-24	15.8	70.3	25.2	4.1	0.0	0.0	0.4	100.0	907	0.0
25-29	15.8	48.0	36.8	11.2	2.7	0.1	1.2	100.0	821	0.3
30-34	14.6	41.9	33.0	12.0	7.4	3.6	2.1	100.0	770	0.3
35-39	12.8	31.7	32.5	17.9	9.1	8.4	0.4	100.0	851	0.6
40-44	22.2	27.4	31.8	17.8	11.4	11.6	0.0	100.0	613	0.8
45-49	24.4	22.6	33.5	19.0	9.6	14.7	0.6	100.0	496	0.9
Total	18.0	47.1	29.8	11.8	5.5	4.9	0.8	100.0	4 962	0.5
MEN										
15-19	37.9	69.8	0.0	0.0	0.0	0.0	30.2	100.0	215	0.0
20-24	30.2	73.4	3.9	0.3	0.0	0.3	22.0	100.0	379	0.0
25-29	31.7	71.3	12.6	0.5	0.2	0.2	15.2	100.0	319	0.0
30-34	29.5	52.5	18.2	8.3	2.6	0.0	18.4	100.0	253	0.0
35-39	37.9	42.2	20.6	19.2	1.7	1.1	15.2	100.0	220	0.3
40-44	47.4	30.1	17.8	13.3	13.5	4.7	20.6	100.0	174	0.8
45-49	54.0	28.5	16.4	15.8	8.8	7.9	22.6	100.0	102	1.1
50-54	56.8	19.5	4.5	17.0	13.5	10.2	35.3	100.0	75	2.9
55-59	64.8	26.9	20.6	17.4	2.1	9.7	23.3	100.0	55	0.9
Total	44.9	55.4	11.7	7.1	3.1	1.9	20.9	100.0	1 793	0.3

## 4.8 Knowledge of Fertile Period

Women were asked at what time in the ovulatory (menstrual) cycle they perceived they were fertile or most likely to fall pregnant. This information can be used should a woman practice periodic abstinence as a natural method of contraception. Only a small proportion of women (12 percent) know the correct answer, which was halfway between two menstrual periods. The proportion of women who know this has not changed since the 1998 survey when 11 percent knew the correct answer. Thirty percent of women did not know when this time was and almost another thirty percent (27 percent) said there was no specific time in the cycle when women are fertile. Only 4 women reported the use of periodic abstinence as a method of contraception and only 2 of these women were able to name the correct timing of the fertile period. Lack of knowledge about the ovulatory cycle is a matter of concern as a third of women are sexually active and not using a method of contraception.

## 4.9 Postpartum Amenorrhea, Abstinence and Insusceptibility

Women who had given birth in the 3 years preceding the survey were asked for how many months they were amenorrheic post delivery (Table 4.7). They were also asked about postpartum abstinence. It can be seen that almost half of women (46 percent) remained amenorrheic for between 2-3 months post partum, a third (34 percent) for a year and a small proportion (16 percent) reported still being amenorrheic at 34-35 months. These findings are similar to those observed in the 1998 SADHS.

The majority of women (79 percent) reported abstinence for at least 2-3 months postpartum. A third (35 percent) continued to abstain for a year and just over a quarter (27 percent) for 2 years. Some women (14 percent) reported abstinence for almost 3 years. The mean length of abstinence is 13.3 months. The overall insusceptibility at one year was 49 percent, which falls to just over a quarter (29 percent) after two years post partum. The median length of abstinence has increased from 4.9 months in 1998 to 7.2 months in the 2003 survey.

Insusceptibility has increased very slightly from 12.2 months to 13.3 months between surveys. Although insusceptibility has positive implications for birth spacing, the abstinence component may be a concern in the context of the high HIV prevalence in South Africa. Long-term abstinence can lead to potential risky sexual behaviour in a relationship where the male partner may engage in other sexual relationships (Ali et al., 2001 and Cleland et al., 1999).

**Table 4.7 Postpartum amenorrhea, abstinence and insusceptibility**

Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrheic, abstaining, and insusceptible, by number of months since birth, and median and mean durations, South Africa 2003

Months since birth	Percentage of births for which the mother is:			Number of births
	Amenorrheic	Abstaining	Insusceptible	
< 2	60.5	80.1	80.1	53
2-3	46.4	78.9	85.7	74
4-5	40.6	62.5	67.5	70
6-7	49.1	48.2	66.8	79
8-9	35.5	47.1	57.1	75
10-11	43.6	42.9	56.8	78
12-13	33.8	34.8	49.3	64
14-15	33.7	29.1	52.7	80
16-17	24.0	17.4	32.9	63
18-19	25.1	15.1	35.2	67
20-21	24.5	22.3	38.1	99
22-23	21.6	24.4	38.1	61
24-25	8.4	26.7	28.7	77
26-27	15.8	32.1	37.6	79
28-29	15.8	24.5	30.4	57
30-31	18.4	18.1	24.4	55
32-33	10.2	29.2	30.5	59
34-35	16.2	13.8	23.0	76
Total	29.1	35.7	46.6	1 267
Median	2.2	7.2	13.3	NA
Mean	10.9	13.3	17.0	NA

Note: Estimates are based on status at the time of the survey.  
NA = Not applicable.

Information about postpartum amenorrhoea, abstinence and insusceptibility by background characteristics is shown in Table 4.8. Women aged between 15-29 years report a slightly shorter length of postpartum amenorrhea (2.2 months) compared to women older than 29 years (2.4 months). The duration of postpartum amenorrhoea in non-urban women is over twice as long as in urban women (5.2 months and 2.1 months respectively). The length of amenorrhoea is related to duration of breastfeeding. The difference between urban and non-urban settings in length of postpartum amenorrhoea has reduced since the 1998 survey where the non-urban duration was 6.3 months compared to only 0.7 months in the urban areas. There are also large differences by province with the Northern Cape reporting the longest duration of postpartum amenorrhea (12.9 months).

Postpartum abstinence is higher in younger women aged 15-29 years compared to those over 29 years. The length of postpartum abstinence in younger women has increased from 5.3 months in the 1998 survey to 9.1 months in the 2003 survey. In 2003 the provinces of Eastern Cape, North West and Limpopo report the highest lengths of postpartum abstinence. This was the same situation in the 1998 survey with the exception of the Free State that had reported one of the highest rates of postpartum abstinence in 1998 (7.1 months) and this fell to 0.4 months in 2003 and was lower than any other province. There were minimal differences between urban and non-urban sites in length of abstinence in 2003, however these figures have both risen compared to 1998.



Table 4.8 Median duration of postpartum insusceptibility by background characteristics				
Median number of months of postpartum amenorrhoea, postpartum abstinence, and postpartum insusceptibility following births in the three years preceding the survey, by background characteristics, South Africa 2003				
Background characteristic	Postpartum amenorrhoea	Postpartum abstinence	Postpartum insusceptibility	Number of births
<b>Age</b>				
15-29	2.2	9.1	13.4	790
30-49	2.4	5.6	9.3	478
<b>Residence</b>				
Urban	2.1	6.9	13.0	839
Non-urban	5.2	7.6	14.5	428
<b>Region</b>				
Western Cape	0.5	0.6	0.6	188
Eastern Cape	2.1	10.0	10.2	154
Northern Cape	12.9	6.9	22.0	29
Free State	0.4	0.4	0.4	84
KwaZulu-Natal	2.4	2.3	9.3	65
North West	6.9	8.9	20.7	118
Gauteng	1.9	4.1	6.2	360
Mpumalanga	0.7	4.1	8.3	90
Limpopo	4.8	9.1	17.5	178
<b>Education</b>				
No education	2.1	13.8	17.7	42
Grades 1-5	0.5	0.5	0.5	76
Grades 6-7	7.3	9.3	9.7	134
Grades 8-11	0.7	8.3	13.7	607
Grade 12	3.2	4.0	12.1	296
Higher	1.4	3.4	7.3	111
<b>Population group</b>				
African	3.0	8.2	13.2	1 090
Afr. urban	2.7	8.1	12.5	689
Afr. non-urban	5.7	8.3	15.0	401
Coloured	0.6	3.3	16.7	125
Indian	0.4	1.9	4.9	19
White	1.7	1.9	2.1	33
Total	2.2	7.2	13.3	1 267
Note: Medians are based on current status.				

## 4.10 Timing of Sterilisation

In 2003 almost a quarter (23 percent) of all women aged 45-49 and 18 percent of all women aged 40-44 years have been sterilized (Table 4.2 and Table 4.3). Women who had been sterilized were asked at what age they had undergone the surgical procedure (Table 4.9). It appears that women are choosing to be sterilized later in their reproductive lives, evident in the increase in the age of timing of sterilization observed between the 1998 and 2003 survey. In 1998, 64 percent of women who had been sterilized had undergone the procedure by the age of 34 years. In the 2003 survey, this figure has dropped slightly to 61 percent. However the median age of sterilization at just over 32 years has not changed between surveys.

Table 4.9 Timing of sterilization

Percent distribution of sterilized women by age at the time of sterilization, and median age at sterilization, according to the number of years since the operation, South Africa 2003

Years since operation	Age at time of sterilization						Total	Number of women	Median age <sup>1</sup>
	<25	25-29	30-34	35-39	40-44	45-49			
<2	1.8	13.2	21.9	40.0	5.7	17.5	100.0	82	35.4
2-3	9.6	16.4	14.5	40.7	17.0	2.0	100.0	71	35.0
4-5	3.1	16.9	39.1	21.0	19.9	0.0	100.0	80	32.1
6-7	6.5	21.4	39.0	29.4	3.7	0.0	100.0	65	32.5
8-9	0.2	27.1	23.2	49.5	0.0	0.0	100.0	51	35.0
10+	17.6	30.3	36.1	16.0	0.0	0.0	100.0	164	a
Total	8.6	22.1	30.4	29.0	6.8	3.1	100.0	514	32.4

<sup>1</sup> Median ages are calculated only for women sterilized at less than 40 years of age to avoid problems of censoring.

a = Not calculated due to censoring.

## 4.11 Source of Contraception

Table 4.10 shows where women access their contraceptive method. The majority (83 percent) obtain their methods from the public health sector. Contraceptive services in the public sector are free to clients and they are an essential component of PHC services. Within the public health sector the most commonly mentioned source is the government primary health care centre (41 percent). Women also get contraceptives from hospitals and family planning clinics. The family planning clinics are normally based within a government health centre. Although family planning services have been integrated into PHC services, they often remain as stand-alone services within a health centre.

The private health sector is less utilized as a source of contraceptives (13 percent). In South Africa private medical aids generally do not pay for contraception and therefore women usually have to pay for a consultation with a doctor who will write a prescription. The method can then be purchased from a pharmacy. The private health sector accounts for about a quarter (24 percent) of female sterilization and one-fifth of pill users. It also accounts for more than half of male sterilization. The IUD is accessed in the private health sector in a similar proportion as the public health sector. IUDs are accessed from both pharmacy and private doctor. Those accessed from a pharmacy will still have to be inserted by a doctor.

Table 4.10 Source of contraception								
Percent distribution of current users of modern contraceptive methods by most recent source of method, according to specific method, South Africa 2003								
Source of supply	Pill	IUD	Injectables	Female condom	Female sterilization	Male sterilization	Male condoms	Total
<b>Public sector</b>	73.9	46.1	92.3	70.4	71.1	40.6	72.4	82.6
Government hospital	12.3	14.1	17.4	16.2	66.0	34.9	14.4	23.2
Government health center	39.1	22.2	51.7	37.0	5.1	5.8	41.1	40.7
Family planning clinic	16.6	8.4	14.2	17.2	0.0	0.0	12.2	12.2
Mobile clinic	6.0	1.4	9.0	0.0	0.0	0.0	4.7	6.5
<b>Private health sector</b>	21.7	50.4	6.2	18.0	23.6	59.4	13.9	13.3
Private doctor	4.5	9.3	1.2	0.0	21.1	59.4	4.3	5.4
Pharmacy	10.6	0.0	0.0	18.0	0.0	0.0	6.6	2.8
Private hospital or clinic	6.5	41.1	5.0	0.0	2.6	0.0	3.0	5.1
<b>Other source</b>	1.4	0.0	0.0	0.0	0.0	0.0	7.9	1.2
Shop	1.1	0.0	0.0	0.0	0.0	0.0	1.8	0.4
Church	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Friends relatives	0.3	0.0	0.0	0.0	0.0	0.0	6.1	0.8
Other	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.1
Missing	3.0	0.5	1.5	11.7	4.3	0.0	3.2	2.5
Total	100.0	97.0	100.0	100.0	100.0	100.0	97.6	99.7
Number of women	632	42	1 884	17	514	18	421	3 527
Note: Table excluded lactational amenorrhoea method (LAM) but includes 17 users of female condoms and 18 users of male sterilization.								

## 4.12 Fertility Preferences

In this section, the fertility preferences of South African women are presented. The ability of women to express a preferred family size and to act on those preferences and achieve them is an important indicator of women's empowerment. Fertility preferences are measured as indices of future fertility trends for three reasons:

- The underlying rationale for the provision of family planning counselling and methods within the context of reproductive health in a post-apartheid South Africa is based on egalitarian principles which aim at enabling individuals and couples to freely and responsibly decide on their ideal number of children and on the spacing of the births of their offspring. From this principle follows the need to quantify preferences as benchmarks for measuring the enactment of these rights.
- Fertility preferences are measurements of the norms regarding ideal family sizes. Norms regarding family size are closely linked to the economic organisation of a society, its cultural setting, power relationships in unions and the dominant family structure system.
- Of particular interest to those concerned about female autonomy in fertility decision-making is that fertility preferences are reflective of the status of women in a society.

Table 4.11 shows fertility preferences for women in unions according to their number of living children. Almost 23 percent of South African women in unions would like to have another child, with 12 percent of these women wanting another child soon, 8 percent wanting

another child after two or more years and 3 percent undecided about the timing of their next birth. Almost 46 percent of South African women in unions do not want additional children.

**Table 4.11 Fertility preferences by number of living children**

Percent distribution of women currently in union by desire for children, according to number of living children, South Africa 2003

Desire for children	Number of living children <sup>1</sup>							Total
	0	1	2	3	4	5	6+	
Have another soon <sup>2</sup>	37.3	16.9	10.6	4.1	3.1	3.3	0.8	11.6
Have another later <sup>3</sup>	12.7	17.9	7.1	5.4	2.4	1.0	0.5	8.4
Have another, undecided when	4.6	5.4	3.3	0.8	1.2	0.9	0.0	2.8
Undecided	14.7	7.8	6.1	5.3	6.8	5.5	4.1	7.1
Wants no more	13.1	34.7	49.7	53.2	56.6	63.4	65.8	45.8
Sterilized	2.3	4.1	14.4	23.7	24.2	22.7	21.4	14.9
Declared infertile	10.1	9.4	7.2	4.6	2.8	1.5	4.7	6.5
Missing	5.3	4.0	1.6	3.0	2.9	1.7	2.7	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	282	539	690	590	292	144	121	2 658

<sup>1</sup>Includes current pregnancy.

<sup>2</sup>Want next birth within two years.

<sup>3</sup>Want to delay next birth for two or more years.

In union: married or living together.

Mothers with higher numbers of living children are more likely to desire to discontinue childbearing (see Table 4.11). Almost one in every eight (13 percent) women in unions with no living children expressed the wish not to have children, whereas 66 percent of respondents (almost two out of three) with six or more living children wanted no more. If we regard women who have been sterilized as having expressed (and acted on) a desire to stop childbearing and add them to those who expressed a wish to cease childbearing, then the percentage of women with six or more living children who wanted no more children increases to 87 percent.

Figure 4.12 shows a comparison of findings on fertility preferences for women in union in the 1998 SADHS and the 2003 SADHS. The percentage of respondents expressing clear views on having a next birth at a given time (that is, having a [next] birth within two years or after two or more years) and the percentage of respondents expressing a clear desire not to have (more) children are similar for the two surveys. Small fluctuations between the two surveys occur in respect of the percentage of respondents who are undecided about their future childbearing: almost 5 percent was undecided in the 1998 survey, whereas 7 percent was undecided in 2003. In addition, whereas only 3 percent of respondents indicated that they were infertile in the 1998 survey, 7 percent of respondents indicated that they were infertile in the 2003 survey. Overall, a trend of a transition towards fewer births can be observed between the two surveys.

Table 4.12 presents the percent distribution of women in unions by desire for children and age of respondents. More than a quarter (26 percent) of women in the age group 15-19 reported that they wanted to delay childbearing by at least two years compared to almost a quarter (22 percent) of women in the age group 20-24. Yet more than a third of the women in the age group 20-24 (35 percent) indicated that they wanted no more children. The percentage of women in unions who wanted no more children increased steadily with age, so that for each of the age groups older than 34 years, more than half the women in each group wanted no more children and one-quarter to one-fifth were sterilized.

**Figure 4.2 Fertility preferences of women in union aged 15-49 years, SADHS 1998 and 2003**

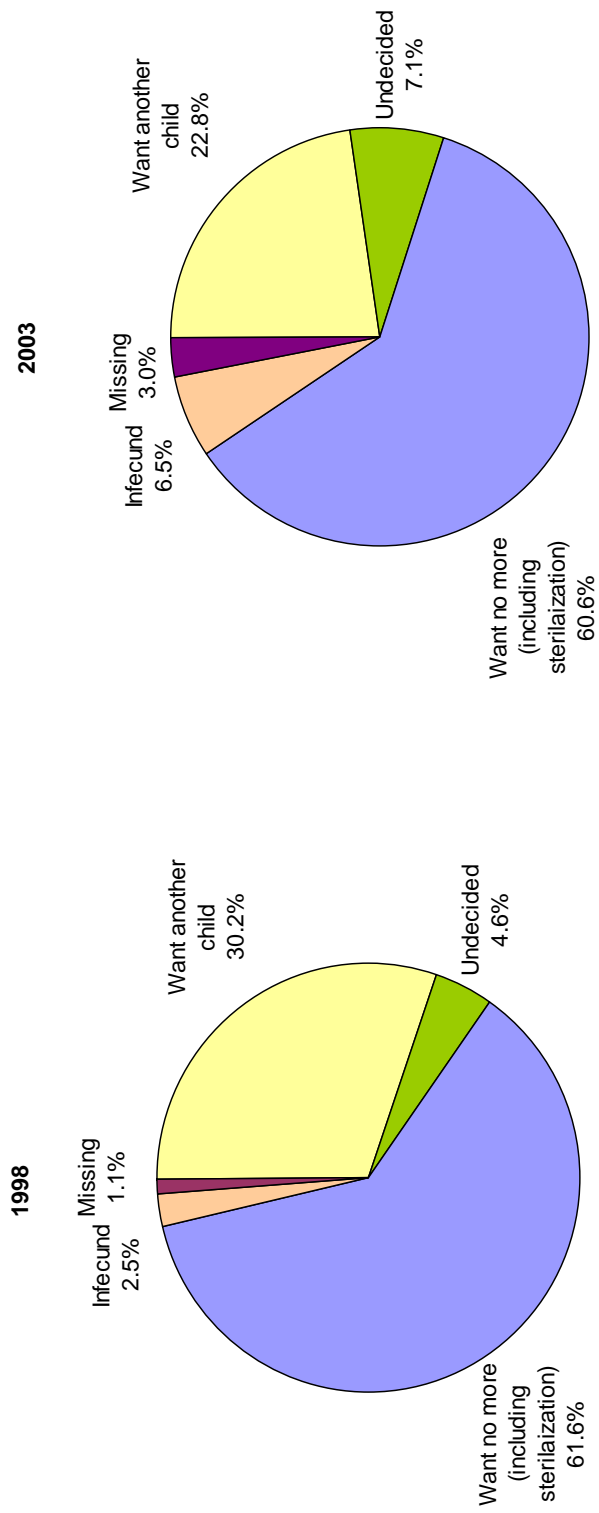


Table 4.12 Fertility preferences by age

Percent distribution of women currently in union by desire for children, according to age of woman, South Africa 2003

Desire for children	Age of woman							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Have another soon <sup>1</sup>	21.9	11.4	17.9	19.7	10.0	6.5	2.8	11.6
Have another later <sup>2</sup>	26.3	21.8	19.3	9.9	4.5	1.1	0.5	8.4
Have another, undecided when	5.6	3.7	6.5	3.8	0.9	1.5	0.8	2.7
Undecided	12.4	19.2	6.7	7.8	5.7	4.4	4.2	7.1
Wants no more	16.6	35.4	37.2	40.9	51.6	53.5	52.1	45.8
Sterilized	1.2	0.5	3.9	8.0	19.3	23.3	28.1	14.9
Declared infecund	6.7	6.7	3.5	6.5	6.6	6.0	9.5	6.5
Missing	9.4	1.3	4.9	3.5	1.3	3.8	2.0	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	51	238	393	503	563	506	405	2 658

<sup>1</sup> Want next birth within two years.<sup>2</sup> Want to delay next birth for two or more years.

In union: married or living together.

The desire to stop childbearing varies according to the background characteristics of respondents (see Table 4.13). The pattern of increased desire to cease childbearing with higher numbers of living children is maintained in the urban/non-urban variable, with only slightly larger percentages of women living in urban areas than women living in non-urban areas expressing a desire for no more children. Overall, 61 percent of married urban women and 59 percent of married non-urban women wished to cease childbearing.

The variation in the desire to cease childbearing according to province is not very pronounced. KwaZulu-Natal has the lowest proportion of women wanting no more children (55 percent). However, almost two thirds of women in this province expressed the desire to cease childbearing once they have reached a parity of two. Of particular note was the high percentage of married women (29 percent) who said that they wanted no more children among women who had no children in the Northern Cape. The pattern of preferences for no more children in Limpopo also deserves mention. Whereas for most provinces more than half of married women expressed a desire for no more children at a parity of two, only 46 percent of women in Limpopo with two living children wanted no more children and only 57 percent with three living children wanted no more children.

The percentage of women wanting no more children is positively associated with education. This trend is revealed when looking at the different categories of living children, especially at the categories for three and four living children. In the category of two living children, more than half the women with some level of education wanted no more children.

Table 4.13 Desire to limit childbearing

Percentage of currently married women who want no more children, by number of living children and background characteristics, South Africa 2003

Background characteristic	Number of living children <sup>1</sup>							Total
	0	1	2	3	4	5	6+	
<b>Residence</b>								
Urban	16.0	37.9	70.6	77.2	80.2	84.4	86.9	61.4
Non-urban	11.5	29.1	53.3	70.6	81.0	89.1	85.8	59.1
<b>Province</b>								
Western Cape	17.9	28.9	69.8	77.1	74.3	86.4	90.6	63.4
Eastern Cape	6.1	35.0	63.5	84.5	87.3	100.0	83.1	64.8
Northern Cape	29.1	37.1	77.6	86.9	85.3	100.0	91.4	69.4
Free State	7.5	39.9	78.3	86.4	87.1	85.0	93.9	67.4
KwaZulu-Natal	15.8	33.4	66.0	69.0	71.8	60.2	53.4	54.5
North West	7.3	37.4	61.5	87.0	95.9	92.4	92.9	68.6
Gauteng	18.7	41.7	69.7	73.5	78.2	84.1	81.7	59.7
Mpumalanga	11.8	28.3	55.6	77.4	79.6	90.5	82.7	58.5
Limpopo	8.7	30.1	45.7	56.5	85.3	87.1	89.9	57.0
<b>Education</b>								
No education	6.5	32.7	39.4	60.9	70.5	67.0	91.9	60.4
Grades 1-5	8.9	40.0	66.6	66.1	79.5	96.2	84.2	68.9
Grades 6-7	13.5	51.0	59.3	83.9	79.7	85.1	66.2	69.9
Grades 8-11	18.1	33.8	68.6	77.7	79.2	85.2	92.9	60.4
Grade 12	8.0	38.0	69.4	66.2	84.8	100.0	100.0	55.5
Higher	25.1	21.8	58.4	89.3	100.0	100.0	100.0	56.5
<b>Population group</b>								
African	11.2	34.2	58.4	70.2	79.3	86.5	86.5	57.9
Afr. urban	11.9	37.8	64.0	71.7	78.3	84.7	88.2	58.3
Afr. non-urban	9.3	27.2	49.5	67.5	81.2	88.5	85.5	57.1
Coloured	3.8	42.6	79.8	81.0	75.2	84.3	82.2	67.1
Indian	4.9	34.2	85.8	96.2	90.3	100.0	100.0	75.4
White	33.7	37.0	80.3	97.0	100.0	100.0	-	68.8
Total	15.1	35.4	65.7	75.3	80.5	86.5	86.3	60.7

Note: Women who have been sterilized are considered to want no more children.

<sup>1</sup> woman has education unknown and 2 women have population group unknown.

<sup>1</sup> Includes current pregnancy.

### 4.13 Need for Family Planning Services

Women who are currently married, and who indicated that they either wanted no more children or wanted to wait for two or more years before having (another) child, but who were not using contraception at the time of the interview, are considered to have “an unmet need for family planning.” Women with an unmet need and current users of contraception (those women with a “met need for family planning”) constitute the “total demand for family planning.” Table 4.14 shows the percentages of currently married women with an unmet need, a met need for family planning as well as the total demand for family planning by background characteristics. The data make special reference to the need status according to a need for spacing or a need for limiting (that is ceasing) births.

Table 4.14 Need for family planning

Percentage of in union women with unmet need for family planning, and with met need for family planning, and the total demand for family planning, by background characteristics, South Africa 2003

Background Characteristic	Unmet need for family planning <sup>1</sup>			Met need for family planning (currently using) <sup>2</sup>			Total demand for family planning <sup>3</sup>			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
<b>Age</b>											
15-19	14.8	2.9	17.7	37.7	9.3	47.0	52.5	12.2	64.7	72.6	51
20-24	12.6	4.2	16.8	31.9	29.8	61.7	44.5	34.1	78.5	78.6	238
25-29	8.6	5.7	14.3	27.8	32.4	60.2	36.3	38.1	74.4	80.8	393
30-34	4.8	6.9	11.7	22.7	40.1	62.8	27.6	47.0	74.6	84.3	503
35-39	2.7	9.5	12.2	7.7	57.7	65.4	10.4	67.2	77.6	84.3	563
40-44	1.4	12.4	13.8	3.6	54.6	58.2	5.0	67.0	72.0	80.8	506
45-49	1.7	14.2	15.9	1.5	49.5	51.0	3.2	63.7	66.9	76.3	405
<b>Residence</b>											
Urban	4.3	8.3	12.6	14.6	47.3	61.9	18.9	55.6	74.5	83.1	1 852
Non-urban	5.6	11.0	16.7	14.4	40.9	55.3	20.0	51.9	71.9	76.8	806
<b>Province</b>											
Western Cape	3.9	7.9	11.8	13.8	49.3	63.0	17.7	57.1	74.8	84.3	404
Eastern Cape	7.5	16.2	23.7	13.0	37.1	50.2	20.5	53.3	73.8	67.9	236
Northern Cape	4.8	8.8	13.6	11.7	48.8	60.5	16.5	57.6	74.1	81.7	51
Free State	8.9	8.9	17.8	8.5	43.8	52.3	17.3	52.7	70.0	74.6	167
KwaZulu-Natal	1.4	5.4	6.8	12.8	59.7	72.5	14.2	65.1	79.2	91.5	387
North West	3.1	13.4	16.5	12.8	42.1	54.9	15.9	55.5	71.4	76.9	146
Gauteng	3.8	8.3	12.1	17.0	44.9	61.9	20.7	53.2	74.0	83.6	788
Mpumalanga	2.3	9.1	11.4	15.7	41.9	57.6	18.0	51.0	68.9	83.5	178
Limpopo	10.1	10.2	20.3	16.6	33.3	49.9	26.7	43.5	70.2	71.1	300
<b>Education</b>											
No education	2.3	15.6	17.8	7.2	31.5	38.7	9.5	47.1	56.6	68.5	176
Grades 1-5	4.5	14.5	19.0	7.6	41.8	49.4	12.0	56.3	68.4	72.2	228
Grades 6-7	4.1	11.7	15.8	8.2	45.8	54.0	12.3	57.5	69.8	77.4	323
Grades 8-11	6.6	8.9	15.4	13.9	43.6	57.5	20.5	52.5	72.9	78.9	1 065
Grade 12	3.4	6.2	9.6	20.8	49.3	70.1	24.2	55.5	79.7	88.0	590
Higher	2.7	4.8	7.5	21.4	54.6	76.0	24.1	59.4	83.5	91.0	273
<b>Population group</b>											
African	5.1	9.9	15.0	14.6	41.6	56.2	19.7	51.5	71.2	78.9	1 976
Afr. urban	4.6	9.4	14.0	14.6	43.0	57.7	19.2	52.5	71.7	80.5	1 234
Afr. non-urban	6.1	10.7	16.8	14.5	39.2	53.8	20.6	49.9	70.5	76.2	742
Coloured	3.9	7.4	11.3	13.6	51.2	64.8	17.5	58.6	76.1	85.1	315
Indian	1.4	7.4	8.8	13.8	61.2	75.0	15.2	68.6	83.8	89.5	90
White	3.4	6.1	9.5	15.3	60.4	75.7	18.7	66.5	85.2	88.8	275
Total	4.7	9.1	13.8	14.5	45.4	59.9	19.2	54.5	73.7	81.3	2 658

<sup>1</sup> Unmet need for spacing includes pregnant women whose pregnancy was mistimed, amenorrheic women who are not using family planning and whose last birth was mistimed, and fecund women who are neither pregnant nor amenorrheic and who are not using any method of family planning and say they want to wait 2 or more years for their next birth. Also included in unmet need for spacing are fecund women who are not using any method of family planning and say they are unsure whether they want another child or who want another child but are unsure when to have the birth unless they say it would not be a problem if they discovered they were pregnant in the next few weeks. Unmet need for limiting refers to pregnant women whose pregnancy was unwanted, amenorrheic women whose last child was unwanted, and fecund women who are neither pregnant nor amenorrheic and who are not using any method of family planning and who want no more children. Excluded from the unmet need category are pregnant and amenorrheic women who became pregnant while using a method (these women are in need of a better method of contraception).

<sup>2</sup> Using for spacing is defined as women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Using for limiting is defined as women who are using and who want no more children. Note that the specific methods used are not taken into account here.

<sup>3</sup> Nonusers who are pregnant or amenorrheic and women whose pregnancy was the result of a contraceptive failure are not included in the category of unmet need, but are included in total demand for contraception (since they would have been using had their method not failed).

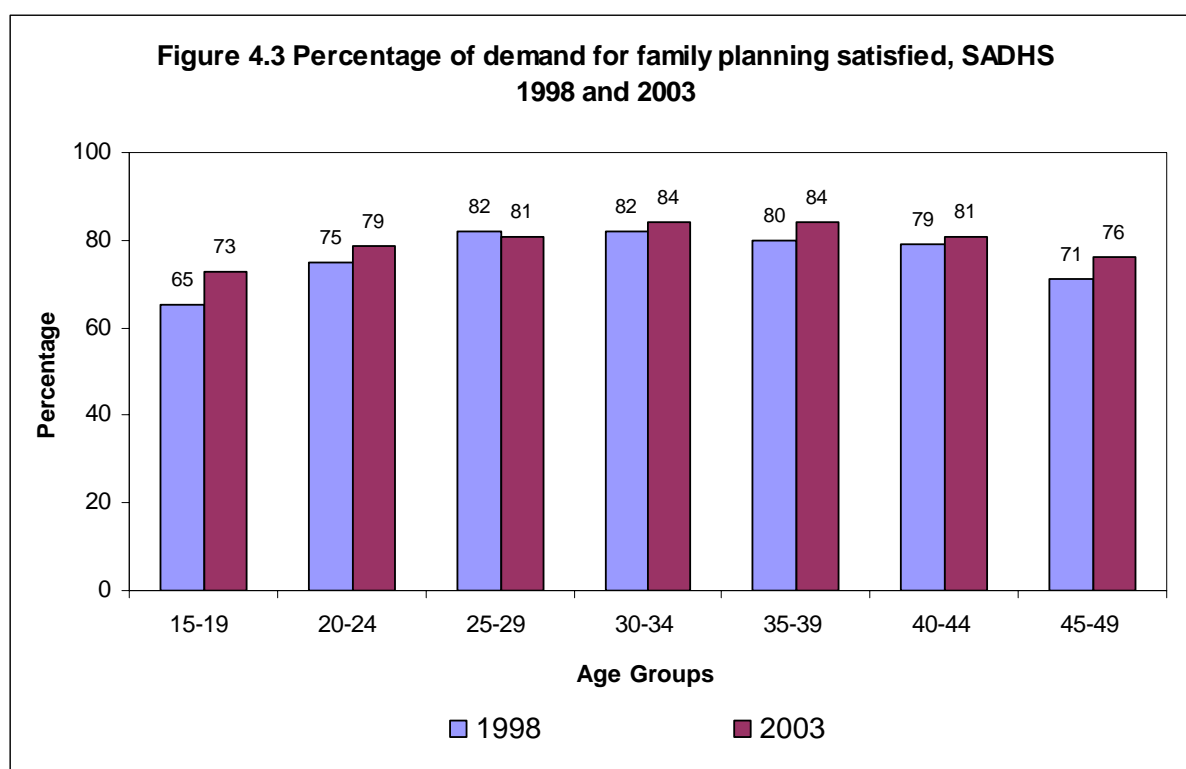
1 woman has education unknown and 2 women have population group unknown.

In union: married or living together.



Just under three quarters (74 percent) of currently married women can be considered to constitute the total demand for family planning in South Africa, of which more than half (55 percent) is a demand for limiting purposes and 19 percent is a demand for spacing purposes. Contraceptive practice is the main component of the total demand for family planning with more than half (60 percent) of women currently in union women using family planning methods to space or limit births.

Almost 14 percent of South African women in union have an unmet need for family planning. This is just below the percentage of women with unmet need found in the 1998 SADHS, which was 15 percent. As in 1998, the percentage of women with an unmet need for limiting is larger than the percentage of women with an unmet need for spacing – in fact the unmet need for limiting (9 percent of currently married women) is almost twice as large as the unmet need for spacing (only 5 percent of currently married women). If all currently married South African women who have an unmet need for family planning (whether a need for spacing or limiting) were to start using a family planning method, the contraceptive prevalence rate will increase from almost sixty percent of married women to reach a level of almost 74 percent of married women. A very high percentage (81 percent) of the potential demand for family planning in South Africa was being satisfied in 2003, an increase from 79 percent observed in the 1998 SADHS (see Figure 4.3)



The pattern in unmet need for family planning follows a U-shaped pattern according to age group with the greatest unmet need observable for the under 30-year age groups and the age group at the end of their reproductive years (45-49). As can be expected, the unmet need for spacing is the greatest at the younger age groups and the unmet need for limiting increases with age.

The unmet need for family planning in the non-urban areas (17 percent) is higher than the unmet need in the urban areas (13 percent). Of interest is the convergence of total demand in

terms of limiting and spacing for urban and non-urban women: the demand for spacing is 19 percent for urban and 20 percent for non-urban women and the demand for limiting is 56 percent for urban and 52 percent for non-urban women.

The unmet need for family planning is different for various provinces of South Africa. Provinces with a higher percentage of unmet need for family planning than the national average are the Eastern Cape (24 percent), Limpopo (20 percent), the Free State (18 percent) and North West (17 percent). An interesting pattern can be seen in Limpopo where the unmet need for spacing and the unmet need for limiting are almost equal at 10 percent.

Unmet need is inversely related to level of education, with higher percentages of unmet need for family planning among women with no education or primary education (19 percent for women with Grade 1-5 and 16 percent for women with Grade 6-7). Satisfied demand for family planning satisfied was lowest among women:

- in their teenage years (73 percent of the demand satisfied),
- at the end of their reproductive years (76 percent of the demand satisfied),
- in non-urban areas (77 percent of the demand satisfied),
- in the Eastern Cape (68 percent of the demand satisfied),
- in Limpopo (71 percent of the demand satisfied),
- in the Free State (75 percent of the demand satisfied),
- in the North West (77 percent of the demand satisfied) and
- with no education (69.5 percent of the demand satisfied) and with primary education (72 percent of the demand satisfied for women with Grade 1-5 and 77 percent for women with Grade 6-7).

#### **4.14 Ideal Number of Children**

In order to quantify and measure what South African women consider to be the ideal number of children, women with no children were asked: *"If you could choose exactly the number of children to have in your whole life, how many would that be?"* Respondents with children were asked: *"If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?"* Analyses of the responses to these questions are useful in ascertaining the desired levels of completed fertility for South African women under the idealized circumstances that they are able to perfectly control their fertility.

Table 4.15 shows the percentage distribution of all women by ideal number of children, according to number of living children. A small percentage of women (3 percent) gave a non-numerical response to questions on ideal number of children. More than half (58 percent) of all women say they would ideally like to have two children or less. In addition, 8 percent of all childless women regarded this as their ideal. Another striking feature of the figures in Table 4.15 is the similarity in the mean ideal number of children for all women and currently married women (2.5 and 2.9 respectively). South African women seem to regard a small number of children as the ideal number to have, a trend that has continued since the 1998 SADHS in which a mean ideal number of children of 2.9 for all women and 3.3 for married women was found.

**Table 4.15 Ideal number of children**

Percent distribution of all women by ideal number of children, and mean ideal number of children for all women and for women currently in union, according to number of living children, South Africa 2003

	Number of living children <sup>1</sup>							
Desire for children	0	1	2	3	4	5	6+	Total
Number desired children								
0	7.8	3.5	2.3	2.3	3.5	2.5	1.7	4.6
1	12.2	24.7	4.0	5.9	1.9	1.3	1.2	11.5
2	51.1	40.2	54.7	21.7	22.7	17.8	8.9	41.5
3	16.2	20.1	20.0	41.7	12.4	23.8	14.2	21.1
4	7.9	6.5	15.1	20.4	43.3	15.2	31.8	13.5
5	1.3	1.2	1.6	3.2	9.4	25.8	8.4	3.0
6+	0.5	1.1	0.9	2.5	4.7	10.3	26.8	2.2
Non-numeric responses	3.0	2.7	1.4	2.4	2.0	3.3	7.1	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	2 437	1 594	1 244	930	430	227	179	7 041
Mean ideal number children for:								
All women	2.1	2.1	2.5	3.0	3.4	3.8	4.5	2.5
Number	2 365	1 551	1 227	908	421	219	167	6 857
Currently in union	2.2	2.3	2.6	3.0	3.5	3.9	4.7	2.9
Number	248	507	682	589	298	138	118	2 581

Note: Means are calculated excluding the women giving non-numeric responses.

<sup>1</sup> Includes current pregnancy.

In union: married or living together.

An association between the ideal number of children and the number of living children can be seen in Table 4.15. The mean ideal number of children increases from 2.1 for childless women to 4.5 for women with six or more living children. An association between ideal and actual number of children can be expected. The reasons for this trend can be twofold: first, some women can successfully attain their desired number of children and second, some women may rationalize and adjust their ideal number to match their actual number of children. However, when looking at the mean ideal number of children for women with a parity of 4 and more living children, a surprising finding emerges. South African women with four or more living children expressed a lower mean ideal number of that what they actually had (those with four children regarded 3.4 as the ideal; those with five regarded 3.8 as the ideal and those with six or more regarded 4.5 as the ideal). In fact, 61 percent of women with five children and 66 percent of women with six or more children reported ideal numbers of children that were less than the actual number of children they have.

Table 4.16 presents the mean ideal number of children for all women by age and selected background characteristics. It also shows the mean ideal number of children for all men by the same background characteristics. On average, women in South Africa considered 2.5 children ideal, whilst men favour a family size of 2.7 children. The slightly higher ideal family size among South African men holds true for most of the background characteristics in Table 4.16 with the exception of men in urban areas, in KwaZulu-Natal and men in Gauteng.

The mean ideal number of children for women in Mpumalanga was 3 and for women in Limpopo was 3.2 (which is higher than the national average), whilst for men in Mpumalanga it was 3.1 and for men in Limpopo it was 3.5. Whereas the relative sizes of the number of respondents in these categories can account for these observed differences, and South African men on average do not idealize very large families, the general trend of higher ideal family sizes among men than among women warrants attention.

Table 4.16 Mean ideal number of children by background characteristics									
Mean ideal number of children for all women by age and all men by background characteristics, South Africa 2003									
Background characteristics	Age							All women	All Men
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
<b>Residence</b>									
Urban	2.0	2.0	2.2	2.5	2.6	2.7	2.9	2.4	2.5
Non-urban	2.3	2.3	2.6	2.8	3.2	3.6	3.5	2.8	2.9
<b>Province</b>									
Western Cape	1.9	1.8	1.9	2.3	2.5	2.7	2.8	2.2	2.9
Eastern Cape	1.9	2.1	2.3	2.7	2.7	2.9	3.3	2.4	2.8
Northern Cape	1.9	2.0	2.2	2.5	2.8	3.1	3.3	2.5	2.8
Free State	1.6	1.8	2.3	2.4	2.6	2.7	2.9	2.2	2.6
Kwazulu-Natal	2.2	1.9	2.4	2.6	2.3	2.8	2.7	2.4	2.4
Northwest	2.0	2.1	2.2	2.7	2.9	3.4	3.3	2.5	2.7
Gauteng	2.0	2.1	2.1	2.4	2.8	2.8	2.9	2.4	2.3
Mpumalanga	2.3	2.4	2.7	3.1	3.5	3.9	3.9	3.0	3.1
Limpopo	2.7	2.8	2.8	3.4	4.0	3.8	4.0	3.2	3.5
<b>Education</b>									
No education	2.5	2.2	2.6	3.0	2.9	3.7	3.9	3.3	3.2
Grades 1-5	1.6	2.3	2.6	3.0	3.3	3.1	3.5	3.0	3.5
Grades 6-7	1.9	2.1	2.6	2.9	3.1	3.4	3.0	2.8	2.9
Grades 8-11	2.1	2.1	2.3	2.7	2.9	2.7	2.9	2.4	2.5
Grade 12	2.1	2.0	2.2	2.4	2.5	2.7	2.8	2.3	2.4
Higher	2.1	2.1	2.2	2.1	2.6	2.6	2.7	2.3	2.7
Total	2.1	2.1	2.3	2.6	2.8	3.0	3.1	2.5	2.7

Overall, non-urban residents preferred larger numbers of children than those in urban areas. The ideal number was higher among women and men with no education or with primary or secondary education than for those with higher levels of education, with men's ideal remaining slightly higher than women's in all categories.

#### 4.15 Fertility Planning

In the SADHS, women were asked questions for each child born in the preceding five years, including current pregnancies, to determine whether the pregnancy was planned (wanted then), wanted but at a later time (mistimed), or unwanted (wanted no more). The responses to these questions indicate the degree to which women are successful in controlling their fertility and implementing their reproductive preferences and goals.

Table 4.17 shows the percent distribution of births in the five years preceding the survey by the status of the pregnancy, according to the birth order and the mother's age at the time of the birth. Half of the births in the last five years were wanted at the time they were conceived, 24 percent were wanted at a later time, and 23 percent were not wanted at all. Almost 30 percent of recent first births were mistimed and a surprising 25 percent of recent first births were unwanted. The percentage of unwanted births varies with birth order so that just 30 percent of all fourth and higher order births were reported as unwanted.

Table 4.17 Fertility planning status						
Percent distribution of births in the five years preceding the survey (including current pregnancies), by fertility planning status, according to birth order and mother's age at birth, South Africa 2003						
Birth order and mother's age at birth	Planning status of birth				Total	Number of births <sup>1</sup>
	Wanted then	Wanted later	Wanted no more	Missing		
<b>Birth order</b>						
1	43.4	29.5	24.7	2.4	100.0	946
2	60.4	21.1	17.6	0.9	100.0	544
3	56.3	21.5	19.9	2.4	100.0	403
4+	45.9	18.8	29.8	5.5	100.0	452
<b>Age at birth</b>						
<20	20.8	42.6	34.4	2.2	100.0	412
20-24	48.2	26.3	23.8	1.7	100.0	585
25-29	65.5	18.0	15.0	1.5	100.0	570
30-34	57.2	22.3	18.6	1.9	100.0	391
35-39	57.4	11.8	25.1	5.7	100.0	290
40-44	47.8	12.0	34.9	5.2	100.0	87
45-49	1.1	19.7	19.6	59.6	100.0	11
Total	50.0	24.1	23.2	2.7	100.0	2 345
<sup>1</sup> Includes current pregnancies.						

The percentage of unwanted recent births is highest amongst women under twenty years of age (34 percent) and women aged 40-44 years (35 percent). The dissatisfaction among South African women regarding early commencement of childbearing is reflected in the fact that almost 43 percent of all births to women under the age of twenty years were reported as mistimed.

The potential demographic impact of avoiding unwanted births can be estimated by calculating the wanted fertility rate. The wanted fertility rate is calculated in the same manner as the conventional total fertility rate, except that the unwanted births are excluded from the numerator when calculating the age-specific fertility rates. For the purposes of this calculation, unwanted births are defined as births that exceeded the number considered as ideal by the respondent. For those women who did not report an ideal family size, it was assumed that all their births were wanted. The wanted rate should be interpreted as a hypothetical measure of what the total fertility rate would have been in the three years preceding the survey, under the condition that all unwanted births had been prevented. A comparison of the total wanted fertility rate and the actual total fertility rate indicates the potential demographic impact of eliminating unwanted births. It is indicative of the extent to which observed fertility exceeds wanted fertility, the potential demand for family planning services and for future decline.

Table 4.18 shows the wanted total fertility rate and the actual total fertility rate for the three years preceding the survey by selected background characteristics. A very striking feature is that the wanted fertility rate amongst South African women is below replacement level. It should be noted at the onset, however, that the reported fertility rates in this table, in particular the figures for KwaZulu-Natal, are not plausible. In the light of the data problems, the reader can only look at broad trends and patterns in the data.

**Table 4.18 Wanted fertility rates**

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by background characteristics, South Africa 2003

Background characteristic	Total wanted fertility rates	Total fertility rate
<b>Residence</b>		
Urban	1.6	2.1
Non-urban	1.6	2.2
<b>Province</b>		
Western Cape	1.8	2.6
Eastern Cape	1.7	2.3
Northern Cape	2.3	2.8
Free State	1.7	2.0
KwaZulu-Natal	0.5	0.6
North West	2.0	2.5
Gauteng	1.7	2.3
Mpumalanga	2.0	2.3
Limpopo	2.1	2.7
<b>Education</b>		
No education	1.7	2.4
Grades 1-5	2.1	2.9
Grades 6-7	2.0	2.5
Grades 8-11	1.7	2.2
Grade 12	1.3	1.6
Higher	1.5	1.8
<b>Population group</b>		
African	1.7	2.1
Coloured	1.6	2.3
Indian	1.3	1.6
White	0.8	*
Total	1.6	2.1

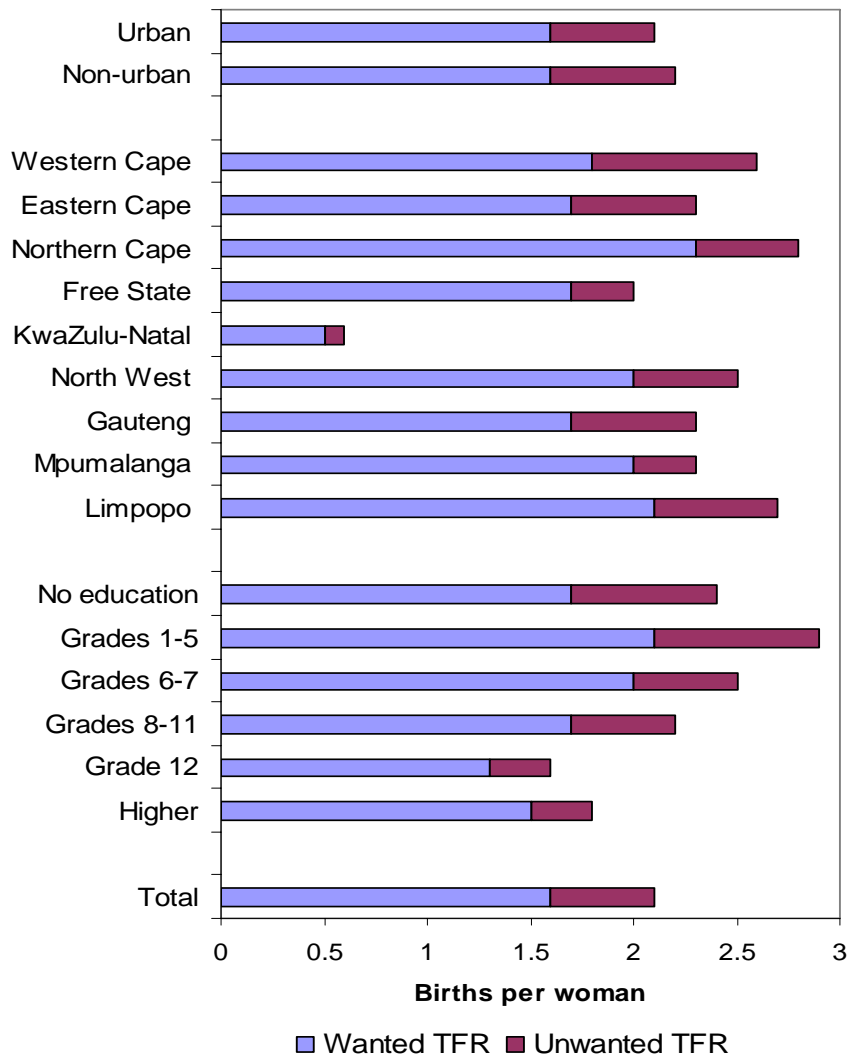
Note: Rates are calculated based on births to women age 15-49 in the period 1-36 months preceding the survey. The total fertility rates are the same as those presented in Table 3.2.

\* indicates data based on fewer than 50 reported births.

The total rate is not to be relied upon as a measure of fertility levels in South Africa. See chapter 3 for details.

Overall, the difference between the wanted fertility rate and the total fertility rate is about half a child (0.5 child that is, 2.1 versus 1.6). Thus, if unwanted births were eliminated, the total fertility rate in South Africa would be 1.6 children born per woman – a rate comparable with low fertility countries. The transition towards lower fertility preferences that emerged in 1998, when the wanted total fertility rate was found to be 2.3, is confirmed in this data. Table 4.18 shows the convergence in fertility preferences for women in urban and non-urban areas. Women in the Northern Cape expressed a wanted fertility rate slightly higher than the replacement level of 2.3. The largest gap between wanted and actual fertility rates was observed for women in the Western Cape (actual TFR 2.6 and wanted TFR 1.8) and women with no education (actual TFR 2.4 and wanted TFR 1.7). Figure 4.4 shows the total fertility rate in terms of its wanted and unwanted components by background variables.

**Figure 4.4 Total fertility rate and its wanted and unwanted components, South Africa 2003**



Bongaarts (2003:5), commenting on the fertility transition in developing countries, suggest that trends in total fertility rates can be categorized as follows:

<i>Category</i>	<i>TFR</i>
Pre-transitional	7+
Early transitional	6.0-6.9
Early mid-transitional	5.0-5.9
Mid-transitional	4.0-4.9
Mid-late transitional	3.0-3.9
Late transitional	2.1-2.9
Post transitional	<2

According to the results of the 2003 SADHS, actual fertility trends suggest that South Africa is in the late transitional phase of the fertility transition with preferences already suggesting post-transitional features.

## **CHAPTER 5**

### **SEXUAL BEHAVIOUR, HIV AND AIDS**

#### **5.1 Introduction**

It is estimated that more than 5 million South Africans were infected with HIV at the end of 2003, the year in which this survey was conducted (Department of Health, 2004). In response to the HIV and AIDS epidemic, South Africa is implementing the recently reviewed comprehensive HIV and AIDS prevention and treatment plan across the country.

A striking finding in the 1998 SADHS was almost universal knowledge of HIV and AIDS; however, it was combined with an extremely low prevalence of condom use – even among young women who had sex with a non-regular partner. A low proportion of sexually active women reported that they had more than one partner in the 12 months preceding the survey. However, it was considered that this was an underestimate of the extent of multiple sexual partners as a result of the sensitivity of the questions.

The findings of the 2003 SADHS inform the government on a range of HIV and AIDS related issues. The information in this chapter is particularly relevant to monitor changes in awareness of HIV and sexual behaviour and to inform mass communication campaigns and interventions that aim to reduce HIV transmission rates. A range of information on knowledge, beliefs and attitudes around HIV and AIDS for both men and women is described in this chapter and for the first time issues of stigma and acceptance of people living with HIV and AIDS are explored. This chapter also reports on sexual behaviour for both men and women including experience of symptoms and treatment seeking behaviour for STIs, types and numbers of sexual partnerships, condom use and negotiation issues around safer sex. Since the last survey, the Voluntary Counseling and Testing (VCT) programme and the Prevention of Mother-to-Child Transmission (PMTCT) programme have been introduced into the public health sector. In this survey, questions were asked about these programmes including uptake of VCT and PMTCT services. As UNAIDS has identified the age group 15-24 years as a key target group for HIV prevention, additional indicators are reported for this age group.

#### **5.2 AIDS Knowledge and Awareness**

Table 5.1 shows that almost all men (95 percent) and women (93 percent) have heard of AIDS. In the 1998 SADHS this question was only asked of women and the total was slightly higher at 97 percent. Table 5.1 presents knowledge of AIDS by background characteristics. There appears to be no difference in knowledge by either age or marital status. Urban women are slightly more likely (95 percent) compared to non-urban women (90 percent) to have heard of AIDS. The background characteristic that shows the strongest relationship with knowledge of AIDS is education. Women with no education report the lowest level of knowledge (81 percent) compared to women with higher education, almost all of whom have heard of AIDS (99 percent). The same pattern is seen in men with the lowest knowledge reported by men with no education (89 percent). Differences in knowledge of AIDS did not show such wide variation for education level of women in 1998 when 90 percent of women with no education had heard of AIDS. Table 5.1 shows that in 2003 there are minimal differences in knowledge between population groups. However, the lowest reported knowledge is found among non-urban African women (90 percent).



Table 5.1 Knowledge of AIDS				
Percentage of women and men 15-49 years who have heard of AIDS by background characteristics, South Africa 2003				
Background characteristic	WOMEN		MEN	
	Has heard of AIDS	Number of respondents	Has heard of AIDS	Number of respondents
<b>Age 5-year groups</b>				
15-19	93.0	1 395	93.1	603
20-24	93.3	1 242	93.7	527
25-29	93.5	1 015	94.4	416
30-39	94.7	1 909	95.5	688
40-49	92.2	1 480	95.5	547
<b>Marital status</b>				
Never in union	93.1	3 821	94.4	1 710
Ever had sex	93.7	2 818	96.3	1 273
Never had sex	91.4	1 003	89.0	437
Married/Living together	93.9	2 658	94.5	957
Divorced/Separated/Widowed	93.8	562	95.1	113
<b>Residence</b>				
Urban	95.1	4 678	95.2	1 919
Non-urban	90.1	2 363	92.9	861
<b>Province</b>				
Western Cape	94.2	892	96.9	344
Eastern Cape	93.8	804	84.8	268
Northern Cape	92.0	125	97.5	52
Free State	95.6	443	90.9	174
KwaZulu-Natal	90.8	1 177	98.0	612
North West	90.8	523	96.1	196
Gauteng	94.0	1 854	92.7	730
Mpumalanga	97.0	451	98.1	194
Limpopo	93.6	772	96.0	208
<b>Education</b>				
No education	80.9	302	88.7	101
Grades 1-5	88.1	438	90.1	174
Grades 6-7	91.1	721	89.8	265
Grades 8-11	93.1	3 285	94.2	1 240
Grade 12	97.0	1 683	96.9	743
Higher	98.6	609	98.7	257
<b>Population group</b>				
African	92.6	5 831	93.6	2 290
Afr. urban	94.3	3 586	94.1	1 466
Afr. non-urban	90.0	2 246	92.7	824
Coloured	96.0	665	98.4	238
Indian	99.3	141	100.0	64
White	99.2	402	98.2	184
Total	93.4	7 041	94.5	2 780
Note: 4 women and 4 men had population group Other/missing.				

### 5.3 Sources of Knowledge about HIV and AIDS

Although knowledge of AIDS is almost universal in South Africa, it is important for people to know how to prevent HIV infection. Men and women were asked to respond to a prompted list of prevention methods and asked if they agree that these methods could prevent HIV infection (Table 5.2). The majority of men (85 percent) agree that condoms reduce the risk of HIV infection but fewer women agree with this statement (71 percent). In 1998 this question was only asked to women and a somewhat higher proportion of women (87 percent) believed that using condoms prevents HIV. This reduction of over 16 percent between surveys is a concern. Older men and women (aged 40-49 years) and younger men and women (15-19 years) are less likely to agree with the statement that condom use prevents HIV infection.

Limiting sex to one uninfected partner is seen as a method to prevent HIV by 82 percent of men and 75 percent of women. A slightly higher proportion of men (76 percent) know that using condoms and having sex with one uninfected partner, prevents HIV, compared to 68 percent of women who agree with this statement.

For all prevention methods, knowledge of the correct prevention methods is lowest in the youngest age group (15-19 years) and in the oldest age group, in both men and women. Non-urban residents reported lower knowledge of methods to reduce the risk of acquiring HIV for all prevention methods. Provincial differences are marked with women in several provinces indicating a far lower recognition of the three risk factors given. Limpopo, KwaZulu-Natal and Eastern Cape reported the lowest proportion of women that know that HIV infection can be reduced by using condoms, having sex with just one partner or both. These data cannot be compared to the 1998 survey as this is the first time this information has been solicited. The HIV antenatal prevalence in 2003 (Department of Health, 2004), the same year as the second SADHS, shows that the provinces in which recognition of ways of acquiring HIV infection is lowest are actually the provinces with the highest rates of HIV infection (Limpopo 18 percent, KwaZulu-Natal 38 percent and Eastern Cape 27 percent). In men the provincial pattern is similar to women with Eastern Cape and Limpopo showing lower knowledge of prevention methods. Men in KwaZulu-Natal however, unlike the female respondents in the same province, were more knowledgeable about ways of acquiring HIV infection than all other provinces for all three indicators.

Education level showed the greatest differences in knowledge of risk reduction strategies. This is particularly marked in women, where less than half of women with no education report that risk of HIV infection could be reduced with either of the two risk reduction strategies. In men, although having had no education resulted in the lowest knowledge of ways of risk reduction, it is still reasonably high for use of condoms and for limiting sex to one uninfected partner (71 percent in both cases). African non-urban men and women showed the lowest recognition of risk factors compared to other population groups and women reported lower responses than men across all population groups.

Table 5.2 Knowledge of HIV prevention methods

Percentage of women and men (15-49 years) who, in response to a prompted question, say that people can reduce the risk of getting HIV by using condoms and by having sex with just one partner who is not infected and who has no other partners, by background characteristics, South Africa 2003

Background characteristic	WOMEN				MEN			
	Using condoms	Limiting sex to one uninfected partner	Using condoms and limiting sex to one uninfected partner <sup>1</sup>	Number of respondents	Using condoms	Limiting sex to one uninfected partner	Using condoms and limiting sex to one uninfected partner <sup>1</sup>	Number of respondents
<b>Age</b>								
15-19	70.1	72.5	66.1	1 395	80.2	77.8	69.6	603
20-24	72.2	76.4	68.7	1 242	86.5	80.3	76.3	527
25-29	72.9	78.0	70.8	1 015	87.9	83.6	80.1	416
30-39	73.2	77.0	70.6	1 909	87.1	86.0	80.4	688
40-49	66.3	70.2	63.0	1 480	84.8	81.9	74.5	547
<b>Marital status</b>								
Never in union	71.3	74.6	67.6	3 821	85.0	81.9	76.3	1 710
Ever had sex	71.5	74.4	67.6	2 818	88.7	84.0	79.9	1 273
Never had sex	70.6	75.2	67.7	1 003	74.4	75.8	66.1	437
Married/Living together	70.2	74.7	67.9	2 658	85.3	82.3	76.0	957
Divorced/Separated/Widowed	71.7	75.6	68.7	562	85.9	80.1	72.9	113
<b>Residence</b>								
Urban	74.8	79.0	71.8	4 678	86.3	83.6	77.9	1 919
Non-urban	63.2	66.2	59.9	2 363	82.7	78.3	72.0	861
<b>Province</b>								
Western Cape	73.5	76.3	71.0	892	87.4	83.4	76.2	344
Eastern Cape	66.6	71.2	61.2	804	74.0	65.9	60.3	268
Northern Cape	74.3	78.9	72.5	125	85.0	82.1	73.9	52
Free State	73.8	77.7	72.5	443	80.3	79.1	71.7	174
KwaZulu-Natal	66.4	71.7	65.1	1 177	90.6	89.6	83.9	612
North West	75.0	76.9	72.4	523	87.9	87.0	81.6	196
Gauteng	74.0	79.4	70.3	1 854	83.4	81.9	76.7	730
Mpumalanga	79.9	82.4	78.3	451	87.9	79.3	75.0	194
Limpopo	61.7	61.3	56.3	772	85.0	78.1	70.6	208
<b>Education</b>								
No education	43.7	46.5	40.1	302	71.4	70.7	59.8	101
Grades 1-5	52.7	55.9	51.4	438	75.0	69.1	59.9	174
Grades 6-7	62.3	65.1	58.7	721	78.4	75.9	69.9	265
Grades 8-11	71.3	74.5	67.6	3 285	85.1	80.6	74.8	1 240
Grade 12	78.6	83.6	75.9	1 683	88.2	87.5	81.7	743
Higher	85.0	90.4	82.8	609	95.9	92.0	89.4	257
<b>Population group</b>								
African	69.3	73.0	65.8	5 831	83.8	80.7	74.6	2 290
Afr. urban	73.2	77.4	59.6	3 586	84.7	82.2	76.4	1 466
Afr. non-urban	63.0	66.0	69.8	2 246	82.1	78.0	71.5	824
Coloured	70.4	73.6	68.6	665	86.2	82.8	73.9	238
Indian	87.4	93.5	88.7	141	97.9	98.7	97.1	64
White	90.1	94.3	84.8	402	96.4	91.1	89.2	184
<b>Total</b>	<b>70.9</b>	<b>74.7</b>	<b>67.8</b>	<b>7 041</b>	<b>85.2</b>	<b>82.0</b>	<b>76.1</b>	<b>2 780</b>

<sup>1</sup> Corresponds to UNAIDS Knowledge indicator 1 "Knowledge of HIV prevention methods".

Note: 4 women and 4 men had population group as Other/missing.

## 5.4 Perceptions of the Risk of Getting HIV

There was misinformation about HIV and how it can be transmitted. In addition there is misinformation that a healthy looking person cannot be carrying HIV, the virus that causes AIDS. Women, but not men, were asked whether they agree with certain statements about the transmission of HIV. Table 5.3 shows that over three-quarters (78 percent) of women agreed with the statement that a healthy looking person could be carrying HIV and similar proportions agree that HIV cannot be transmitted by witchcraft (76 percent) or agree with the statement that a person cannot be infected with HIV by sharing food with an HIV infected person (73 percent). Just over half (57 percent) of women rejected the statement that HIV cannot be transmitted by mosquito bites that indicates a need for more information in this area. While the overwhelming majority of women do not hold common misconceptions about the transmission of HIV, about a quarter of women do. Half of women (51 percent) rejected misconception about transmission via mosquito bites and that a healthy looking person cannot have HIV.

Table 5.3 shows how the responses to these questions vary across selected background characteristics. It can be seen that age and marital status have little influence on responses. Overall, non-urban women report lower proportions (42 percent) of rejecting misinformation about HIV than urban women. Provinces with the lowest proportions of rejecting misinformation are Eastern Cape, Free State, Northern Cape and Limpopo. Education plays the greatest role in responses to this question with only a quarter of women with no education (28 percent) rejecting the two most common misconceptions that a healthy looking person can have HIV and HIV can be transmitted by mosquito bites. This is almost three times higher (75 percent) among women with higher education.

The most common misconception in South Africa is the association between mosquito bites and HIV transmission and by sharing food with an infected person. Although the misinformation question asked in the 2003 survey was not asked in exactly the same way in 1998, the data from 2003 can be compared to a similar question in the 1998 SADHS, which asked about misinformation on knowledge of ways to avoid AIDS. A similar percentage of women in 1998 (71 percent) reported that they disagreed with the statement that to avoid AIDS one must avoid sharing food with an infected person. Regarding mosquito bites, almost half (44 percent) of women rejected this as a mode of transmission, however, another 18 percent said they did not know. There has been an increase in the rejection of misinformation for this particular mode of transmission between the two surveys. These data suggest that there remains a need to reach all women with information about the risks of HIV transmission. In particular, women in non-urban areas need to be informed about the transmission routes of HIV.

Table 5.3 Beliefs about AIDS

Percentage of women 15-49 years who, in response to a prompted question, correctly reject local misconceptions about transmission or prevention, and who know that a healthy-looking person can have the HIV virus by background characteristics, South Africa 2003

Background characteristic	Percentage of respondents who know that:				A healthy-looking persons cannot have HIV and HIV cannot be transmitted by mosquito bites <sup>†</sup>	Number of respondents
	A healthy-looking person can have HIV	HIV cannot be transmitted by mosquito bites	HIV cannot be transmitted by witchcraft	A person cannot become infected by sharing food with an HIV infected person		
<b>Age</b>						
15-19	75.8	58.8	76.8	73.7	50.8	1 395
20-24	77.3	58.3	77.2	74.9	51.2	1 242
25-29	80.4	60.2	76.1	75.1	55.0	1 015
30-39	80.4	58.1	78.3	74.4	52.3	1 909
40-49	75.0	50.3	72.3	66.0	44.5	1 480
<b>Marital status</b>						
Never in union	78.0	59.6	77.0	74.9	52.6	3 821
Ever had sex	78.5	58.0	77.7	74.2	51.2	2 818
Never had sex	76.5	64.1	75.2	76.8	56.5	1 003
Married/Living together	77.2	54.2	75.6	70.2	48.3	2 658
Divorced/Separated/Widowed	79.5	51.7	73.6	69.3	47.3	562
<b>Residence</b>						
Urban	80.4	61.7	79.0	77.9	55.1	4 678
Non-urban	72.7	47.6	70.7	62.3	41.5	2 363
<b>Province</b>						
Western Cape	81.0	60.1	69.7	73.4	55.6	892
Eastern Cape	72.8	36.2	56.3	66.9	31.5	804
Northern Cape	72.8	55.6	70.8	69.7	47.2	125
Free State	71.7	57.4	84.6	70.0	47.7	443
KwaZulu-Natal	82.6	64.2	81.4	70.8	59.4	1 177
North West	80.8	59.5	82.2	75.0	55.4	523
Gauteng	78.6	63.4	79.7	80.3	55.4	1 854
Mpumalanga	77.1	59.0	84.8	75.4	51.0	451
Limpopo	72.7	45.2	75.2	61.3	38.1	772
<b>Education</b>						
No education	52.2	33.1	55.2	41.5	27.7	302
Grades 1-5	62.4	29.1	57.6	46.2	24.6	438
Grades 6-7	68.8	43.3	68.6	60.1	35.3	721
Grades 8-11	76.9	54.6	75.7	73.1	48.0	3 285
Grade 12	86.6	70.6	84.6	83.2	64.3	1 683
Higher	92.6	80.1	88.7	91.1	74.9	609
<b>Population group</b>						
African	76.1	55.3	75.9	71.6	48.5	5831
Afr. urban	78.4	60.1	78.7	77.3	52.9	3586
Afr. non-urban	72.5	47.6	71.4	62.4	41.5	2246
Coloured	81.8	56.0	71.0	69.9	51.1	665
Indian	92.5	74.0	89.2	91.4	70.0	141
White	90.1	76.3	84.9	87.0	71.8	402
Total	77.8	56.9	76.2	72.7	50.5	7041

<sup>†</sup> Corresponds to UNAIDS Knowledge indicator 2 "No incorrect beliefs about AIDS".

Note: 4 women had population group as Other/missing.

## **5.5 Accepting Attitudes towards those Living with HIV/AIDS**

For the first time in the 2003 SADHS survey a question was asked which explored acceptance towards people living with HIV or AIDS in a number of particularly sensitive areas. As HIV prevalence has been increasing, the number of people living with HIV or AIDS has increased and so there is a need to understand how strong the stigma of the infection and disease is in the population. Accepting attitudes may indicate better knowledge and understanding of HIV and AIDS. It may also be a result of more people being affected by family members disclosing their status or a result of caring for those living with HIV or AIDS. A number of statements were presented to women respondents around interaction with and attitudes towards those infected with HIV.

The majority of women (85 percent) reported that they would be willing to care for a family member with HIV or AIDS at home (Table 5.4). Differences were observed across selected characteristics of women willing to do this. Across the provinces, KwaZulu-Natal shows the lowest proportion of women (71 percent) reporting that they would care for family members. As the province with one of the highest rates of HIV infection, this is of some concern. Women with no education also reported a lower level of agreement to this response (79 percent).

Women were asked if they would be prepared to buy fresh vegetables from a vendor they knew to be infected with HIV; overall almost three-quarters (73 percent) said yes. Significantly fewer women with no education (49 percent) compared to 83 percent of those with higher education were comfortable with buying fresh vegetables from an infected person. Non-urban women were also less likely to report preparedness to buy fresh vegetables from an HIV positive vendor reported lower levels of agreement (62 percent) compared to urban women (78 percent).

Most women (82 percent) believe an HIV positive teacher should be able to continue teaching. Again this measure of acceptance is affected by education with increasing acceptance as women's education increase (61 percent – 89 percent). The lowest level of accepting attitudes is in the disclosure of the HIV status of a family member. However, nearly two-thirds of women (60 percent) indicate they would not necessarily want an HIV positive family member's HIV status to remain a secret. More educated women were more likely to have accepting attitudes of positive status increases with education. There is also considerable variation across the provinces with only half (51 percent) of women in KwaZulu-Natal accepting a family member's HIV positive status to be known compared to 79 percent in the Eastern Cape. Overall, more than one-third of women (38 percent) express acceptance on all four measures, with education playing the most significant role on all four measures. Only 22 percent of women with no education compared to 51 percent of those with higher education express acceptance on all four measures.

Table 5.4 Accepting attitudes towards those living with HIV or AIDS

Percentage of women who have heard about HIV or AIDS expressing accepting attitudes toward people with HIV, by background characteristics, South Africa 2003

Background characteristic	Percentage of respondents who:				Percentage expressing acceptance on all 4 measures <sup>1</sup>	Number of respondents who have heard of HIV/AIDS
	Willing to care for family member with HIV/AIDS at home	Would buy fresh vegetables from shopkeeper with HIV/AIDS	Believe HIV/AIDS positive teacher should be allowed to teach	Would not want HIV+ status of family member to remain secret		
<b>Age</b>						
15-19	81.2	73.3	81.3	59.4	36.7	1 297
20-24	86.8	75.6	85.6	58.5	39.8	1 159
25-29	85.1	72.2	83.3	61.5	39.3	950
30-39	84.6	72.7	82.3	58.4	38.2	1 809
40-49	86.2	69.1	79.5	61.4	38.1	1 365
<b>Marital status</b>						
Never in union	84.0	73.8	84.2	58.4	38.3	3 557
Ever had sex	85.2	73.4	85.0	58.4	39.1	2 640
Never had sex	80.6	75.0	81.6	58.5	36.0	916
Married/Living together	85.1	70.5	80.5	60.9	38.0	2 496
Divorced/Separated/Widowed	87.8	73.1	77.7	62.4	39.5	527
<b>Residence</b>						
Urban	86.3	77.7	85.0	59.9	41.7	4 450
Non-urban	81.4	61.6	76.5	59.2	31.3	2 130
<b>Province</b>						
Western Cape	88.5	72.1	76.5	55.5	33.4	841
Eastern Cape	88.5	70.8	75.9	78.6	49.2	754
Northern Cape	88.8	68.0	72.2	70.7	42.0	115
Free State	82.8	69.7	81.0	66.6	41.9	424
KwaZulu-Natal	70.5	72.6	88.0	50.9	28.6	1 069
North West	92.3	72.9	88.7	74.9	54.9	475
Gauteng	87.2	82.5	87.7	54.1	40.9	1 742
Mpumalanga	82.6	63.9	82.5	56.2	35.5	437
Limpopo	88.3	57.8	71.9	57.5	28.9	722
<b>Education</b>						
No education	78.5	49.0	61.4	49.5	21.6	244
Grades 1-5	79.9	54.5	67.4	58.7	27.8	386
Grades 6-7	83.3	62.4	75.4	57.3	29.7	657
Grades 8-11	85.4	73.4	81.6	60.3	38.9	3 057
Grade 12	84.8	78.9	90.3	59.2	41.2	1 632
Higher	88.4	82.8	89.0	65.0	50.5	601
<b>Population group</b>						
African	84.8	73.1	83.8	59.7	38.8	5 400
Afr. urban	86.8	80.0	87.9	59.8	43.2	3 380
Afr. non-urban	81.4	61.5	76.9	59.6	31.5	2 021
Coloured	85.1	67.9	72.5	55.9	29.2	638
Indian	83.2	76.6	83.8	62.1	43.3	140
White	83.9	70.6	76.8	63.9	44.0	399
<b>Total</b>	<b>84.7</b>	<b>72.5</b>	<b>82.3</b>	<b>59.7</b>	<b>38.3</b>	<b>6 580</b>

<sup>1</sup> Corresponds to UNAIDS Stigma and Discrimination indicator 1 "Accepting attitudes towards those living with HIV".

Note: 4 women had population group as Other/missing.

## 5.6 Knowledge of Prevention of Mother-to-Child Transmission of HIV

For the first time in the 2003 survey, both men and women were asked if HIV could be transmitted by breastfeeding (Table 5.5). Fifty-six percent of women and 51 percent of men know that this is a mode of HIV transmission. Both men and women with no education (41 percent and 35 percent respectively) are least likely to know about mother-to-child transmission (MTCT) via breast milk. Women's knowledge increased slightly with education, with women with higher education being twice as likely to know about MTCT with no education (73 percent and 35 percent respectively). In men, although there is an increase in knowledge with education, the effect of education is not as strong as in women. Women in Limpopo and men in Gauteng have the least knowledge of MTCT via breastfeeding (49 percent and 53 percent respectively).

<b>Table 5.5 Knowledge of prevention of mother to child transmission of HIV</b>				
Percentage of women and men who know that HIV can be transmitted from mother-to-child by breastfeeding, by background characteristics, South Africa 2003				
Background characteristic	WOMEN		MEN	
	HIV can be transmitted by breastfeeding	Number of respondents	HIV can be transmitted by breastfeeding	Number of respondents
<b>Age</b>				
15-19	48.9	1 395	47.5	603
20-24	57.4	1 242	48.6	527
25-29	60.8	1 015	57.1	416
30-39	58.3	1 909	53.2	688
40-49	53.3	1 480	51.7	547
<b>Marital status</b>				
Never in union	55.5	3 821	50.9	1 710
Ever had sex	58.2	2 818	54.1	1 273
Never had sex	47.7	1 003	41.6	437
Married/Living together	55.5	2 658	52.8	957
Divorced/Separated/Widowed	56.9	562	45.7	113
<b>Residence</b>				
Urban	56.9	4 678	50.1	1 919
Non-urban	53.0	2 363	54.1	861
<b>Province</b>				
Western Cape	57.3	892	59.6	344
Eastern Cape	57.2	804	48.1	268
Northern Cape	60.5	125	59.5	52
Free State	50.2	443	52.7	174
KwaZulu-Natal	61.9	1 177	60.0	612
North West	62.3	523	59.4	196
Gauteng	50.0	1 854	35.0	730
Mpumalanga	64.3	451	59.0	194
Limpopo	48.6	772	56.0	208
<b>Education</b>				
No education	35.0	302	40.5	101
Grades 1-5	40.4	438	51.1	174
Grades 6-7	53.3	721	46.4	265
Grades 8-11	53.0	3 285	51.0	1 240
Grade 12	63.0	1 683	53.1	743
Higher	73.3	609	57.7	257
<b>Population group</b>				
African	55.2	5 831	51.7	2 290
Afr. urban	56.5	3 586	50.3	1 466
Afr. non-urban	53.1	2 246	54.3	824
Coloured	58.3	665	55.5	238
Indian	59.4	141	56.9	64
White	55.7	402	39.0	184
<b>Total</b>	<b>55.6</b>	<b>7 041</b>	<b>51.4</b>	<b>2 780</b>
Note: 4 women and 4 men had population group as Other/missing.				



## 5.7 HIV Testing

At the time of the survey, voluntary counseling and testing (VCT) was available in the public and private sector. In 2003, in the public sector the Prevention of Mother-to-Child Transmission (PMTCT) programme was being expanded throughout all the provinces. In total, 30 percent of women report that they have been tested for HIV (Table 5.6), however, around a third of women tested report that they did not get the results of their test. Although fewer men (23 percent) report they had been tested for HIV, a far higher proportion reported that they had received their results. Despite the fact that more women have been tested, this gender difference in getting HIV test results has resulted in similar proportions, approximately 20 percent, of both men and women knowing their HIV status.

A small proportion of men (6 percent) and women (8 percent) do not know if they had been tested for HIV. Both men and women in urban areas were twice as likely to have been tested as those living in non-urban areas. There are marked provincial differences in testing, with Western Cape reporting the highest level for both men and women. Rates are lowest in KwaZulu-Natal and among men and women in Limpopo. As seen in previous tables, education played a strong role in testing status with increasing levels of HIV testing reported with increasing education level. The proportion of men who were tested and had received their result ranged from 8 percent to 43 percent, and the proportion of women ranged from 9 percent to 37 percent. HIV testing rates were highest in the white and Indian population groups and lowest in the non-urban African population. Among those who were tested, differences were noted in the proportions of men and women who received their results. The proportions of women not receiving the results of their test varied from around a quarter in the Western Cape to over a half in Limpopo. Women in urban areas were more likely to receive their results compared to non-urban areas. The likelihood of getting results of an HIV test also increased with educational status, with approximately half the women with no education not getting their test results compared to less than third in the highest education level.

Table 5.6 HIV tests and receiving results

Percentage of women and men by status of HIV testing in the last 12 months by background characteristics, South Africa 2003

Background characteristic	WOMEN					Number of respondents	MEN					Number of respondents
	Tested: received results	Tested: no results received	Never tested	DK/ Missing	Total		Tested: received result	Tested: no results received	Never tested	DK/ Missing	Total	
<b>Age</b>												
15-19	6.7	4.1	81.1	8.2	100.0	1 395	5.1	0.9	86.5	7.6	100.0	603
20-24	16.1	16.4	59.4	8.1	100.0	1 242	13.3	3.0	77.3	6.3	100.0	527
25-29	22.8	17.4	51.6	8.2	100.0	1 015	23.9	2.4	68.1	5.6	100.0	416
30-39	24.7	13.7	54.2	7.3	100.0	1 909	28.7	4.0	62.9	4.5	100.0	688
40-49	23.5	6.0	61.5	8.9	100.0	1 480	29.7	1.6	64.0	4.8	100.0	547
<b>Marital status</b>												
Never in union	14.0	8.9	69.1	8.1	100.0	3 821	13.4	2.3	78.5	5.8	100.0	1 710
Ever had sex	18.0	11.8	62.9	7.4	100.0	2 818	15.6	2.8	77.9	3.7	100.0	1 273
Never had sex	2.8	0.7	86.4	10.0	100.0	1 003	6.9	1.0	80.5	11.7	100.0	437
Married/Living together	24.5	15.0	52.2	8.3	100.0	2 658	31.1	2.8	60.4	5.7	100.0	957
Divorced/Separated/Widowed	28.2	9.0	55.2	7.6	100.0	562	29.3	0.6	64.3	5.8	100.0	113
<b>Residence</b>												
Urban	23.5	12.2	57.6	6.7	100.0	4 678	24.1	2.8	68.1	5.0	100.0	1 919
Non-urban	10.3	9.2	69.6	10.9	100.0	2 363	11.2	1.7	79.7	7.4	100.0	861
<b>Province</b>												
Western Cape	31.7	11.3	50.7	6.3	100.0	892	40.4	4.7	51.8	3.1	100.0	344
Eastern Cape	17.9	9.7	65.2	7.3	100.0	804	19.6	2.2	63.0	15.2	100.0	268
Northern Cape	23.1	13.4	54.9	8.6	100.0	125	25.8	3.0	68.7	2.5	100.0	52
Free State	15.3	9.3	68.6	6.8	100.0	443	14.2	2.1	74.3	9.5	100.0	174
KwaZulu-Natal	12.0	5.7	72.9	9.4	100.0	1 177	17.5	2.2	77.7	2.6	100.0	612
North West	13.9	8.2	67.8	10.1	100.0	523	16.2	1.4	78.5	3.9	100.0	196
Gauteng	23.8	14.8	52.3	9.1	100.0	1 854	17.2	2.4	73.1	7.3	100.0	730
Mpumalanga	17.0	13.9	64.8	4.3	100.0	451	20.5	3.0	74.7	1.9	100.0	194
Limpopo	11.5	13.5	66.8	8.3	100.0	772	12.5	0.4	82.7	4.4	100.0	208
<b>Education</b>												
No education	8.5	8.0	61.7	21.8	100.0	302	8.4	2.6	77.7	11.3	100.0	101
Grades 1-5	8.2	10.2	68.4	13.3	100.0	438	7.8	2.2	80.1	9.9	100.0	174
Grades 6-7	14.2	7.6	67.7	10.6	100.0	721	15.9	0.8	72.3	11.0	100.0	265
Grades 8-11	16.8	11.0	64.0	8.2	100.0	3 285	14.5	2.5	77.0	6.0	100.0	1 240
Grade 12	23.9	12.2	58.8	5.1	100.0	1 683	27.6	2.5	66.8	3.1	100.0	743
Higher	37.2	16.0	44.5	2.3	100.0	609	43.0	3.5	51.9	1.5	100.0	257
<b>Population group</b>												
African	15.9	11.0	64.0	9.2	100.0	5 831	15.9	2.0	75.5	6.6	100.0	2 290
Afr. urban	19.9	12.1	60.0	7.9	100.0	3 586	18.9	2.2	72.8	6.0	100.0	1 466
Afr. non-urban	9.5	9.2	70.2	11.1	100.0	2 246	10.4	1.5	80.4	7.7	100.0	824
Coloured	28.2	10.6	56.9	4.4	100.0	665	29.0	6.0	63.4	1.6	100.0	238
Indian	34.4	11.7	51.7	2.2	100.0	141	55.9	1.7	42.4	0.0	100.0	64
White	44.8	15.2	38.8	1.3	100.0	402	48.7	3.6	45.9	1.8	100.0	184
Total	19.1	11.2	61.6	8.1	100.0	7 041	20.1	2.4	71.7	5.7	100.0	2 780

Note: 4 women and 4 men had population as Other/missing.

## 5.8 Attitudes toward Negotiating Safer Sex

Safer sex needs to be negotiated between partners and communication about sex can be awkward and embarrassing for some women. For the first time in the 2003 SADHS attitudes towards women's ability to negotiate safer sex with their husbands/boyfriends were explored. Women were asked *Please tell me if you think it is OK for a wife/girlfriend to refuse to have sex with her husband/boyfriend when she knows he has a disease that can be transmitted through sexual contact?* and similarly: *When a wife/girlfriend knows her husband/boyfriend has a disease that can be transmitted through sexual contact, is it OK for her to ask that they use a condom?* For men the information was only collected on women being able to propose condom use.

The majority of women (79 percent) believe that a wife/girlfriend can refuse to have sex with her husband/boyfriend and 83 percent say she can propose condom use if her husband has a sexually transmitted infection (STI) (Table 5.7). A similar proportion of men (84 percent) agree that a woman can propose condom use if her husband/boyfriend has an STI. Background characteristics showed minimal variation in responses between women and men by age group and marital status. Divorced, separated and widowed men and women reported the highest levels of agreement with the statement that a woman can refuse sex and propose condom use.

Table 5.7 also shows that a lower proportion of non-urban women (73 percent) believe that a woman can refuse sex compared to 82 percent of women resident in urban areas. There were marked differences by province with almost all women in both the Western and Northern Cape reporting that a woman could refuse sex. Provinces with the lowest proportion of women who believe that a woman can refuse sex when her husband/boyfriend has an STI are North West (71 percent), Eastern Cape (71 percent) and Mpumalanga (67 percent). North West had the lowest proportion of men (62 percent) who said a woman could propose condom use. Education played a strong role in agreement to the two statements with 71 percent of both men and woman who had no education saying a woman could propose condom use compared to 90 percent of men and 92 percent of women with higher education. The greatest difference was found between women with no education (67 percent) and the most educated group (90 percent) who said a woman could refuse sex with her partner if he had an STI. This information points to a wide gap in negotiation skills between poorly educated women and those who have attained a high educational level.

**Table 5.7 Attitudes toward negotiating safer sex with husband/boyfriend**

Percentage of women 15-49 years and men 15-59 years who believe that, if a husband/boyfriend has an STI, his wife/girlfriend can either refuse to have sex with him or propose condom use, by background characteristics, South Africa 2003

Background characteristic	WOMEN			MEN		
	Refuse sex	Propose condom use	Number of respondents	Refuse sex	Propose condom use	Number of respondents
<b>Age</b>						
15-19	73.8	77.2	1395	-	80.1	603
20-24	78.3	84.2	1242	-	85.2	527
25-29	78.8	85.1	1015	-	85.0	416
30-34	80.8	85.7	918	-	89.1	348
35-39	83.6	87.9	991	-	85.7	340
40-44	81.5	86.5	812	-	84.5	232
45-49	82.3	82.3	668	-	84.7	224
50-54				-	73.8	184
55-59				-	80.1	155
<b>Marital status</b>						
Never in union	76.2	81.6	3 821	-	83.1	1 738
Ever had sex	77.3	83.4	2 818	-	85.2	1 297
Never had sex	73.0	76.4	1 003	-	77.0	441
Married/Living together	82.6	86.0	2 658	-	84.2	1 215
Divorced/Separated/Widowed	84.8	88.1	562	-	87.2	148
<b>Residence</b>						
Urban	82.3	85.5	4 678	-	85.6	2 151
Non-Urban	73.3	80.4	2 363	-	79.3	667
<b>Province</b>						
Western Cape	93.4	94.4	892	-	82.7	379
Eastern Cape	70.6	80.2	804	-	91.5	313
Northern Cape	91.0	81.9	125	-	89.8	59
Free State	82.0	87.0	443	-	78.7	199
KwaZulu-Natal	86.6	88.9	1 177	-	83.9	701
North West	70.6	73.9	523	-	62.1	216
Gauteng	77.4	79.1	1 854	--	86.3	815
Mpumalanga	66.6	77.3	451	-	83.5	208
Limpopo	75.3	87.4	772	-	85.9	228
<b>Education</b>						
No education	67.3	70.9	302	-	70.6	141
Grades 1-5	74.7	80.6	438	-	72.4	227
Grades 6-7	73.7	80.5	721	-	83.7	316
Grades 8-11	79.1	82.7	3 285	-	83.8	1 367
Grade 12	81.8	87.6	1 683	-	86.8	787
Higher	89.6	92.0	609	-	89.7	279
<b>Population group</b>						
African	76.3	81.7	5 831	-	82.7	2 540
Afr. urban	78.8	83.0	3 586	-		1 613
Afr. non-urban	72.2	79.7	2 246	-		927
Coloured	91.4	91.4	665	-	89.5	264
Indian	98.0	96.6	141	-	83.2	79
White	96.6	96.2	402	-	94.9	229
				-		
Total	79.3	83.4	7 041	-	83.6	3 118

<sup>†</sup> Corresponds to UNAIDS Sexual Negotiation Indicator 1 "Women's ability to negotiate safer sex with husband."

- Question not included in men's questionnaire.

Note: 4 women and 5 men had population group as Other/missing.

## 5.9 Age at First Sexual Intercourse

Table 5.8 shows that there have been some changes over time in age at first sexual intercourse. In the oldest age group, 31 percent reported that they had had sex by the age of 18. In the 20-24 age group 5.5 percent report first sex by age of 15 and 42 percent by age of 18. Less than six percent of women report they had had sex by the age of 15 years. The median age of first intercourse is highest in the oldest age group (19.2 years), however, it remains relatively steady across the age groups, indicating that the age of first sex continues to remain fairly stable. The median age of first intercourse in the 25-29 age groups is 18.3 years; for the same age group in the 1998 survey the figure was 18.1. This may indicate an increase in women delaying age of first intercourse, which is important for prevention of STI/HIV and teenage pregnancy.

Table 5.8 Age at first sexual intercourse								
Percentage of women 15-49 years who had first sexual intercourse by specific exact ages and median age at first intercourse, according to current age, South Africa 2003								
Current age	Percentage who had first sexual intercourse by exact age:					Percentage who never had intercourse	Number of women	Median age at first intercourse
	15	18	20	22	25			
Age								
15-19	7.2	na	na	na	na	57.0	1 395	a
20-24	5.5	42.2	73.1	na	na	13.6	1 242	18.4
25-29	5.1	44.8	71.8	84.7	88.7	2.8	1 015	18.3
30-34	6.4	45.5	71.5	83.2	87.8	0.7	918	18.2
35-39	5.9	43.9	71.0	82.9	87.9	0.1	991	18.4
40-44	5.2	39.5	67.1	80.2	84.4	0.2	812	18.6
45-49	5.2	31.0	56.7	73.5	79.8	0.1	668	19.2
20-49	5.6	41.8	69.4	na	na	3.7	5 646	18.4
25-49	5.6	41.7	68.4	81.5	86.2	0.9	4 404	18.5

na = Not applicable.  
a - omitted because less than 50 percent of the women had intercourse for the first time before reaching the beginning of the age group.  
Note: Figure in parenthesis is based on 25-49 observations.

The data in Table 5.9 show the median age at first intercourse by current age group and broken down by background characteristics. Education has an important role to play. Age of sexual debut increases with education. There is a difference of 1-3 years between the highest and lowest education categories, depending on the age group. Interestingly the largest difference of 3 years is seen in the 20-24 age group. This is a concern as it appears that having no education is now playing a more important role in its influence in median age at first sex. If we look at women with no education in the older age groups we find that the median age of first sex is higher by approximately 2 years. In the 1998 SADHS the data showed a very similar pattern across the age groups. The provinces reporting the lowest age for first sexual intercourse in both surveys are Eastern Cape and Mpumalanga.

Table 5.9 Median age at first intercourse								
Median age at first sexual intercourse among women age 20(25)-49, by current age and background characteristics, South Africa 2003								
Background characteristic	Current age						Women age	Women age
	20-24	25-29	30-34	35-39	40-44	45-49	20-49	25-49
<b>Residence</b>								
Urban	18.5	18.6	18.5	18.5	18.5	19.3	18.6	18.6
Non-urban	18.6	18.2	18.1	18.3	18.7	19.1	18.4	18.4
<b>Province</b>								
Western Cape	18.6	18.7	18.6	18.8	19.5	19.5	18.8	18.9
Eastern Cape	17.8	18.6	18.4	18.2	18.3	19.9	18.3	18.5
Northern Cape	19.1	19.5	19.4	19.3	20.0	19.2	19.4	19.5
Free State	18.9	18.1	18.4	18.4	18.3	18.7	18.5	18.4
KwaZulu-Natal	a	19.0	18.4	18.8	18.9	20.2	19.0	18.9
North West	18.9	18.2	18.4	18.3	18.2	18.3	18.4	18.3
Gauteng	18.3	18.3	18.3	18.0	18.3	19.3	18.4	18.4
Mpumalanga	17.9	17.9	18.1	17.8	17.9	18.6	18.0	18.0
Limpopo	18.3	18.3	18.2	18.4	19.2	18.9	18.4	18.4
<b>Education</b>								
No education	16.0	17.8	16.9	18.8	18.5	18.2	17.9	18.1
Grades 1-5	16.6	18.4	16.7	18.3	18.4	19.0	18.2	18.3
Grades 6-7	16.5	16.7	16.8	17.4	17.8	19.0	17.6	17.7
Grades 8-11	18.0	17.9	18.2	18.2	18.5	19.0	18.3	18.3
Grade 12	18.9	18.6	18.7	18.8	19.1	20.6	18.8	18.8
Higher	18.9	18.6	18.9	18.7	19.3	20.4	18.9	18.9
Total	18.5	18.5	18.4	18.4	18.6	19.2	18.5	18.6
a - omitted because less than 50 percent of the women had intercourse for the first time before reaching the beginning of the age group.								

## 5.10 Recent Sexual Activity

Almost half of all women (47 percent) had sexual intercourse within the four weeks preceding the time of data collection (Table 5.10). This varied by age with over half of the youngest age group (57 percent) having not yet commenced sexual activity. In this age group only 18 percent report sexual intercourse in the last four weeks. Only one-quarter of the never in union women have never had sex. One-fifth of married women have also not had sex in the last 4 weeks.

Table 5.10 Recent sexual activity

Percent distribution of women by timing of last sexual intercourse, according to background characteristics, South Africa 2003

Background characteristic	Timing of last sexual intercourse				Never had sexual intercourse	Total	Number of women
	Within the last 4 weeks	Within 1 year <sup>1</sup>	One or more years	Missing			
<b>Current age</b>							
15-19	17.7	18.9	5.6	0.8	57.0	100.0	1395
20-24	43.7	30.2	11.8	0.8	13.6	100.0	1242
25-29	52.7	29.2	13.5	1.7	2.8	100.0	1015
30-39	60.7	21.8	15.2	1.9	0.4	100.0	1909
40-49	52.4	19.8	25.7	1.9	0.2	100.0	1480
<b>Marital status</b>							
Never in union	28.1	27.9	16.8	0.9	26.2	100.0	3821
Married or living together	76.5	16.9	4.3	2.3	0.0	100.0	2658
Divorced/separated/widowed	27.0	22.7	48.5	1.7	0.0	100.0	562
<b>Marital duration<sup>2</sup></b>							
Married only once:							
0-4 years	80.3	15.3	2.2	2.1	0.0	100.0	585
5-9 years	77.1	17.5	3.4	2.0	0.0	100.0	454
10-14 years	79.3	16.3	1.3	3.1	0.0	100.0	471
15-19 years	74.5	18.8	3.6	3.0	0.0	100.0	400
20-24 years	73.2	17.5	7.2	2.1	0.0	100.0	349
25+ years	67.4	17.8	12.0	2.8	0.0	100.0	197
Married more than once	75.5	16.4	8.2	0.0	0.0	100.0	202
<b>Residence</b>							
Urban	49.2	21.5	14.9	1.8	12.7	100.0	4678
Non-urban	40.5	27.1	14.2	0.9	17.3	100.0	2363
<b>Province</b>							
Western Cape	46.6	20.6	12.7	6.5	13.6	100.0	892
Eastern Cape	38.0	26.8	23.5	0.2	11.6	100.0	804
Northern Cape	39.7	24.4	21.0	0.8	14.0	100.0	125
Free State	37.8	25.4	22.9	0.5	13.4	100.0	443
KwaZulu-Natal	49.5	18.2	7.7	1.5	23.0	100.0	1177
North West	43.3	25.6	19.3	0.3	11.5	100.0	523
Gauteng	52.5	21.9	13.6	0.9	11.1	100.0	1854
Mpumalanga	50.8	23.7	12.6	0.5	12.5	100.0	451
Limpopo	40.1	31.4	12.9	0.4	15.2	100.0	772
<b>Education</b>							
No education	55.1	19.9	23.3	0.0	1.7	100.0	302
Grades 1-5	43.0	27.6	23.2	1.9	4.4	100.0	438
Grades 6-7	45.3	23.4	18.8	1.6	10.9	100.0	721
Grades 8-11	41.6	23.6	13.6	1.3	19.9	100.0	3285
Grade 12	51.1	22.8	11.8	1.8	12.5	100.0	1683
Higher	57.2	22.3	12.7	1.7	6.1	100.0	609
<b>Current contraceptive method</b>							
Female sterilization	64.3	16.1	15.9	3.5	0.2	100.0	514
Pill	63.0	24.1	8.1	2.3	2.6	100.0	632
IUD	64.0	28.2	4.8	0.0	3.0	100.0	42
Injection	58.6	26.5	10.5	0.9	3.5	100.0	769
No method	32.8	21.0	18.0	1.3	26.9	100.0	3509
Other	57.2	29.2	11.6	1.2	0.8	100.0	1576
Total	46.3	23.4	14.6	1.5	14.2	100.0	7041

<sup>1</sup> Excludes women who had sexual intercourse within the last 4 weeks.<sup>2</sup> Excludes women who are not currently married.

## 5.11 Self Reporting of Sexually-Transmitted Infections

Sexually transmitted infections (STIs) are a major public health concern in South Africa. STIs are associated with transmission and acquisition of HIV infection and control of STIs can reduce HIV transmission (Gilson *et al.*, 1997). Many STIs are asymptomatic and therefore self reported symptoms are an underestimate of the total burden of STIs in a population. In the 2003 survey both men and women were asked whether they knew if they had had an STI in the last 12 months. In addition, they were asked if they had experienced symptoms that are indicative of STIs including an abnormal discharge or a genital ulcer or sore.

Table 5.11 shows that in total 2.9 percent of women and 2.1 percent of men reported an STI in the last year. The proportion for individual symptoms is higher in women for abnormal discharge (5.4 percent) and genital ulcers (3.5 percent). The figures for men were slightly lower than for women for both symptoms. Women in the 15-29 age groups report the highest rates for STI/discharge/genital ulcer (9.2 percent). Prevalence rates are lowest in the oldest age group (5.3 percent). Similar rates were reported for urban and non-urban women. Provinces showed considerable differences in STIs and symptoms reported. Eastern Cape, Free State and Limpopo showed rates almost twice as high as some of the other provinces. No obvious pattern was observed with education and rates were highest in the African urban population. In men, the youngest age group (15-19 years) reported the highest prevalence rates of STIs and related symptoms. A similar pattern is observed among women particularly those residing in Eastern Cape, Free State, North West and Limpopo provinces. Limpopo reports the highest prevalence rate for both men and women. Among men, African urban men report the highest prevalence rates of STIs and symptoms. In the 1998 SADHS, men only were asked about history of STI symptoms but not if they knew they had had an STI in the three months preceding the survey. In the 2003 SADHS the reference period for reporting STI symptoms is 12 months. We would therefore expect that the 2003 data could show higher reporting because of the longer period for reporting symptoms. However, in 1998, 12 percent of men reported symptoms of painful urination, discharge or genital sore over the previous three months. In 2003 the proportion of men reporting a discharge, genital sore or known STI had decreased to 3.8 percent over a 12 month period. Although this shows a considerable decrease between surveys, the reduction is mainly due to some provinces, in particular KwaZulu-Natal showing markedly reduced rates of STI reporting. KwaZulu-Natal reported the highest rates in 1998 (20 percent) and now the rate has dropped to less than one percent. It is not clear whether this drop may be due in part to fieldwork problems noted in this province in particular.



**Table 5.11 Self-reporting of sexually-transmitted infection (STI) and STI symptoms**

Among women and men (15-49 years) who ever had sex, percentage self-reporting an STI and/or symptoms of an STI in the 12 last months by background characteristics, South Africa 2003

Background characteristic	WOMEN					MEN				
	Percentage with STI	Percentage with abnormal genital discharge	Percentage with genital sore/ulcer	Percentage with STI/discharge /genital sore/ulcer	Number who ever had sex	Percentage with STI	Percentage with abnormal genital discharge	Percentage with genital sore/ulcer	Percentage with STI/discharge /genital sore/ulcer	Number who ever had sex
<b>Age</b>										
15-19	2.3	7.4	3.7	9.2	600	3.5	3.7	5.3	8.1	256
20-24	3.5	6.1	4.4	9.3	1 072	2.3	2.3	3.3	4.4	470
25-29	3.8	5.5	5.4	9.2	987	4.3	3.7	3.1	6.0	394
30-39	2.8	5.4	2.9	7.3	1 902	0.9	1.4	0.6	2.0	679
40-49	2.3	4.0	2.2	5.3	1 477	1.3	1.1	1.2	1.7	542
<b>Marital status</b>										
Married or living together	3.2	4.8	3.3	7.4	2 830	2.5	2.5	2.9	4.4	1 273
<b>Residence</b>										
Urban	2.7	5.6	3.7	7.8	4 084	1.7	1.8	1.7	3.3	1 675
Non-urban	3.5	5.0	3.1	7.4	1 954	3.2	3.1	3.5	5.0	667
<b>Province</b>										
Western Cape	2.3	4.4	1.1	5.4	771	1.2	2.0	0.9	3.7	309
Eastern Cape	5.3	8.5	3.6	11.5	711	3.7	3.7	1.9	5.0	214
Northern Cape	2.2	3.6	0.7	5.2	107	0.7	0.0	1.2	1.8	43
Free State	2.7	5.3	9.4	11.5	384	1.6	2.4	2.5	4.9	145
KwaZulu-Natal	2.9	1.9	0.6	4.0	906	0.3	0.3	0.3	0.3	478
North West	2.8	4.1	3.6	5.5	463	3.3	3.3	6.1	6.4	166
Gauteng	2.1	6.0	3.3	7.3	1 647	1.6	1.5	1.6	2.8	654
Mpumalanga	3.8	5.3	3.6	6.4	394	3.5	3.0	3.3	4.5	160
Limpopo	3.2	8.0	7.2	12.5	654	7.5	6.4	7.5	11.8	173
<b>Education</b>										
No education	1.8	5.1	2.2	5.8	297	0.7	0.7	2.2	2.2	93
Grades 1-5	4.0	6.1	3.0	8.5	419	3.5	2.9	3.0	5.2	147
Grades 6-7	3.1	3.1	3.1	5.3	643	0.7	1.4	0.8	1.9	213
Grades 8-11	2.9	7.2	4.0	9.5	2 632	2.8	3.1	3.3	5.6	979
Grade 12	3.1	3.3	2.7	6.1	1 473	2.1	1.7	1.4	2.6	675
Higher	2.1	4.8	4.7	6.2	572	0.7	0.6	0.6	0.7	234
<b>Population group</b>										
African	3.2	5.9	3.9	8.3	5 006	2.6	2.4	2.6	4.3	1 929
.Afr. urban	3.0	6.2	4.3	8.6	3 152	2.2	2.0	2.2	3.9	1 290
.Afr. non-urban	3.6	5.3	3.2	7.8	1 854	3.3	3.1	3.5	5.0	639
Coloured	1.8	3.7	1.5	5.2	559	0.1	2.2	0.8	2.5	203
Indian	0.7	1.6	0.4	1.9	110	0.7	0.3	0.3	0.7	52
White	1.3	2.8	1.8	4.4	361	0.0	0.0	0.0	0.0	154
Number	2.9	5.4	3.5	7.7	6 038	2.1	2.2	2.2	3.8	2 342

Note: 4 woman and 4 men had population group as Other/missing.

## 5.12 Seeking Treatment for STIs

Table 5.12 shows that approximately two-thirds of women (64 percent) but only just over half of men (55 percent) sought advice or treatment for an STI or symptom of an STI. We can also see that men and women choose slightly different sources for treatment for STIs. Men and women predominantly choose to go to a clinic/hospital or health professional but the proportion of men is lower than that of women (83 percent and 96 percent respectively). Few women seek care from a traditional healer, shop/pharmacy, friends or the church. In contrast, 10 percent of men seek advice from a traditional healer and under 5 percent seek advice from relatives or friends.

Table 5.12 Women and men seeking treatment for STIs		
Percentage of women and men reporting STI or symptoms of an STI in the last 12 months and percent distribution of the highest level of care sought, South Africa 2003		
Background characteristic	Women	Men
<b>Sought advice or treatment<sup>1</sup></b>		
Advice or treatment from any source	64.1	54.6
No advice or treatment	35.9	45.4
Total	100.0	100.0
Number with STI and/or symptoms of STI	462	97
<b>Source of advice or treatment</b>		
Clinic/hospital/health professional	95.6	83.3
Traditional healer	1.2	9.6
Advice or medicine from shop/pharmacy	2.8	2.5
Advice from friends/relatives	0.2	4.5
Advice from church	0.2	0.0
Total	100.0	100.0
Number seeking treatment	297	53
<sup>1</sup> Corresponds to UNAIDS STI Service Indicator 4 "Men and women seeking treatment for STI's"		
Note: Symptoms of an STI are an abnormal genital discharge/sore/ulcer.		

## 5.13 Higher Risk Sex and Condom Use

Table 5.13 shows the proportion of sexually active women and men engaged in high risk sex in the last 12 months. This is a UNAIDS indicator which defines high risk sex as sex with a non-marital partner. In South Africa marriage rates are low and sexual partnerships outside marital and cohabiting relationships are common. The effect of this can be seen clearly in the 15-19 year age group where it appears that almost all sexually active women (95 percent) and men (99 percent) are engaging in high risk sex. Many of these men and women may be in stable relationships. However, as they are not married, their behaviour has been categorized as high risk.

The proportion of sexually active men and women engaging in high risk sex decreases with age as marital rates increase. However, a third (34 percent) of the oldest women and one-quarter of the oldest men (25 percent) are still classified as engaging in high risk sex (Table 5.13). Condom use at last higher risk sex was reported at higher levels among women (46 percent) than men (30 percent). However, in non-urban areas, condom use at last higher risk sex was comparable for men and women (39 percent and 35 percent respectively). In urban areas it was much higher among women (49 percent) than among men (27 percent). The association of condom use at last higher risk sex with education was striking in women, with only 16 percent of women with no education using a condom compared with 63 percent of women with higher education. The pattern was completely reversed in the case of men, Condom use at last higher risk sex was higher for men with less education (42 percent) and lowest for men with higher education (18 percent). Condom use was highest for women in Gauteng (51 percent) and in KwaZulu-Natal (57 percent) and was highest for men in Western Cape (51 percent) and Gauteng (39 percent).

Table 5.13 Higher risk sex and condom use at last higher risk sex in the last year

Among women and men reporting sexual activity in the last 12 months, percentage of women and men who have had sex with a non-marital/non-cohabiting partner in the last 12 months and among women and men who have had higher risk sex in the last 12 months, percentage who say they used a condom the last time they had sex with a non-marital/non-cohabiting, by background characteristics, South Africa 2003

Background characteristic	WOMEN				MEN			
	Percentage engaging in higher risk sex in the last 12 months <sup>1</sup>	Number of respondents sexually active in the last 12 months	Percentage used condom at last higher risk sex <sup>2</sup>	Number of respondents with higher risk sex in last 12 months	Percentage engaging in higher risk sex in the last 12 months <sup>1</sup>	Number of respondents sexually active in the last 12 months	Percentage used condom at last higher risk sex <sup>2</sup>	Number of respondents with higher risk sex in last 12 months
<b>Age</b>								
15-19	94.8	511	49.2	484	99.1	214	25.0	213
20-24	84.6	917	53.0	776	94.6	421	27.7	399
25-29	64.2	832	45.5	535	83.6	380	30.5	318
30-39	42.1	1 575	39.1	663	51.6	633	29.9	326
40-49	33.8	1 068	38.0	361	25.2	485	40.8	122
<b>Marital status</b>								
Never in union	98.9	2 142	52.2	2 118	98.6	1 112	25.5	1 096
Married or living together	18.7	2 483	23.3	465	21.0	920	52.2	193
Divorced/separated/widowed	84.5	280	31.6	236	89.4	92	30.9	82
<b>Residence</b>								
Urban	56.9	3 306	48.9	1 882	62.3	1 537	27.3	957
Non-urban	58.7	1 598	39.4	938	70.6	596	34.9	421
<b>Province</b>								
Western Cape	47.9	600	37.7	287	66.3	143	51.0	95
Eastern Cape	60.9	521	39.9	317	49.9	278	35.9	139
Northern Cape	46.8	80	35.4	37	76.3	150	21.5	115
Free State	49.8	280	43.5	140	82.2	198	28.8	163
KwaZulu-Natal	61.7	797	57.4	491	60.5	131	35.2	79
North West	66.4	361	43.0	239	65.5	144	27.0	94
Gauteng	58.2	1 378	50.6	802	60.5	38	39.3	23
Mpumalanga	56.2	336	40.1	188	68.3	448	19.1	306
Limpopo	57.5	552	36.2	317	60.4	603	32.2	364
<b>Education</b>								
No education	40.2	226	16.4	91	55.2	84	41.9	46
Grades 1-5	44.1	309	26.1	136	42.7	123	57.0	52
Grades 6-7	48.8	495	29.5	242	56.6	192	44.7	108
Grades 8-11	62.2	2 141	43.6	1 332	71.2	881	31.2	628
Grade 12	61.7	1 244	55.8	768	66.6	635	21.9	423
Higher	51.2	484	62.8	248	54.6	218	18.2	119
<b>Population group</b>								
African	62.5	4 081	46.2	2 552	70.3	1 754	30.0	1 233
Afr. urban	64.1	2 558	49.6	1 640	69.5	1 185	27.6	823
Afr. non-urban	59.9	1 522	40.1	912	72.0	569	34.8	410
Coloured	43.7	418	34.8	183	42.3	184	37.8	78
Indian	10.6	95	42.8	10	31.3	49	13.0	15
White	24.2	308	58.2	75	35.9	144	12.3	52
<b>Total</b>	<b>57.5</b>	<b>4 904</b>	<b>45.7</b>	<b>2 820</b>	<b>64.6</b>	<b>2 133</b>	<b>29.6</b>	<b>1 378</b>

<sup>1</sup> Corresponds to UNAIDS Sexual Behaviour indicator 1 "Higher risk sex in the last year".

<sup>2</sup> Corresponds to UNAIDS Sexual Behaviour indicator 2 "Condom use at last higher risk sex".

Note: 3 women and 3 men had population group as Other/missing, 7 Men had marital status missing.

## 5.14 HIV Prevention during Antenatal Period

The implementation of the Prevention of Mother-to-Child Transmission (PMTCT) Programme through antenatal HIV testing in the public sector in South Africa commenced in May 2001 in 18 national sites and 260 access points (clinics and hospitals) which offered antenatal and perinatal services. The number of access points increased from 153 in July 2001 to 260 in December in 2001. In July 2002 approximately 29 percent of PHC facilities were PMTCT sites (Ramkissoo *et al.*, 2004). In the 2003 SADHS, information on testing in the PMTCT programme was collected for the first time (Table 5.14). Women were included in the analysis if they had given birth since January 2002 which means they would have potentially been exposed to the programme in that latter half of 2001. In total 56 percent of women reported that they were tested for HIV during their antenatal visit. This is high considering that the programme was not widely available prior to the data collection for the 2003 survey.

HIV testing rates are considerably lower in non-urban areas with less than half of women (43 percent) being tested compared to two-thirds (63 percent) in urban areas. Provinces varied considerably in level of testing with only 34 percent of women in the North West receiving HIV testing compared to 61 percent in the Western Cape and 70 percent in Gauteng. Education plays a strong role in testing status with an increase in HIV testing with increasing educational level. Women with only grade 1-5 education have the lowest testing rates (44 percent) compared to 75 percent in the highest education group.

The HIV testing in the public sector PMTCT programme is voluntary. Women are normally given group counseling in which they are told the benefits of testing after which they choose whether they wish to be tested. In the 2003 SADHS, women were asked how the test was offered to them or if they themselves asked for the test. Two-thirds said they were offered the test and they accepted, while some women asked for the test (18 percent) and 15 percent felt it had been a requirement. There are differences by province in the way the test was offered with a third (36 percent) of women in Mpumalanga stating the test was required compared to only 3 percent in Gauteng.

To ensure continuous participation in the PMTCT programme it is important that women who are tested receive their results. In the survey, most women who said they had been tested reported receiving the results of their HIV test (84 percent). Women in urban areas were more likely to know their HIV status (90 percent) compared to (70 percent) of non-urban women. At least 90 percent of women received their results in four provinces while several other provinces performed poorly in this regard.

The PMTCT programme encompasses three key components: Primary prevention of HIV, prevention of unplanned and or unwanted pregnancy and prevention of mother-to-child transmission during pregnancy. From Table 5.15, it can be seen that most women (80 percent) said the health provider discussed prevention of HIV during their antenatal care visit. Some provinces performed better than others with a number of provinces reporting rates over 80 percent. Eastern Cape showed the lowest level of client-provider discussion (63 percent). Discussion of HIV prevention increased with level of education. White women were the least likely to have talked to a health provider about means of prevention (60 percent).

Table 5.14 Tested for HIV during antenatal visit

Percentage distribution of women aged 15-49 who was tested for HIV during any antenatal visit of last birth in the 2 years preceding the survey, whether test was asked for, offered or required and whether respondents were given the test result according to selected background characteristics, South Africa 2003

Age	Tested for HIV during Antenatal visits					How test was offered					Given Results of test							
	Yes		No		Number	Asked for		Offered	Required		Missing	Total	Yes		No	Missing	Total	Number
	Yes	No	Missing	Total		Yes	No		Yes	No								
15-19	49.3	24.5	26.2	100.0	90	9.1	62.8	26.0	2.1	100.0	79.2	18.5	2.3	100.0	45			
20-24	57.1	26.2	16.7	100.0	242	19.1	69.6	11.3	0.0	100.0	83.0	14.3	2.7	100.0	138			
25-29	55.7	25.3	19.1	100.0	219	17.9	62.4	17.0	2.8	100.0	81.7	16.2	2.1	100.0	122			
30-34	61.6	21.9	16.5	100.0	148	22.7	60.1	17.3	0.0	100.0	87.7	10.4	1.9	100.0	91			
35-39	(54.7)	(26.1)	(19.2)	100.0	100	15.7	74.8	9.5	0.0	100.0	92.0	6.0	2.0	100.0	55			
40-44	58.8	21.9	19.3	100.0	38	*	*	*	*	100.0	*	*	*	100.0	22			
45-49	*	*	*	100.0	6	-	-	-	-	-	-	-	-	-	0			
Residence																		
Urban	63.1	19.2	17.7	100.0	544	18.8	69.1	11.5	0.6	100.0	90.2	8.0	1.8	100.0	343			
Non-urban	43.4	35.1	21.5	100.0	299	16.6	57.2	24.5	1.8	100.0	68.9	28.0	3.1	100.0	130			
Province																		
Western Cape	61.7	10.2	28.1	100.0	116	14.6	71.6	13.9	0.0	100.0	96.1	3.9	0.0	100.0	72			
Eastern Cape	50.3	38.4	11.3	100.0	107	(19.9)	(54.2)	(25.9)	0.0	100.0	66.9	33.1	0.0	100.0	54			
Northern Cape	59.9	23.5	16.6	100.0	20	27.7	48.0	24.2	0.0	100.0	78.4	16.7	4.9	100.0	12			
Free State	48.4	37.3	14.2	100.0	60	(21.6)	(52.2)	(26.1)	0.0	100.0	94.0	6.0	0.0	100.0	29			
KwaZulu-Natal	57.0	9.4	33.6	100.0	45	(8.2)	(68.3)	(15.8)	(7.6)	100.0	89.6	9.0	1.4	100.0	26			
North West	34.0	40.8	25.1	100.0	81	(38.1)	(54.5)	(7.5)	0.0	100.0	71.4	17.1	11.4	100.0	27			
Gauteng	68.4	16.3	15.2	100.0	229	15.9	80.8	3.3	0.0	100.0	93.0	5.2	1.9	100.0	157			
Mpumalanga	51.6	28.6	19.8	100.0	61	11.1	53.7	35.2	0.0	100.0	81.1	18.9	0.0	100.0	31			
Limpopo	52.3	30.3	17.4	100.0	124	21.9	51.9	22.5	3.6	100.0	66.7	28.3	5.0	100.0	65			
Education																		
No education	(25.1)	(30.0)	(44.9)	100.0	28	*	*	*	*	100.0	*	*	*	100.0	7			
Grades 1-5	40.2	31.1	28.6	100.0	45	*	*	*	*	100.0	*	*	*	100.0	18			
Grades 6-7	55.0	26.1	19.0	100.0	80	(12.0)	(67.3)	(20.8)	0.0	100.0	88.1	10.8	1.1	100.0	44			
Grades 8-11	53.5	26.0	20.5	100.0	418	16.7	69.8	12.4	1.0	100.0	80.5	16.0	3.5	100.0	224			
Grade 12	62.5	22.5	15.0	100.0	188	15.9	70.5	13.6	0.0	100.0	91.8	7.3	1.0	100.0	117			
Higher	74.9	18.1	7.0	100.0	83	24.3	49.4	23.1	3.2	100.0	83.9	14.7	1.4	100.0	62			
Population group																		
African	55.1	26.5	18.4	100.0	722	19.0	66.5	13.4	1.1	100.0	83.3	14.6	2.1	100.0	398			
Afr. Urban	62.1	20.9	17.0	100.0	447	20.3	70.7	8.3	0.7	100.0	90.2	8.1	1.7	100.0	277			
Afr. Non-urban	43.8	35.5	20.7	100.0	276	16.0	57.0	25.1	1.9	100.0	67.3	29.5	3.2	100.0	121			
Coloured	57.3	15.2	27.6	100.0	86	20.6	64.6	14.8	0.0	100.0	90.6	8.2	1.2	100.0	49			
Indian	76.5	16.3	7.2	100.0	13	(1.5)	(67.6)	(30.9)	0.0	100.0	94.7	1.8	3.5	100.0	10			
White	*	*	*	100.0	21	*	*	*	*	100.0	*	*	*	*	100.0	15		
Total	56.1	24.9	19.1	100.0	842	18.2	65.8	15.1	0.9	100.0	84.4	13.5	2.2	100.0	472			

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed while a figure in parentheses is based on 25-49 cases. A hyphen indicates that there were no women who were tested.

Table 5.15 Discussion of HIV/AIDS prevention and use family planning during antenatal visit

Percentage distribution of women aged 15-49 who had discussions about preventing HIV/AIDS and the use of family planning with health care provider during antenatal visit of last birth in the 3 years preceding the survey (from Jan 2000), according to selected background characteristics, South Africa 2003

Background characteristic	Discussed ways to prevent HIV/AIDS					Discussed using Family Planning					Number
	Yes	No	Don't know	Missing	Total	Yes	No	Don't know	Missing	Total	
<b>Age</b>											
15-24	84.0	14.7	1.1	0.2	100.0	89.1	10.1	0.4	0.4	100.0	443
25+	78.6	17.6	0.8	3.0	100.0	85.7	10.4	1.1	2.7	100.0	859
<b>Residence</b>											
Urban	83.6	13.3	0.8	2.3	100.0	88.9	8.6	0.7	1.8	100.0	865
Non-urban	74.2	23.1	1.1	1.6	100.0	82.8	13.7	1.3	2.2	100.0	437
<b>Province</b>											
Western Cape	82.1	13.5	1.5	2.9	100.0	89.4	6.9	0.8	2.9	100.0	173
Eastern Cape	63.9	34.1	1.3	0.7	100.0	74.7	21.9	2.0	1.4	100.0	168
Northern Cape	82.6	16.2	0.6	0.6	100.0	86.1	12.7	0.6	0.6	100.0	29
Free State	78.8	17.8	1.6	1.8	100.0	83.8	12.8	1.6	1.8	100.0	84
KwaZulu-Natal	74.0	14.3	4.5	7.2	100.0	85.9	2.7	1.8	9.7	100.0	72
North West	89.3	9.0	0.6	1.1	100.0	93.6	4.7	0.0	1.7	100.0	107
Gauteng	88.4	9.5	0.0	2.1	100.0	91.6	7.0	0.8	0.6	100.0	379
Mpumalanga	85.8	12.3	0.7	1.3	100.0	93.1	5.6	0.0	1.3	100.0	104
Limpopo	72.6	25.4	0.5	1.5	100.0	80.4	17.1	0.5	2.0	100.0	186
<b>Education</b>											
No education	78.6	18.3	0.5	2.6	100.0	80.3	15.2	0.5	4.1	100.0	40
Grades 1-5	75.7	22.3	1.7	0.3	100.0	84.0	12.4	1.7	1.9	100.0	73
Grades 6-7	78.7	20.8	0.0	0.5	100.0	88.0	11.5	0.0	0.5	100.0	127
Grades 8-11	79.9	16.9	1.7	1.6	100.0	86.8	9.8	1.4	2.0	100.0	617
Grade 12	83.4	12.7	0.0	4.0	100.0	88.8	8.7	0.4	2.2	100.0	324
Higher	80.9	17.4	0.0	1.8	100.0	84.8	13.5	0.0	1.8	100.0	121
<b>Population group</b>											
African	81.5	15.7	0.8	2.0	100.0	87.1	10.1	0.9	1.9	100.0	1 108
Afr. urban	86.0	11.0	0.7	2.3	100.0	89.7	7.8	0.8	1.7	100.0	696
Afr. non-urban	73.8	23.7	0.9	1.7	100.0	82.6	14.0	1.0	2.3	100.0	411
Coloured	85.3	11.3	2.3	1.0	100.0	95.0	2.7	1.3	1.0	100.0	122
White	73.2	25.1	1.0	0.7	100.0	85.9	13.4	0.0	0.7	100.0	51
Indian	49.8	45.4	0.0	4.9	100.0	63.6	31.5	0.0	4.9	100.0	21
<b>Total</b>	<b>80.4</b>	<b>16.6</b>	<b>0.9</b>	<b>2.0</b>	<b>100.0</b>	<b>86.9</b>	<b>10.3</b>	<b>0.9</b>	<b>1.9</b>	<b>100.0</b>	<b>1 302</b>

1 woman has population group unknown

Discussion around family planning was high (87 percent) and showed few differences by age and residence. There were some differences by province the lowest level of 75 percent found in the Eastern Cape. There were generally high levels of family planning discussion in all population groups with the exception of white women where only 67 percent talked of family planning with a provider.

## 5.15 Number of Sexual Partners

Both men and women were asked how many sexual partners they had in the 12 months prior to the survey. For women in a union (married or cohabiting) almost all reported one sexual partner in the previous 12 months (92 percent) and a small percentage (4.3 percent) say they had no sexual partner during this time. Only 1.6 percent of women mention that they had more than one partner (Table 5.16). Women in a union and in the oldest age group (45-49) were more likely to mention no sexual partner in the past year (12 percent) as were women in the Eastern Cape (11 percent). Women not in a union include those who have never had sex and therefore the proportion that had no sexual partner was considerably higher (44 percent). Just over half of this group (52 percent) report one

Table 5.16 Number of sexual partners

Percent distribution of men and women by number of persons with whom they had sexual intercourse in the last 12 months according to background characteristics, South Africa 2003

Background characteristic	WOMEN 15-49									
	Currently in union					Currently not in union				
	0	1	2+	Missing	Total	Mean	Number	0	1	2+
<b>Age</b>										
15-19	0.2	98.0	0.0	1.8	100.0	1.0	51	64.9	31.1	3.1
20-24	2.7	93.7	1.7	1.9	100.0	1.1	238	30.7	64.3	4.3
25-29	2.0	91.1	3.1	3.8	100.0	1.0	393	25.3	69.1	4.6
30-34	1.7	96.3	0.8	1.2	100.0	1.0	503	33.5	60.5	4.2
35-39	3.0	92.6	1.5	2.9	100.0	1.0	563	30.9	65.6	1.3
40-44	5.2	90.1	1.9	2.8	100.0	1.0	506	41.2	57.4	0.2
45-49	11.9	84.6	0.9	2.5	100.0	1.0	405	69.5	29.3	0.1
<b>Residence</b>										
Urban	4.4	91.2	1.5	2.9	100.0	1.0	1 852	42.7	53.0	3.0
Non-urban	4.0	92.5	1.7	1.7	100.0	1.0	806	45.7	50.2	3.3
<b>Province</b>										
Western Cape	4.7	85.4	0.6	9.3	100.0	1.0	404	44.1	48.5	2.9
Eastern Cape	10.8	86.8	2.4	0.0	100.0	1.0	236	45.1	49.6	5.0
Northern Cape	5.9	93.5	0.0	0.6	100.0	1.0	51	55.1	43.3	0.5
Free State	6.5	91.3	0.9	1.3	100.0	1.0	167	54.3	42.9	2.1
KwaZulu-Natal	2.3	93.6	1.0	3.1	100.0	1.0	387	44.7	52.8	0.8
North West	2.4	96.8	0.8	0.0	100.0	1.0	146	41.8	53.7	4.0
Gauteng	3.1	93.8	1.8	1.4	100.0	1.0	788	40.8	56.0	2.6
Mpumalanga	1.5	96.7	1.1	0.7	100.0	1.0	178	40.5	57.3	1.8
Limpopo	5.5	89.6	3.7	1.2	100.0	1.1	300	42.5	50.1	7.0
<b>Education</b>										
No education	7.0	91.8	1.2	0.0	100.0	1.0	176	50.1	49.2	0.8
Grades 1-5	7.0	88.2	1.4	3.5	100.0	1.0	228	50.0	46.6	2.8
Grades 6-7	6.8	89.6	1.2	2.4	100.0	1.0	323	48.3	48.8	1.6
Grades 8-11	4.4	91.2	2.2	2.2	100.0	1.0	1 065	47.4	48.2	3.3
Grade 12	2.2	93.4	1.1	3.2	100.0	1.0	590	36.2	58.6	3.8
Higher	1.4	94.0	1.1	3.5	100.0	1.0	273	32.8	63.3	2.3
<b>Population group</b>										
African	4.0	92.3	2.1	1.6	100.0	1.0	1 976	42.1	54.0	3.2
Afr. urban	4.8	92.1	2.3	1.8	100.0	1.0	1 234	40.2	56.0	3.0
Afr. non-urban	4.3	92.7	1.9	1.1	100.0	1.0	742	45.1	50.8	3.4
Coloured	6.1	87.4	0.0	6.4	100.0	1.0	315	54.3	37.9	2.7
Indian	2.1	94.8	0.2	2.9	100.0	1.0	90	80.0	18.7	1.0
White	5.0	90.0	0.0	4.9	100.0	1.0	275	51.3	44.0	3.8
<b>Total</b>	4.3	91.6	1.6	2.5	100.0	1.07	2 658	43.8	52.0	3.1

Note: 1 woman has education unknown. 4 women have population group as Other/missing.

Background characteristic	MEN 15-59										All men										
	Currently in union					Currently not in union															
	0	1	2+	missing	Total	Mean	Number	0	1	2+	missing	Total	Mean	Number	0	1	2+	missing	Total	Mean	Number
<b>Age</b>																					
15-19	30.8	38.5	30.8	0	1.2	100	12	64.7	26.4	7.7	1.1	0.5	100.0	590	64.1	26.6	8.2	1.1	100.0	0.5	603
20-24	1.7	78.0	20.3	0.0	1.3	100.0	54	21.2	53.2	24.4	1.2	1.3	100.0	472	19.2	55.8	24.0	1.0	100.0	1.3	527
25-29	0.2	87.3	10.9	1.6	1.2	100.0	99	10.7	61.5	27.8	0.0	1.4	100.0	316	8.2	67.7	23.7	0.4	100.0	1.3	416
30-34	1.3	89.0	9.5	0.1	1.2	100.0	171	15.5	55.6	28.4	0.4	1.4	100.0	177	8.5	72.1	19.1	0.3	100.0	1.3	348
35-39	0.0	92.1	6.4	1.6	1.1	100.0	209	13.8	64.2	19.3	2.7	1.1	100.0	131	5.3	81.4	11.3	2.0	100.0	1.1	340
40-44	2.3	89.1	4.4	4.2	1.1	100.0	248	27.8	54.7	16.7	0.8	0.9	100.0	75	8.2	81.1	7.3	3.4	100.0	1.0	323
45-49	2.0	86.9	6.6	4.5	1.1	100.0	163	23.3	59.2	14.8	2.7	0.9	100.0	61	7.8	79.4	8.9	4.0	100.0	1.0	224
50-54	11.7	79.8	6.7	1.7	1.0	100.0	142	39.6	49.3	11.1	0.0	0.8	100.0	42	18.1	72.8	7.7	1.3	100.0	0.9	184
55-59	10.2	83.0	2.1	4.7	0.9	100.0	116	43.5	51.4	4.7	0.5	0.6	100.0	38	18.4	75.2	2.7	3.6	100.0	0.8	155
<b>Residence</b>																					
Urban	2.9	87.1	6.9	3.1	1.1	100.0	899	29.3	49.2	20.6	0.9	1.1	100.0	1 252	18.3	65.0	14.9	1.8	100.0	1.1	2 151
Non-urban	5.8	84.8	8.6	0.8	1.1	100.0	316	40.4	44.0	14.4	1.2	0.8	100.0	651	29.1	57.3	12.5	1.1	100.0	0.9	967
<b>Province</b>																					
Western Cape	11.4	70.5	18.1	0.0	1.1	100.0	106	43.9	37.7	15.4	3.0	1.0	100.0	122	28.8	52.9	16.7	1.6	100.0	1.0	228
Eastern Cape	5.7	76.6	8.1	9.6	1.0	100.0	207	28.1	51.3	18.9	1.7	1.1	100.0	172	15.9	65.1	13.0	6.0	100.0	1.1	379
Northern Cape	0.0	89.1	9.5	1.4	1.0	100.0	56	31.5	44.0	23.7	0.8	1.1	100.0	161	23.4	55.6	20.0	1.0	100.0	1.0	216
Free State	6.3	90.1	3.5	0.0	1.0	100.0	78	31.2	48.0	19.6	1.2	1.1	100.0	234	25.0	58.5	15.6	0.9	100.0	1.0	313
KwaZulu-Natal	2.7	93.8	2.7	0.8	1.0	100.0	78	35.9	45.9	17.7	0.5	0.9	100.0	121	23.0	64.6	11.9	0.6	100.0	0.9	199
North West	1.0	85.1	12.8	1.1	1.1	100.0	61	35.5	43.9	20.1	0.5	1.1	100.0	146	25.3	56.1	17.9	0.7	100.0	1.1	208
Gauteng	5.8	89.1	3.1	1.9	1.1	100.0	25	40.8	41.4	17.8	0.0	1.2	100.0	34	26.2	61.2	11.7	34	100.0	1.1	59
Mpumalanga	2.7	91.6	4.4	1.2	1.2	100.0	228	35.7	49.1	14.4	0.9	0.9	100.0	472	24.9	63.0	11.1	1.0	100.0	1.0	701
Limpopo	1.4	90.7	6.5	1.4	1.3	100.0	376	28.8	49.7	20.9	0.6	0.8	100.0	439	16.2	68.6	14.2	1.0	100.0	1.0	815
<b>Education</b>																					
No education	9.4	85.1	4.5	1.0	1.0	100.0	82	32.8	39.5	27.7	0.0	1.0	100.0	59	19.2	66.1	14.2	0.6	100.0	1.0	141
Grades 1-5	8.1	80.4	7.7	3.7	1.0	100.0	129	49.9	33.6	15.5	0.9	0.7	100.0	98	26.2	60.1	11.1	2.5	100.0	0.9	227
Grades 6-7	2.3	89.4	4.8	3.5	1.0	100.0	139	44.2	40.8	13.3	1.7	0.7	100.0	178	25.8	62.1	9.6	2.5	100.0	0.9	316
Grades 8-11	4.2	86.1	7.6	2.1	1.1	100.0	439	37.6	46.5	15.1	0.8	0.9	100.0	928	26.9	59.2	12.7	1.2	100.0	1.0	1 367
Grade 12	1.7	88.0	8.8	1.6	1.1	100.0	290	20.5	55.2	23.5	0.7	1.3	100.0	497	13.6	67.3	18.1	1.0	100.0	1.2	787
Higher	0.0	88.3	7.1	4.6	1.1	100.0	136	22.4	46.6	28.0	3.0	1.3	100.0	143	11.4	67.0	17.8	3.8	100.0	1.2	279
<b>Population group</b>																					
African	4.5	85.4	8.9	1.3	1.1	100.0	879	31.9	47.5	19.5	1.1	1.0	100.0	1 661	22.4	60.6	15.8	1.2	100.0	1.1	2 540
Afr. urban	3.6	86.1	8.8	1.5	1.1	100.0	582	27.0	49.5	22.4	1.0	1.2	100.0	1 032	18.6	62.7	17.5	1.2	100.0	1.1	1 613
Afr. non-urban	6.1	84.0	9.2	0.8	1.1	100.0	297	40.1	44.1	14.6	1.2	0.8	100.0	630	29.2	56.8	12.9	1.1	100.0	0.9	927
Coloured	1.9	84.7	6.5	6.9	1.1	100.0	142	37.6	52.7	9.7	0.0	0.8	100.0	121	18.3	70.0	8.0	3.7	100.0	0.9	264
Indian	1.2	94.6	0.0	4.3	1.0	100.0	140	43.9	43.8	12.3	0.0	0.8	100.0	89	17.7	74.9	4.8	2.6	100.0	0.9	229
White	2.0	91.0	2.6	4.4	1.1	100.0	48	47.7	32.6	19.1	0.6	0.9	100.0	31	20.0	67.9	9.1	2.9	100.0	1.0	79
Total	3.7	86.5	7.3	2.5	1.1	100.0	1 215	33.1	47.4	18.5	1.0	1.0	100.0	1 903	21.6	62.6	14.2	1.6	100.0	1.0	3 118
Note: 5 men have population group as Other/missing.																					



partner in the last year. A small proportion (3 percent) report two or more partners. The number of partners in the last year is highest in Limpopo (7 percent) and Eastern Cape (5 percent) and lowest rates are seen in Northern Cape and KwaZulu-Natal where less than one percent report more than one partner. Women who have primary education or lower report lower levels of having two or more partners in the last year compared with women with senior school education and higher.

In 1998 less than two percent of women in a union and almost 4 percent of women not in a union reported 2 or more sexual partners in the past year. The prevalence of multiple partners reported by women has decreased very slightly between the first and second survey. White women reported higher rates of two or more partners (3.8 percent) compared to other population groups in this survey in 2003, with Indian women reporting the lowest rate of 1 percent. In 1998 African women reported higher rates of partnerships (4.4 percent) and this has decreased to 3.2 percent. In 2003 SADHS approximately two-thirds of the youngest and oldest groups of women not in a union had no sexual partner in the past year. Within the population groups 80 percent of Indian women not in a union had no sexual partner and this may be because it is less acceptable for an Indian woman to have sexual partners outside a marital or cohabiting relationship.

The question on number of sexual partners was only asked to women in the 1998 survey and in 2003 the same question was asked to men. The majority of men in a union (87 percent) report that they had one sexual partner in the last 12 months and 7 percent report 2 or more partners. There was however striking differences by age group with the younger age groups reporting higher levels of two or more partners. For men not in a union the number with more than one partner in the last year rose to 19 percent. The percentage of men with no sexual partner in the last year was highest (65 percent) in the youngest age group (15-19) and this is primarily because this group includes over 40 percent who had never had sex. Men in the younger age groups (15-35 years) had much higher rates of two or more partnerships. Several provinces (North West, Limpopo and Northern Cape) had rates of over 20 percent for 2 or more sexual partners for men not in a union. Education level plays a similar role in men as it does in women and shows that partners in the last year increased with increasing level of education for men not in a union except for men with no education (28 percent), which was similar to men with the highest education level. This is important information as it indicates that men with higher education who are more likely to be employed and have more disposable income may be putting themselves at risk of acquiring STIs/HIV. Although the higher educated groups report higher condom use (Table 5.13) compared to those with lower education they are still engaging in higher risk sexual behaviour. Looking at population groups, over 19 percent of both white and African men (combined urban and non-urban) and not in a union, reported the highest levels of two or more partners with coloured men reporting the lowest figure (10 percent).

## **5.16 Male Circumcision**

Almost half of men (45 percent) reported in the 2003 survey that they had been circumcised (Table 5.17). Circumcision is usually performed in babies in some cultures and in teenage men in some African cultures. Circumcision as a strategy to reduce transmission for STIs and HIV has received a great deal of interest internationally with increasing evidence that circumcision reduces the risk of STIs and HIV among men, including a trial conducted in South Africa (Auvert *et al.*, 2005). The 2003 SADHS found that the proportion of circumcised men is highest among men over 30 years where the prevalence is 53 percent. The

Western Cape (68 percent) and Free State (71 percent) reported the highest proportion of men circumcised with Gauteng and KwaZulu-Natal reporting the least proportion of circumcised men (25 percent and 27 percent respectively). Almost half (49 percent) of men from non-urban residential areas had been circumcised.

Table 5.17 Male circumcision		
Percentage of men 15-59 years who have been circumcised by background characteristics, South Africa 2003		
Background characteristics	Percent	Number
<b>Age</b>		
15-19	25.5	603
20-24	42.4	527
25-29	43.5	416
30-34	51.7	348
35-39	55.0	340
40-44	53.1	323
45-49	52.6	224
50-54	56.2	184
55-59	48.9	155
<b>Residence</b>		
Urban	42.8	2 151
Non-urban	48.7	967
<b>Province</b>		
Western Cape	67.5	228
Eastern Cape	43.8	379
Northern Cape	34.1	216
Free State	70.7	313
KwaZulu-Natal	26.8	199
North West	32.8	208
Gauteng	25.2	59
Mpumalanga	36.3	701
Limpopo	47.5	815
<b>Education</b>		
No education	43.8	141
Grades 1-5	52.8	227
Grades 6-7	45.9	316
Grades 8-11	43.0	1 367
Grade 12	43.8	787
Higher	47.3	279
<b>Population group</b>		
African	50.4	2 540
Afr. urban	50.6	1 613
Afr. non-urban	50.1	927
Coloured	15.8	264
Indian	18.8	79
White	21.7	229
Total	44.7	3 118
Note: 5 men had population group missing or unknown.		

## CHAPTER 6

### INFANT AND CHILD MORTALITY

#### 6.1 Introduction

One of the most important indicators of health for any developing country is the number of children who die within the first year of life. The infant mortality rate and other indices of early childhood mortality also play a role in reflecting health status in general and community development. Given the wealth disparities within the South African society, monitoring the infant mortality rate is critical to track inequalities in child health and progress in social development, central to government's long term policy objectives.

This chapter presents the estimates of levels and trends of child mortality and assesses the plausibility of the results by contrasting them with the previous surveys. It will also focus on socioeconomic factors related to the family and demographic factors related to the mother and child, because they are both important components of child survival.

The mortality rates are calculated from information obtained in the birth history section of the women's questionnaire. In the absence of a complete vital registration system, this information is regarded as being capable of giving reliable estimates of child mortality. Common errors that occur in the collection of retrospective data such as omission of births and deaths would bias the estimates only slightly downwards (Sullivan, 1990). Such omissions are especially common for infants who die shortly after birth. Other problems may include misreporting of date of birth and age at death which can distort both the level and trends in child mortality. It is also possible perverse incentives in completing the questionnaire lead to the poor completion of the birth history questions as discussed in the Chapter 3 on fertility.

The child mortality rates (per thousand) presented in this chapter are defined as follows:

- Neonatal mortality (NN): the probability of dying within the first month of life
- Post neonatal mortality (PNN): the difference between infant and neonatal mortality
- Infant mortality ( ${}_1q_0$ ): the probability of dying in the first year of life
- Child mortality ( ${}_4q_1$ ): the probability of dying between exact age one and five
- Under-five mortality ( ${}_5q_0$ ): the probability of dying between birth and exact age five.

Overall, levels of child mortality in sub-Saharan Africa have been declining, albeit at a slow pace. However, countries affected by AIDS have shown a reversal in the trend (Garenne and Gakusi, 2006; Hill and Amouzou, 2006; Nannan, Bradshaw and Timæus, 2001). The AIDS epidemic in South Africa would be expected to increase child mortality rates over recent years but it may also create a bias in the estimate. The increased mortality among adult women from AIDS may result in an underestimate of child mortality as a result of the association between the mortality of the mother and the risk of mortality of the child, either directly through the transmission of HIV to the child, or indirectly through increased mortality risk among orphans. Thus the children of women who have died and are missing from the survey are likely to have higher mortality than the children of those who participate in the survey. Mady (2003) has reviewed and reported on the extent of this potential bias and concludes that direct methods of estimating child mortality, as applied here, would underestimate the rate slightly, on the order of 5-7 percent.

## 6.2 Levels and Trends in Infant and Child Mortality

Table 6.1 shows neonatal, post-neonatal, infant, child and under-five mortality rates for the three five-year periods before the survey. The most recent estimates centre around 2001 and show that the under-5 mortality rate is 58 per 1000 live-births and the infant mortality rate is 43 per 1000 live-births. Figure 6.1 presents the child mortality trends from the 1970's from previous surveys. The graph shows 5 year retrospective estimates of infant, child and under-five mortality obtained from 3 separate surveys: the 1988-1992 Human Science Research Council (HSRC) Survey, the 1998 and the 2003 South Africa Demographic and Health Surveys. While the previous 2 surveys show absolute congruency between all the age-specific estimates, the most recent 2003 survey shows considerably lower infant, child and under-five mortality levels corresponding to the same period in the 1998 SADHS. The 2003 survey estimates are lower than would be expected in the context of the AIDS epidemic in South Africa, even recognizing that the measurement of child mortality may be biased as a result of the epidemic. The estimate for the recent period is also somewhat lower than the illustrative estimate of under-five mortality derived from the 2001 census of 65-75 per 1000 live births (Dorrington, Moultrie and Timæus, 2004).

Table 6.1 Early childhood mortality rates

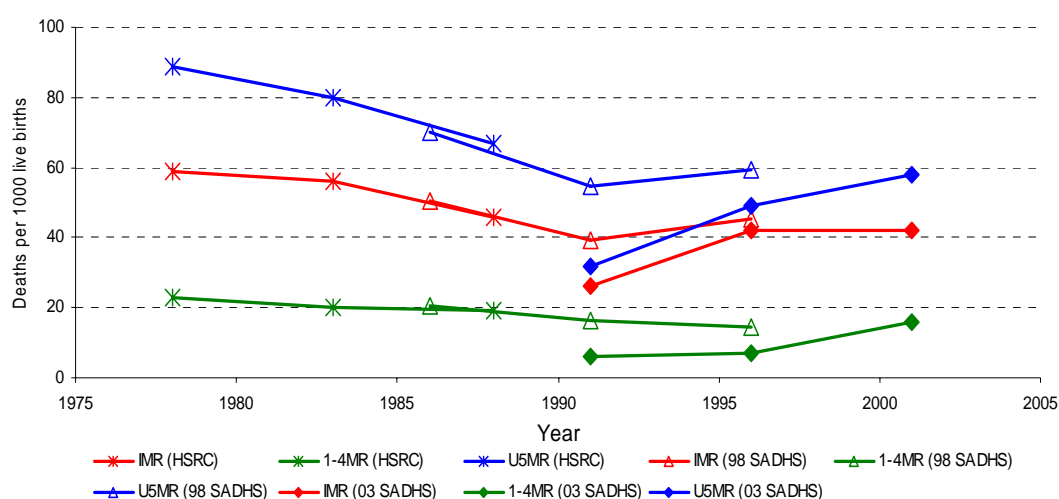
Neonatal, postneonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, South Africa 2003

Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality ( $_1q_0$ )	Child mortality ( $_4q_1$ )	Under-five mortality ( $_5q_0$ )
0-4	15	28	43	16	58
5-9	24	19	42	7	49
10-14	17	10	27	7	33

<sup>1</sup> Computed as the difference between the infant and neonatal mortality rates.

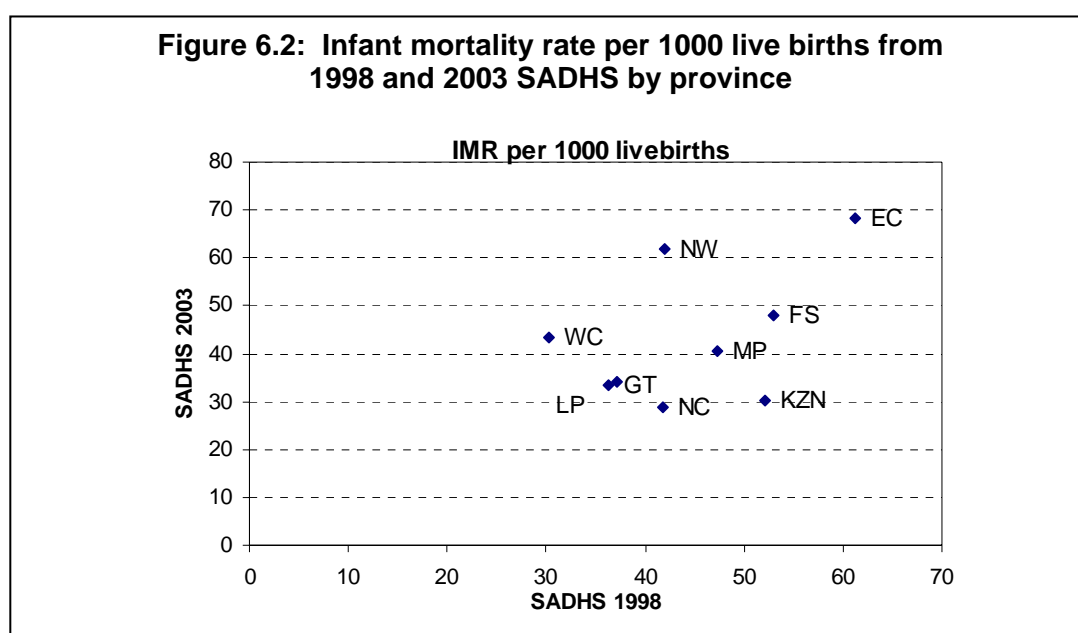
These data should be read with caution. See text for details.

Figure 6.1: Child mortality trends: HSRC 1988-1992, SADHS 1998 and SADHS 2003



A summary of the birth history data (Table C.7) shows that there has been a substantial drop in the number of births reported in the last five years, suggesting that incentives to omit births in the preceding 5 years by simply not completing the questionnaire played a role in this survey. Furthermore, the proportion of child deaths for whom an exact age at death was unknown was high at 21 percent. In these cases, a standard imputation procedure was used with a random allocation of the date of death within a logically plausible time range. In addition, the number of live-births for each woman shows a very unusual age pattern (Table C.8). Unlike the pattern in the 1998 SADHS which displays a steady increase in the number of children born to women associated with increasing age, the number does not increase with the age of women 30 years and older in the 2003 SADHS.

Furthermore, it can be seen from Figure 6.2 that there is poor correlation between the provincial estimates for child mortality from 2003 SADHS<sup>1</sup> with the 1998 SADHS ( $R^2 = 0.2044$  for the infant mortality rate and  $R^2 = 0.0877$  for the under-5 mortality rate). Given the inconsistencies of findings of this survey with the 1998 SADHS and the context of the HIV epidemic with the impact that it has on child mortality, the estimates of the level of child mortality from this survey are not plausible. These data quality concerns make it extremely difficult to interpret what the trend and indeed what the true level of child mortality is. The overall child mortality levels as well as the differentials between sub-groups should be used cautiously.



Although the actual level of child mortality may be high, Table 6.1 shows that the infant, child and under-five mortality have all increased over the 15-year period preceding the survey. Table 6.1 also shows that in the most recent period about three-quarters of all deaths under-five occur in the first year of life and one quarter occur in the first month of life. It is difficult to explain why the infant deaths may account for a much higher proportion of all under-five deaths in the earlier periods. Interestingly, the neonatal mortality rates observed in the most recent period of this survey are a similar order of magnitude to those in the previous survey. However, the post neonatal rates are somewhat lower for the earlier periods.

<sup>1</sup>It should be noted that the childhood mortality rates from the 1998 SADHS were low for some provinces; consequently, the rates were adjusted for three provinces.

### 6.3 Socio-economic Differentials in Childhood Mortality

For purposes of examining differentials in childhood mortality, the estimates of child mortality are based on averages over the 10 year period preceding the survey. Differentials in the various mortality rates by selected socioeconomic characteristics are presented in Table 6.2. The table focuses on basic geographic and socioeconomic characteristics including residence, province, mother's education, and population group. A general observation would be that while the levels of mortality are clearly too low, the data reflect differentials in the expected direction. Attention is drawn to the fact that many of the estimates in this table are based on between only 250-500 births making the mortality estimate considerably less robust. In the case that the estimate is based on less than 250 births, the estimate has not been presented.

**Table 6.2 Early childhood mortality rates by socioeconomic characteristics**

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by background characteristic, South Africa 2003

Background characteristic	Neonatal mortality (NN)	<sup>1</sup> Postneonatal mortality (PNN)	Infant mortality ( <sub>1</sub> q <sub>0</sub> )	Child mortality ( <sub>4</sub> q <sub>1</sub> )	Under-five mortality ( <sub>5</sub> q <sub>0</sub> )
<b>Residence</b>					
Urban	20	21	41	10	51
Non-urban	18	26	45	12	57
<b>Province</b>					
Western Cape	5	40	45	14	58
Eastern Cape	12	55	67	12	78
Northern Cape	*	*	*	*	*
Free State	*	*	*	*	*
KwaZulu-Natal	(33)	(15)	(48)	(21)	68
North West	(27)	(35)	(62)	(16)	(76)
Gauteng	24	9	33	9	43
Mpumalanga	(21)	(19)	(40)	(13)	(52)
Limpopo	(20)	(14)	(34)	(10)	(44)
<b>Education</b>					
No education	(26)	(30)	(56)	(4)	(60)
Grades 1-5	(19)	(62)	(81)	(17)	(97)
Grades 6-7	(14)	(25)	(38)	(11)	(49)
Grades 8-11	26	21	47	13	59
Grades 12	15	15	30	11	41
Higher	*	*	*	*	*
<b>Population</b>					
African	22	22	45	10	54
Afr. urban	24	22	47	9	55
Afr. non-urban	19	23	42	12	53
Coloured	(6)	(38)	(44)	(19)	(62)
Indian	*	*	*	*	*
White	*	*	*	*	*
<b>Total<sup>2</sup></b>	15	28	43	16	58

<sup>1</sup> Computed as the difference between the infant and neonatal mortality rates.

<sup>2</sup> Rates for the five year period before the survey.

Note: Figures in parenthesis are based on 250-500 while an asterisk denotes a figure based on fewer than 250 births that has been suppressed.

These data should be read with caution. See text for details.

Table 6.2 shows mortality is consistently higher in non-urban than urban areas except for neonatal mortality. This pattern of higher non-urban than urban mortality was also observed in the 1998 SADHS, although the difference has decreased. The provincial levels of childhood mortality are clearly not a true reflection of South African reality and can not be relied upon particularly given the weak statistical correlation of the infant mortality rate as seen in Figure 6.1, the most obvious outlier being KwaZulu-Natal. The well understood relationship of child mortality with maternal education and population group differences do not follow the expected patterns either. Child

mortality for coloured children is higher than child mortality for African children in this survey. All other surveys and censuses have found mortality risk by population group to be consistently higher for Africans than it is for coloureds, Indians and whites respectively (HSRC, Census 1996, SADHS 1998). The results from this survey are inconsistent with these strong established relationships and are clearly not a reflection of South African reality.

## 6.4 Demographic Differentials in Childhood Mortality

It is well established that bio-demographic factors of the mother and child influence childhood mortality (Hobcraft, McDonald and Rutstein, 1983). Table 6.3 examines the relationship between childhood mortality and bio-demographic variables for the 10 year period preceding the survey. Given the inconsistencies in the data, the estimates should be treated with caution. However, many of the expected patterns in child mortality are also displayed in these data. The overall pattern of heavier mortality for boys than girls also holds true for South Africa. The pattern of increasing mortality with increasing maternal age follows the international consensus of higher mortality risk at the extreme ends of the reproductive cycle (15-49). Birth order also shows the typical pattern of higher mortality with the first child and the higher parities of over four children. This is not surprising as birth order and parity are very closely linked to the age of the mother. The mortality pattern associated with length of the previous birth interval also follows the expected direction. It would be useful to assess the difference in child mortality rates for births that were small compared with average weight or larger births. However, too high a proportion of mother's did not have a recording of the birth weight of the child (21 percent).

Table 6.3 Early childhood mortality rates by demographic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by demographic characteristics, South Africa 2003

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN) <sup>1</sup>	Infant mortality ( <sub>1</sub> q <sub>0</sub> )	Child mortality ( <sub>4</sub> q <sub>1</sub> )	Under-five mortality ( <sub>5</sub> q <sub>0</sub> )
<b>Child's sex</b>					
Male	26	22	48	13	61
Female	14	24	37	9	46
<b>Mother's age at birth</b>					
<20	16	15	31	9	40
20-29	18	20	38	10	48
30-39	25	26	51	14	65
40-49	*	*	*	*	*
<b>Birth order</b>					
1	20	15	35	13	47
2-3	14	21	35	9	43
4-6	33	26	59	11	70
7+	*	*	*	*	*
<b>Previous birth interval</b>					
<2 years	17	70	87	23	108
2 years	27	19	45	11	56
3 years	17	38	54	6	60
4+ years	18	17	35	8	43

<sup>1</sup> Computed as the difference between the infant and neonatal mortality rates.

Note: Figures in parenthesis are based on 250-500 births.

These data should be read with caution. See text for details.

The relationship between maternal age and child mortality shows the expected U-shape with women younger than 20 years having higher infant and under five mortality rates than women between 20 and 40 years of age. Mortality by birth order also shows a U-shaped pattern that is consistent with international findings. In general first order children have slightly higher mortality risks than children of birth orders 2-3, after which mortality increases as birth order increases. The time interval between births also has a substantial impact on child survival chances. The data show that when the previous birth interval is less than two years, both infant and under-five mortality

increases two-fold. This is also a finding consistent with international research and highlights the importance of birth spacing as a means of reducing childhood mortality.

## **6.5 High-Risk Fertility Behavior**

It is well established that the fertility pattern of mothers is strongly related to child survival status. Higher risks of infant and early age mortality are associated with very young or older maternal ages, short birth intervals and high parities. The following analysis uses these factors and groups the mother's characteristics according to higher or lower risk. Mothers considered to be at higher risk are under 18 years of age at the time of the birth or age 35 years or more at the time of birth. A short birth interval is defined as less than 24 months, and a high order birth is one occurring after three or more previous births. A birth therefore, may have from zero to three potentially high-risk factors. Although first births are considered high risk, they are placed in a separate category due to the fact that they are not *avoidable* risks in the same sense as the other factors.

The results are based on births in the previous 5 years before the survey and are presented as risk ratios in Table 6.4. The first column shows the percentage of births that fall into each of the risk categories. Thirty-six percent of births are in at least one high risk category, while twelve percent have multiple high risk characteristics. The second column represents risk ratios which are the ratios of the proportion of children in a particular risk category who have died to the proportion in the reference category who have died. The reference category has no high risk births. The results confirm that babies born to women at the extreme ends of their reproductive years have a higher mortality risk, as do babies born after short birth intervals. Higher parity births have a somewhat increased mortality risk (1.4); when this risk is coupled with a short birth interval, the babies have a 3 times greater mortality risk. In South Africa this category of multiple risk represents less than 2 percent of all births in the last 5 years and is not of major public health importance.



**Table 6.4 High-risk fertility behaviour**

Percentage distribution of children born in the five years preceding the survey by category of elevated risk of mortality and the risk ratio, and percent distribution of currently married women by category of risk if they were to conceive a child at the time of the survey, South Africa 2003

Risk category	Births in the 5 years preceding the survey		Percentage of currently married women
	Percentage of births	Risk ratio	
<b>Not in any high risk category</b>	32.6	1.00	34.0
<b>Unavoidable risk category</b>			
First order births between ages 18 and 34 years	31.8	0.83	7.8
<b>Single high-risk category</b>			
Mothers's age <18	7.3	0.95	0.3
Mothers's age >34	5.6	0.98	17.8
Birth interval <24 months	2.9	1.91	4.4
Birth order >3	7.7	1.40	6.2
Subtotal	23.4	1.22	28.7
<b>Multiple high-risk category</b>			
Age >34 & birth interval <24 months	0.2	0.00	0.2
Age >34 & birth order >3	9.7	1.33	26.0
Age >34 & birth interval <24 months & birth order >3	0.6	11.39	1.7
Birth interval <24 months & birth order >3	1.6	2.79	1.5
Subtotal	12.1	1.99	29.4
In any avoidable high-risk category	35.6	1.49	58.2
Total	100.0	-	100.0
Number of births	2 120	-	2 658

Note: Risk ratio is the ratio of the proportion dead among births in a specific high-risk category to the proportion dead among births not in any high-risk category.

na = Not applicable.

<sup>1</sup> Women are assigned to risk categories according to the status they would have at the birth of a child if they were to conceive at the time of the survey: current age less than 17 years and 3 months or older than 34 years and 2 months, latest birth less than 15 months ago, or latest birth being of order 3 or higher.

<sup>2</sup> Includes the category age <18 and birth order >3.

a Includes sterilized women.

The third column shows the distribution of currently married women by risk category into which a currently conceived child would fall. Comparing this percentage with the distribution of births in the last five years, gives an indication that without birth control, the percentage of births that would be high risk because of maternal age greater than 34 would rise significantly as would the percentage of births with multiple high risk characteristics.

## 6.6 Early Childhood Mortality and Women's Status

The results of child mortality and women's status are shown in Table 6.5. The inclusion of these questions into the Women's Questionnaire is an attempt to understand the relationship that child mortality has with the autonomy of women. The indices represent estimates for the 10 year period preceding the survey. The results from this table should be viewed cautiously. While the question relating to the justification of wife beating follows the expected direction, the results of the questions relating to the number of final decisions a woman makes and the number of reasons for refusing sex with husband, yield quite unlikely outcomes.

Table 6.5 Early childhood mortality rates by women's status

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by women's status indicators, South Africa 2003

Women's status Indicators	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
<b>Number of decisions in which woman has final say</b>					
0	17	50	67	5	71
1-2	12	29	41	13	53
3-4	17	9	26	20	46
5	25	19	43	9	52
<b>Number of reasons to refuse sex with husband</b>					
0	16	19	34	13	47
1-2	32	59	91	6	97
3-4	20	22	42	11	52
<b>Number of reasons wife beating is justified</b>					
0	19	22	41	11	52
1-2	20	28	47	10	57
3-4	23	19	42	17	58
5	24	38	62	14	75

na = Not applicable.

<sup>1</sup> Computed as the difference between the infant and neonatal mortality rates.

<sup>2</sup> Either by herself or jointly with others.

These data should be read with caution. See text for details.

## **CHAPTER 7**

### **MATERNAL AND CHILD HEALTH**

#### **7.1 Introduction**

In the current rights-based dispensation of South Africa, mothers and children have been accorded special recognition given their importance in society and recognition of their special needs and vulnerabilities resulted in many interventions being targeted at mothers and children, including health-specific interventions.

As access to appropriate good quality health services is one of the many important factors that have a bearing on the health of mothers and children, the ongoing monitoring of health service accessibility, coverage, utilisation and quality, is necessary for ongoing planning and delivery of services to these groups that are particularly vulnerable in our current context of poverty and HIV.

This chapter deals with aspects of maternal and child health status, as well as health service coverage to mothers and children. The first few sections deal primarily with antenatal and obstetric care. The ensuing sections deal with aspects of child health that relate to preventive programme coverage (using immunisation coverage as an indicator), the prevalence and treatment of two acute childhood conditions covered by the Integrated Management of Childhood Illnesses (IMCI) and are particularly prevalent among children under five years of age, and concludes by looking at serious accidents and injuries - these being the most common cause of death and morbidity among older children.

In Section 2.12 it has already been noted that the number of children in the SADHS is relatively small. This means that most of the data presented by background characteristics for child health issues in this chapter may be problematic due to the small sample size. Furthermore, some of the results for KwaZulu-Natal are anomalous when compared with the 1998 SADHS and as that province has the largest child population in the country, this skews the national averages. Care must therefore be taken when interpreting and using the results for the child health indicators.

#### **7.2 Antenatal Care**

The results of the survey shown in Table 7.1 indicate continuing high levels of utilisation of antenatal care for births in the preceding five years (92 percent), only slightly lower than 94 percent utilisation observed in the 1998 SADHS. Mothers reported visiting antenatal care a median of seven times during their pregnancy (Table 7.2). For the majority of births (54 percent), the first antenatal care visit was before six months of gestation. However, for more than a fifth of pregnancies, women did not receive antenatal care until six or seven months of gestation and 2.6 percent did not receive antenatal care until eight months of gestation. The median time at which mothers started antenatal visits was 5.5 months of gestation, an increase from median of 5.2 in the last survey.

Table 7.1 Antenatal care							
Percentage distribution of most recent births in the five years preceding the survey by source of antenatal care during pregnancy, according to selected background characteristic, South Africa 2003							
Background characteristic	Doctor	Nurse/ midwife	Auxillary midwife	No one	Missing	Total	Number of births
<b>Mother's age at birth</b>							
<20	19.0	71.7	0.4	6.5	2.3	100.0	333
20-34	30.0	63.0	0.3	4.5	2.2	100.0	1 231
35+	29.5	57.7	0.0	7.4	5.4	100.0	295
<b>Birth order</b>							
1	25.6	66.0	0.2	5.7	2.5	100.0	742
2-3	30.8	62.1	0.4	4.2	2.5	100.0	765
4-5	30.5	59.4	0.0	7.0	3.1	100.0	261
6+	16.1	71.8	0.0	7.2	5.0	100.0	90
<b>Residence</b>							
Urban	34.7	56.3	0.4	5.8	2.8	100.0	1 219
Non-urban	15.2	77.9	0.0	4.4	2.6	100.0	640
<b>Province</b>							
Western Cape	55.6	33.5	0.5	7.6	2.8	100.0	275
Eastern Cape	11.5	83.6	0.0	4.3	0.5	100.0	225
Northern Cape	20.2	69.9	0.4	8.7	0.7	100.0	41
Free State	14.1	76.8	0.0	3.4	5.7	100.0	117
KwaZulu-Natal	53.4	36.0	0.0	3.2	7.4	100.0	107
North West	17.2	77.9	0.0	2.7	2.2	100.0	173
Gauteng	31.2	58.7	0.6	6.5	3.0	100.0	515
Mpumalanga	16.1	77.6	0.0	5.5	0.8	100.0	144
Limpopo	17.4	75.9	0.0	4.2	2.4	100.0	261
<b>Education</b>							
No education	7.8	69.9	3.5	13.7	5.1	100.0	82
Grades 1-5	10.4	79.9	0.0	8.6	1.1	100.0	116
Grades 6-7	19.4	71.6	0.1	4.1	4.8	100.0	202
Grades 8-11	25.4	66.2	0.1	5.2	3.0	100.0	866
Grade 12	39.0	55.8	0.0	3.5	1.7	100.0	441
Higher	46.1	47.0	0.0	5.7	1.2	100.0	152
<b>Population group</b>							
African	24.0	68.6	0.2	4.6	2.7	100.0	1 566
Afr. urban	30.4	61.5	0.3	4.8	2.9	100.0	969
Afr. non-urban	13.5	80.1	0.0	4.1	2.2	100.0	597
Coloured	43.1	43.1	0.6	9.2	4.1	100.0	202
White	61.5	24.8	0.0	13.6	0.0	100.0	64
Indian	67.1	28.6	0.0	1.4	3.0	100.0	26
Total	28.0	63.7	0.2	5.3	2.7	100.0	1 859

**Table 7.2 Number of antenatal care visits and timing of first visit**

Percentage distribution of women who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits for the most recent birth, and by the timing of the first visit according to residence, South Africa 2003

Number and timing of ANC visits	Residence		Total
	Urban	Non-urban	
<b>Number of ANC visits</b>			
None	5.8	4.4	5.3
1	2.0	3.0	2.3
2-3	11.7	20.5	14.7
4+	54.2	59.7	56.1
Don't know/missing	26.3	12.4	21.5
Total	100.0	100.0	100.0
<b>Number of months pregnant at time of first ANC visit</b>			
No antenatal care	5.8	4.4	5.3
<4	34.5	26.6	31.7
4-5	28.0	32.8	29.7
6-7	23.9	28.5	25.5
8+	2.8	3.2	2.9
Don't know/missing	5.0	4.6	4.9
Total	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	4.7	5.2	4.9
Number of women	1 219	640	1 859

Table 7.1 shows that nurses or midwives continue to provide the majority of the care (56 percent) followed by doctors (25 percent). The source of antenatal care varied slightly by women's age. Births to women who were younger than 20 years old were less likely to have had antenatal care provided by a doctor than older women. Doctors are more likely to provide antenatal care to women in urban areas than to women in non-urban areas (41 percent versus 17 percent). The highest proportions of pregnancies that were cared for by a doctor occurred in Gauteng, Western Cape and Northern Cape. The lowest proportions occurred in the Eastern Cape and the Northern Province. The differences in antenatal care provision by population group show that the highest proportion of pregnancies cared for by a doctor was among

white women (82 percent) and the lowest was amongst African women (23 percent). The percentage was even lower for African women living in non-urban areas (15 percent). Antenatal care was associated with levels of education. Table 7.2 shows that births to women with less education were more likely to receive antenatal care from a nurse or midwife than from a doctor. The proportion of births to women who obtained antenatal care from a doctor increased from 7 percent among women with no education to 42 percent among women with tertiary education.

As found in the previous survey a relatively high proportion of white women do not receive any antenatal care (11 percent). Overall, higher order births, those in the Western and Northern Cape and those whose mothers have no education, are more likely not to receive antenatal care.

Key components of antenatal care such as weight, height and blood pressure measurements were almost universally conducted across the whole sample (Table 7.3). Urine and blood samples were also taken from nearly all mothers attending antenatal care (Table 7.3). The coverage of interventions such as provision of iron tablets and informing mothers of danger signs was less uniform. Young mothers below the age of 20, living in rural areas and those with no education were less likely to be informed of complications. Of particular concern is the finding that a minority of mothers in the Eastern Cape (48 percent), Free State (38 percent) and Limpopo (25 percent) were informed of possible pregnancy complications. A majority (63 percent) of mothers received iron supplements. Once again mothers who were young or lived in non-urban areas or did not have any education were less likely to receive iron supplementation. However, there was fairly consistent coverage across all provinces.

Table 7.3 Components of antenatal care

Percentage of women with a live birth in the five years preceding the survey who received antenatal care for the most recent birth, by content of antenatal care, and percentage of women with a live birth in the five years preceding the survey who received iron tablets or syrup or anti-malarial drugs, according to selected background characteristic, South Africa 2003

Background characteristic	Informed of signs of pregnancy complications	Among women who received antenatal care					Number of women	Among women who gave birth		
		Weight measured	Height measured	Blood pressure measured	Urine sample taken	Blood sample taken		Received iron tablets or syrup	Received anti-malarial drugs	Number of women
<b>Age at birth</b>										
<20	45.9	94.8	72.4	92.0	94.6	91.2	303	60.4	1.1	333
20-24	57.8	97.4	77.3	97.2	97.0	95.2	1 147	63.1	0.6	1 231
25+	59.1	97.9	72.7	97.4	97.2	95.1	260	65.0	0.4	295
<b>Birth order</b>										
1	54.5	96.3	75.1	94.7	95.9	93.3	683	62.4	0.6	742
2-3	60.7	97.2	79.4	98.2	97.4	96.2	715	64.7	0.7	765
4-5	51.2	98.0	73.6	96.6	96.4	94.0	233	60.9	0.8	261
6+	38.9	100.0	54.7	92.8	96.0	91.6	80	57.4	1.0	90
<b>Residence</b>										
Urban	62.8	97.2	83.4	97.8	97.0	96.8	1 112	64.0	0.7	1 219
Non-urban	43.1	96.8	61.5	93.5	95.9	90.3	598	60.8	0.7	640
<b>Province</b>										
Western Cape	74.4	97.3	90.4	98.3	97.3	96.2	242	53.3	0.0	275
Eastern Cape	47.5	92.5	46.3	92.9	93.1	86.7	216	64.0	0.0	225
Northern Cape	54.5	99.7	81.1	99.7	99.2	98.4	37	84.2	0.0	41
Free State	37.9	97.2	87.2	96.2	97.9	97.1	109	51.0	0.5	117
KwaZulu-Natal	73.8	99.7	81.2	100.0	97.9	98.1	98	69.5	0.0	107
North West	51.5	95.6	72.5	94.8	95.3	95.1	166	44.7	0.0	173
Gauteng	68.0	98.3	88.7	98.2	97.6	96.5	462	69.1	1.2	515
Mpumalanga	57.8	97.5	81.3	97.0	97.1	95.4	136	79.1	0.9	144
Limpopo	25.2	97.6	53.6	92.7	96.2	92.0	245	62.3	1.8	261
<b>Mother's education</b>										
No education	44.2	95.4	76.3	87.8	92.4	88.7	66	56.4	0.0	82
Grades 1-5	48.5	93.1	51.0	94.3	92.3	87.1	104	58.3	0.8	116
Grades 6-7	49.1	94.7	76.8	92.7	94.2	91.8	187	61.3	0.9	202
Grades 8-11	55.2	97.5	77.3	96.3	96.7	95.0	792	58.7	0.3	866
Grade 12	60.6	98.8	80.3	99.1	98.2	96.3	422	69.1	1.7	441
Higher	65.9	96.1	70.0	98.7	100.0	98.2	140	78.0	0.0	152
Total	55.9	97.0	75.7	96.3	96.6	94.5	1 710	62.9	0.7	1 859

### 7.3 Tetanus Toxoid

To estimate the extent of tetanus toxoid vaccination coverage during pregnancy, women were asked to report if they received injections against tetanus during pregnancy for all births in the five year period preceding the survey. These results are presented in Table 7.4 and show that 39.5 percent of women received at least one dose of tetanus toxoid during pregnancy in the past five years. However there were a large number of don't know or missing in the responses (29 percent). Of those that had a response the coverage was 56 percent, similar to that found in the previous survey. As previously the coverage in the non-urban area was much higher than in the urban area (51 percent versus 34 percent). This could probably be explained by the very low coverage in the Western Cape (10 percent) and Gauteng (25 percent). Unlike other antenatal care indicators there was little variation with differing levels of education. As found in the previous survey, low proportions of coloured and white women received tetanus toxoid vaccinations during pregnancy.

Table 7.4 Tetanus toxoid injections						
Percentage distribution of women who had a live birth in the five years preceding the survey by number of tetanus toxoid injections received during pregnancy for the most recent birth, according to background characteristics, South Africa 2003						
Background characteristic	None	One injection	Two or more injections	Don't know/missing	Total	Number of women
<b>Age at birth</b>						
<20	33.1	22.5	32.1	12.3	100.0	333
20-34	37.0	17.8	25.6	19.6	100.0	1 231
35-49	36.3	19.2	21.7	22.8	100.0	295
<b>Birth order</b>						
1	35.5	19.0	28.3	17.2	100.0	742
2-3	37.1	17.7	26.3	19.0	100.0	765
4-5	35.4	20.9	21.2	22.5	100.0	261
6+	37.0	21.7	22.0	19.3	100.0	90
<b>Residence</b>						
Urban	40.8	14.0	24.0	21.2	100.0	1 219
Non-urban	27.5	28.0	30.3	14.1	100.0	640
<b>Region</b>						
Western Cape	76.8	5.9	5.9	11.4	100.0	275
Eastern Cape	24.5	27.7	35.7	12.0	100.0	225
Northern Cape	27.8	23.3	38.2	10.7	100.0	41
Free State	21.0	24.5	42.4	12.1	100.0	117
KwaZulu-Natal	18.9	19.3	36.1	25.7	100.0	107
North West	36.3	34.2	19.8	9.7	100.0	173
Gauteng	39.2	7.3	21.5	32.0	100.0	515
Mpumalanga	25.9	30.8	32.2	11.0	100.0	144
Limpopo	18.7	27.2	36.1	18.0	100.0	261
<b>Education</b>						
No education	27.5	27.8	20.3	24.4	100.0	82
Grades 1-5	34.7	31.2	21.0	13.1	100.0	116
Grades 6-7	31.6	24.1	27.9	16.4	100.0	202
Grades 8-11	37.6	17.0	26.7	18.7	100.0	866
Grade 12	37.5	15.6	24.6	22.3	100.0	441
Higher	36.5	17.5	32.6	13.4	100.0	152
<b>Population</b>						
African	31.4	20.3	27.7	20.5	100.0	1 566
Afr. urban	35.5	14.5	25.3	24.6	100.0	969
Afr. non-urban	24.7	29.8	31.6	13.9	100.0	597
Coloured	65.8	10.7	14.3	9.2	100.0	202
Indian	47.6	16.6	22.6	13.2	100.0	26
White	55.9	8.9	26.9	8.3	100.0	64
Other	100.0	0.0	0.0	0.0	100.0	0
<b>Total</b>	<b>36.2</b>	<b>18.8</b>	<b>26.2</b>	<b>18.8</b>	<b>100.0</b>	<b>1 859</b>

## 7.4 Assistance and Medical Care at Delivery

An important finding from this survey is that the proportion of women who reported that their last live birth occurred in a health facility increased to 89 percent from the 83 percent reported in the 1998 survey (Table 7.5). Much of this increase has occurred in the non-urban areas with an increase from the 74 percent reported in 1998 to 83 percent in 2003. Only 6.5 percent of deliveries were reported as having occurred at home. In particular there were sharp falls in proportion of home deliveries in Mpumalanga (23 to 7 percent), Eastern Cape (25 to 16 percent), Free State (13 to 3.5 percent), Northern Province (19 to 10 percent), KwaZulu-Natal (14 to 5 percent) and North West (12 to 5 percent). The proportion of women who delivered at home was related to the level of education with home deliveries for 20 percent of the women with no education compared to 2.5 percent of the women with higher education. The proportion of home deliveries was highest amongst the non-urban African women (13 percent) and lowest among Indian women (less than 1 percent). Amongst women who delivered their last newborn outside of a health facility 80 percent reported receiving no post-natal check-up and only 13 percent received a check-up within 2 days.

Table 7.5 Place of delivery

Percentage distribution of births in the five years preceding the survey by place of delivery, according to selected background characteristic, South Africa 2003

Characteristics, South Africa 2008

Background characteristic	Health facility		At home	Other/missing	Total	Number of births
	Public sector	Private sector				
<b>Mother's age at birth</b>						
<20	86.8	1.61	4.31	7.28	100.0	374
20-34	85.3	6.43	5.47	2.77	100.0	1 405
35+	67.1	9.3	13.84	9.73	100.0	340
<b>Birth order</b>						
1	86.5	5.5	3.5	4.5	8.0	844
2-3	83.5	7.7	5.7	3.1	8.8	860
4-5	78.8	4.0	11.5	5.7	17.2	303
6+	57.8	2.8	24.0	15.4	39.4	112
<b>Residence</b>						
Urban	84.0	7.9	3.7	4.4	8.1	1 383
Non-urban	80.2	2.6	12.0	5.2	17.2	736
<b>Province</b>						
Western Cape	82.7	7.9	1.6	7.8	9.4	323
Eastern Cape	77.2	4.5	15.6	2.7	18.3	266
Northern Cape	83.3	6.4	8.9	1.4	10.3	46
Free State	86.0	3.3	3.6	7.2	10.8	130
KwaZulu-Natal	68.7	20.2	5.0	6.1	11.1	117
North West	87.4	5.7	5.2	1.7	6.9	192
Gauteng	84.9	4.7	4.8	5.6	10.4	588
Mpumalanga	85.8	7.0	6.9	0.3	7.2	169
Limpopo	82.1	3.3	10.2	4.4	14.6	288
<b>Education</b>						
No education	75.0	0.0	19.7	5.4	25.0	95
Grades 1-5	67.2	2.7	25.6	4.5	30.1	150
Grades 6-7	83.0	0.1	11.7	5.3	16.9	219
Grades 8-11	87.5	1.9	4.6	6.0	10.6	990
Grade 12	84.9	10.7	1.6	2.9	4.4	498
Higher	65.2	31.0	2.5	1.3	3.8	168
<b>Population group</b>						
African	84.4	3.8	7.3	4.5	11.8	1 773
Afr. urban	86.3	4.9	3.9	4.9	8.7	1 094
Afr. non-urban	81.4	1.8	12.9	3.9	16.8	678
Coloured	86.0	4.3	2.5	7.3	9.8	240
White	41.5	51.3	5.5	1.7	7.2	75
Indian	57.1	40.1	0.6	2.2	2.9	32
Total	82.7	6.0	6.6	4.7	11.3	2 120

The type of assistance a woman receives during childbirth has important health consequences for both mother and child. Table 7.6 shows the percentage distribution of live births in the five years before the survey by type of assistance received during delivery, according to background characteristics. A high proportion of deliveries were attended by a medically trained person (91 percent) and this is higher than the 84 percent in the 1998 SADHS. More than half the deliveries were attended by a trained nurse or midwife and nearly a third of the deliveries were attended by a doctor. A very small proportion of deliveries were attended by a Traditional Birth Attendant (TBA) or not attended at all. There were strong urban/non-urban differences in the type of birth attendant. The proportion of deliveries assisted by a doctor was higher in the urban areas (34 percent) than in the non-urban areas (13 percent). More than two-thirds of white women (68 percent) were assisted by a doctor compared with 11 percent of non-urban African women.



**Table 7.6 Assistance during delivery**

Percentage distribution of births in the five years preceding the survey by type of assistance during delivery, according to selected background characteristic, South Africa 2003

Background characteristic	Attendant assisting during delivery							Total	Number of births
	Doctor	Nurse/ midwife	TBA	Relative/ friend	Other	No one	Missing		
<b>Mother's age at birth</b>									
<20	21.1	72.0	1.4	1.8	0.0	0.7	2.9	100.0	374
20-34	26.4	67.1	0.4	2.9	0.2	1.0	2.0	100.0	1 405
35+	32.4	47.3	1.3	6.3	0.7	3.7	8.4	100.0	340
<b>Birth order</b>									
1	26.9	67.3	0.9	1.6	0.0	0.7	2.7	100.0	844
2-3	27.7	65.4	0.4	2.9	0.1	1.3	2.3	100.0	860
4-5	27.7	60.1	0.8	5.8	0.5	1.8	3.2	100.0	303
6+	10.4	53.9	2.3	11.4	2.2	6.4	13.4	100.0	112
<b>Residence</b>									
Urban	33.7	60.7	0.2	1.6	0.0	1.0	2.8	100.0	1 383
Non-urban	12.8	72.3	1.7	6.4	0.7	2.2	3.9	100.0	736
<b>Province</b>									
Western Cape	39.1	51.9	0.8	0.4	0.0	0.4	7.4	100.0	323
Eastern Cape	18.8	64.8	1.4	9.6	1.8	1.8	1.8	100.0	266
Northern Cape	30.7	63.6	1.7	2.0	0.4	0.7	1.1	100.0	46
Free State	15.2	76.5	0.0	1.0	0.0	0.0	7.4	100.0	130
KwaZulu-Natal	57.8	33.3	0.0	1.3	0.0	2.6	5.0	100.0	117
North West	13.9	79.4	0.8	2.0	0.0	1.5	2.5	100.0	192
Gauteng	33.9	61.3	0.0	1.8	0.0	1.2	1.9	100.0	588
Mpumalanga	18.1	74.4	1.4	3.4	0.0	2.7	0.0	100.0	169
Limpopo	9.0	78.6	1.8	6.3	0.0	2.1	2.2	100.0	288
<b>Education</b>									
No education	18.9	56.1	1.5	11.8	0.0	5.7	6.1	100.0	95
Grades 1-5	10.9	62.8	2.1	12.3	1.6	6.7	3.7	100.0	150
Grades 6-7	24.4	62.3	1.6	4.8	1.1	2.0	3.8	100.0	219
Grades 8-11	21.0	71.9	0.7	2.4	0.0	0.9	3.1	100.0	990
Grade 12	35.8	60.6	0.2	0.9	0.0	0.2	2.3	100.0	498
Higher	51.7	45.3	0.0	0.0	0.0	0.0	3.0	100.0	168
<b>Population group</b>									
African	22.5	68.3	0.8	3.8	0.3	1.7	2.7	100.0	1 773
Afr. urban	29.7	64.3	0.1	1.8	0.0	1.3	2.8	100.0	1 094
Afr. non-urban	10.9	74.8	1.8	6.9	0.7	2.4	2.5	100.0	678
Coloured	36.8	54.2	0.8	0.8	0.1	0.1	7.3	100.0	240
White	67.9	30.4	0.0	0.0	0.0	0.0	1.7	100.0	75
Indian	70.2	27.2	0.0	0.6	0.0	0.0	2.0	100.0	32
Total	26.4	64.8	0.8	3.2	0.2	1.4	3.2	100.0	2 120

Table 7.7 shows the trends in reproductive health care by 3 indicators of women's status: the number of decisions in which the woman has the final say, the number of reasons to refuse sex with husband, and the number of reasons for which wife beating is justified. As the reproductive health care indicators are all relatively high, there is not much scope for variations. However, there is a strong trend between the number of reasons that wife beating is justified and receiving post-natal care within 2 days of delivery.

Table 7.7 Reproductive health care by women's status

Percentage of women with a live birth in the five years preceding the survey who received antenatal and postnatal care from a health professional for the most recent birth, and percentage of births in the five years preceding the survey for which mothers received professional delivery care, by women's status indicators, South Africa 2003

Women's status indicator	Antenatal care	Postnatal care within first two days	Number of women	Delivery care from doctor/nurse/midwife	Number of births
<b>Number of decisions in which woman has final say</b>					
0	92.7	91.1	406	91.3	450
1-2	90.0	91.3	685	89.1	795
3-4	90.0	94.2	320	94.9	363
5	93.4	90.0	448	91.8	512
<b>Number of reasons to refuse sex with husband</b>					
0	91.2	92.5	499	93.1	566
1-2	87.9	86.4	94	89.5	111
3-4	93.7	88.9	187	85.0	213
5	91.4	91.8	1 080	91.6	1 229
<b>Number of reasons wife beating is justified</b>					
0	91.3	92.2	1 491	92.6	1 701
1-2	90.5	89.3	249	85.8	285
3-4	91.9	89.0	80	82.7	88
5	98.1	81.5	39	88.1	46
Total	91.4	91.4	1 859	91.2	2 120

## 7.5 Characteristics of Delivery

The 2003 SADHS collected information on several other aspects relating to the delivery of babies, such as whether the delivery was by caesarean section. Questions on birth weight and size of baby at birth were included to estimate the proportion of low birth weight infants. The data show that 21 percent of women in the survey delivered by caesarean section. Eight percent of births weigh less than 2.5kg (Table 7.8). Urban women had more caesarean sections than non-urban women (24 percent versus 15 percent). Women who delivered in the provinces of Gauteng, Western Cape and North West had more caesarean sections and those in Northern Province had the least. As in the 1998 SADHS an extremely high rate of 43 percent was reported by white women (though in this instance it was based on a very small sample size). The proportion of caesarean sections varies from 9 percent in those with grade 1-5 education to 30 percent of women with post-matric levels of education. Information on birth weight was collected in the survey but was not known in one third of the deliveries. From the data that were reported, low birth weight was more common amongst the women who were younger than 20 compared with older women (20 years and above). A higher proportion of first births weigh less than 2.5 kg.

Table 7.8 Delivery characteristic: caesarean section and birth weight, and size of child

Among births in the five years preceding the survey, the percentage of deliveries by caesarean section, and the percentage distribution by birth weight, according to selected background characteristic, South Africa 2003

Background characteristic	Delivery by C-section	Birth weight			Size of child at birth					Number of births
		Less than 2.5 kg	2.5 kg or more	Birth weight not provided	Very small	Smaller than average	Average or larger	Don't know/missing	Total	
Mother's age at birth										
<20	16.2	9.0	62.2	28.8	6.7	5.4	83.9	4.0	100.0	374
20-34	19.1	8.8	62.2	29.0	6.1	7.5	83.0	3.5	100.0	1 405
35+	22.6	3.8	57.3	38.8	5.9	5.2	77.6	11.4	100.0	340
Birth order										
1	19.8	10.3	61.5	28.2	6.6	6.2	82.9	4.3	100.0	844
2-3	23.9	7.7	64.4	27.9	5.5	7.1	83.7	3.8	100.0	860
4-5	16.0	5.3	60.0	34.7	6.8	7.6	79.6	6.0	100.0	303
6+	13.9	0.7	42.3	57.0	5.8	6.0	74.0	14.2	100.0	112
Residence										
Urban	23.7	9.0	59.5	31.5	6.7	6.3	82.7	4.3	100.0	1 383
Non-urban	14.8	6.2	65.1	28.7	5.1	7.5	81.6	5.8	100.0	736
Province										
Western Cape	33.6	11.2	57.5	31.4	6.5	10.4	74.1	9.0	100.0	323
Eastern Cape	21.8	5.3	58.0	36.7	8.0	6.6	80.6	4.8	100.0	266
Northern Cape	18.9	14.6	67.2	18.2	10.4	10.9	75.1	3.6	100.0	46
Free State	15.4	6.8	61.0	32.2	4.1	7.3	78.7	9.9	100.0	130
KwaZulu-Natal	14.1	7.4	59.4	33.2	4.7	4.9	81.8	8.7	100.0	117
North West	21.9	7.9	67.0	25.2	8.2	6.7	80.3	4.9	100.0	192
Gauteng	20.5	8.2	57.0	34.8	6.5	2.7	88.5	2.4	100.0	588
Mpumalanga	20.4	4.8	67.0	28.2	7.1	5.9	86.3	0.7	100.0	169
Limpopo	9.7	8.4	71.3	20.4	2.4	11.3	82.3	4.0	100.0	288
Education										
No education	13.3	6.2	50.1	43.7	6.2	8.9	75.1	9.7	100.0	95
Grades 1-5	9.4	3.6	45.5	50.9	8.2	4.9	79.6	7.4	100.0	150
Grades 6-7	18.7	8.7	60.6	30.8	4.2	6.4	83.3	6.1	100.0	219
Grades 8-11	19.5	7.2	61.5	31.4	6.5	8.1	80.6	4.9	100.0	990
Grade 12	25.1	11.6	65.3	23.1	6.2	5.4	84.7	3.7	100.0	498
Higher	30.4	6.6	71.8	21.6	5.1	3.2	90.4	1.3	100.0	168
Population group										
African	18.1	7.8	60.3	31.9	6.4	5.7	83.5	4.5	100.0	1 773
Afr. urban	21.1	8.7	56.3	35.0	7.2	4.6	83.8	4.4	100.0	1 094
Afr. non-urban	13.4	6.5	66.6	26.9	5.0	7.5	83.0	4.5	100.0	678
Coloured	28.4	8.4	63.5	28.1	5.2	11.0	74.7	9.1	100.0	240
Indian	44.3	8.2	75.9	15.9	4.7	15.0	78.7	1.7	100.0	75
White	43.1	16.0	78.5	5.5	5.2	13.8	79.0	2.0	100.0	32
Total	20.6	8.0	61.4	30.5	6.2	6.7	82.3	4.8	100.0	2 120

## 7.6 Immunisation Coverage

Immunisation coverage is a very important indicator of children's access to preventive programmes. Given that the immunisation schedule is used to tag on a number of other preventive programmes and interventions, for example the developmental screening and vitamin A supplementation, immunisation coverage serves as a good proxy indicator of children's access to other preventive programmes. With an ever-increasing curative workload over the past few years, concerns around delivery of preventive programmes are escalating. This is especially in reference to the primary level staff and their ability to seek out and follow up children who should have had immunisations but for one or other reason did not access the programme as has been done by local authority clinics in the past.

The standard indicators for immunisation coverage are measured in the 1 year olds (12-23 months) and are based on a total of 408 children that were included in this age group, 63 percent in the urban

and 47 percent in the non-urban areas. Approximately 52 percent were girls and 48 percent were boys. As mentioned in the introduction, the relatively small number of children included in the survey means that many of the results are problematic when presented by background characteristic due to the small sample size. Furthermore, some of the results for KwaZulu-Natal are anomalous when compared to the 1998 SADHS and as that province has the largest child population in the country, this skews the national averages. Care must therefore be taken when interpreting and using the results on immunisation and other child health indicators.

Table 7.9 shows the vaccination status, based on the road to health card or reported by the mother. A 1 year old child is considered fully immunised if she/he has received a BCG, three doses of DPT and polio vaccine (excluding polio dose given at birth) and a measles vaccine. Of concern is that just more than half (55 percent) of the children in the overall sample have received all their vaccines, as compared to 63 percent in 1998. This significant drop in vaccination coverage compared to the 1998 SADHS occurred in all the vaccinations (Figure 7.1). Data from the Department of Health routine information in the District Health Information System (DHIS) reflects immunisation coverage of 84 percent in 2004 (Barron *et al.*, 2005). Routine immunisation data suggest that countrywide immunisation coverage in 2003 was 75 percent. As different service providers have different ways in which they chart doses, data errors could have occurred if interviewers had not been adequately informed of all the possibilities of charting vaccines administered. However, the discrepancy between the survey and the routine statistics is extremely large and cannot be explained by the methodological differences alone.

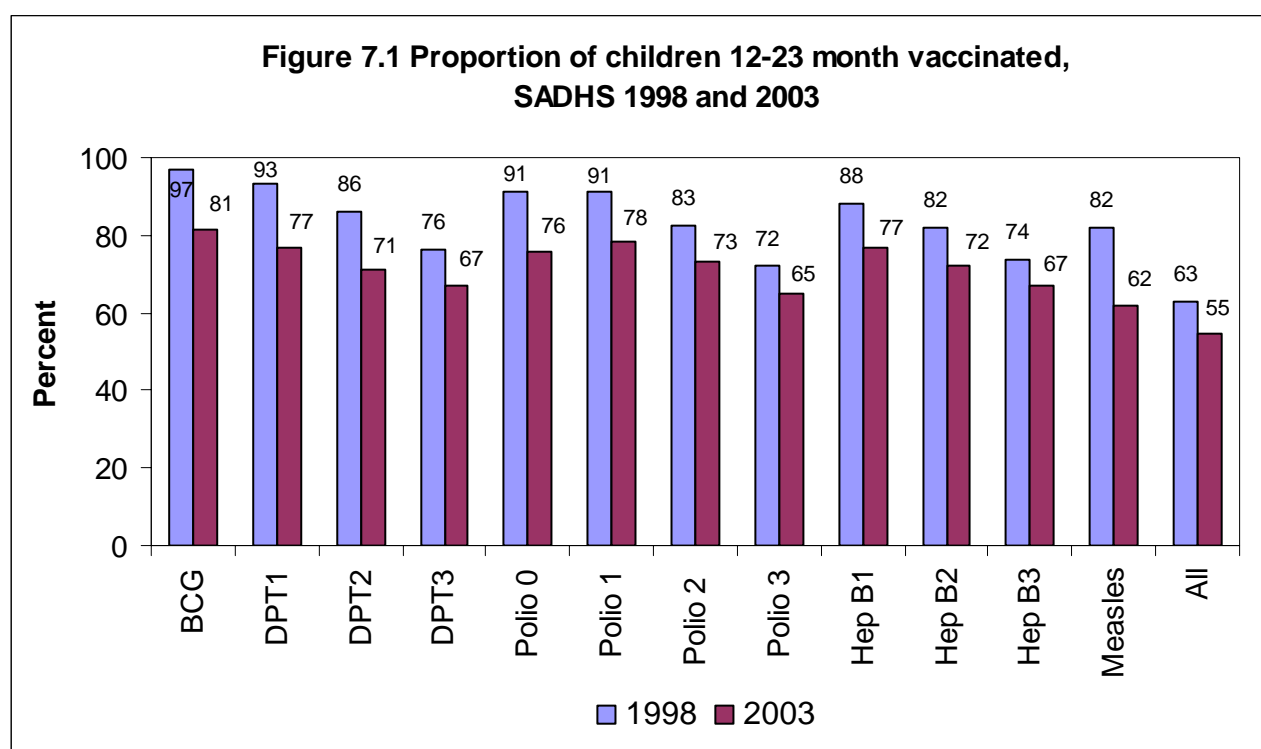


Table 7.9 Vaccination by background characteristics

Among children aged 12-23 months, percentage with health cards seen by interviewer and percentage who received each vaccine by the time of the survey (according to the vaccination card or mother), by selected background characteristic, South Africa 2003

Background characteristic	BCG	DPT 1	DPT 2	DPT 3	Polio 0 <sup>1</sup>	Polio 1	Polio 2	Polio 3	Hep B1	Hep B2	Hep B3	Measles	All <sup>2</sup>	None	Vit A	Health card	Number of children	
<b>Sex</b>																		
Male	80.8	74.8	72.6	65.9	75.3	77.4	72.7	61.9	74.6	71.6	65.3	60.0	54.1	17.2	27.0	70.9	195	
Female	81.5	78.4	72.1	65.8	76.6	80.2	74.3	66.6	78.8	72.6	68.2	63.9	55.3	16.9	30.4	71.2	212	
<b>Birth order</b>																		
1	82.9	75.8	72.0	67.2	79.6	77.1	73.6	67.0	74.6	72.3	67.0	68.5	58.0	14.6	35.3	71.2	176	
2-3	80.7	77.9	70.3	69.2	74.3	79.9	73.9	67.7	79.5	74.7	71.4	61.2	56.2	17.6	22.0	71.8	166	
4-5	80.5	80.1	73.6	62.8	72.7	80.1	71.7	55.0	80.1	65.4	56.4	43.5	39.7	19.5	28.9	71.4	49	
6+	69.2	63.6	63.6	56.0	63.6	69.2	69.2	48.5	63.6	63.6	48.5	56.0	50.4	30.8	27.7	61.6	16	
<b>Residence</b>																		
Urban	78.1	73.9	68.9	62.5	71.6	75.2	69.8	59.7	73.9	68.5	62.5	58.8	50.9	19.3	25.0	66.5	258	
Non-urban	86.5	81.5	78.3	71.6	83.6	85.2	80.0	72.3	81.9	78.3	74.1	67.5	61.3	13.1	35.3	79.1	149	
<b>Province</b>																		
Western Cape	(78.4)	(75.4)	(70.2)	(61.3)	(64.8)	(76.3)	(65.5)	(49.2)	(73.3)	(62.8)	(54.0)	(57.1)	(49.8)	(21.6)	(23.0)	(52.2)	60	
Eastern Cape	(79.6)	(77.0)	(74.4)	(64.1)	(74.4)	(79.6)	(79.6)	(61.7)	(77.0)	(74.4)	(66.7)	(69.3)	(56.5)	(20.4)	(45.4)	(74.4)	47	
Northern Cape	93.4	93.4	93.4	86.8	92.1	93.4	93.4	85.5	93.4	93.4	88.8	80.6	77.3	4.6	30.4	84.7	9	
Free State	(83.7)	(75.6)	(70.3)	(68.3)	(77.6)	(81.7)	(72.3)	(69.0)	(79.7)	(76.4)	(72.3)	(66.3)	(54.2)	(16.3)	(27.5)	(70.3)	29	
KwaZulu-Natal	(78.5)	(73.5)	(61.3)	(55.8)	(78.0)	(61.3)	(56.3)	(55.8)	(68.5)	(56.3)	(55.8)	(59.6)	(47.0)	(21.5)	(38.0)	(55.8)	25	
North West	74.1	72.0	67.7	62.9	67.7	72.0	70.5	65.1	72.0	70.3	66.8	67.2	58.2	23.8	24.1	63.8	40	
Gauteng	(73.0)	(67.2)	(62.1)	(53.4)	(70.1)	(70.1)	(65.0)	(56.3)	(67.2)	(62.1)	(56.3)	(48.4)	(42.6)	(21.2)	(11.5)	(72.7)	101	
Mpumalanga	95.1	96.6	96.6	92.5	91.0	96.6	96.6	81.8	96.6	96.6	90.5	78.4	74.8	3.4	42.9	77.7	33	
Limpopo	92.9	84.4	81.5	78.7	90.1	92.9	84.4	81.5	87.2	84.4	81.5	67.3	64.5	7.1	41.3	88.9	65	
<b>Education</b>																		
None - Grade 7	88.5	88.0	74.6	68.4	87.1	88.7	74.2	66.2	88.7	75.7	68.4	67.3	57.5	11.3	30.8	82.9	76	
Grades 8-11	80.9	75.6	73.1	69.6	74.5	78.2	75.4	69.8	76.5	72.5	68.6	60.3	54.6	18.9	30.8	71.1	203	
Grade 12+	77.3	71.7	66.2	62.2	71.8	72.2	69.6	57.0	70.3	69.4	62.9	61.7	53.4	17.6	24.4	64.0	129	
<b>Population group</b>																		
African	81.6	76.5	71.5	65.7	76.7	78.9	73.7	64.2	77.0	72.0	66.9	62.3	54.7	16.4	29.4	72.7	354	
Afr. urban	77.6	72.8	66.7	61.1	71.6	74.2	68.5	58.0	72.7	67.0	61.3	58.9	50.0	19.2	24.8	67.5	214	
Afr. non-urban	87.6	82.2	78.9	72.7	84.6	86.2	81.5	73.6	83.6	79.7	75.4	67.5	61.9	12.0	36.5	80.7	140	
Coloured	79.7	79.2	79.2	64.1	69.6	79.2	71.7	63.8	75.9	71.7	64.6	64.2	56.8	20.3	25.6	61.3	38	
White	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	8
Indian	(64.6)	(61.9)	(61.9)	(60.1)	(62.8)	(64.6)	(61.9)	(60.1)	(61.9)	(61.9)	(60.1)	(54.2)	(52.4)	(35.5)	(27.4)	(58.8)	7	
<b>Live with whom</b>																		
Respondent	82.7	78.8	73.1	69.6	77.7	80.2	75.3	68.0	79.1	74.1	69.4	63.9	56.7	15.4	29.2	73.6	385	
Elsewhere	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	23
All children	81.2	76.7	71.2	67.0	76.0	78.3	73.4	65.1	76.8	72.1	66.8	62.0	54.7	17.0	28.8	71.1	408	
Additional children	(67.9)	(40.4)	(44.6)	(61.8)	(48.5)	(48.5)	(56.8)	(43.7)	(42.6)	(43.1)	(60.3)	(58.0)	(48.6)	(32.1)	(34.3)	(42.6)	45	

<sup>1</sup> Polio 0 is the polio vaccination given at birth.

<sup>2</sup> BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth).

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates a figure is based on fewer than 25 respondents, and has been suppressed.

Differentials may be difficult to interpret as a result of small sample of children

The percentage of children who received no vaccination at all has increased substantially from 2.6 percent in 1998, to 17 percent in 2003. It must be borne in mind that this survey included only 408 children. However, if correct, this statistic is most concerning, as it indicates that nearly a fifth of all children are unprotected from serious childhood infections. This is especially of concern in the context of large-scale child poverty and ever-increasing numbers of children infected and affected by the HIV-pandemic.

The BCG vaccine coverage, this being given at birth, has the highest coverage of 81 percent. This percentage was 97 percent in 1998. This decline is puzzling as there has been an increase in the proportion of births that occurred in facilities when compared with 1998. It would suggest that either the neonatal provision of BCG has declined substantially or that there is a problem in the quality of the collected data. It may suggest that children born outside of health facilities are not getting adequate neonatal follow-up care or children born in private sector facilities may not be getting the birth dose of the immunisation against BCG.

Table 7.9 shows that vaccine coverage drops very steadily from birth with DPT3 coverage being 67 percent, Polio 3 being 65 percent, measles being 62 percent. Hep B3, being one of the most recently introduced vaccines is at 67 percent. This is a typical pattern that was also observed in the 1998 SADHS.

Vitamin A supplementation was introduced in Primary Health Care Services in 2002. The survey shows that by 2003, the availability and implementation of Vitamin A supplementation was not yet adequate, given that only 28.8 percent of children received it. This finding is in keeping with results from a rapid assessment done by Giese and Hussey (2002) that found only 35 percent of clinics reported that they routinely administered Vitamin A supplementation to children.

Disaggregating the data by different characteristics of the child population is vital to identify particular sub-groups that may be at a greater disadvantage in terms of their ability to access the immunisation programme. Table 7.9 shows that the proportion of African children who received no immunisation coverage at all was higher in the urban areas (19 percent) compared to the non-urban areas (13 percent). This is contrary to the 1998 result where coverage in urban and non-urban areas was quite similar. This may be due to the burgeoning informal settlements on the fringes of urban areas, where health services are not adequately established and where population mobility is high. The sample size for children in other population groups was too small to comment on.

Immunisation coverage for girls and boys are roughly equal. Immunisation coverage between provinces differs quite significantly for the different vaccines. However, given the relatively small sample size, it is difficult to interpret these variations. Interestingly the group where mothers had no education had consistently higher levels of vaccine coverage for all vaccines except measles. This may point to the trend where middle and upper class families opt not to vaccinate, or start to vaccinate their children much later, for fear of vaccine side effects.

The data do not allow any differentiation in immunisation coverage between socio-economic groups to be made. Although the vaccine coverage of the children who did not live with the respondent is based on a very small group, the contrast of 22 percent fully immunised compared to 57 percent for children living with the respondent, suggests that children who do not live with their primary caregiver (the respondent in this instance) are at a greater disadvantage when it comes to having access to basic health care. This is a group worthy of special attention by primary level health services in particular and demands further exploration, especially in the light of high urban-rural mobility and growing number of children with ill and dying primary caregivers.

The proportion of children for whom a Road-to-Health card was seen was quite similar in both surveys (75 percent in 1998 and 71 percent in 2003). In 2003, a further 22 percent of children had a Road-to-Health card but it was not seen by the interviewer. About 30 percent of the information on vaccination status was obtained from the caregiver's report rather than by observing the Road-to-Health card. Nearly 5 percent had lost the card and just under 1 percent had never had a card. Table 7.10 shows the proportion of children 12-23 months old who received specific vaccinations according to the source of the information.

Only 4 percent of children for whom the card was not seen were reported to be fully immunised and this group also accounts for all the children who have no vaccinations at all. These results either indicate that mothers are not aware of their child's vaccination status or that this group of children, who did not access health care services and therefore do not have a card, are not accessing preventive services.

**Figure 7.2 Proportion of children 12-23 months  
with health card, all vaccinations and none,  
SADHS 2003**

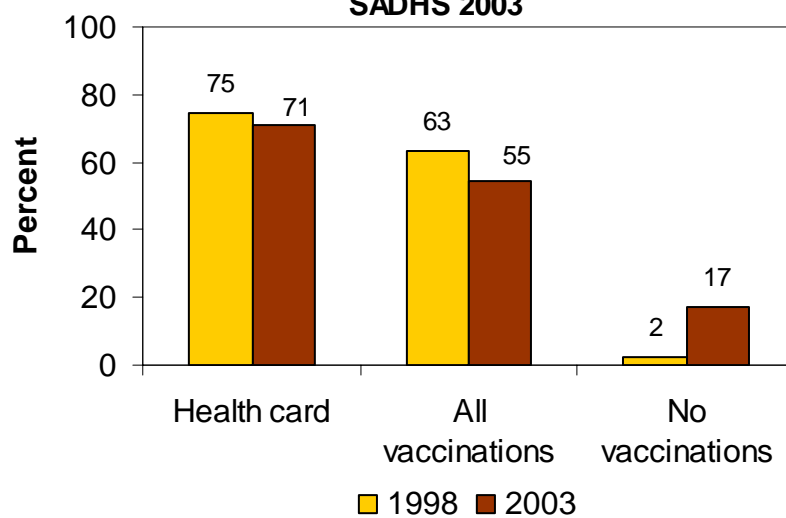


Table 7.10 Vaccinations by source of information																
Percentage of children aged 12-23 months who received specific vaccines at any time before the survey, by source of information (vaccination card or mother's report), and percentage vaccinated by 12 months of age, South Africa 2003																
Source of information	BCG	DPT 1	DPT 2	DPT 3	Polio 0 <sup>1</sup>	Polio 1	Polio 2	Polio 3	Hep B1	Hep B2	Hep B3	Measles	All <sup>2</sup>	None	Vit A	Number of children
Vaccinated at any time before survey																
Vaccination card	71.0	67.6	63.6	61.1	69.5	69.5	67.0	63.0	68.4	66.3	62.7	55.6	50.8	0.0	22.2	290
Mother's report <sup>3</sup>	10.2	9.1	7.6	5.9	6.5	8.8	6.3	2.1	8.4	5.8	4.1	6.4	4.0	17.0	6.6	118
Either source	81.2	76.7	71.2	67.0	76.0	78.3	73.3	65.1	76.8	72.1	66.8	62.0	54.7	17.0	28.8	408
Vaccinated by 12 months of age	81.2	66.9	57.4	49.9	76.0	69.2	58.7	49.9	67.9	56.3	49.0	22.3	18.5	17.2	10.4	408
<sup>1</sup> Polio 0 is the polio vaccination given at birth.																
<sup>2</sup> BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth).																
<sup>3</sup> For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.																



## 7.7 Prevalence and Treatment of Diarrhoeal Disease

### 7.7.1 Prevalence

The diarrhoeal prevalence and treatment of children has been obtained through self-reporting by mothers and caregivers, with no further triangulation from health service providers. Perceptions of what diarrhoea is and how serious the illness is might thus be influenced by the mother's knowledge and experience with the disease. It also does not give an idea of what the aetiology of the diarrhoea might be.

Table 7.11 Prevalence of diarrhoea		
Percentage of children under five years of age with diarrhoea during the two weeks preceding the survey, by selected background characteristic, South Africa 2003		
Background characteristic	Diarrhoea	Number of children
<b>Child's age</b>		
<6 months	6.7	194
6-11 months	18.1	229
12-23 months	12.6	408
24-35 months	4.2	394
36-47 months	6.5	392
48-59 months	3.0	400
<b>Child's sex</b>		
Male	8.4	992
Female	7.5	1 024
<b>Birth order</b>		
1	9.6	725
2-3	7.8	741
4-5	8.4	262
6+	6.4	83
<b>Residence</b>		
Urban	7.5	1 322
Non-urban	8.7	694
<b>Province</b>		
Western Cape	13.2	306
Eastern Cape	8.8	246
Northern Cape	15.6	45
Free State	16.7	121
KwaZulu-Natal	0.9	114
North West	7.2	183
Gauteng	3.9	563
Mpumalanga	6.8	164
Limpopo	8.4	274
<b>Mothers's education</b>		
No education	14.1	90
Grades 1-5	3.2	135
Grades 6-7	13.2	209
Grades 8-11	7.7	936
Grade 12	6.4	479
Higher	7.2	166
<b>Population group</b>		
African	7.8	1 686
Afr. urban	7.6	1 041
Afr. non-urban	8.0	645
Coloured	10.4	223
White	5.4	75
Indian	4.1	31
<b>Total</b>	<b>7.9</b>	<b>2 016</b>
Results for KwaZulu-Natal are anomalous and may influence the other estimates. See text for details.		

The prevalence of diarrhoea during the preceding two-week period is shown in Table 7.11. Comparisons cannot be made easily with the 1998 SADHS, as the two surveys were performed at very different times of the year. The 2003 survey was done just outside the peak diarrhoeal season, which generally starts in February. If the survey were done a month or two later, prevalence may have been quite different. Nevertheless, the results do yield some interesting findings. Overall the prevalence of diarrhoea is lower in 2003 than in 1998 (8 percent and 13 percent respectively). By age group, the highest prevalence reported for diarrhoeal disease in 2003 is 18 percent in the age group six to eleven months, followed by the age group 12 to 23 months with 13 percent (Table 7.11). In 1998, the prevalence showed a peak in the 12-23 month age group, suggesting that there may have been a shift in the age distribution towards younger ages. As in 1998, males and females have similar prevalences of 8.4 and 7.5 percent respectively. Prevalences in the urban and non-urban areas are similar with figures of 7.5 and 8.7 percent respectively while in 1998, the prevalence in the non-urban areas was somewhat higher than in the urban areas. The provincial breakdown for prevalence of diarrhoea is difficult to interpret. The pattern is very different from that observed in 1998. KwaZulu-Natal, the province with the highest prevalence of HIV among pregnant women, and with large numbers of children living in rural parts of the province, has an implausibly low prevalence. It should be noted that the data for this province, having the largest number of children would also influence the national estimate.

## 7.7.2 Knowledge and treatment of diarrhoea

Table 7.12, depicting the mother or care-giver's knowledge of diarrhoea treatment, shows that only a third of respondents whose child had diarrhoea in the preceding two weeks knew about the oral rehydration packet for the treatment of diarrhoea. This percentage is consistent between urban and non-urban areas, between different population groups and fluctuates between 20 and 45 percent across different age groups for children and across provinces.

Table 7.12 Knowledge of diarrhoea care		
Percentage of women with births in the five years preceding the survey who know about oral rehydration packets for treatment of diarrhoea according to selected background characteristic South Africa 2003		
Background characteristic	Know about oral rehydration packet for treatment of diarrhoea	Number of women
<b>Age</b>		
15-19	25.9	133
20-24	34.3	473
25-29	32.8	441
30-34	30.6	373
35-49	36.5	438
<b>Residence</b>		
Urban	33.4	1 219
Non-urban	32.5	640
<b>Province</b>		
Western Cape	25.7	275
Eastern Cape	39.7	225
Northern Cape	51.2	41
Free State	39.7	117
KwaZulu-Natal	35.9	107
North West	44.8	173
Gauteng	27.9	515
Mpumalanga	45.8	144
Limpopo	23.9	261
<b>Education</b>		
No education	19.3	82
Grades 1-5	39.5	116
Grades 6-7	33.8	202
Grades 8-11	32.5	866
Grade 12	32.0	441
Higher	41.4	152
<b>Population group</b>		
African	33.4	1 566
Afr. urban	33.2	969
Afr. non-urban	33.7	597
Coloured	30.3	202
White	33.1	64
Indian	39.3	26
<b>Total</b>	<b>33.1</b>	<b>1 859</b>
Note: 1 case with population group unknown.		

Although the survey did not include a question about knowledge of homemade sugar and salt solution, it can be seen from Table 7.13 that home solution is given more often in younger compared to older children, with the majority of children older than two years receiving the ORS packets. Children younger than 11 months of age are taken to health facilities more often (61 percent) compared to older children. This practise is more frequent in the urban (60 percent) versus the non-urban areas (48 percent) – the most likely explanation for this geographical variation being availability, distance and transport costs in getting to health facilities (Table 7.13). A significant finding, albeit an expected one, is the notable difference in knowledge between respondents with no education at all (19 percent) and those with education higher than grade 12 (41 percent). The global emphasis on educating women is especially valid in relation to improving child health.

Table 7.13 Treatment of diarrhoea

Among children under five years who had diarrhoea in the two weeks preceding the survey, the percentage taken for treatment to a health facility or provider, the percentage who received oral rehydration therapy (ORT) (either an oral rehydration solution (ORS) made form a packet, a home-made solution (HS), or increased fluids), the percentage received no form of ORT and the percentage given other treatments, according to selected background characteristic, South Africa 2003

Background characteristic	Percentage taken to a health facility of provider	Oral rehydration therapy (ORT)				No oral rehydration therapy		Other treatment				Number with diarrhoea	
		ORS packets	HS at home	Either ORS or HS	Increased fluids	Did not receive ORT	Pills/syrup	Injection	Intravenous drip	Home remedy/herbs	No treatment		
<b>Child's age</b>													
0-11 months	61.4	28.4	38.1	54.6	21.6	35.7	25.6	3.5	1.1	4.1	63.8	54	
12-23 months	55.8	42.8	49.3	68.1	29.7	28.0	15.1	0.0	2.9	5.4	67.0	51	
24+ months	49.8	42.1	32.9	66.5	20.9	28.6	18.3	1.9	2.5	10.0	51.2	54	
<b>Child's sex</b>													
Male	54.7	38.4	41.3	65.1	23.6	26.3	15.7	0.0	2.3	4.0	66.0	83	
Female	56.7	36.8	38.5	60.6	24.4	35.7	24.2	3.7	2.0	9.1	55.2	76	
<b>Residence</b>													
Urban	60.3	41.1	41.9	62.3	21.1	31.9	18.7	0.0	1.9	6.2	63.1	99	
Non-urban	48.2	32.0	36.8	64.0	28.7	29.0	21.4	4.7	2.6	6.9	57.0	60	
Total	55.7	40.0	37.6	63.0	24.0	30.8	19.8	1.8	2.2	6.4	60.8	159	

**Table 7.14 Feeding practices during diarrhoea**

Percentage distribution of children under five years who had diarrhoea in the two weeks preceding the survey by amount of fluids and solid foods given compared with normal practices, South Africa 2003

Feeding practice	Total
<b>Increase or decrease fluids</b>	
Same as usual	32.4
More	24.0
Somewhat less	8.9
Much less	18.9
None	10.8
Missing/Don't know	5.1
<b>Increase or decrease in foods</b>	
Same as usual	33.9
More	11.8
Somewhat less	11.4
Much less	23.6
None	8.6
Never gave food	4.2
Missing/Don't know	6.3
Total	100.0
Number of children	159

Table 7.14 shows the distribution of feeding practices for children who had diarrhoea in the preceding two weeks. Only a quarter of respondents indicated that an increased amount of fluid was given to the child. This is a worrying observation, as it is somewhat lower than the 57 percent in the 1998 SADHS. Similarly, 35 percent indicated that less food was given to the child compared to 53 percent in the previous survey.

## **7.8 Prevalence of Acute Respiratory Infections (ARI) and Fever**

Prevalence of ARI was estimated in the 2003 survey by asking mothers if their children under age five had been coughing accompanied by short, rapid breathing during the two weeks preceding the survey. In addition, mothers were asked whether their child had a fever in the preceding two weeks. Mothers whose children had experienced these symptoms were asked what they had done to treat the illness. The results are presented in Table 7.15.

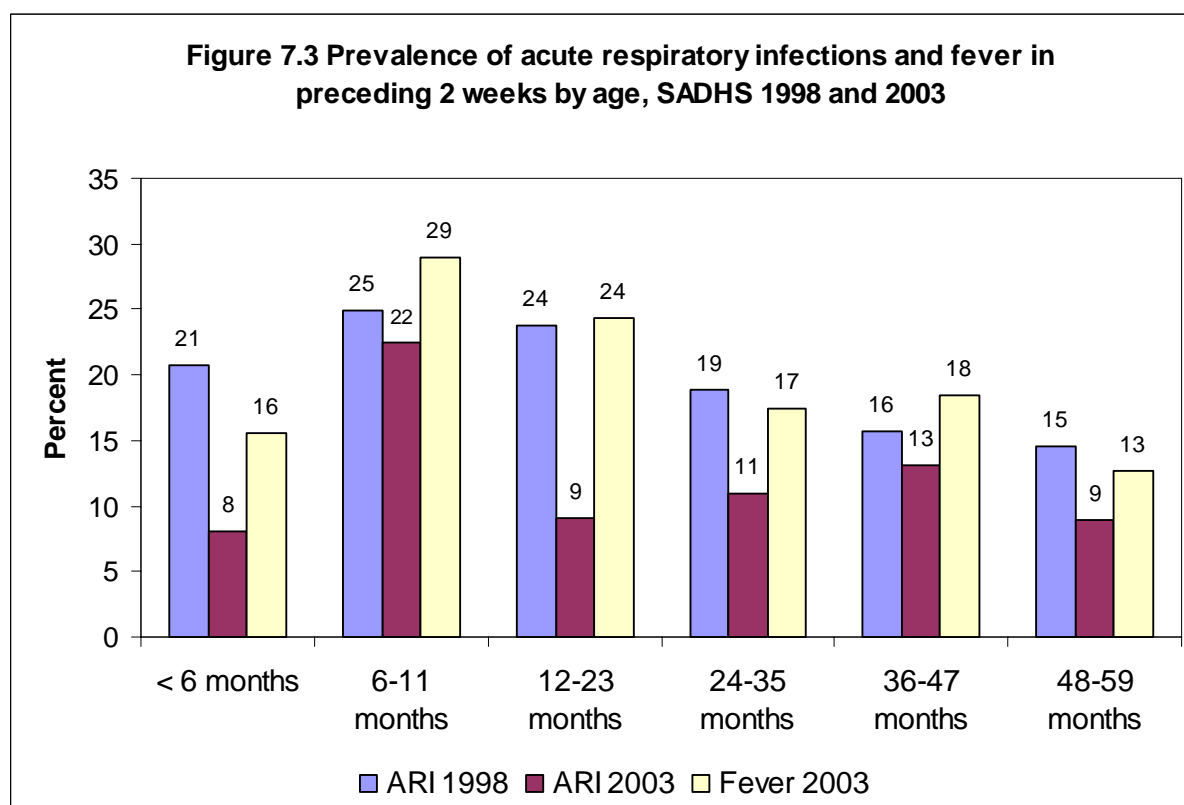
**Table 7.15 Prevalence and treatment of symptoms of ARI and fever**

Percentage of children under five years who were ill with a cough accompanied by short, rapid breathing (symptoms of ARI) and percentage who had a fever during the two weeks preceding the survey, the percentage with fever during the two weeks preceding the survey and the percentage ill children taken to a health facility or provider, according to socio-demographic characteristic, South Africa 2003

Background characteristic	Percentage of children with cough accompanied by fast breathing (ARI)	Percentage of children with fever	Number of children	Percentage taken to a health facility/provider	Number of children with ARI or fever
<b>Child's age</b>					
<6 months	8.1	15.5	194	52.4	34
6-11 months	22.4	28.9	229	70.9	79
12-23 months	9.1	24.3	408	69.2	108
24-35 months	11.0	17.4	394	63.3	84
36-47 months	13.1	18.4	392	56.8	94
48-59 months	9.0	12.7	400	69.8	66
<b>Child's sex</b>					
Male	11.4	19.6	992	63.8	235
Female	11.9	18.7	1 024	65.8	230
<b>Birth order</b>					
1	11.5	19.7	813	75.1	94
2-3	11.6	19.4	820	70.7	95
4-5	13.3	18.3	288	90.1	38
6+	8.2	15.7	95	54.7	8
<b>Residence</b>					
Urban	10.6	18.6	1 322	64.7	287
Non-urban	13.6	20.3	694	64.9	178
<b>Province</b>					
Western Cape	12.0	23.5	306	69.9	82
Eastern Cape	13.6	29.7	246	53.3	83
Northern Cape	6.3	18.1	45	69.5	9
Free State	15.0	19.9	121	62.4	30
KwaZulu-Natal	8.4	19.8	114	77.9	25
North West	9.0	19.2	183	61.0	42
Gauteng	10.4	12.3	563	56.5	88
Mpumalanga	14.1	16.8	164	83.8	38
Limpopo	13.1	20.0	274	70.9	67
<b>Education</b>					
No education	11.8	14.8	90	82.0	14
Grades 1-5	10.0	13.5	135	74.8	26
Grades 6-7	13.6	22.7	209	56.4	56
Grades 8-11	11.3	18.9	936	62.9	208
Grade 12	11.5	20.3	479	65.7	121
Higher	12.3	19.9	166	70.6	39
<b>Population group</b>					
African	11.7	19.7	1 686	66.1	393
Afr. urban	10.5	19.2	1 041	66.6	226
Afr. non-urban	13.7	20.6	645	65.4	167
Coloured	11.6	19.5	223	63.3	52
White	11.8	6.2	75	35.4	13
Indian	6.3	18.1	31	57.9	6
<b>Total</b>	<b>11.6</b>	<b>19.2</b>	<b>2 016</b>	<b>64.8</b>	<b>465</b>

Results show that a high proportion of children in the 6-11 month age group had a bout of ARI, i.e. 22 percent and the prevalence in this age group was significantly higher than in any other age group. This age group also had the highest prevalence of diarrhoeal disease, indicating the need to focus on the health of very young children within health services. Relatively low rates in subsequent four years were found, namely between 9 percent and 13 percent. The questions asked in the 2003 survey were slightly different from those in the 1998 survey, making direct comparison difficult. In the 1998 survey, the questions did not distinguish fever from coughing. However, the age pattern in 2003 displays a different picture to the 1998 survey where the relative difference in prevalence between age groups was very

small and a more gradual decrease in prevalence was noted from the younger age group to the four to five year olds (Figure 7.3).



There were no striking differentials in ARI prevalence rates by sex, birth order, urban versus non-urban residence or population group. Interestingly, the second lowest prevalence occurred in KwaZulu-Natal (8.4 percent) whilst this province had the highest prevalence rate in 1998 (26 percent). The decline in prevalence is more likely to be an error than a real decrease. Maternal educational status does not appear to be related to ARI prevalence rates.

From Table 7.13, it can be seen that health care was sought for two thirds of the children who were sick with a cough or fever, which was slightly lower than the 75 percent of children ill with ARI reported in 1998 SADHS. It is difficult to interpret these results as the difference may be a result of the change in questionnaire. Furthermore, it is also not necessarily appropriate that children with fever only be taken to the health facility. Additional information would be required to assess this.

## 7.9 Injuries

Injuries are the commonest causes of death in children after the age of 5. Understanding the underlying causes and contributory factors is essential in the planning of appropriate and effective interventions, many such interventions falling outside the domain of the health sector.

Intentional injuries in the form of inter-personal violence are commonest in adolescent boys between the ages of 5 and 19, firearms being the most common mechanism. Accidental injuries are commoner in the younger children and girls.

The data does not allow for any comment on the cause of injuries. A total of 21 injuries in the previous months were recorded among the 2 557 children aged 0-4 years, which is an overall

rate of 973 injuries per 100 000 population (95% CI: 572 – 1 355 per 100 000 population). The cause of injury was unspecified in 51 percent of these cases, making it difficult to assess the causes.

In the 5-14 year age group the annual injury rate for children requiring medical treatment was 1 611 per 100 000 population among male children (95% CI: 502 – 1 075 per 100 000 population) and 788 per 100 000 population among female children (95% CI: 502 – 1 075 per 100 000 population).

The rates for all the age groups have increased substantially compared to the 1998 survey as shown in Figure 7.4. It shows a near doubling of the injury rates in the 5-9 and 10-14 year old age groups. This disturbing trend concurs with the perceived increase in accidents and incidents of violence against children over the past few years.

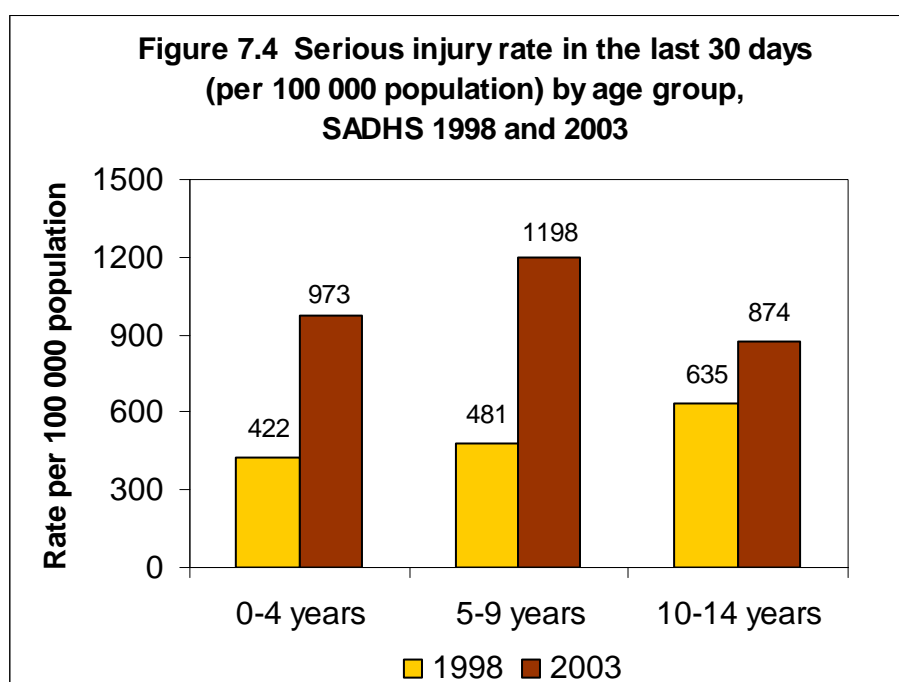
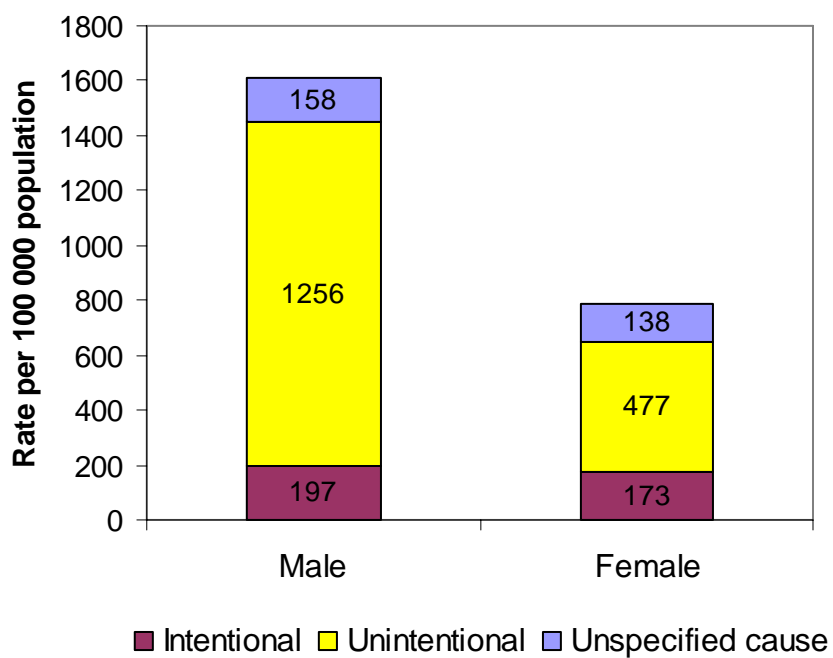


Figure 7.5 shows the rates for unintentional injuries (or accidents) such as burns, falls, motor collisions or sports injuries and for intentional injuries for children age 5-14 years. Unintentional injuries were the cause of most injuries and male children were particularly vulnerable. Falls and burns were important contributors to the younger children between 5 and 9 years of age, whereas sports and traffic-related injuries were more frequent among children aged 10 to 14 years.

**Figure 7.5 Serious injury rate in last 30 days  
(per 100 000) by cause and sex  
among children aged 5-14 years, SADHS 2003**





## CHAPTER 8

### INFANT AND CHILD FEEDING PRACTICES

#### 8.1 Introduction

This chapter focuses upon infant feeding and nutritional status of children. Since breastfeeding remains one of the most important health interventions in child health, it is described in detail. Breastfeeding makes a major contribution to child health by protecting infants from morbidity and mortality associated with common infectious diseases. According to scientific evidence, exclusive breastfeeding reduced under-five mortality by 13 percent (Jones *et al.*, 2003). A WHO pooled analysis of studies found that compared with infants who are exclusively breastfed infants aged 0-5 months who are not breastfed have six-fold and two-and-a-half-fold increased risks of death from diarrhea and pneumonia respectively (WHO Collaborative Study Team, 2000). A recent study that assessed the impact of breastfeeding by women infected with HIV concluded that breastfeeding significantly reduced mortality among their children and was not associated with increased morbidity or mortality among the women (Taha *et al.*, 2006). This finding was based on the pooled analysis of 2000 HIV infected women enrolled in two trials conducted in Malawi.

Breastfeeding also provides a number of social, psychological, family spacing and economic benefits to both mother and baby. These advantages remain even in better off urban settings. Studies from urban settings in other middle-income countries such as Brazil (Victora *et al.*, 1996) and Malaysia (Habicht *et al.*, 1996) have found that breastfeeding provides a great deal of protection against infection and mortality of young children. Studies from Europe and the United States have found that even in very well resourced settings infants who are breastfed are less likely to have common infections such as ear infections and show better cognitive and motor development than infants who have not been breastfed.

It is important to stress that there is a dose response relationship between the amount of breastfeeding and the benefits. So exclusive breastfeeding (i.e. giving no other fluids or solids, not even water) has a significantly greater impact than mixed feeding. However, in some settings in South Africa, especially in hospitals, it is common practice to give babies other substances to drink within the first days of life. When such fluids are given before lactation is established, they are known as prelacteal feeds (PLF). PLF result in the baby receiving insufficient breast milk and may lead to lactation failure, diarrhoea and shortening of the duration of breast-feeding (Blomquist *et al.*, 1994; Hossain *et al.*, 1995). It is for these reasons that UNICEF/ WHO discourage the use of PLF unless medically indicated (WHO-UNICEF, 1990).

Results from a recent large study in Ghana found that late initiation (after day 1) of breastfeeding was associated with a 2.4-fold increase in risk of neonatal death. The authors calculate that 16 percent of neonatal deaths could be saved if all infants were breastfed from day 1 and 22 percent if breastfeeding started within the first hour (Edmond *et al.*, 2006).

The discovery that HIV is present in breastmilk and that HIV can be transmitted to the baby via breastfeeding has led to a modification of the previous message that all women should exclusively breastfeed. Further research has shown that, on average, about 7 percent of babies born to HIV-infected mothers will become infected if they are mixed breastfed for 12 months. High maternal HIV viral load, sero-conversion during lactation, evidence of immune suppression, increased viral load in breast milk, breast pathologies and pattern of feeding are all important risk factors for increased risk of transmission through breastfeeding. Recently, a study in Zimbabwe reported that the risk of postnatal transmission by mothers who exclusively breastfed for at least 3 months, i.e. gave no other fluids, milks or solids, was reduced by 61 percent compared with the risk associated

with mixed breastfeeding. This confirms the findings from an earlier study in Durban. The present National Department of Health guidelines are adapted from WHO/UNICEF guidelines that state that women known to be HIV positive should avoid all breastfeeding if replacement feeding is acceptable, feasible, affordable, sustainable and safe. Otherwise exclusive breastfeeding for the first months of life is recommended followed by early breastfeeding cessation as soon as feasible, when conditions for safe replacement feeding can be met.

## 8.2 Initiation of Breastfeeding

The majority of babies (82 percent) are breastfed for at least some period (Table 8.1). However this is lower than the 87 percent reported in the 1998 survey. On the other hand, the 2003 survey found a higher proportion of mothers had initiated breastfeeding within one hour of birth (61 percent compared with 45 percent).

**Table 8.1 Initial breastfeeding**

Percentage of children born in the five years preceding the survey who were ever breastfed, and among children ever breastfed, percentage who started breastfeeding within one hour and within one day of birth and percentage who received prelacteal feed, by selected background characteristics, South Africa 2003

Background characteristic	Percentage ever breastfed	Number of children	Of those ever breastfed, percentage who started:			
			Within one hour of birth	Within one day of birth	Received a prelacteal feed	Number of children
<b>Sex</b>						
Male	81.0	1 044	61.8	83.5	28.8	845
Female	81.9	1 076	60.5	82.0	29.0	882
<b>Residence</b>						
Urban	80.7	1 383	60.9	81.8	29.8	1116
Non-urban	82.9	736	61.5	84.4	27.3	611
<b>Province</b>						
Western Cape	87.1	323	69.26	84.97	11.5	281
Eastern Cape	77.4	266	66.78	81.76	39.6	206
Northern Cape	90.1	46	55.12	88.78	26.8	42
Free State	78.8	130	62.32	83.49	24.5	102
KwaZulu-Natal	76.7	117	45.57	81.45	29.7	90
North West	54.4	192	62.05	78.64	26.9	104
Gauteng	82.4	588	61.07	78.46	39.0	484
Mpumalanga	87.8	169	52.78	89.06	11.9	148
Limpopo	93.0	288	58.2	86.16	32.8	268
<b>Education</b>						
No education	73.7	95	69.7	78.6	23.6	70
Grades 1-5	78.4	150	53.8	71.4	42.7	118
Grades 6-7	86.4	219	66.7	84.8	24.9	189
Grades 8-11	80.2	990	61.5	83.4	26.6	794
Grade 12	84.0	498	58.7	83.9	32.5	418
Higher	81.8	168	60.7	84.5	27.8	137
<b>Population group</b>						
African	80.5	1 773	60.9	82.0	30.9	1 428
Afr. urban	79.5	1 094	60.1	79.9	32.5	870
Afr. non-urban	82.2	678	62.1	85.4	28.6	558
Coloured	89.0	240	64.0	84.8	15.8	213
White	76.6	75	57.2	88.8	21.9	57
Indian	86.9	32	57.9	90.7	40.8	28
<b>Assistance at delivery</b>						
Missing	97.6	67	4.1	8.6	1.42	65
Health professionals	80.6	1 933	63.3	85.6	29.02	1 559
Traditional midwife	68.0	16	89.1	89.1	33.36	11
Other/No one	88.4	104	61.6	85.7	46.38	91
<b>Place of delivery</b>						
Homes	86.2	140	67.7	86.6	47.1	68
Health facility	80.6	1 880	62.8	85.6	27.8	33
Other/missing	91.1	99	25.3	29.3	23.3	90
<b>Total</b>	<b>81.5</b>	<b>2 120</b>	<b>61.1</b>	<b>82.7</b>	<b>28.9</b>	<b>1 727</b>

1 case with missing population group.

There is substantial variation in breastfeeding across the provinces. In four provinces (Eastern Cape, Free State, KwaZulu-Natal and North West), the proportion of babies ever breastfed is below 80 percent and in the North West it is only 54 percent. This province also reported the lowest

proportion in the 1998 survey (62 percent). Newborns in Mpumalanga and KwaZulu-Natal are the least likely to be breastfed soon after birth (53 and 46 percent respectively), while those in Western Cape are the most likely (69 percent). Gauteng showed the greatest improvement in this indicator with a noticeable increase in proportion of infants receiving breast milk within the first hour (from 36 percent to 61 percent).

It can be seen from Table 8.1 that there is little variation in these indicators according to other characteristics such as area of residence, educational attainment or population group. One noticeable change from the 1998 SADHS is that the proportion of mothers with no education not giving breast milk to their babies increased from 9 percent in 1998 to 26 percent in 2003. This is a worrying trend especially as infant deaths are more likely in this group. There is now a reversal in the gradient of breastfeeding and education with the most highly educated category having a higher proportion of ever breastfeeding than most of the lower categories.

Whilst the proportion of ever breastfed remains relatively high, a significant minority (29 percent) of babies were given a prelacteal feed. This is known to have a negative influence on the optimal feeding of babies and seems to be particularly prevalent in the Eastern Cape, KwaZulu-Natal, Gauteng and Limpopo where 30 percent or more of babies were given a prelacteal feed.

### 8.3 Duration of Breastfeeding

As shown in Table 8.2, prevalence of exclusive breastfeeding (i.e. giving nothing but breast milk to the infant) is low in South Africa and there has been little change since 1998. Addition of other liquids whilst breastfeeding starts early in South Africa. Only 8 percent of infants under 6 months are exclusively breastfed and a further 19 percent are almost exclusively breastfed with the addition of water only. It should be noted that the proportion of babies being exclusively breastfed is probably even lower than this as breastfeeding patterns were established by 24 hour recall. This methodology is known to overestimate the amount of exclusive breastfeeding.

Table 8.2 Breastfeeding status by age

Percentage distribution of youngest children under three years living with the mother by breastfeeding status and percentage of children under three years using a bottle with a nipple, according to age in months, South Africa 2003-2004

Age in months	Breastfeeding and consuming:						Total	Number of children	Percentage using a bottle with a nipple	Number of children <sup>1</sup>
	Not breast-feeding	Exclusively breastfed	Plain water only	Water-based liquids/ juice	Other milk	Complementary foods				
<2	16.9	11.2	26.8	8.7	27.7	8.8	100.0	54	49.9	55
2-3	22.4	12.2	14.1	5.0	19.5	26.8	100.0	72	48.5	73
4-5	39.7	1.3	16.8	3.1	11.4	27.8	100.0	64	58.8	66
6-7	31.7	0.7	6.4	1.7	8.3	51.2	100.0	78	53.3	78
8-9	28.3	0.0	3.3	10.5	10.4	47.5	100.0	72	49.6	74
10-11	37.8	4.1	5.7	0.9	5.9	45.6	100.0	76	49.4	77
12-15	33.9	0.5	4.2	0.4	1.5	59.5	100.0	129	40.0	133
16-19	48.9	1.1	1.5	1.0	3.5	44.0	100.0	112	27.1	120
20-23	69.4	0.0	0.6	0.9	0.6	28.4	100.0	144	37.6	155
24-27	79.0	0.0	0.0	2.0	0.0	19.0	100.0	114	23.3	152
28-31	86.6	0.0	0.0	0.8	0.0	12.6	100.0	99	28.5	111
32-35	89.1	0.0	2.6	0.0	0.0	8.2	100.0	110	20.0	131
<6	26.7	8.3	18.6	5.4	19.1	22.0	100.0	190	52.4	194
6-9	30.1	0.4	4.9	5.9	9.3	49.4	100.0	150	51.5	152

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children classified as breastfeeding and consuming plain water only consume no supplements. The categories of not breastfeeding, exclusively breastfed, breastfeeding and consuming plain water, water-based liquids/juice, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and water-based liquids and who do not receive complementary foods are classified in the water-based liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

<sup>1</sup> Based on all children under three years.

There appears to have been a steep fall in the proportion of infants receiving complementary foods before the age of 6 months, falling from 70 percent in 1998 to 22.0 percent in 2003 (Table 8.2) but this can be explained by the changes in definition from the previous survey. The present survey only classifies semi-solid and solid foods as complementary food in contrast to the previous survey in which other liquids such as milk were included in the definition of complementary foods.

While the prevalence of exclusive breast feeding is very low, breastfeeding does tend to continue for extended periods. The median duration of breast feeding, based on the current status, is 16.6 months (data not shown). The median is highest in the Northern Cape (22.1 months) followed by Limpopo (19.9 months). The median duration is longer for non-urban children than for urban children (18.6 months compared to 14.3 months).

#### **8.4 Vitamin A and Iron Supplementation**

For the first time in the 2003 survey women were asked about the intake of micronutrient supplementation during pregnancy and shortly after birth (Table 8.3). National guidelines recommend that all mothers should be taking iron and folic acid supplementation during pregnancy and vitamin A shortly after birth. Approximately one third of women reported receiving vitamin A shortly after birth. There was little difference across age, urban or non-urban area and educational groups but women in Western Cape were much less likely to report vitamin A intake. Night blindness is a sign of vitamin A deficiency and it is of concern to note that just over 8 percent of respondents reported symptoms of night blindness, being highest in Mpumalanga and the Eastern Cape.

**Table 8.3 Vitamin A supplementation to postpartum mothers**

Percentage of women with a birth in the five years preceding the survey who received a vitamin A dose in the first two months after delivery, percentage who suffered from night blindness during pregnancy, percentage who took iron tablets or syrup for specific number of days, by selected background characteristics, South Africa 2003

	Received vitamin A dose postpartum	Night blindness reported	Night blindness adjusted	Number of days iron tablets/syrup taken during pregnancy					Number of women
				None	<60	60-89	90+	DK/missing	
<b>Age at birth</b>									
15-19	33.7	12.3	0.9	31.5	19.0	5.7	5.7	38.1	333
20-24	37.1	6.5	1.4	30.3	22.4	6.4	11.3	29.6	467
25-29	32.3	7.8	0.2	29.7	18.9	5.5	14.0	31.9	461
30-34	29.4	6.5	0.9	31.4	14.4	4.6	14.1	35.6	303
35-49	38.7	8.9	0.1	25.0	21.9	2.6	10.2	40.3	295
<b>Number of children ever born</b>									
1	36.5	8.6	1.0	29.0	20.1	5.8	10.6	34.4	742
2-3	33.1	7.2	0.5	29.0	18.3	5.0	12.0	35.8	765
4-5	31.7	10.6	0.8	32.5	20.2	4.1	13.8	29.3	261
6+	34.0	7.2	0.0	33.2	23.2	4.2	2.9	36.5	90
<b>Residence</b>									
Urban	32.7	8.7	0.8	28.8	17.8	5.7	13.2	34.5	1 219
Non-urban	37.3	7.4	0.6	31.5	22.8	4.0	7.6	34.1	640
<b>Province</b>									
Western Cape	21.3	3.4	0.5	41.5	20.2	4.6	18.7	15.0	275
Eastern Cape	55.5	15.6	0.9	27.5	32.2	2.1	8.9	29.3	225
Northern Cape	29.9	6.6	0.9	12.5	6.1	28.8	42.7	9.9	41
Free State	33.6	3.5	1.0	41.9	19.5	2.0	6.9	29.7	117
KwaZulu-Natal	46.3	5.5	0.2	22.3	25.4	2.0	22.0	28.3	107
North West	26.0	7.4	0.7	50.4	17.4	5.4	12.8	14.0	173
Gauteng	33.4	9.5	0.0	22.2	14.1	7.5	6.6	49.6	515
Mpumalanga	27.3	11.0	1.3	15.9	13.4	4.8	16.5	49.4	144
Limpopo	36.9	6.9	2.0	28.2	23.1	2.8	3.3	42.6	261
<b>Education</b>									
No education	33.8	10.9	0.8	35.5	20.4	0.4	6.4	37.3	82
Grades 1-5	36.8	10.8	2.3	34.0	24.0	3.2	5.0	33.7	116
Grades 6-7	31.8	8.4	0.8	32.7	23.8	4.6	7.1	31.7	202
Grades 8-11	32.8	9.8	0.7	33.4	18.3	5.4	10.1	32.7	866
Grade 12	34.4	5.3	0.3	24.1	16.7	6.7	13.9	38.6	441
Higher	43.9	4.5	0.6	14.7	24.8	4.0	22.8	33.7	152
<b>Total</b>	<b>34.3</b>	<b>8.2</b>	<b>0.7</b>	<b>29.7</b>	<b>19.5</b>	<b>5.2</b>	<b>11.2</b>	<b>34.4</b>	<b>1 859</b>

The type of supplementation women should receive is often not well communicated to women. One third of women had missing information about iron supplementation with the lowest proportions missing in the Western Cape, Northern Cape and the North West. Across all age groups and urban and non-urban areas about 30 percent of women reported not receiving any iron supplementation during pregnancy. Rates of non-iron supplementation were particularly high in the Western Cape (42 percent), Free State (42 percent) and North West (50 percent). There is a strong association with educational attainment; women with the least amount of education were twice as likely to report not receiving iron compared with the most educated.

## 8.5 Vitamin A Supplementation amongst Children

Randomised control trials have convincingly shown that vitamin A supplementation in children under 5 years can reduce mortality by an average of 25 percent (WHO/CHC Immunisation-Linked Vitamin A Supplementation Study Group, 1998). The SAVACG study conducted in 1994 found that nearly a third of children have sub-clinical vitamin A deficiency in South Africa (SAVACG Study Group, 1995). A national programme of vitamin A supplementation aimed at children 6 months to 5 years was introduced in 2002. It is disappointing to see that less than 40 percent of children were reported to have received vitamin A supplement in the last 6 months (Table 8.4). The

Eastern Cape scored the best with 58 percent of children receiving supplementation. In contrast, just under 30 percent of children in the Western Cape were reported as having received a supplement in the previous 6 months. At the time of the 2003 survey, the Western Cape had implemented a targeted programme compared to other provinces that had implemented a prophylactic programme to all children 6-60 months.

**Table 8.4 Micronutrient intake among children**

Percentage of children age 6-59 months who received vitamin A supplements in the six months preceding the survey, by background characteristics, South Africa 2003

Background characteristic	Consumed vitamin A supplements	Number of children
<b>Age in months</b>		
6-9	36.3	152
10-11	34.2	77
12-23	46.3	408
24-35	38.9	394
36-47	38.4	392
48-59	35.9	400
<b>Sex</b>		
Male	39.9	900
Female	38.9	922
<b>Birth order</b>		
2-3	39.2	733
4-5	38.4	735
6+	41.1	269
<b>Breastfeeding status</b>		
Breastfeeding	40.3	442
Not breastfeeding	40.3	1 294
Missing	21.3	86
<b>Residence</b>		
Urban	36.0	1 198
Non-urban	45.9	624
<b>Region</b>		
Western Cape	29.6	283
Eastern Cape	57.7	220
Northern Cape	49.4	41
Free State	45.8	110
KwaZulu-Natal	42.3	106
North West	30.2	160
Gauteng	32.3	505
Mpumalanga	46.6	155
Limpopo	44.6	241
<b>Mother's education</b>		
No education	38.4	80
Grades 1-5	39.8	124
Grades 6-7	31.2	189
Grades 8-11	41.4	839
Grade 12	37.4	440
Higher	44.7	150
<b>Population group</b>		
African	41.3	1 521
Afr. urban	38.0	944
Afr. non-urban	46.6	577
Coloured	31.3	207
Indian	30.5	27
White	25.3	67
<b>Mother's age at birth</b>		
<20	38.2	328
20-24	43.6	449
25-29	36.9	455
30-34	37.6	299
35-49	39.9	290
Total	39.4	1 822

Note: Information on vitamin A supplements is based on mother's recall.

## 8.6 Nutritional Status of Children

The weight of newborn baby is considered to be low when it is less than 2,500 grams or below minus 2 SD of the expected birth weight according to the NCHS/WHO growth charts developed in 1978 (Hamill *et al.*, 1979). Low birth weight carries a range of health risks for children, not only an increased risk of dying at young ages. Those who survive have an increased risk of infectious diseases, are likely to remain undernourished, with reduced muscle strength, throughout their lives, and suffer a higher incidence of diabetes and heart disease in later life (Fishman *et al.*, 2004). Long term social consequences of low birth weight result from a tendency to have a lower IQ and cognitive disabilities, which may result in poorer performance in school and their job opportunities as adults. Given the immediate and long term effects of fetal growth retardation, the birth weight of a child is a very important health indicator.

The birth weight of a baby is determined by the nutritional status and the health of the mother. While undernutrition and stunting of the mother and illness are the leading causes of low birth weight in developing countries, cigarette smoking during pregnancy is the leading cause of low birth weight in the industrialized countries. Teen pregnancy is associated with low birth weight. Weight gain during pregnancy should be carefully monitored and so as to ensure the optimal growth of the baby.

Table 8.5 shows the nutritional status of children at birth based on their weight relative to the WHO-NCHS standard birth-weights for boys and girls. It should be noted that nearly 30 percent of the children did not have records of birth weight, which may introduce a bias in the statistics. Blanc and Wardlaw (2005)

examined data from 62 surveys and conclude that the bias is likely to understate the prevalence of low birth weight. They also stress the importance of monitoring the proportion of birth weights that

are recorded. In the 1998 survey, a very similar proportion of children did not have a recorded birth weight (32 percent).

From Table 8.5, it can be seen that overall, 8.5 percent of the births are less than minus 2 SD from the expected value suggesting that this remains a problem in some sectors of population. The proportion is higher for coloured and Indian children (10 and 15 percent respectively) and consequently is more common in the Western Cape and Northern Cape where the prevalence is 15 percent and 13 percent respectively. Together with these two provinces, KwaZulu-Natal stands out as having a high proportion of extreme underweight children (below minus 3 SD).

Table 8.5 Nutritional status of children at birth						
Percentage of children classified as malnourished according to weight-for-age who were weighed at birth, by selected background characteristics, South Africa 2003						
	Proportion with birth weight recorded	Weight-for-age			Number of children	Birth weight in kg
		Percentage Below -3 SD	Percentage Below -2 SD	Mean Z-score		
<b>Sex</b>						
Male	68.3	4.8	11.1	-0.43	713	3.12
Female	70.6	2.0	6.1	-0.30	759	3.03
<b>Birth order</b>						
1	71.8	4.0	10.5	-0.52	606	3.01
2-3	72.1	2.4	7.7	-0.28	621	3.11
4-5	65.3	5.0	7.1	-0.25	198	3.12
6+	43.0	0.4	0.4	0.14	48	3.30
<b>Residence</b>						
Urban	68.5	3.9	9.6	-0.42	948	3.05
Non-urban	71.3	2.2	6.5	-0.27	525	3.12
<b>Province</b>						
Western Cape	68.6	7.3	14.6	-0.42	222	3.05
Eastern Cape	63.3	3.6	7.6	-0.22	169	3.15
Northern Cape	81.8	6.5	12.9	-0.73	38	2.93
Free State	67.8	4.1	7.7	-0.46	88	3.03
KwaZulu-Natal	66.8	5.9	10.2	-0.29	78	3.13
North West	74.8	1.8	6.8	-0.35	143	3.08
Gauteng	65.2	1.4	6.6	-0.44	383	3.03
Mpumalanga	71.8	1.0	5.2	-0.21	121	3.15
Limpopo	79.6	3.1	8.3	-0.31	230	3.10
<b>Mother's Education</b>						
No education	56.3	0.3	4.2	-0.30	54	3.10
Grades 1-5	49.1	0.0	4.8	-0.18	74	3.16
Grades 6-7	69.2	2.8	9.1	-0.38	151	3.07
Grades 8-11	68.6	3.5	8.8	-0.41	679	3.05
Grade 12	76.9	4.8	10.1	-0.44	383	3.05
Higher	78.4	1.8	5.3	-0.02	132	3.24
<b>Population group</b>						
African	68.1	3.1	8.4	-0.35	1 207	3.08
Afr. urban	65.0	3.7	9.6	-0.42	711	3.05
Afr. non-urban	73.1	2.3	6.7	-0.26	496	3.12
Coloured	71.9	6.2	10.1	-0.42	172	3.05
White	84.1	0.0	2.9	-0.33	63	3.10
Indian	94.5	2.7	14.7	-0.63	30	2.97
<b>Mother's age</b>						
15-19	74.8	1.3	10.1	-0.37	100	3.08
20-24	73.7	3.4	9.3	-0.52	390	3.01
25-29	69.4	4.1	11.7	-0.40	352	3.06
30-34	71.2	2.5	6.7	-0.27	310	3.12
35-39	67.2	2.8	4.5	-0.18	214	3.14
40-44	59.3	6.9	7.4	-0.38	90	3.06
45-49	38.2	0.0	4.2	0.20	16	3.39
<b>Total</b>	<b>69.5</b>	<b>3.3</b>	<b>8.5</b>	<b>-0.36</b>	<b>1 473</b>	<b>3.08</b>

The proportion of children who have low birth weight differs by background characteristics. As would be expected, the proportion is highest for the first birth and decreases with increasing birth order. Low birth weight increases with mother's education. However, it is difficult to interpret the trends in the other characteristics because they are correlated.

In 1998, 12 percent of the children for whom birth-weight was recorded were less than 2.5 kg. As the criteria for low birth-weight differs between the 2 surveys, it is difficult to assess the changes. However, the 1998 survey also shows higher proportions among coloured and Indian children, a strong relationship with birth-order and mother's education.

The anthropometry of children under-5 years is presented in Table 8.6. Heights and weights have been compared with the NCHS/WHO growth charts and the prevalence of stunting (below minus 2 SD of the expected height for age), wasting (below minus 2 SD of the expected weight for height) and underweight (below minus 2 SD of the expected weight for age) are given according to selected background characteristics. Overall, 12 percent of children are underweight, 27 percent are stunted and 5 percent are wasted. The SAVACG survey conducted in 1994 on children aged 6-72 months found a prevalence of 9.3 percent for underweight, 22.9 percent for stunting and 2.6 percent for wasting (SAVACG Study Group, 1995). In 1999 the Department of Health conducted the National Food Consumption Survey on children aged 1-9 years and found a prevalence of 10.3 percent for underweight, 21.6 percent for stunting and 3.7 percent for wasting (Labadarios *et al.*, 2000). The anthropometric measurements in the 2003 survey were restricted to those children under-5 years whose mother was interviewed. Thus orphans and other children who do not live with their biological mother were excluded. It is therefore not possible to compare the studies precisely. However, there are no indications that the nutritional status of children has changed substantially over the past 10 years.

Table 8.6 shows that stunting correlates strongly with mother's level of education, ranging from 38 percent in the cases when the mother has no education to 13 percent when the mother has post-matric level education. This table also shows that the poor nutritional status of coloured children correlates with the high prevalence low birth weight seen in Table 8.5.



Table 8.6 Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by selecting background characteristics, South Africa 2003

Background characteristic	Height-for-age (Stunting)				Weight-for-height (Wasting)				Weight-for-age (Underweight)				Number of children
	Percentage below -3 SD	Percentage below -2 SD	Mean Z-score	SE	Percentage below -3 SD	Percent age below -2 SD	Mean Z-score	SE	Percentage below -3 SD	Percentage below -2 SD	Mean Z-score	SE	
<b>Sex</b>													
Male	12.6	28.2	-1.26	0.078	2.9	6.5	0.29	0.078	2.8	12.6	-0.58	0.072	574
Female	11.2	26.6	-1.06	0.078	0.7	4.0	0.38	0.083	3.0	10.5	-0.41	0.075	585
<b>Birth order</b>													
1	10.4	23.9	-1.13	0.088	2.4	6.3	0.27	0.082	3.3	12.7	-0.52	0.074	439
2-3	12.3	29.0	-1.17	0.086	1.8	5.1	0.35	0.091	2.7	11.1	-0.50	0.079	474
4-5	11.1	26.3	-1.12	0.140	0.9	2.8	0.42	0.128	1.9	10.6	-0.42	0.116	191
6+	22.5	45.1	-1.43	0.277	0.2	6.2	0.59	0.238	4.0	9.4	-0.48	0.213	55
<b>Residence</b>													
Urban	12.3	26.9	-1.15	0.075	2.5	5.6	0.37	0.081	2.9	11.6	-0.47	0.072	737
Non-urban	11.1	28.1	-1.19	0.077	0.5	4.5	0.29	0.065	2.9	11.4	-0.54	0.068	422
<b>Province</b>													
Western Cape	12.1	34.7	-1.28	0.182	2.0	6.2	0.40	0.137	4.6	10.9	-0.54	0.150	149
Eastern Cape	12.4	28.5	-1.24	0.164	0.0	0.8	0.82	0.179	0.8	7.1	-0.14	0.172	149
Northern Cape	14.1	37.1	-1.50	0.101	3.0	10.0	-0.30	0.076	5.4	25.8	-1.19	0.078	38
Free State	14.6	32.9	-1.38	0.200	2.6	8.4	0.18	0.103	8.2	15.9	-0.77	0.120	89
KwaZulu-Natal	11.2	13.3	-0.97	0.321	6.8	7.5	0.66	0.383	10.9	11.3	-0.15	0.364	51
North West	10.0	24.0	-0.92	0.160	1.3	6.0	0.03	0.111	2.4	12.4	-0.59	0.099	112
Gauteng	13.1	26.5	-1.17	0.124	3.0	4.2	0.49	0.165	0.8	10.1	-0.40	0.136	269
Mpumalanga	11.3	22.2	-0.82	0.136	1.0	6.0	0.26	0.099	2.2	9.1	-0.32	0.096	130
Limpopo	9.2	26.6	-1.25	0.106	0.0	5.3	0.03	0.093	1.6	14.2	-0.77	0.093	173
<b>Mother's Education</b>													
No education	15.8	38.4	-1.43	0.332	0.0	4.6	0.11	0.199	3.0	17.0	-0.84	0.176	60
Grades 1-5	12.0	32.9	-1.36	0.149	1.7	3.5	0.04	0.111	3.5	15.8	-0.86	0.108	89
Grades 6-7	13.6	31.7	-1.24	0.158	0.3	4.2	0.50	0.128	1.9	8.7	-0.39	0.120	135
Grades 8-11	14.8	30.9	-1.26	0.090	1.4	5.7	0.35	0.096	2.5	11.5	-0.54	0.081	524
Grade 12	7.0	18.6	-0.94	0.112	2.1	4.5	0.38	0.118	3.6	10.4	-0.33	0.106	262
Higher	3.6	12.6	-0.74	0.169	6.4	8.4	0.36	0.204	3.8	11.6	-0.25	0.180	89
<b>Population group</b>													
African	11.7	27.0	-1.15	0.057	1.7	5.0	0.39	0.063	2.4	10.6	-0.44	0.057	970
Afr. urban	12.1	26.4	-1.12	0.081	2.5	5.3	0.44	0.098	2.3	10.4	-0.39	0.084	567
Afr. non-urban	11.3	27.8	-1.19	0.076	0.5	4.5	0.32	0.066	2.5	11.0	-0.51	0.067	403
Coloured	15.2	37.4	-1.43	0.140	2.7	7.5	0.01	0.125	6.6	18.1	-0.92	0.101	134
White	7.0	7.0	-0.73	0.346	2.2	2.2	0.34	0.234	3.3	12.6	-0.27	0.271	39
Indian	4.6	13.1	-0.81	0.262	1.5	9.1	0.18	0.282	2.1	8.7	-0.40	0.217	16
<b>Mother's age</b>													
15-19	10.8	23.1	-0.96	0.171	0.2	10.5	0.43	0.134	1.7	8.5	-0.30	0.152	68
20-24	13.7	27.8	-1.27	0.120	2.0	5.2	0.23	0.095	3.8	13.6	-0.64	0.098	279
25-29	9.9	28.7	-1.20	0.109	2.1	5.3	0.23	0.112	2.3	14.2	-0.60	0.100	283
30-34	10.7	24.2	-1.04	0.123	2.9	4.7	0.49	0.127	3.3	8.6	-0.31	0.099	255
35-39	13.2	25.5	-1.08	0.163	0.7	3.6	0.54	0.118	3.2	8.4	-0.28	0.132	160
40-44	12.3	34.5	-1.23	0.211	0.4	5.2	0.29	0.165	1.8	14.6	-0.60	0.128	89
45-49	19.0	37.1	-1.48	0.241	0.5	5.8	-0.02	0.166	0.0	4.9	-1.02	0.139	25
Total	11.9	27.4	-1.16	0.055	1.8	5.2	0.34	0.057	2.9	11.5	-0.49	0.052	1 159

## **CHAPTER 9**

### **ADOLESCENT HEALTH**

#### **9.1 Introduction**

Adolescence is an important transitional stage of human development from childhood to adulthood with many psycho-social challenges. During this phase there are significant biological, physical, social, hormonal and psychological changes. These changes influence behaviour and emotional stability that require a supportive and safe environment, particularly in the home and school settings. Adolescence is often marked with searching for a unique identity and adolescents may challenge authority or rules as a way to establish their own individuality. Without appropriate support, adolescents often need to “prove” to adults and peers that they are old enough to engage in activities that may endanger their lives. Driving, taking alcohol, drugs, smoking and experimenting with sex and guns are risky activities that may put their health and future in danger. Not only is adolescence a time of experimentation, but also a time when life-long habits that will affect their health in future are started. Unhealthy diets and insufficient physical activity are also habits that are initiated in this period. Young people's vulnerability to unhealthy behaviours is related to a range of individual, family and community practices that are closely related to economic and education opportunities. Measuring the health and risk-taking behaviours among adolescents including the magnitude of problems such as unprotected sex, teenage pregnancy, multiple sexual partners and substance abuse is therefore important.

Sexual activity among adolescents in the context of the HIV pandemic has high health risks. Aside from leading to teenage pregnancy which in turn is associated with health complications and poor infant health as well as social, psychological and economic problems, the risks of contracting HIV is high. The sexual behaviour of youth is a critical factor in the continued spread of the HIV pandemic. The UN has identified key indicators of risky sexual behaviour of youth aged 15-24 years to monitor progress in changing behaviours. These indicators are reported in this chapter in addition to the health and risk-taking behaviour among late adolescents aged 15-19 years.

#### **9.2 Sexual Behaviour**

Delaying age of sexual debut by encouraging sexual abstinence among young people is one of the major goals of the HIV prevention strategy. Table 9.1 shows the proportion of women and men aged 15-24 years who had had sexual intercourse by age of 15 and 18 years. This was the first time that men were asked this question. Overall, 12 percent of men and 6 percent of women aged 15-24 years had had their sexual debut by age 15 showing that men initiated sexual activity at an earlier age than women. Just under twelve percent of men aged 15-19 had had their first sexual intercourse by age 15 compared to 7 percent of women in the same age group. Just over twelve percent of men aged 20-24 years had had their sexual debut by age 15 and this rose to 63 percent by age 18. By comparison, 6 percent of women 20-24 years had had sex by 15 years and 42 percent by 18 years. In this survey the proportion of women aged 15-19 years who had sex by age 15 was slightly lower, 7 percent than 9 percent observed in 1998. A slight difference was also observed in women aged 20-24 years (6 percent in 2003 compared with 7 percent in 1998). These results indicate a slight increase in the age of sexual debut among young women.

**Table 9.1 Age at first sex among young women and men**

Percentage of young women and men age 15-24 who have had sex by exact age 15 and 18, by background characteristics, South Africa 2003

Background characteristics	WOMEN			MEN		
	15	18	Number of respondents 15-24	15	18	Number of respondents 15-24
<b>Age</b>						
15-17	7.9	na	849	12.9	na	371
18-19	6.1	51.3	546	9.8	54.6	232
15-19	7.2	na	1 395	11.7	na	603
20-22	6.4	41.1	808	10.6	63.7	331
23-24	3.8	44.3	433	15.5	61.1	196
20-24	5.5	42.2	1 242	12.4	62.7	527
<b>Marital status</b>						
Never in union	6.1	36.7	2 319	12.0	48.7	1 053
Married/Living together	9.0	56.8	317	12.1	68.6	76
<b>Residence</b>						
Urban	5.8	38.5	1 634	13.4	54.7	708
Non-urban	7.4	40.3	1 003	9.8	42.2	421
<b>Region</b>						
Western Cape	5.0	37.4	331	12.1	49.8	104
Eastern Cape	10.9	54.1	327	20.9	50.0	133
Northern Cape	6.3	38.0	45	8.7	43.1	20
Free State	5.9	38.8	179	15.2	50.0	75
KwaZulu-Natal	1.9	22.5	420	5.6	33.2	239
North West	5.7	42.9	203	12.1	54.9	98
Gauteng	6.4	37.4	607	12.8	61.6	252
Mpumalanga	8.5	47.2	168	9.8	48.4	93
Limpopo	8.6	44.0	357	13.8	58.3	114
<b>Education</b>						
No education	*	*	21	*	*	13
Grades 1-5	18.6	62.9	62	12.5	28.1	41
Grades 6-7	14.5	44.7	171	13.6	37.3	92
Grades 8-11	5.9	40.7	1 599	13.1	49.4	665
Grades 12	4.5	32.4	612	9.1	57.6	244
Higher	3.5	29.4	169	4.5	55.9	73
<b>Population</b>						
African	7.0	41.0	2 272	12.9	51.7	967
Afr. urban	6.5	41.0	1 313	15.2	58.4	561
Afr. non-urban	7.5	41.1	960	9.7	42.5	406
Coloured	4.1	31.4	236	6.9	47.5	86
Indian	1.2	7.0	37	4.9	30.3	19
White	0.8	24.8	91	(7.6)	(31.4)	57
Total 15-24	6.4	na	2 637	12.0	na	1 129

Na=not applicable

Age at first sexual intercourse is shown by selected background characteristics in Table 9.1. Six percent of unmarried young women had their first sexual intercourse by age 15 compared to 9 percent of those who were married or cohabiting. A similar proportion of young married or cohabiting and unmarried men (12 percent) had had their first sexual intercourse at age 15. The proportion of women who had their first sexual intercourse by age 15 was almost identical among women resident in non-urban settings (7 percent) and those who were resident in urban settings (6 percent). In contrast, more men in urban settings (13 percent) compared to non-urban settings (10 percent) had had their first sexual intercourse by age 15.

Compared with other provinces, KwaZulu-Natal (2 percent) and the Western Cape (5 percent) had the lowest proportion of women who had had their first sexual intercourse by age 15. KwaZulu-Natal also had the lowest proportion of men (6 percent) who had had their first sexual intercourse by age 15 followed by the Northern Cape (9 percent) and Mpumalanga (10 percent). The province with the highest proportion of young men and women who had had their first sexual intercourse by age 15 was the Eastern Cape (21 percent and 11 percent respectively).

Education was found to play a role in age of first sexual debut with only 4 percent of women with more than secondary education reporting they had had sex by age 15, while 19% with grades 1-5 education had had their first sexual intercourse by age 15. Among both women and men, the proportion having had their first sexual intercourse by age 15 was lower among whites, Indians and coloureds than among Africans.

Table 9.2 shows the proportion of young unmarried men and women who had had sex in the last 12 months and who used a condom at last sex. Over half (54 percent) of unmarried men aged 15-24 years had had sex in the past 12 months and 75 percent of them had used a condom at last sex. In contrast, 49 percent of the young women reported having had sex in the last 12 months, and 53 percent of them reported condom use at last sex. Similar proportions of condom use were observed in the National HIV Prevalence Survey conducted by the HSRC in 2005, which found that 73 percent of sexually active young men and 56 percent of sexually active young women used a condom (Shisana *et al.* 2005). The 2003 SADHS shows that condom use among sexually active women aged 15-24 has increased considerably since the 1998 survey, when approximately 20 percent of young unmarried women reported condom use at last sex. There has been an increase of 30 percentage points over a five-year period, indicating a significant shift towards acceptance of condom use. The question in 1998 was not asked of men and therefore we cannot comment on changes in the male population.

From Table 9.2, it can be seen that condom use at last sex was higher among men and women resident in urban settings (77 percent and 60 percent respectively) compared to men and women resident in non-urban settings (69 percent and 41 percent respectively). Condom use at last sex among unmarried young women was lowest in the Eastern Cape (38 percent) followed by Limpopo (40 percent) and Mpumalanga (42 percent). The lowest proportion of men who used a condom at last sex was reported for Limpopo (61 percent). Condom use at last sex increased with level of education in both unmarried young women and young men. Differences were also seen in condom use at last sex by population group with fewer African non-urban and coloured women (42 percent) reporting use of condom at last sex. The highest condom use recorded was among unmarried Indian men where almost all (96 percent) had used a condom at last sex. African non-urban men reported the lowest rates of condom use (70 percent) among men. The 1998 survey reported similar effects of background characteristics on condom use at last sex for women.

**Table 9.2 Young people having premarital sex in the last year and using a condom during premarital sex**

Among never married women and men age 15-24, percentage who have had sex in the last 12 months, and, among those who had pre-marital sex in the last 12 months, percentage who used a condom at last sex by background characteristics, South Africa 2003

Background characteristic	WOMEN				MEN			
	Had sex in last 12 months	Number of never married respondents 15-24	Used condom at last sex	Number of respondents 15-24 sexually active in last 12 month	Had sex in last 12 months	Number of never married respondents 15-24	Used condom at last sex	Number of respondents 15-24 sexually active in last 12 month
<b>Age</b>								
15-19	34.0	1,334	50.4	454	34.9	588	73.8	205
20-24	68.6	986	55.1	676	77.6	465	75.0	360
<b>Residence</b>								
Urban	50.2	1,428	60.4	717	58.3	669	77.1	390
Non-urban	46.3	891	40.7	413	45.7	384	68.9	176
<b>Region</b>								
Western Cape	46.5	289	50.4	134	57.7	90	(79.7)	(52)
Eastern Cape	55.2	290	38.2	160	56.7	132	(68.4)	(75)
Northern Cape	43.3	38	47.5	17	45.1	19	72.7	9
Free State	40.9	157	56.9	64	53.0	74	70.3	39
KwaZulu-Natal	36.1	404	64.0	146	42.7	232	73.8	99
North West	55.5	190	56.3	105	63.2	97	85.1	61
Gauteng	52.3	499	67.4	261	58.9	233	76.7	137
Mpumalanga	53.6	144	42.3	77	56.9	92	75.6	52
Limpopo	53.6	308	40.4	165	49.0	84	60.7	41
<b>Education</b>								
No education	*	10	*	3	*	11	*	5
Grades 1-5	49.2	52	(30.8)	26	29.8	40	*	12
Grades 6-7	39.0	155	33.7	61	36.4	85	60.3	31
Grades 8-11	45.3	1 430	49.6	648	50.1	619	71.6	310
Grades 12	55.0	526	63.2	289	70.4	230	84.4	162
Higher	70.3	146	65.8	103	66.8	68	80.2	45
<b>Population group</b>								
African	50.8	2 014	53.4	1 024	55.2	906	73.8	500
Afr. urban	53.8	1 157	60.9	622	61.5	535	75.9	329
Afr. non-urban	46.9	857	41.7	402	46.0	370	69.7	171
Coloured	35.5	201	42.0	71	51.0	75	76.4	38
Indian	*	*	*	3	40.6	18	(95.5)	7
White	*	*	*	31	(36.9)	54	*	20
<b>Total 15-24</b>	<b>48.7</b>	<b>2 319</b>	<b>53.2</b>	<b>1 130</b>	<b>53.7</b>	<b>1 053</b>	<b>74.5</b>	<b>565</b>

<sup>1</sup> Corresponds to UNAIDS Young People's Sexual Behavior Indicator 2 "Young people having premarital sex".

<sup>2</sup> Corresponds to UNAIDS Young People's Sexual Behavior Indicator 3 "Young people using a condom during premarital sex".

### *Sexual relations*

The question on number of sexual partners in the previous 12 months was only asked of women in the 1998 survey, but in 2003 the question was also asked of men. However, the question on the number of sexual partners does not indicate whether the partnerships were concurrent or consecutive. Therefore we cannot say what proportion of these relationships are truly multiple partnerships i.e. where the respondent had relationships with more than one person at the same time. Table 9.3 shows that among women aged 15-19 years who had ever had sex, 3 percent had two or more sexual partners in the last year. Slightly more women in the 20-24 year age group (4 percent) reported two or more partners in the previous 12 months. In 1998 almost identical figures were seen in both age groups.

Compared to women, much higher proportions of men who had ever had sex reported two or more partners in the previous 12 months (8 percent and 24 percent in the respective age groups). Interestingly, married or cohabiting men reported two or more partners more often than men who were not in union (20 versus 15 percent).

**Table 9.3 Multiple sex partnerships among young women and men**

Among all women and men age 15-24, percentage who have had sex with more than one partner in the last 12 months, by background characteristics South Africa 2003

Background characteristic	WOMEN		MEN	
	Percentage who had 2+ partners in the last 12 months	Number of respondents 15-24	Percentage who had 2+ partners in the last 12 months	Number of respondents 15-24
<b>Age</b>				
15-19	2.9	1 395	8.2	603
20-24	3.8	1 242	24.0	527
<b>Marital status</b>				
Not in union	3.5	2 319	15.3	1053
Currently married/Living together	2.3	317	19.5	76
<b>Residence</b>				
Urban	3.1	1 634	17.7	708
Non-urban	3.7	1 003	12.0	421
<b>Region</b>				
Western Cape	3.1	331	19.2	104
Eastern Cape	6.9	327	18.1	133
Northern Cape	0.4	45	15.5	20
Free State	2.4	179	13.7	75
KwaZulu-Natal	0.8	420	8.7	239
North West	4.5	203	21.7	98
Gauteng	2.2	607	16.4	252
Mpumalanga	0.6	168	17.7	93
Limpopo	6.6	357	16.2	114
<b>Education</b>				
No education	*	21	*	13
Grades 1-5	2.2	62	13.3	41
Grades 6-7	2.0	171	8.4	92
Grades 8-11	3.3	1 599	14.0	665
Grades 12	3.8	612	22.2	244
Higher	3.6	169	19.6	73
<b>Population group</b>				
African	3.5	2 272	16.5	967
Afr. urban	3.3	1 313	19.7	561
Afr. non-urban	3.8	960	12.1	406
Coloured	2.7	236	12.6	86
Indian	0.8	37	15.1	19
White	2.0	91	(4.3)	57
Total 15-24	3.3	2 637	15.6	1 129

\* Corresponds to UNAIDS Young People's Sexual Behavior Indicator 4 "Young people having multiple partners in last year".

Young women in the Eastern Cape (7 percent) and Limpopo (7 percent) reported the highest figures for two or more partners in the last year, with the lowest proportions reported in Northern Cape, Mpumalanga and KwaZulu Natal, where less than one percent reported more than one partner. Number of partners increased with education, with women who had primary education reporting lower levels of two or more partners compared to women with senior school education and higher. Young white and Indian women reported the lowest rates of 2 or more partners in the last year (2.0 percent and 0.8 percent) compared to other population groups.

Among men, North West, Western Cape and Eastern Cape had the highest rates for 2 or more sexual partners in the last year. Young men with grade 12 or higher education had the highest proportion of partners in the last 12 months. African urban men reported the highest levels of two or more partners (20 percent) while African non-urban women reported the highest levels of two or more partners (4 percent).

Table 9.4 shows the proportion of young women and men engaging in high risk sex in the last 12 months. This UNAIDS indicator defines high risk sex as sex with a non-marital partner. However, in South Africa, marriage rates are low and sexual partnerships outside marital and cohabiting relationships are common. The effect of this can be seen clearly by the extremely high proportions in both the 15-19 and 20-24 year age groups who engage in higher risk sex according to this definition. Many of these men and women may be in stable partnerships; however, as they are not married their relationships have been categorized as higher risk. Table 9.4 shows that almost all sexually active women (95 percent) and men (99 percent) in the 15-19 year age group engage in higher risk sex. There are no significant differences seen in higher risk sex by urban or rural residence or by province for women or men. Higher risk sex increased to 94 percent in the highest education group in women and 99 percent in men. White women reported the lowest level of higher risk sex (37 percent) while among Indian women a higher proportion (69 percent) reported the higher risk. Higher levels of between 85 and 91 percent were seen among women in the other population groups. Coloured men reported lower levels of higher risk sex (86 percent) compared to the other population groups. Without additional information regarding the nature of the relationship, it is difficult to interpret this indicator.

Condom use at last higher risk sex is reported at much higher levels in men than women (Table 9.4). Almost three-quarters of men aged 15-24 (72 percent) reported condom use at the last higher risk sexual encounter compared to half (52 percent) of women. Condom use was higher in urban men and women and increased with education. The effect of education was greatest in women with a quarter (27 percent) of women with grade 1-5 education using a condom compared with 66 percent of women with higher education. Condom use was highest in Gauteng (62 percent) and KwaZulu-Natal (65 percent) for women and in men was highest in North West (84 percent) and Western Cape (77 percent).

Table 9.4 Higher risk sex and condom use at last higher risk sex in the last year among young women and men

Among sexually active young women and men age 15-24, percentage who have had sexual relations with non-marital, non-cohabiting partner in the last 12 months, and among women and men age 15-24 who have had higher risk sex in the last 12 months, percentage who say they used a condom the last time they had sex with a non-marital, non-cohabiting partner, by background characteristics, South Africa 2003

Background characteristic	WOMEN				MEN			
	Percentage engaging in higher risk sex in last 12 months	Number of respondents sexually active in last 12 months	Percentage used condom at last higher risk sex	Number of respondents 15-24 who had higher risk sex 12 month	Percentage engaging in higher risk sex in last 12 months	Number of respondents sexually active in last 12 months	Percentage used condom at last higher risk sex	Number of respondents 15-24 who had higher risk sex 12 month
<b>Age</b>								
15-19	94.6	511	49.3	483	98.7	214	73.3	212
20-24	84.7	917	53.2	777	94.4	421	70.6	398
<b>Marital status</b>								
Never in union	98.8	1 130	53.7	1 116	99.1	565	74.8	560
Married/Living together	48.3	298	35.7	144	70.2	70	(35.0)	(49)
<b>Residence</b>								
Urban	89.0	909	58.3	810	96.1	429	74.9	412
Non-urban	86.9	518	39.7	450	95.4	207	64.5	198
<b>Region</b>								
Western Cape	86.3	172	47.3	149	(89.4)	(66)	(76.5)	(59)
Eastern Cape	85.8	194	40.4	166	(100.0)	(76)	(67.5)	(76)
Northern Cape	80.9	23	43.3	19	94.9	10	69.7	9
Free State	84.6	85	52.3	72	95.6	40	68.7	38
KwaZulu-Natal	90.9	160	65.4	146	96.1	106	72.9	102
North West	90.2	117	55.0	105	98.7	62	83.8	61
Gauteng	90.3	365	62.0	330	97.0	156	73.8	152
Mpumalanga	88.3	101	42.2	89	96.5	54	75.5	52
Limpopo	87.7	210	39.3	184	91.6	66	50.2	60
<b>Education</b>								
No education	*	14	*	12	*	8	*	8
Grades 1-5	(89.9)	33	(26.8)	29	*	13	*	12
Grades 6-7	88.9	72	34.1	64	(89.0)	38	(58.7)	34
Grades 8-11	88.5	811	46.9	717	96.0	353	69.4	339
Grades 12	85.6	371	64.3	317	96.2	174	80.8	167
Higher	94.0	125	65.5	117	98.8	50	76.7	50
<b>Population group</b>								
African	89.6	1266	152.1	1135	96.7	556	70.5	537
Afr. urban	91.4	767	59.3	701	97.1	355	73.5	345
Afr. non-urban	86.9	499	40.5	434	95.8	201	65.1	192
Coloured	84.6	104	38.2	88	85.7	49	73.7	42
Indian	(69.3)	9	*	3	(100.0)	7	(95.5)	7
White	(36.5)	49	(68.3)	34	*	23	*	23
Total 15-24	88.2	1 428	51.7	1 260	95.9	636	71.5	609

\* Corresponds to UNAIDS Young People's Sexual Behavior Indicator 5 "Young people using a condom at last higher risk sex."



**Table 9.5 Age-mixing in sexual relationships**

Among women age 15-19 who have had non-marital sex in the last 12 months, percentage who have had non-marital sex with a man 10 years or more older than themselves in the last 12 months, by background characteristics, South Africa 2003

Background characteristic	Percentage who had non-marital sex with a man 10+ years older	Number of women 15-19 having non-marital sex in last 12 months
<b>Age</b>		
15-17	3.2	198
18-19	5.2	285
<b>Marital Status</b>		
Never in union	3.7	448
Married/Living together	(13.3)	35
<b>Residence</b>		
Urban	3.4	280
Non-urban	5.8	203
<b>Region</b>		
Western Cape	(3.2)	48
Eastern Cape	(8.9)	77
Northern Cape	2.1	9
Free State	0.0	30
KwaZulu-Natal	(4.6)	56
North West	3.3	37
Gauteng	2.8	93
Mpumalanga	(6.1)	36
Limpopo	4.3	97
<b>Education</b>		
No education	*	4
Grades 1-5	*	14
Grades 6-7	(1.6)	31
Grades 8-11	5.4	357
Grades 12	2.3	65
Higher	*	13
<b>Population</b>		
African	4.2	440
Afr. urban	2.9	240
Afr. non-urban	5.6	200
Coloured	(7.0)	30
Indian	*	1
White	*	12
<b>Total 15-19</b>	<b>4.4</b>	<b>483</b>

Corresponds to UNAIDS Young People's Sexual Behavior Indicator 7 "Age-mixing in sexual relationships" - among the last three partners in the last 12 months.

There are concerns that young women may be placing themselves at greater risk of acquiring STIs or HIV by engaging in relationships with older men. In the 2003 survey young women aged 15-19 were asked about the age of their sexual partners in the last year to indicate what proportion of women are placing themselves at risk in this type of relationship. A small percentage of women aged 15-17 years (3 percent) and 18-19 years (5 percent) reported having sex with a non-marital partner 10 years or older than them in the past year. This figure was higher in the non-urban areas (6 percent). Although the coloured population reported the highest rates for age-mixing (7 percent) this number was based on a small sample and should be interpreted with caution.

**Table 9.6 Sexual activity and condom use in last 12 months**

Percentage of young women and men who have never had sex and condom use according to number of partners in last 12 months, South Africa 2003

	15-19	20-24	15-24
<b>WOMEN</b>			
Never had sex	57.0	13.6	36.6
Had sex, but not in last 12 months	5.6	11.8	8.5
Sex with only 1 partner & used condom last time	15.8	33.9	24.3
Sex with only 1 partner & did not use condom last time	17.9	36.2	26.5
Sex with more than 1 partner & used condom last time	1.4	2.2	1.8
Sex with more than 1 partner & did not use condom last time	1.5	1.6	1.6
Not defined	0.8	0.8	0.8
Total	100.0	100.0	100.0
Number	1 395	1 242	2 637
<b>MEN</b>			
Never had sex	57.4	10.8	35.7
Had sex, but not in last 12 months	6.6	8.5	7.5
Sex with only 1 partner & used condom last time	19.5	38.2	28.2
Sex with only 1 partner & did not use condom last time	7.9	17.9	12.6
Sex with more than 1 partner & used condom last time	6.4	16.8	11.3
Sex with more than 1 partner & did not use condom last time	1.8	7.1	4.3
Not defined	0.3	0.8	0.5
Total	100.0	100.0	100.0
Number	603	527	1 129

Table 9.6 gives information on sexual activity and condom use in partnerships within the last 12 months. The table is structured to show increasingly risky sexual behaviour. For both men and women who reported more than one partner in the last 12 months the question was not asked in such a way to indicate whether the partnerships were concurrent or consecutive.

Over half of both male and female 15-19 year olds (57 percent) have never had sex. A small proportion of adolescents have had sex but not in the last year (6 percent). For 15-19 year old women with only one partner in the last year similar proportions used a condom at

last sex (16 percent) compared with those who did not use a condom (18 percent). Women who reported more than one partner in the last year also had similar proportion using and not using condoms (1.4 and 1.5 percent respectively). The pattern of condom use in 15-19 year old women was different to the men. In instances where they had sex with one partner more men used a condom at last sex (20 percent) compared to 8 percent who did not use a condom. Among those men with two or more partners, a higher percentage of men report using a condom (6 percent) compared to those who did not (2 percent). In the 20-24 year olds, the proportions who have never had sex falls to 14 percent of women and 11 percent of men. There are similar percentages of men and women who have had sex previously but not in the last 12 months. This means that approximately a quarter of women and a fifth of men in the 20-24 age groups had not had sex in the last year. A similar gender pattern of condom use was found in the 20-24 age group as among the 15-19 year olds. A similar proportion of women who had one partner in last year said they did not use a condom at last sex (36 percent) and slightly less said they used a condom (34 percent). Among men who had only one partner, 38 percent report condom use compared to 18 percent who did not use a condom. Similarly in men reporting more than one partner in the last year, more men used a condom at last sex (17 percent) compared to those who did not (7 percent). The information in this table shows that a higher proportion of men report condom use where they have had one partner or more than one partner in the last year compared to women.

Table 9.7 Condom use at first sex among young women and men

Among women and men age 15-24 who have ever had sex, percentage who used a condom the first time they ever had sex, by background characteristics South Africa 2003

Background characteristics	WOMEN		MEN	
	Used a condom at first sex	Number of respondents 15-24 who have ever had sex	Used a condom at first sex	Number of respondents 15-24 who have ever had sex
<b>Age</b>				
15-19	51.0	600	42.8	256
20-24	38.6	1 072	37.1	470
<b>Marital Status</b>				
Never in union	45.2	1 355	39.9	651
Married/Living together	33.7	317	32.4	75
<b>Residence</b>				
Urban	48.4	1 060	43.1	486
Non-urban	33.8	612	31.1	241
<b>Region</b>				
Western Cape	44.1	213	(50.5)	72
Eastern Cape	26.8	234	(32.1)	81
Northern Cape	50.0	29	54.8	12
Free State	43.5	120	45.9	47
KwaZulu-Natal	53.4	169	36.0	118
North West	51.6	143	42.5	70
Gauteng	49.3	407	41.4	184
Mpumalanga	31.3	114	30.4	60
Limpopo	39.4	242	32.6	82
<b>Education</b>				
No education	*	16	*	8
Grades 1-5	(15.4)	46	*	17
Grades 6-7	16.9	93	(32.1)	43
Grades 8-11	40.7	951	36.9	408
Grades 12	51.5	422	47.8	194
Higher	64.8	140	43.6	56
<b>Population group</b>				
African	41.7	1 450	35.9	637
Afr. urban	46.0	833	38.7	403
Afr. non-urban	36.0	617	31.1	234
Coloured	42.9	115	56.4	54
Indian	50.3	25	82.0	8
White	65.6	76	*	28
<b>Total 15-24</b>	<b>43.0</b>	<b>1 672</b>	<b>39.1</b>	<b>726</b>

\* Corresponds to UNAIDS Young People's Sexual Behavior Indicator 6 "Condom use at first sex."

Table 9.7 shows data concerning condom use at first sex among sexually experienced women and men aged 15-24 according to selected background characteristics. Condom use at first sex was higher among the 15-19 year olds than the 20-24 year olds who were sexually experienced. Fifty-one percent of 15-19 year old women and 43 percent of men in this age group used a condom at first sex. In the 20-24 year age range, condom use at first sex was similar among women and men, 39 percent and 37 percent respectively. Condom use at first sex was higher among urban young women and men than non-urban women and men (48 percent and 43 percent for urban women and men respectively; 34 percent and 31 percent for non-urban women and men). Condom use at first sex also varied by province with low condom use at first sex reported by young women in the Eastern Cape (27 percent) and by young women and men in Mpumalanga (31 percent and 30 percent respectively). The highest rates of condom use at first

sex were reported by young women in KwaZulu-Natal (53 percent) and young men in Northern Cape (55 percent). Condom use at first sex increased with increased education: 65 percent of young women (15-24 years) with higher education used a condom at first sex compared with only 17 percent of those with grade 6-7 education. This trend was also evident among young men although not to the same extent, with 44 percent of those with higher education using a condom at last sex versus 32 percent among those with grade 6-7 education.

## Teenage Pregnancy

Table 9.8 Teenage pregnancy and motherhood

Percentage of women age 15-19 who are mothers or pregnant with their first child, by background characteristics, South Africa 2003

Background characteristic	Percentage who are:		Percentage who have begun childbearing	Number of women
	Mothers	Pregnant with first child		
<b>Age</b>				
15	1.2	0.9	2.1	294
16	3.5	1.9	5.4	280
17	9.5	1.7	11.2	275
18	12.3	3.8	16.1	294
19	23.4	3.7	27.1	251
<b>Residence</b>				
Urban	8.9	2.1	11.0	819
Non-urban	10.7	2.8	13.5	576
<b>Region</b>				
Western Cape	10.5	3.0	13.6	163
Eastern Cape	7.5	6.4	13.9	188
Northern Cape	12.9	2.5	15.4	27
Free State	12.3	2.8	15.1	95
KwaZulu-Natal	1.8	0.0	1.8	235
North West	10.5	3.7	14.2	95
Gauteng	11.2	1.0	12.2	277
Mpumalanga	12.2	1.1	13.3	92
Limpopo	14.1	2.5	16.6	223
<b>Education</b>				
No education	*	*	*	8
Grades 1-5	(5.0)	(3.8)	(8.8)	32
Grades 6-7	16.4	3.8	20.2	120
Grades 8-11	9.1	2.4	11.4	1 031
Grades 12	7.7	1.8	9.5	178
Higher	(7.4)	(0.0)	(7.4)	26
<b>Population group</b>				
African	10.5	2.2	12.7	1 209
Afr. urban	10.1	1.6	11.8	653
Afr. non-urban	10.9	2.9	13.8	556
Coloured	6.4	3.7	10.1	114
Indian	2.0	0.0	2.0	24
White	(0.0)	(2.4)	(2.4)	49
<b>Total</b>	<b>9.6</b>	<b>2.3</b>	<b>11.9</b>	<b>1 396</b>

Table 9.8 shows that 12 percent of women 15-19 are mothers or are pregnant with their first child. This is a decline from 16 percent observed in the 1998 SADHS. The proportion of teenagers who have begun childbearing rises rapidly from 2 percent at age 15 to 27 percent at age 19. This proportion is lower than that found in the 1998 SADHS where 35 percent of the women aged 19 reported that they had ever been pregnant. In the 2003 SADHS, similar proportions of the young women living in urban and non-urban areas have begun childbearing (11 percent and 14 percent respectively). The highest proportions of women aged 15-19 years who have ever been pregnant is found in Limpopo (17 percent), Northern Cape (15 percent) and Free State (15 percent). KwaZulu-Natal has the lowest proportion of women aged 15-19 years who have ever been pregnant (2 percent). This figure is much lower than that reported for KwaZulu-Natal (17 percent) in the 1998 SADHS and may be due in part to fieldwork problems noted in this province in particular. While this could also partially explain the overall decrease in the level of teenage pregnancy in the 2003 SADHS, it should be noted that in six of the nine provinces, the proportion of young women who have ever been pregnant is

lower in the 2003 SADHS than in the 1998 SADHS. Levels have declined substantially in Mpumalanga since 1998. The proportion of those who have ever been pregnant decreased with increasing education level, with 7 percent of those with higher education reporting having ever been pregnant, compared with 20 percent of those with grade 6-7 education. African teenagers have the highest rates of teenage pregnancies (13 percent) and whites and Indians the lowest at 2 percent.

# HIV/AIDS Awareness

Table 9.9 HIV and AIDS awareness among youth

Percentage of women and men age 15-24 years with knowledge of AIDS and HIV prevention methods, agreeing with stated beliefs about AIDS, attitudes towards people living with HIV or AIDS, attitudes towards negotiating sex with partners and the percentage distribution of HIV testing status by age group, South Africa 2003

	WOMEN			MEN		
	15-19	20-24	15-24	15-19	20-24	15-24
<b>Knowledge about AIDS</b>						
Has heard of AIDS	93.0	93.3	93.2	93.1	93.7	93.3
<b>Knowledge about HIV prevention methods</b>						
Using condoms	70.1	72.2	71.0	80.2	86.5	83.1
Limiting sex to one uninfected partner	72.5	76.4	74.4	77.8	80.3	79.0
Using condoms and limiting sex to one uninfected partner	66.1	68.7	67.3	69.6	76.3	72.7
<b>Beliefs about AIDS</b>						
A healthy-looking person can have the HIV virus	75.8	77.3	76.5	75.7	81.1	78.2
HIV cannot be transmitted by mosquito bites	58.8	58.3	58.5	59.9	64.3	62.0
HIV cannot be transmitted by witchcraft	76.8	77.1	76.9	na	na	na
A person cannot become infected by sharing food with HIV infected person	73.7	74.9	74.9	82.1	84.4	83.2
A healthy looking person can have the HIV virus and HIV cannot be transmitted by mosquito bites <sup>1</sup>	50.8	51.2	52.6	na	na	na
<b>Accepting attitudes towards those living with HIV/AIDS<sup>3</sup></b>						
Willing to care for family member with HIV or AIDS at home	81.2	86.8	83.8	na	na	na
Would buy fresh vegetables from shopkeeper with HIV or AIDS	73.3	75.6	74.4	na	na	na
Believe HIV positive teacher should be allowed to teach	81.3	85.6	83.3	na	na	na
Would not want HIV+ status of family member to remain secret	59.4	58.5	59.0	na	na	na
Acceptance on all 4 measures <sup>2</sup>	36.7	39.8	38.2	na	na	na
<b>Knowledge of prevention of mother to child transmission of HIV</b>						
HIV can be transmitted by breastfeeding	48.9	57.4	52.9	47.5	48.6	48.0
<b>Had HIV test and received test results</b>						
Received results	6.7	16.1	11.1	5.1	13.3	8.8
No results	4.1	16.4	9.9	0.9	3.0	1.9
Never tested	81.1	59.4	70.9	86.5	77.3	82.3
DK/Missing	8.2	8.1	8.1	7.6	6.3	7.0
<b>Attitudes toward negotiating safer sex with partner</b>						
Refuse sex	66.6	66.4	66.5	66.8	67.8	67.3
Refuse sex or propose condom use	77.2	84.2	80.5	na	na	na
<b>Total</b>	<b>1 395</b>	<b>1 242</b>	<b>2 637</b>	<b>603</b>	<b>527</b>	<b>1 129</b>

<sup>1</sup> Corresponds to UNAIDS Knowledge indicator 2 "No incorrect beliefs about AIDS".

<sup>2</sup> Corresponds to UNAIDS Stigma and Discrimination indicator 1 "Accepting attitudes towards those living with HIV".

<sup>3</sup> Based on those who have heard of HIV/AIDS.

na = Not applicable.

Table 9.9 summarizes a number of questions asked about HIV and AIDS awareness, beliefs and attitudes in men and women aged 15-19 and 20-24 years. The majority of men and women in both age groups (93 percent) have heard of AIDS. However, less know about HIV prevention methods. Just fewer than three-quarters of women have knowledge that using condoms and limiting sex to one uninfected partner can prevent HIV infection. The knowledge is slightly higher for all three prevention strategies in the 20-24 year age group. Knowledge of prevention of HIV is slightly higher among men both age groups than among women. For both men and women, the 20-24 age groups is more knowledgeable than the younger group.

Beliefs about AIDS were asked of women and there were few differences between the two age groups. About three-quarters of women correctly identified that a healthy looking person can have the HIV virus, that it cannot be transmitted by witchcraft or that a person cannot become infected by sharing food with a HIV infected person. There was some uncertainty about mosquito bites with only just over half (58 percent) of women in both age groups agreeing with the statement that HIV

cannot be transmitted by mosquito bites. Half of women rejected this common misconception about mosquito bites and agreed that a healthy person could in fact be infected with HIV. This indicates that there is much scope to improve the knowledge about HIV and AIDS among young women.

Statements asking about accepting attitudes towards those living with HIV/AIDS were only asked of women. Acceptance was highest for willingness to care for HIV positive family members and HIV positive teachers being allowed to teach. Around three-quarters of both age groups said they would be prepared to buy fresh food from an HIV positive shopkeeper. Although there was high acceptance of those willing to care for family members with HIV, far less would like it to be known that there was an HIV positive member in the family. In total, just over a third of both age groups expressed acceptance on all four scenarios presented in this question. Acceptance was slightly higher in the 20-24 year age group for all statements except for not wanting the HIV positive status of a family member to remain a secret and in this case both age groups reported similar levels of agreement.

Knowledge of prevention of mother to child transmission (PMTCT) was highest in the 20-24 year age group of women. This is expected as many women will have heard about PMTCT in the 20-24 age group during antenatal care. Knowledge was similar for the youngest age group of women (49 percent) and both age groups of men.

Few women (7 percent) and fewer men (5 percent) in the 15-19 age groups have had an HIV test and received the results. This could be expected as over half of men and women have not had sex in this age group. Testing rates increased in the 20-24 age group for both men and women with slightly more women (16 percent) compared to men (13 percent). VCT services are now available in most PHC clinics and for pregnant women HIV testing is available in the PMTCT programme. Although the availability of this service has increased in recent years this survey shows that greater emphasis should be placed on utilization of this service.

Approximately two-thirds of men and women in the 15-24 age group believe that if the male partner has an STI his girlfriend/wife can refuse to have sex with him. Over three quarters of women aged 15-19 (77 percent) and more (84 percent) say a woman can refuse to have sex or propose condom use if her partner has an STI.

### **9.3 Contraception and Use of Condoms**

Contraceptive use is high among young sexually active women aged 15-24 (68 percent) (Table 4.3 in Chapter 4), which is the same as in the 1998 SADHS (68 percent). Contraceptive use is much lower among women aged 15-19 years who were currently in a union (47 percent) and slightly lower among women in a union, aged 20-24 years (62 percent). The injectable contraceptive is still by far the most commonly used method (Table 4.3 in Chapter 4). The two-monthly injectable Nurlsterate is particularly popular, especially among women in the youngest age group, with 36 percent of sexually active unmarried women aged 15-19 years and 26 percent aged 20-24 using this method. In contrast, 8 percent of sexually active women aged 15-19 years and 15 percent aged 20-24 were using the three-monthly injectable Depo-Provera<sup>®</sup>. There has been a considerable increase in male condom use among young women since the 1998 SADHS. Among sexually active women, 18 percent in the 15-19 year age group and 15 percent aged 20-24 years are currently using condoms as their contraceptive method. In the 1998 DHS, only 4 percent of sexually active women aged 15-19 used condoms as a form of contraception. However, male condom use for contraception is lower among young women in a union, being used by 10 percent of those aged 15-19 and 12 percent of those aged 20-24 years. Few young women are using female condoms, only 0.2 percent of those aged 20-24 percent, and nil in the younger age group. Condom use at last sex among young people having premarital sex in the last year (Table 9.2), and condom use at last sex among sexually

active young women and men who had had sexual relations with a non-marital, non-cohabiting partner in the last twelve months are described earlier in this chapter (Table 9.4). Use of oral contraceptives among sexually active women aged 15-19 has dropped from 9 percent in the 1998 SADHS to 5 percent in the 2003 survey. Among women aged 15-19 years and currently in a union, oral contraceptive use was higher (12 percent).

#### **9.4 Incidence of Intentional and Unintentional Injury**

A total of 16 injuries in the month preceding the survey were reported by the 3 170 household members between the ages of 15 and 19 years (data not shown). There were 1.7 male injuries for every female injury reported and for both sexes unintentional injuries were more common than intentional injuries. There were 7 unintentional injuries recorded for every intentional injury. Urban injury rates were 50 percent higher than the rates in rural areas.

#### **9.5 Patterns of Exposure to Tobacco**

The use of tobacco products during adolescence usually leads to a lifelong addiction to nicotine. This has serious health consequences as tobacco will kill up to half of all smokers who start young and continue throughout their lives and half of those will die before the age of 69 years (Peto *et al.*, 1994). This section reports on the tobacco use patterns among adolescents aged 15-19 years. Some of the subgroups have insufficient numbers of participants to make meaningful deductions from the data in the subgroups.

Tables 9.10 and 9.11 shows the prevalence of the tobacco use among boys and girls and the age of initiation of the habit by age, residence and other background characteristics. Twice as many adolescent men than adolescent women have ever used tobacco products (20 percent and 10 percent respectively). In 1998 these figures were 17 and 9 percent respectively for males and females. The adolescents in urban areas use tobacco much more frequently than those in non-urban settings with the differences much larger among the females. For males the rates were highest in the Northern, Western and Eastern Cape provinces and for females in the Northern and Western Cape provinces. The African adolescents have much lower rates of having ever used any tobacco product than any other group.

Very few adolescents use smokeless tobacco while 14 percent of males report smoking daily and 16 percent daily or occasionally (fig 9.1). In 1998 these figures were 11 percent and 14 percent. For females just more than 5 percent smoked daily or occasionally while in 1998 6 percent did so. As in the case of the adult smokers, fewer adolescents use manufactured cigarettes in 2003 than in 1998, again emphasizing how the increase in prices and taxing of manufactured cigarettes may have partially resulted in a move towards young smokers buying loose tobacco and rolling their own cigarettes.

Table 9.10 Tobacco use by adolescent men

Percentage of males aged 15-19 years who ever used tobacco products, who currently smoked daily and who currently smoke daily or occasionally, and of those who ever smoked daily, the percentage who smoke manufactured cigarettes and the mean starting age, according to background characteristics, South Africa 2003

Background characteristics	Among men 15-19, percentage who:				Among those who currently smoked daily								
	Ever used any tobacco products	Ever used smokeless tobacco daily	Ever smoked tobacco daily	Currently smoked daily	Currently smoked occasionally	Smoke daily or occasionally	Number of men	Percentage who smoked manufactured cigarettes	Mean duration of smoking in years	Std error	Mean age when started smoking	Std error	Number who ever smoked cigarettes daily
<b>Age</b>													
15	7.0	3.6	2.5	1.0	0.9	1.9	110	*	*	*	*	*	1
16	12.3	1.4	10.2	8.2	0.7	8.9	150	*	*	*	*	*	12
17	18.1	0.6	14.5	13.1	2.9	16.1	111	*	*	*	*	*	15
18	28.2	0.5	27.7	23.7	2.3	26.0	145	(94.6)	(2.9)	(0.2)	(15.4)	(0.2)	34
19	32.2	7.5	25.6	22.7	2.4	25.1	127	(89.5)	(3.0)	(0.4)	(16.1)	(0.4)	29
<b>Residence</b>													
Urban	22.6	2.4	19.8	17.5	1.3	18.8	381	91.5	2.6	0.2	15.5	0.3	67
Non-urban	16.0	3.0	12.0	9.3	2.6	11.9	261	(92.3)	(3.3)	(0.4)	(14.6)	(0.4)	24
<b>Province</b>													
Western Cape	37.1	0.0	37.1	32.5	0.0	32.5	60	*	*	*	*	*	20
Eastern Cape	25.7	3.3	20.8	19.2	3.3	22.5	66	*	*	*	*	*	13
Northern Cape	26.4	1.4	26.4	21.3	0.0	21.3	10	*	*	*	*	*	2
Free State	21.2	0.8	17.7	12.7	5.8	18.5	51	*	*	*	*	*	6
KwaZulu-Natal	17.0	2.5	16.1	14.8	1.2	15.9	131	*	*	*	*	*	19
North West	17.3	3.1	12.7	4.4	2.9	7.3	44	*	*	*	*	*	2
Gauteng	20.2	3.8	14.5	14.3	1.9	16.2	150	*	*	*	*	*	21
Mpumalanga	15.6	5.6	11.2	6.8	0.0	6.8	54	*	*	*	*	*	4
Limpopo	8.6	1.2	6.2	4.9	1.2	6.2	76	*	*	*	*	*	4
<b>Education</b>													
No education	40.8	10.2	30.6	30.6	0.0	30.6	7	*	*	*	*	*	2
Grades 1-5	40.7	5.4	32.0	26.7	5.6	32.3	44	*	*	*	*	*	12
Grades 6-7	13.0	0.8	10.8	10.8	1.6	12.3	79	*	*	*	*	*	8
Grades 8-11	17.4	3.0	14.6	12.2	0.8	13.0	424	92.0	2.7	0.2	15.4	0.2	52
Grade 12	25.7	1.0	21.4	16.8	6.6	23.4	67	*	*	*	*	*	11
Higher	28.9	0.0	28.9	28.9	0.0	28.9	20	*	*	*	*	*	6
<b>Population Group</b>													
African	15.8	2.5	13.2	10.6	1.5	12.1	572	88.0	2.9	0.3	15.0	0.3	61
Afr. urban	16.8	2.0	15.3	12.9	0.6	13.5	319	(86.2)	(2.6)	(0.3)	(15.4)	(0.3)	41
Afr. non-urban	14.6	3.1	10.4	7.7	2.7	10.3	253	*	*	*	*	*	19
Coloured	48.8	0.3	48.8	47.4	0.7	48.1	46	*	*	*	*	*	22
White	68.5	0.0	40.8	36.3	27.6	63.9	10	*	*	*	*	*	4
Indian	55.2	20.2	35.0	35.0	0.0	35.0	14	*	*	*	*	*	5
Total	19.9	2.7	16.6	14.2	1.8	16.0	642	91.7	2.8	0.2	15.2	0.2	91

Note: Std error = Standard deviation of the mean.

Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.



Table 9.11 Tobacco use by adolescent women

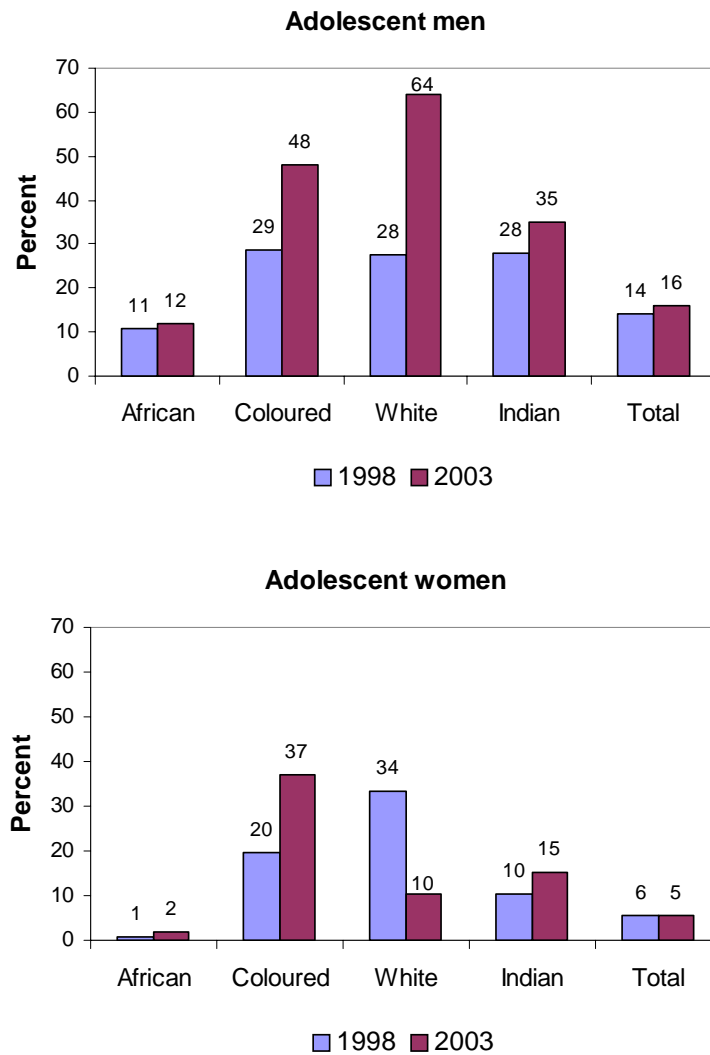
Percentage of females aged 15-19 years who ever used tobacco products, who ever smoked daily and who currently smoke daily or occasionally, and of those who currently smoked daily, the percentage who smoke manufactured cigarettes and the mean starting age, according to background characteristics, South Africa 2003

Background characteristic	Among women 15-19, percentage who						Among those who currently smoked daily						
	Ever used any tobacco products	Ever used smokeless tobacco daily	Ever smoked tobacco daily	Currently smoked daily	Currently smoked occasionally	Smoke daily or occasionally	Number of women	Percentage who smoked manufactured cigarettes	Mean duration of smoking in years	Std error	Mean age when started smoking	Std error	Number who ever smoked cigarettes daily
Age													
15	7.9	0.5	7.5	5.2	0.0	5.2	122	*	*	*	*	*	6
16	9.1	2.0	6.7	3.3	0.1	3.4	135	*	*	*	*	*	4
17	12.4	1.4	11.3	6.6	0.1	6.8	131	*	*	*	*	*	9
18	4.7	0.0	3.7	3.6	0.9	4.5	148	*	*	*	*	*	5
19	18.3	4.0	15.4	7.0	0.5	7.5	120	*	*	*	*	*	8
Residence													
Urban	13.9	1.7	12.4	7.7	0.5	8.3	399	(100.0)	(2.9)	(0.2)	(14.7)	(0.2)	31
Non-urban	4.5	1.2	2.9	0.9	0.1	1.0	258	*	*	*	*	*	2
Province													
Western Cape	30.6	0.0	28.8	17.2	1.7	18.9	80	*	*	*	*	*	14
Eastern Cape	8.5	0.0	8.5	8.5	0.0	8.5	87	*	*	*	*	*	7
Northern Cape	29.8	1.4	26.0	15.2	2.4	17.6	13	*	*	*	*	*	2
Free State	12.2	8.1	2.1	2.1	1.2	3.3	48	*	*	*	*	*	1
KwaZulu-Natal	6.0	0.0	6.0	2.3	0.0	2.3	130	*	*	*	*	*	3
North West	1.6	0.0	0.0	0.0	0.0	0.0	41	*	*	*	*	*	0
Gauteng	11.1	2.6	11.1	5.8	0.0	5.8	109	*	*	*	*	*	6
Mpumalanga	3.5	2.4	1.1	0.0	0.0	0.0	46	*	*	*	*	*	0
Limpopo	3.5	1.8	1.8	0.0	0.0	0.0	104	*	*	*	*	*	0
Education													
No education	35.4	0.0	35.4	35.4	0.0	35.4	6	*	*	*	*	*	2
Grades 1-5	21.8	6.5	3.8	2.7	11.5	14.1	12	*	*	*	*	*	0
Grades 6-7	11.0	4.1	6.9	6.9	0.0	6.9	50	*	*	*	*	*	3
Grades 8-11	9.2	1.4	8.0	3.7	0.2	3.9	486	*	*	*	*	*	18
Grade 12	9.2	0.0	9.2	5.9	0.0	5.9	92	*	*	*	*	*	5
Higher	35.5	0.0	35.5	35.5	0.0	35.5	11	*	*	*	*	*	4
Population Group													
African	5.8	1.7	4.3	1.6	0.1	1.7	568	*	*	*	*	*	9
Afr. urban	7.7	2.1	6.4	2.3	0.2	2.5	317	*	*	*	*	*	7
Afr. non-urban	3.2	1.3	1.6	0.6	0.0	0.6	250	*	*	*	*	*	2
Coloured	47.6	0.3	44.5	34.2	2.8	37.0	61	*	*	*	*	*	21
White	15.6	0.0	15.6	10.3	0.0	10.3	12	*	*	*	*	*	1
Indian	24.4	0.0	24.4	15.3	0.0	15.3	15	*	*	*	*	*	2
Total	10.2	1.5	8.7	5.1	0.3	5.4	657	(99.6)	(2.9)	(0.2)	(14.8)	(0.2)	33

Note: Std error = Standard deviation of the mean.

Parenthesis indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

**Figure 9.1 Percentage of adolescent men and women who ever smoked cigarettes daily or occasionally**



## 9.6 Alcohol Use/Misuse by Adolescents

By the time young people reach mid-adolescence many have begun to use alcohol, sometimes irresponsibly. Alcohol misuse by adolescents has been linked to several negative consequences including absenteeism from school, school failure, road-related injuries and sexual risk behaviour including teenage pregnancy. The SADHS included nine questions to assess lifetime, past 12 months and past seven days use of alcohol, amount consumed on average per day, frequency of drinking in the past 12 months and a four-item measure of symptoms of alcohol problems (Erwing, 1984). The findings based on the latter measure were not reported as this instrument was designed for the adult population.

### *Drinking patterns*

Just under a third (32 percent) of adolescent males and just under a fifth (17 percent) of adolescent females reported that they have ever consumed alcohol during their lifetime (Tables 9.12 and 9.13). Twenty-eight percent of male adolescents and 14 percent of female adolescents acknowledge that they had consumed alcohol during the past 12 months. The proportion of adolescents indicating that they had drunk alcohol over the past seven days ('currently') is substantially less, at 15 percent for males and 8 percent for females. For both sexes combined, the proportion of adolescents currently consuming alcohol is 11 percent. This is the same percentage found in the 1998 SADHS (Department of Health, 1998) and translates into more than 550 000 adolescents countrywide (Statistics South Africa, 2003).

From Tables 9.12 and 9.13, it can also be seen that the proportion of current drinkers differs substantially by population group and sex, with the highest proportion of the population drinking being found among white males (45 percent) and the lowest proportion being found among African females (5 percent). These two demographic groups were also the highest and the lowest in 1998 SADHS, but the proportion of white males reporting currently drinking appears to have decreased (53 percent in 1998) and the proportion of African females has increased (from 3 percent to 5 percent). The numbers were too low to accurately assess current drinking rates among Indians. Interestingly, the proportion of adolescents who have ever drunk alcohol or who drank in the past 12 months, increased among the 18 and 19 year old males but remained constant over the adolescent ages in the case of females. In 1998 the current drinking levels appeared to be positively associated with age for both males and females.

The proportion of male and female adolescents reporting that they had ever consumed alcohol in 2003 SADHS (32 percent of men and 17 percent of women) is less than was found in the national Youth Risk Behaviour Survey (YRBS) of high school learners aged 11 to 20 conducted by the Department of Health in 2002 (Reddy *et al.*, 2003). In this study 56 percent of males and 44 percent of females reported lifetime use of alcohol. For both males and females, the proportion reporting lifetime use of alcohol was substantially higher in the YRBS for each age. The lower reported rates observed in the SADHS are likely to reflect different survey methodology used rather than any dramatic reduction in drinking rates over an 18-24 month period.

Table 9.12 Alcohol use among adolescent men

Percentage of men aged 15-19 years who ever drank alcohol, who drank alcohol in the past 12 months or past 7 days (current drinkers) and the percentage of drinkers with on average responsible (<2 drinks per day), hazardous drinking (2-5 drinks per day) and harmful drinking (6+ drinks per day) in the past 12 months and the past 7 days by background characteristics, South Africa 2003.

Background characteristic	Ever drank alcohol	Drink past 12 months	Average in past 12 months				Average in past 7 days				Number		
			Abstainers	Responsible <2 drinks	Hazardous 2-5 drinks	Harmful 6+ drinks	Missing	Drink past 7 days	Abstainers	Responsible <2 drinks		Hazardous 2-5 drinks	Harmful 6+ drinks
Age													
15	22.8	20.8	79.2	20.8	0.0	0.0	0.0	8.9	91.1	8.9	0.0	0.0	110
16	24.7	22.7	77.3	20.3	1.5	0.9	0.0	12.4	87.7	12.2	0.1	0.0	150
17	24.3	17.0	83.0	13.6	1.4	1.2	0.8	8.7	91.3	7.2	1.5	0.0	111
18	36.3	31.0	69.0	27.3	0.9	0.7	2.0	21.4	78.6	21.2	0.1	0.1	145
19	50.0	45.1	54.9	41.2	1.5	2.4	0.0	22.4	77.6	17.7	1.7	3.1	127
Residence													
Urban	38.0	32.6	67.4	29.7	1.2	1.0	0.8	18.5	81.5	16.6	1.0	0.8	381
Non-urban	23.1	20.5	79.5	17.9	1.0	1.2	0.4	10.3	89.7	9.9	0.1	0.4	261
Province													
Western Cape	52.6	45.8	54.2	39.0	2.3	4.5	0.0	23.6	76.4	21.3	2.3	0.0	60
Eastern Cape	31.0	27.7	72.3	26.1	0.0	1.6	0.0	22.8	77.2	17.9	0.0	4.9	66
Northern Cape	33.2	31.8	68.2	26.9	3.3	1.6	0.0	26.2	73.9	21.0	5.2	0.0	10
Free State	24.3	21.6	78.4	20.5	0.0	0.0	1.2	9.3	90.7	9.3	0.0	0.0	51
KwaZulu-Natal	16.1	11.7	88.3	11.5	0.0	0.1	0.0	5.2	94.9	3.3	1.7	0.1	131
North West	40.7	37.1	62.9	34.0	0.0	3.1	0.0	27.6	72.4	27.6	0.0	0.0	44
Gauteng	43.1	37.8	62.2	34.8	1.5	0.0	1.5	17.7	82.3	17.7	0.0	0.0	150
Mpumalanga	24.4	23.2	76.8	17.6	3.1	2.5	0.0	17.2	82.8	16.0	0.0	1.2	54
Limpopo	26.6	21.9	78.1	18.9	1.8	0.0	1.2	8.0	92.0	8.0	0.0	0.0	76
Education													
No education	52.2	52.2	47.8	52.2	0.0	0.0	0.0	32.9	67.1	32.9	0.0	0.0	7
Grades 1-5	46.4	42.6	57.4	32.0	8.2	2.4	0.0	24.2	75.8	21.4	0.4	2.4	44
Grades 6-7	23.6	20.1	79.9	18.6	0.4	1.2	0.0	12.5	87.5	12.1	0.2	0.2	79
Grades 8-11	29.7	25.6	74.4	23.0	0.6	1.2	0.9	13.7	86.3	13.1	0.4	0.2	424
Grade 12	35.5	31.0	69.0	31.0	0.0	0.0	0.0	18.0	82.0	14.8	0.0	3.2	67
Higher	61.5	50.8	49.2	47.4	3.4	0.0	0.0	22.4	77.6	11.8	10.7	0.0	20
Population group													
African	28.5	24.3	75.7	21.5	1.2	0.9	0.7	13.6	86.4	12.6	0.3	0.7	572
Afr. urban	33.1	27.7	72.3	24.8	1.3	0.7	0.9	16.1	83.9	14.7	0.5	0.9	319
Afr. non-urban	22.7	20.0	80.0	17.4	1.0	1.2	0.4	10.3	89.7	9.9	0.0	0.4	253
Coloured	56.1	50.1	49.9	46.1	0.7	3.3	0.0	19.8	80.2	18.7	1.1	0.0	46
White	64.8	64.8	35.2	64.8	0.0	0.0	0.0	44.6	55.4	29.8	14.8	0.0	14
Indian	68.3	63.1	36.9	63.1	0.0	0.0	0.0	40.9	59.1	40.9	0.0	0.0	10
Total	31.9	27.7	72.3	24.9	1.1	1.1	0.6	15.2	84.8	13.9	0.6	0.6	642

1 man had education unknown. 1 man had population group missing.

Table 9.13 Alcohol use among adolescent women

Percentage of women aged 15-19 years who ever drank alcohol, who drank alcohol in the past 12 months or past 7 days (current drinkers) and the percentage of drinkers with on average responsible (<2 drinks per day), hazardous drinking (2-3 drinks per day) and harmful drinking (4+ drinks per day) in the past 12 months and the past 7 days by background characteristics, South Africa 2003.

Background characteristic	Ever drank alcohol	Drink past 12 months	Average in past 12 months				Missing	Drink past 7 days	Average in past 7 days				Number
			Abstainers	Responsible <2 drinks	Hazardous 2-3 drinks	Harmful 4+ drinks			Abstainers	Responsible <2 drinks	Hazardous 2-3 drinks	Harmful 4+ drinks	
<b>Age</b>													
15	14.5	12.6	87.4	10.9	0.0	1.7	0.0	7.6	92.5	7.6	0.0	0.0	122
16	18.0	13.8	86.2	9.6	3.1	1.0	0.0	9.2	90.8	7.6	1.6	0.0	135
17	21.4	17.2	82.8	15.0	0.6	1.6	0.0	7.1	92.9	3.4	3.7	0.0	131
18	14.4	10.4	89.6	7.7	1.0	1.7	0.0	5.9	94.1	4.2	0.7	0.9	148
19	17.7	14.8	85.2	9.1	1.9	3.0	0.8	8.4	91.6	6.9	1.4	0.0	120
<b>Residence</b>													
Urban	23.3	18.6	81.4	14.8	1.8	2.1	0.0	10.0	90.0	7.5	2.2	0.3	399
Non-urban	7.8	6.0	94.0	3.7	0.7	1.3	0.4	3.9	96.1	3.4	0.4	0.0	258
<b>Province</b>													
Western Cape	39.6	37.4	62.6	27.9	3.4	6.1	0.0	25.4	74.6	20.3	3.4	1.7	80
Eastern Cape	17.2	9.7	90.3	6.2	0.0	3.5	0.0	4.7	95.3	3.5	1.3	0.0	87
Northern Cape	41.3	34.2	65.8	30.4	1.4	2.4	0.0	16.3	83.7	13.6	2.7	0.0	13
Free State	17.2	12.6	87.4	8.9	2.5	1.2	0.0	8.9	91.1	7.7	1.2	0.0	48
KwaZulu-Natal	7.4	3.4	96.6	3.4	0.0	0.0	0.0	2.1	97.9	0.5	1.6	0.0	130
North West	15.3	15.3	84.7	15.3	0.0	0.0	0.0	9.1	90.9	9.1	0.0	0.0	41
Gauteng	24.9	22.2	77.8	16.9	2.6	2.6	0.0	8.6	91.4	5.9	2.6	0.0	109
Mpumalanga	1.1	1.1	98.9	1.1	0.0	0.0	0.0	1.1	98.9	1.1	0.0	0.0	46
Limpopo	8.8	5.3	94.7	2.7	1.8	0.0	0.9	2.7	97.4	2.7	0.0	0.0	104
<b>Education</b>													
No education	35.4	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	6
Grades 1-5	2.7	2.7	97.3	2.7	0.0	0.0	0.0	2.7	97.3	1.1	1.5	0.0	12
Grades 6-7	9.7	9.7	90.3	9.7	0.0	0.0	0.0	9.7	90.3	7.0	2.7	0.0	50
Grades 8-11	16.0	13.0	87.0	10.0	1.3	1.8	0.0	6.8	93.2	5.9	0.7	0.3	486
Grade 12	23.8	16.9	83.1	11.1	1.5	3.3	1.0	9.4	90.6	4.8	4.6	0.0	92
Higher	53.0	53.0	47.0	42.0	11.0	0.0	0.0	24.6	75.4	17.4	7.2	0.0	11
<b>Population group</b>													
African	13.2	9.8	90.2	7.9	0.7	1.1	0.2	5.0	95.0	3.7	1.3	0.0	568
Afr. urban	18.4	13.6	86.5	11.4	0.6	1.6	0.0	6.5	93.5	4.5	2.0	0.0	317
Afr. non-urban	6.8	5.1	94.9	3.6	0.7	0.4	0.4	3.0	97.0	2.6	0.4	0.0	250
Coloured	42.3	37.8	62.2	25.2	3.5	9.1	0.0	28.3	71.7	22.2	3.8	2.2	61
White	32.2	32.2	67.8	32.2	0.0	0.0	0.0	3.9	96.1	3.9	0.0	0.0	15
Indian	58.4	50.1	49.9	26.1	23.9	0.0	0.0	31.9	68.1	31.9	0.0	0.0	12
Total	17.2	13.7	86.3	10.4	1.3	1.8	0.1	7.6	92.4	5.9	1.5	0.2	657

1 woman had population group missing.

For male adolescents aged 15-19, the highest current drinking levels were reported in the North West, Western Cape, Eastern Cape and Northern Cape (23 to 28 percent), and the lowest levels were reported in KwaZulu-Natal (5 percent). However, the levels of reported use of alcohol in KwaZulu-Natal for both male and female adolescents are so low as to make their accuracy highly questionable. For female adolescents aged 15-19, the highest current drinking levels are in the Western Cape (25 percent), and the lowest levels is in Mpumalanga (1 percent). There appears to have been some shifting in the ranking of provinces in terms of the proportion of current drinkers since 1998, but the Western Cape has been one province that has consistently had a high proportion of adolescent drinkers over both surveys. For males, the proportion of adolescents with no education reporting current drinking appears to be higher (33 percent) than for all other education categories. In contrast, for females, the proportion of current drinkers appears to be highest among females with tertiary education (25 percent). For both male and female adolescents, the proportion of current drinkers in urban areas appears to be higher than their non-urban counterparts.

The population group and urban/non-urban differences described above for current drinking rates are very similar for lifetime and past 12 month consumption of alcohol. The age, provincial and education differences, however, do not match exactly. With regard to lifetime consumption of alcohol there are a number of similarities between the findings of the 2003 SADHS and the findings of the YRBS reported by Reddy *et al.*, (2003). For example, for male adolescents in both studies the proportion of the population reporting lifetime drinking is high in the Western Cape and Gauteng (in highest three provinces) and low in KwaZulu-Natal (in lowest two provinces). Similarly for female adolescents in both studies the proportion of the population reporting lifetime drinking is high in the Western and Northern Cape provinces and low in KwaZulu-Natal. In both studies and for both male and female adolescents, the proportion of the population reporting having ever drunk alcohol was lowest among Africans. In addition for both studies, among females, the proportion of drinkers was highest among 17 year olds.

Using data on the average number of drinks consumed per day and drinking frequency over the past 12 months\*, the proportion of persons drinking “responsibly” (less than four drinks per day for men and less than two drinks per day per women), drinking at “harmful levels” (four drinks to less than six drinks per day for men and two drinks to less than four drinks per day for women) and drinking at “hazardous levels” (six or more drinks per day for men and four or more drinks per day for women) was calculated. These levels were recommended by the Australian National Health and Medical Research Council in 1987 and were applied in the 1998 SADHS. For drinking during the past seven days this was calculated directly using information provided by respondents. Based on data over the past 12 months, roughly 90 percent of male adolescent drinkers and 77 percent of female adolescent drinkers on average drank at responsible levels.

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\* 5 or more days per week (category 1), 1-4 days per week (category 2), 1-3 days per month (category 3), and less than once a month (category 4). To calculate an average daily amount of alcohol consumed, the daily frequency of alcohol drinking was multiplied by the average daily amount, with persons in category 1 estimated as drinking every day, persons in category 2 at 2.5/7 times a day, category 3 at 1/15 times a day and category 4 at 1/30 times per day.

## ***Risky drinking***

Using the levels of hazardous and harmful drinking referred to in the previous section and the data based on the average over the past 12 months, it was found that 8 percent of male and 23 percent of female drinkers drink at “hazardous” or “harmful” levels. In terms of the total sample of drinkers and non-drinkers, just over 3 percent of adolescents drink at hazardous/harmful levels (Tables 9.12 and 9.13). Using the information provided on drinking practices during the seven days preceding the interview, it was found that 8 percent of male drinkers and 22 percent of female drinkers drink at hazardous/harmful levels.

Hazardous and harmful drinking appears to be particularly high over weekends. Using information on the amount of alcohol consumed over the seven days preceding the interview, 9 percent of male drinkers and 37 percent of female drinkers exceeded the recommended levels for responsible drinking on average over the weekend (Friday, Saturday and Sunday). For weekdays (Monday-Thursday) one percent of male drinkers and two percent of female drinkers drink at hazardous or harmful levels. Rates of hazardous/harmful drinking are therefore roughly 8 times higher for male adolescents over weekends as compared to weekdays and 21 times greater for female adolescent drinkers (Table 9.14). It is difficult to compare levels of hazardous/harmful drinking over weekdays and weekends with the 1998 SADHS as the same measures of “risky drinking” were not used in both surveys.

For male adolescents hazardous/harmful drinking at weekends appears to be highest among persons 19 years of age (16 percent), whereas for female adolescents the highest proportion is among those who are 18 years of age (50 percent). For male adolescents, hazardous/harmful drinking at weekends appears to be highest among persons residing in urban areas (10 percent), whereas for female adolescents the highest proportion is among those who live in non-urban settings (41 percent). Among male adolescents hazardous/harmful drinking is highest among whites (23 percent). The YRBS of high school learners (age 11-20) also found past month binge drinking to be highest among male learners who were 18 years of age (Reddy *et al.*, 2003). For females the highest level of binge drinking was noted among adolescents aged 15 and “19 and older”. The YRBS found that among males, levels of past month binge drinking were greatest among whites.

In the 2003 SADHS, 28 percent of male adolescents and 14 percent of female adolescents (15-19 years old) acknowledge that they have consumed alcohol in the past 12 months. This is substantially less than for adult men but only two percent less than for adult females. This is also less than would be expected based on the findings of previous research. Despite these low drinking rates, the data indicate very high levels of risky drinking (especially over weekends) by both males and females who are current drinkers of alcohol, and interventions are especially needed to reduce high levels of drinking over weekends.

## **9.7 Anthropometry of Adolescents**

In the SADHS all women and men aged 15 years and above were eligible for four anthropometric measurements: weight, height, waist circumference and hip circumference. The SADHS fieldworkers were given a standard training programme based on a manual prepared for this purpose. Portable digital scales were used to measure weight to the nearest 0.1 kg with the respondent wearing light clothing. Height was measured in cm by means of a stadiometer. Waist measurement was measured at the narrowest point of the waist and hip measurement was taken at the broadest point of the buttocks.

Table 9.14 Hazardous and harmful drinking among adolescents

Hazardous and harmful drinking over weekdays and weekends among adolescent men and women, who drink alcohol by background characteristics, South Africa 2003

Background characteristics	Weekdays (Monday-Thursday)		Weekends (Friday-Sunday)	
	Men	Women	Men	Women
<b>Age</b>				
15	0.0	0.0	3.2	40.1
16	0.0	0.0	3.1	25.6
17	0.0	0.0	8.9	37.6
18	0.7	8.9	8.4	49.5
19	3.1	1.0	16.1	32.8
<b>Residence</b>				
Urban	0.8	2.1	10.2	35.8
Non-urban	2.0	0.0	7.0	40.9
<b>Province</b>				
Western Cape	0.0	4.6	14.9	48.3
Eastern Cape	5.9	0.0	17.6	48.7
Northern Cape	0.0	4.0	41.9	25.9
Free State	0.0	0.0	0.0	41.0
KwaZulu-Natal	2.1	0.0	17.3	51.2
North West	0.0	0.0	9.3	13.8
Gauteng	0.0	0.0	0.0	23.8
Mpumalanga	5.3	0.0	16.0	0.0
Limpopo	0.0	0.0	9.9	33.3
<b>Education</b>				
No education	0.0	*	0.0	*
Grades 1-5	5.7	57.9	13.9	57.9
Grades 6-7	1.2	0.0	9.4	86.3
Grades 8-11	0.7	2.2	5.5	29.4
Grade 12	0.0	0.0	17.0	53.5
Higher	0.0	0.0	27.6	27.0
<b>Population group</b>				
African	1.5	0.0	9.2	31.4
Afr. urban	1.1	0.0	10.7	31.4
Afr. non-urban	2.1	0.0	6.6	31.3
Coloured	0.0	6.7	5.7	66.6
White	0.0	0.0	22.9	0.0
Indian	0.0	0.0	3.5	0.0
<b>Total</b>	<b>1.2</b>	<b>1.7</b>	<b>9.3</b>	<b>36.6</b>

No respondents in category.

Note: For men responsible drinking is defined as less than 4 standard drinks per day, hazardous levels as 4 to 5 and harmful drinking as 6 or more drinks per day. For women the comparable amounts are less than 2, 2 to 3 and 4 or more.



## Weight and Height

Tables 9.15 and 9.16 show the mean values of weight and height of adolescent men and women. In both men and women the mean weight and height measurements increase from age 15 to 19 years. Mean weights are higher in urban areas for both men and women while height is only greater in adolescent men in urban areas. In men the lowest mean weight is found in Northern Cape (52.6 kg) and the highest in KwaZulu-Natal (59.6 kg). In women the lowest weight is also found in the Northern Cape (50.7 kg) and the highest in the Eastern Cape (61.8 kg). The lowest height in men is found in Eastern Cape (1.63 m) and the highest in Gauteng (1.69) and Limpopo, Western Cape and Mpumalanga (1.67 m). In women the lowest mean height was in Northern Cape (1.56 m) and the highest in Eastern Cape and Mpumalanga (1.59 m).

Table 9.15 Anthropometric measurements for adolescent men						
The mean and standard error of weight (kg) and height (m) of men aged 15-19 by background characteristics, South Africa 2003						
Background characteristic	Weight (kg)			Height (m)		
	Mean	Std error	Number	Mean	Std error	Number
<b>Age</b>						
15	49.4	1.02	103	1.62	0.01	103
16	56.8	1.17	147	1.67	0.01	147
17	56.4	0.93	111	1.66	0.01	111
18	58.0	0.83	142	1.67	0.01	142
19	60.7	1.11	121	1.68	0.01	121
<b>Residence</b>						
Urban	57.7	0.71	371	1.67	0.01	371
Non-urban	54.8	0.61	254	1.65	0.01	254
<b>Province</b>						
Western Cape	(56.9)	(1.58)	60	(1.67)	(0.01)	60
Eastern Cape	54.3	1.48	66	1.63	0.01	66
Northern Cape	52.6	1.17	10	1.65	0.01	10
Free State	54.1	0.90	50	1.64	0.01	50
KwaZulu-Natal	59.6	1.12	121	1.65	0.01	121
North West	54.7	1.49	42	1.66	0.01	42
Gauteng	57.3	1.29	148	1.69	0.01	148
Mpumalanga	56.4	1.05	53	1.67	0.01	53
Limpopo	54.7	1.11	74	1.67	0.01	74
<b>Education</b>						
No education	*	*	7	*	*	7
Grades 1-5	(52.2)	(1.12)	44	(1.62)	(0.01)	44
Grades 6-7	53.3	1.02	77	1.65	0.01	77
Grades 8-11	56.3	0.55	413	1.66	0.01	413
Grade 12	(62.9)	(1.38)	62	(1.69)	(0.01)	62
Higher	*	*	20	*	*	20
<b>Population group</b>						
African	56.1	0.48	556	1.66	0.00	556
Afr. urban	57.2	0.70	310	1.67	0.01	310
Afr. non-urban	54.7	0.62	246	1.65	0.01	246
Coloured	55.9	2.07	44	1.64	0.02	44
White	*	*	14	*	*	14
Indian	(60.9)	(3.16)	10	(1.70)	(0.02)	10
Total	56.5	0.50	625	1.66	0.00	625
Note: Std error = Standard deviation of the mean.						
1 case had education unknown and 1 case reported population group as Other.						
Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.						

Table 9.16 Anthropometric measurements for adolescent women						
The mean and standard error of weight (kg) and height (m) of women aged 15-19 by background characteristics, South Africa 2003						
Background characteristic	Weight(kg)			Height (m)		
	Mean	Std error	Number	Mean	Std error	Number
<b>Age</b>						
15	54.4	1.44	119	1.55	0.01	119
16	53.1	1.07	129	1.56	0.01	129
17	56.5	1.15	127	1.58	0.01	127
18	58.8	1.19	141	1.59	0.01	141
19	60.3	1.25	118	1.59	0.01	118
<b>Residence</b>						
Urban	57.8	0.85	387	1.58	0.00	387
Non-urban	54.8	0.72	247	1.58	0.00	247
<b>Province</b>						
Western Cape	57.9	2.32	80	1.57	0.01	80
Eastern Cape	61.8	1.97	79	1.59	0.01	79
Northern Cape	50.7	0.96	13	1.56	0.01	13
Free State	54.3	0.96	47	1.57	0.01	47
KwaZulu-Natal	58.5	1.51	124	1.58	0.01	124
North West	54.5	1.28	40	1.58	0.01	40
Gauteng	(55.1)	(1.38)	105	(1.57)	(0.01)	105
Mpumalanga	56.5	1.27	45	1.59	0.01	45
Limpopo	53.6	0.98	100	1.57	0.01	100
<b>Education</b>						
No education	*	*	4	*	*	4
Grades 1-5	*	*	11	*	*	11
Grades 6-7	52.9	2.03	48	1.57	0.01	48
Grades 8-11	56.1	0.67	471	1.58	0.00	471
Grade 12	62.5	1.49	89	1.59	0.01	89
Higher	*	*	11	*	*	11
<b>Population group</b>						
African	57.1	0.60	547	1.58	0.00	547
Afr. urban	58.7	0.91	308	1.58	0.01	308
Afr. non-urban	55.2	0.74	239	1.58	0.00	239
Coloured	54.6	2.44	59	1.56	0.01	59
White	*	*	15	*	*	15
Indian	(50.4)	(1.42)	12	(1.56)	(0.01)	12
Total	56.7	0.59	634	1.58	0.00	634
Note: Std error = Standard deviation of the mean.						
1 case reported population group as Other.						
Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.						

In Figure 9.2, the mean weights for adolescent men and women in 2003 are compared with those observed in the 1998 SADHS. The mean weights at each single year of age are very similar with the largest difference (2.5 kg) being among 16-year-old women. Mean heights of men and women in the two surveys are also very similar.

### **Body Mass Index and Prevalence of Obesity**

Tables 9.17 and 9.18 show the distribution of adolescent men and women by BMI status. BMI is a useful measure of nutritional status, which is defined as the weight in kilograms divided by the square of the height in metres. However, growing concern about the applicability of the adult standard cut-off's for children has led to the development of age-dependent standards for overweight and obesity for ages under 20 years (Cole *et al.*, 2000). New cut-off's developed by Conde & Monteiro (2006), using population data collected in Brazil, also provide age dependent criteria for underweight that correspond to an adult BMI cut-off of 17.5. Although these might not be completely applicable to the South African population, the SADHS data are also presented using these age dependent criteria.

It is interesting to compare the prevalence of underweight in adolescents using the different criteria. There is a marked difference in the case of males and a smaller difference in the case of females. Based on the age dependent criteria, 4 percent of adolescent males are underweight, while using the standard reference BMI cut-off of 18.5, the prevalence of underweight is much higher at 29 percent. In the case of adolescent women, the prevalence of underweight is 4 percent based on the age dependent criteria and 12 percent based on the standard reference cut-off. The large differences in underweight when using the two different criteria are also likely to be due to the fact that the age dependent criteria use BMI<17.5 instead of BMI<18.5 as a cut-off point for underweight. In contrast to the large difference in underweight, there are only small differences in the prevalence of overweight and obesity when using the different criteria, even at the younger ages.

The average BMI increases with age for both adolescent men and women. It is higher for women than for men at all age groups and for all provinces. Using the age dependent criteria, 8 percent of adolescent women are obese compared to 1 percent of adolescent men. The prevalence of female obesity is highest in the Eastern and Western Cape and is more common in urban settings than non-urban. Compared to other population groups, African urban women have the highest mean BMI (22.6) and African non-urban women have the lowest mean BMI (22.1).

A comparison of the prevalence of the standard reference BMI categories in the 1998 and 2003 surveys is presented in Figure 9.3. There is very little difference between the two surveys for either adolescent men or women. This also applies to mean BMI values for both adolescent men and women. Men have a mean BMI of 21.0 kg/m<sup>2</sup> in 1998 and a mean of 20.4 kg/m<sup>2</sup> in 2003. For women, this is 23.0 kg/m<sup>2</sup> and 22.8 kg/m<sup>2</sup> in 1998 and 2003, respectively.

**Figure 9.2 Mean weight of adolescent men and women,  
SADHS 1998 and 2003**

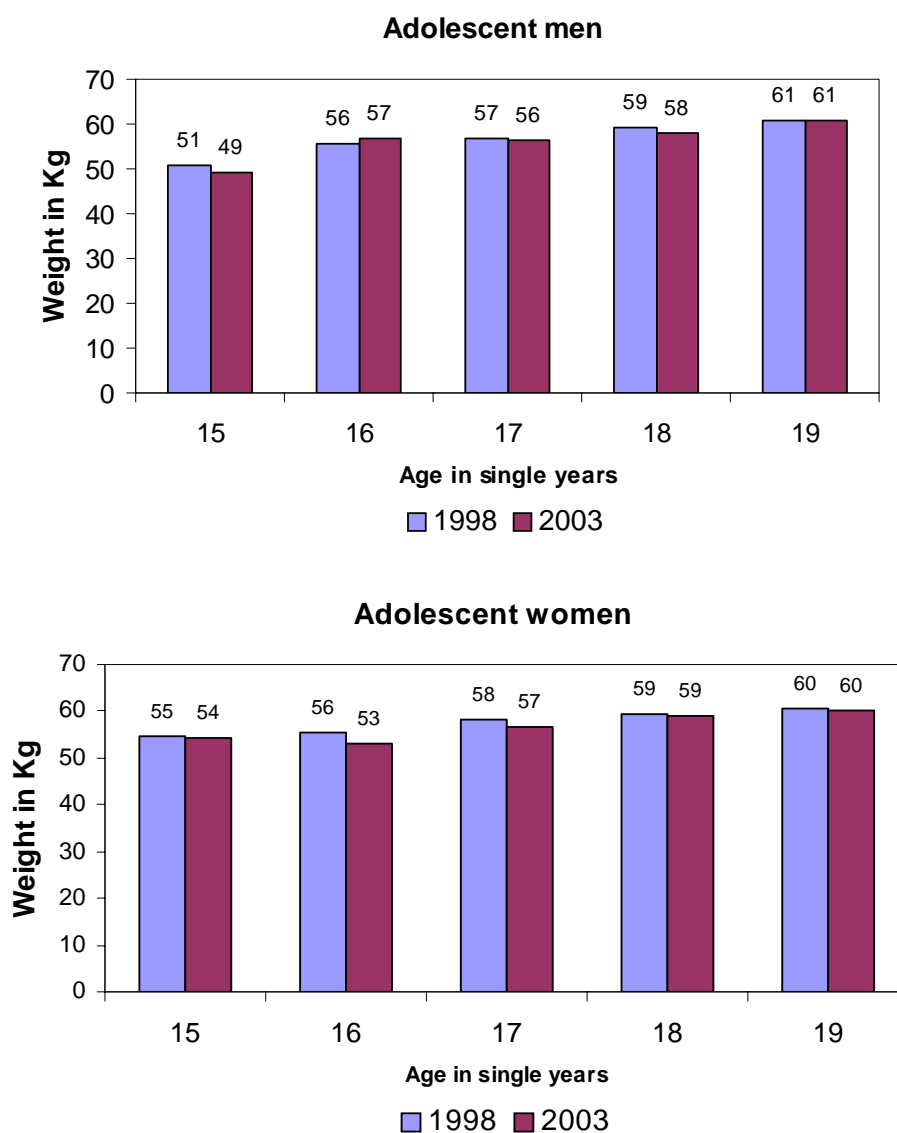


Table 9.17 Body mass index (BMI) of adolescent men

Mean and standard error of the BMI ( $\text{kg/m}^2$ ) and the percentages of men aged 15-19 by age independent body mass index categories and age dependent categories with equivalent cut-offs at age 20 according to background characteristics, South Africa 2003

Background characteristic	Body Mass Index			BMI Categories (age independent)			BMI Categories (age dependent) <sup>†</sup>				Number
	Mean	Std error		Underweight <18.5	Normal 18.5-24.9	Overweight 25-29.9	Underweight <17.5	Normal 17.5-24.9	Overweight 25-29.9	Obese 30+	
<b>Age</b>											
15	18.8	0.35		53.7	39.9	6.4	0.0	8.0	9.5	0.0	103
16	20.4	0.34		32.7	57.3	9.3	0.7	2.1	16.7	2.4	147
17	20.4	0.34		27.6	63.4	9.0	0.0	5.2	12.8	0.3	111
18	20.7	0.25		21.0	72.6	5.5	1.0	4.5	8.9	1.4	142
19	21.5	0.30		14.1	74.8	11.0	0.1	1.8	14.9	1.1	121
<b>Residence</b>											
Urban	20.6	0.21		28.5	62.6	8.3	0.6	4.3	12.9	1.3	371
Non-urban	20.2	0.19		29.7	62.0	8.1	0.2	3.7	12.4	0.9	254
<b>Province</b>											
Western Cape	(20.4)	(0.43)		(21.6)	(73.8)	(2.3)	(2.3)	(6.8)	(2.3)	(2.3)	60
Eastern Cape	20.2	0.43		29.0	64.5	6.5	0.0	2.9	11.4	0.0	66
Northern Cape	19.4	0.41		44.6	51.6	3.8	0.0	10.8	78.3	0.0	10
Free State	20.3	0.31		28.8	65.7	3.5	1.9	3.9	83.4	3.1	50
KwaZulu-Natal	22.0	0.33		9.4	70.2	20.3	0.1	0.2	72.6	2.9	121
North West	19.8	0.48		40.2	51.1	8.7	0.0	11.9	75.3	1.5	42
Gauteng	20.1	0.39		41.6	50.7	7.8	0.0	3.9	82.9	13.2	148
Mpumalanga	20.1	0.28		26.7	70.1	3.2	0.0	4.1	85.1	10.8	53
Limpopo	19.6	0.25		35.2	61.7	3.1	0.0	4.4	88.8	6.9	74
<b>Education</b>											
No education	*	*		*	*	*	*	*	*	*	7
Grades 1-5	(19.7)	(0.36)		(35.5)	(61.5)	(3.1)	(0.0)	(9.6)	(79.7)	(10.7)	44
Grades 6-7	19.6	0.34		36.0	60.8	2.5	0.8	2.1	88.9	8.2	77
Grades 8-11	20.4	0.17		30.4	59.8	9.3	0.4	4.7	81.1	12.9	413
Grade 12	(22.1)	(0.41)		(9.4)	(78.3)	(12.3)	(0.0)	(0.0)	(77.5)	(20.6)	62
Higher	*	*		*	*	*	*	*	*	*	20
<b>Population group</b>											
African	20.3	0.15		29.7	62.4	7.7	0.2	4.0	82.4	12.6	556
Afr. urban	20.5	0.22		29.8	62.8	7.2	0.2	4.2	82.4	12.4	310
Afr. non-urban	20.2	0.20		29.5	61.9	8.4	0.2	3.8	82.5	12.8	246
Coloured	20.6	0.60		27.1	64.9	4.8	3.1	6.5	84.7	5.7	44
Indian	*	*		*	*	*	*	*	*	*	14
Whites	(21.0)	(0.76)		(40.1)	(47.7)	(11.3)	(1.0)	(0.0)	(59.6)	(40.4)	10
Total	20.4	0.15		29.0	62.4	8.2	0.4	4.1	82.1	12.7	625

<sup>†</sup> Derived by Conde and Monteiro (2006), the age dependent cutoffs vary by single year of age to be equivalent the BMI cutoffs for age 20 years of underweight (<17.5), normal (17.5-24.9), overweight (25-29.9) and obese (30+).

Note: Std error = Standard deviation of the mean.

1 case had education unknown and 1 case reported population group as Other.

Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 9.18 Body mass index (BMI) of adolescent women

Mean and standard error of the BMI ( $\text{kg/m}^2$ ) and the percentages of women aged 15-19 by age independent body mass index categories and age dependent categories with equivalent cut-offs at age 20 according to background characteristics, South Africa 2003

Background characteristic	Body Mass Index		BMI Categories (age independent)				BMI Categories (age dependent) <sup>1</sup>				
	Mean	Std error	Underweight ≤18.5	Normal 18.5-24.9	Overweight 25-29.9	Obese 30+	Underweight ≤17.5	Normal 17.5- 24.9	Overweight 25-29.9	Obese 30+	Number
<b>Age</b>											
15	22.5	0.57	13.0	65.5	15.6	5.9	1.7	72.7	18.6	7.1	119
16	21.7	0.43	18.8	63.7	10.6	6.9	6.0	74.7	12.4	6.9	129
17	22.5	0.43	8.1	72.8	12.4	6.7	2.1	78.8	12.4	6.7	127
18	23.3	0.47	12.9	61.7	15.3	10.1	5.0	68.9	16.0	10.1	141
19	23.9	0.52	6.8	57.6	28.1	7.6	3.2	59.3	27.9	9.5	118
<b>Residence</b>											
Urban	23.3	0.34	10.5	63.2	16.7	9.7	4.1	67.9	17.9	10.1	387
Non-urban	22.0	0.27	14.4	66.0	15.5	4.1	3.0	75.9	16.2	4.9	247
<b>Province</b>											
Western Cape	23.6	0.96	21.0	52.7	13.4	12.9	6.9	66.8	11.7	14.7	80
Eastern Cape	24.4	0.89	7.9	62.3	6.9	22.9	2.7	65.1	9.3	22.9	79
Northern Cape	20.9	0.33	23.7	66.3	7.7	2.4	4.7	82.5	10.4	2.4	13
Free State	22.1	0.39	16.1	62.9	21.0	0.0	5.2	72.9	21.9	0.0	47
KwaZulu-Natal	23.4	0.58	7.5	59.4	25.7	7.5	2.2	63.0	27.0	7.8	124
North West	21.8	0.50	16.8	66.2	15.4	1.6	8.2	69.4	20.8	1.6	40
Gauteng	(22.3)	(0.50)	(5.5)	(76.6)	(15.2)	(2.7)	(0.7)	(81.5)	(15.2)	(2.7)	105
Mpumalanga	22.4	0.45	11.4	68.5	16.4	3.7	2.9	71.7	21.6	3.7	45
Limpopo	21.8	0.37	15.5	65.7	14.3	4.4	4.6	75.7	13.4	6.3	100
<b>Education</b>											
No education	*	*	*	*	*	*	*	*	*	*	2
Grades 1-5	*	*	*	*	*	*	*	*	*	*	11
Grades 6-7	21.5	0.99	17.34	67.2	10.4	5.1	10.3	71.7	13.0	5.1	48
Grades 8-11	22.6	0.27	12.8	65.0	16.3	5.9	3.3	73.1	17.0	6.6	471
Grade 12	24.8	0.50	3.6	60.6	16.5	19.3	0.2	61.6	18.9	19.3	89
Higher	*	*	*	*	*	*	*	*	*	*	11
<b>Population group</b>											
African	22.9	0.24	9.2	66.0	17.6	7.3	8.1	70.1	9.3	12.6	547
Afr. urban	23.6	0.36	6.5	65.0	18.9	9.6	2.6	66.9	20.4	10.2	308
Afr. non-urban	22.1	0.28	12.6	67.2	16.0	4.2	3.0	75.3	16.7	5.0	239
Coloured	22.4	1.00	33.4	45.1	9.0	12.6	18.9	72.5	3.3	5.3	59
Indian	*	*	*	*	*	*	*	*	*	*	15
White	(20.7)	(0.53)	(25.5)	(65.9)	(5.2)	(3.4)	(100.0)	(0.0)	(0.0)	(0.0)	12
Total	22.8	0.24	12.0	64.3	16.2	7.5	3.7	71.0	17.3	8.1	634

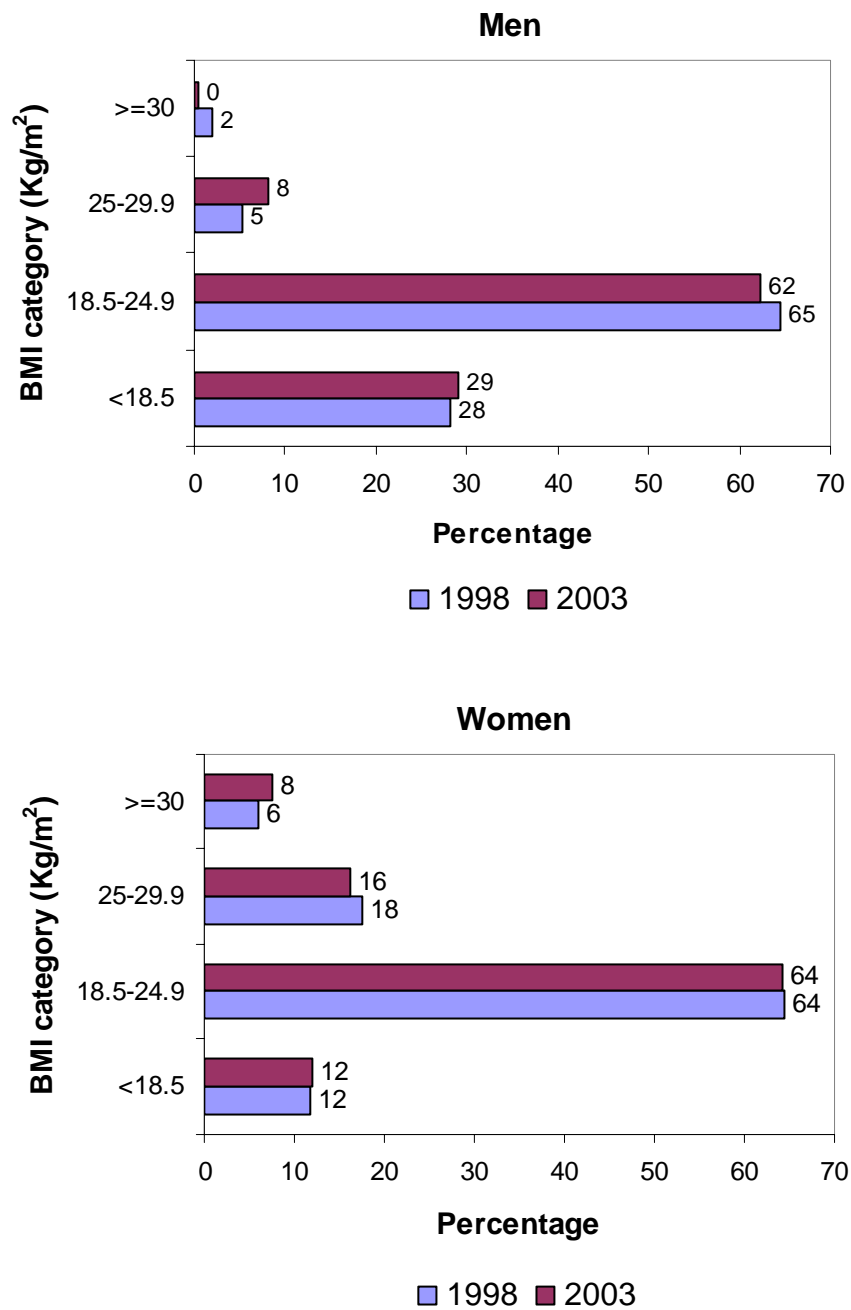
<sup>1</sup>Derived by Conde and Monteiro (2006), the age dependent cutoffs vary by single year of age to be equivalent the BMI cutoffs for age 20 years of underweight (<17.5), normal (17.5-24.9), overweight (25-29.9) and obese (30+).

Note: Std error = Standard deviation of the mean.

1 case had education unknown and 1 case reported population group as Other.

Parenthesis indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

**Figure 9.3 Distribution of adolescent men and women by BMI**



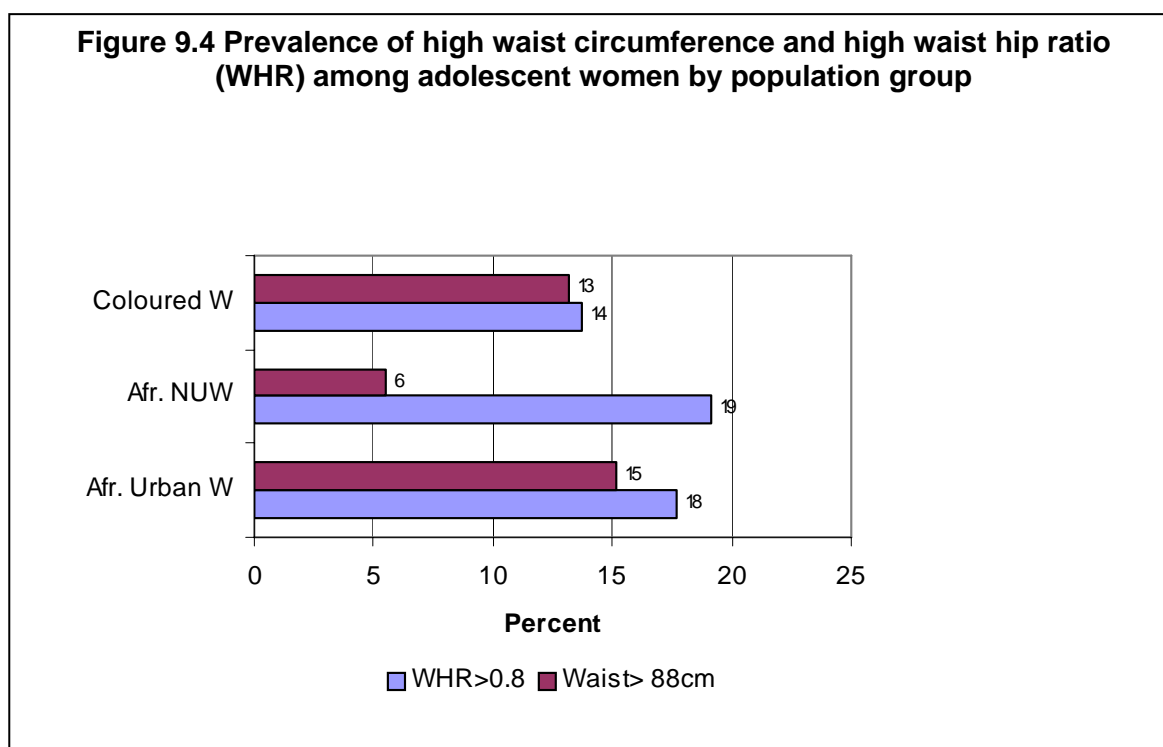
### ***Waist and Hip Circumference and Waist/hip ratio (WHR)***

Tables 9.19 and 9.20 show the mean waist and hip circumferences and WHRs for adolescent men and women, respectively. They also show the prevalence of those having a WHR above cut-off points for central obesity as indicated by  $\text{WHR} \geq 1.0$  in men and 0.85 in women and waist measurements greater than or equal to 88 cm in women and 102 cm in men.

A high waist circumference and high WHR are associated with cardiovascular disease and with type 2 diabetes. The tables show that less than 1 percent of adolescent men have a waist measurement equal to or above 102 cm and only 2 percent have a  $\text{WHR} \geq 1.0$ . However, in adolescent women 5 percent have a waist measurement above 88 cm and 9 percent have a high WHR. In both men and women the mean waist and hip measurements increased with age. In men and women the mean waist measurements are highest in Gauteng Province. In men the mean WHR is the same (0.8) in all the provinces excepting KwaZulu-Natal where the mean is 0.9. In women, however, it varies between 0.7 and 1.4.

Figure 9.4 shows the prevalence of adolescent women who have a waist and WHR above the cut-off points by population group. Values are not available for white and Indian women because of small sample sizes. Urban African women have the highest prevalence of a high waist circumference (15 percent) followed by coloured women (13 percent) and non-urban African women (6 percent). Non-urban African women have the highest prevalence of a high WHR (19 percent), followed by urban African women (18 percent) and by coloured women (14 percent).

Non-urban African adolescent women clearly have smaller waists than the other two groups. This is reflected by the lower proportion with high waist circumference in combination with the higher proportion of high WHR when compared with the other groups.





**Table 9.19 Waist and hip circumference of adolescent men**

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for men aged 15-19 as well as the prevalence of men with WHR  $\geq 1.0$  and waist circumference  $\geq 102$  cm by background characteristics, South Africa 2003

Background characteristic	Waist Circumference (cm)				Hip Circumference (cm)			Waist Hip Ratio (WHR)			
	Mean	Std error	Percentage with waist $\geq 102$ cm	Number	Mean	Std error	Number	Mean	Std error	Percentage with WHR $\geq 1.0$	Number
<b>Age</b>											
15	64.7	1.56	0.0	103	80.3	1.97	103	0.8	0.02	5.0	103
16	70.7	1.05	0.0	147	85.0	1.36	147	0.9	0.07	4.4	147
17	68.3	0.68	0.0	111	86.3	1.19	111	0.8	0.01	2.7	111
18	70.2	0.90	0.9	139	86.8	1.00	139	0.8	0.01	3.9	139
19	72.8	0.87	0.1	119	89.2	1.05	119	0.8	0.01	3.8	119
<b>Residence</b>											
Urban	70.4	0.74	0.0	366	86.9	0.82	366	0.8	0.01	4.9	366
Non-urban	68.4	0.75	0.5	254	83.9	0.89	254	0.9	0.04	2.6	254
<b>Province</b>											
Western Cape	(68.4)	(1.01)	(0.0)	(59)	(87.6)	(1.02)	60	(0.8)	(0.01)	(0.0)	60
Eastern Cape	69.7	1.13	0.0	66	85.2	1.15	66	0.8	0.01	1.6	66
Northern Cape	67.6	0.93	0.0	10	84.5	1.14	10	0.8	0.01	1.9	10
Free State	69.5	0.98	0.0	50	86.4	1.08	50	0.8	0.01	2.3	50
KwaZulu-Natal	71.0	1.43	1.1	121	84.9	1.80	119	0.9	0.09	6.5	119
North West	68.6	0.90	0.0	42	82.7	1.06	42	0.8	0.02	3.8	42
Gauteng	71.5	1.61	0.0	145	87.2	1.90	145	0.8	0.03	8.1	145
Mpumalanga	67.5	0.60	0.0	53	84.8	0.97	53	0.8	0.01	0.0	53
Limpopo	66.4	1.05	0.0	74	84.7	1.11	74	0.8	0.01	1.2	74
<b>Education</b>											
No education	*	*	*	7	*	*	7	*	*	*	7
Grades 1-5	(68.6)	(1.19)	(0.0)	44	(84.2)	(1.34)	44	(0.8)	(0.01)	(0.0)	44
Grades 6-7	69.1	0.86	0.0	77	84.2	1.43	77	0.8	0.01	4.5	77
Grades 8-11	69.2	0.68	0.3	408	85.2	0.81	408	0.8	0.03	5.0	408
Grade 12	(70.8)	(1.22)	(0.0)	62	(88.7)	(1.69)	62	(0.8)	(0.01)	(0.0)	62
Higher	*	*	*	20	*	*	20	*	*	*	20
<b>Population group</b>											
African	69.3	0.57	0.2	551	85.2	0.67	551	0.8	0.02	4.4	551
Afr. urban	70.1	0.79	0.0	303	86.4	0.94	303	0.8	0.01	5.8	303
Afr. non-urban	68.4	0.64	0.5	244	83.8	0.90	244	0.9	0.04	2.6	244
Coloured	69.1	1.86	0.0	44	87.2	1.61	44	0.8	0.01	0.0	44
White	*	*	*	14	*	*	14	*	*	*	14
Indian	(71.1)	(1.66)	(1.0)	10	(88.7)	(1.21)	10	(0.8)	(0.01)	(1.0)	10
Total	69.6	0.54	0.7	620	85.7	0.61	620	0.8	0.02	2.0	620

Note: Std error = Standard deviation of the mean.

1 case had education unknown and 1 case reported population group as Other.

Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 9.20 Waist and hip circumference of adolescent women

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for women aged 15-19 as well as the prevalence of men with WHR  $\geq 0.85$  and waist circumference  $\geq 88$  cm by background characteristics, South Africa 2003

Background characteristic	Waist Circumference (cm)				Hip Circumference (cm)			Waist Hip Ratio (WHR)			
	Mean	Std error	Percentage with waist $\geq 88$ cm	Number	Mean	Std error	Number	Mean	Std error	Percentage with WHR $\geq 0.85$ cm	Number
<b>Age</b>											
15	68.7	1.31	7.3	119	87.6	1.84	119	0.9	0.13	12.2	119
16	68.6	1.91	9.3	129	88.1	2.11	129	0.9	0.11	18.3	129
17	71.8	1.13	9.9	127	88.3	2.44	127	1.2	0.20	25.2	127
18	73.2	1.27	14.9	141	93.2	1.87	141	0.9	0.08	17.7	141
19	78.1	4.26	11.9	116	101.3	4.95	116	0.9	0.10	15.3	116
<b>Residence</b>											
Urban	73.6	1.53	14.2	384	93.3	2.10	384	1.0	0.09	17.5	384
Non-urban	69.7	0.87	5.4	247	88.9	1.19	247	0.9	0.08	18.4	247
<b>Province</b>											
Western Cape	73.6	2.14	15.3	80	91.6	3.58	80	1.1	0.25	20.2	80
Eastern Cape	73.8	1.89	18.8	79	94.5	2.77	79	1.0	0.21	13.7	79
Northern Cape	66.2	0.73	1.4	13	91.4	0.92	13	0.7	0.01	2.7	13
Free State	72.2	1.97	6.3	47	93.8	1.11	47	0.8	0.02	9.0	47
KwaZulu-Natal	71.1	1.77	16.5	124	81.1	2.95	124	1.4	0.21	40.2	124
North West	70.6	1.31	2.2	40	93.1	2.47	40	0.9	0.16	13.0	40
Gauteng	(75.1)	(5.10)	(8.2)	105	(99.7)	(5.62)	105	(0.75)	(0.01)	(10.3)	103
Mpumalanga	69.9	1.13	2.9	45	94.2	1.67	45	0.8	0.01	8.9	45
Limpopo	69.8	1.21	6.8	100	91.2	1.32	100	0.8	0.01	11.5	100
<b>Education</b>											
No education	*	*	*	2	*	*	2	*	*	*	2
Grades 1-5	*	*	*	11	*	*	11	*	*	*	11
Grades 6-7	70.8	1.59	6.5	48	91.3	1.86	48	0.8	0.01	19.2	48
Grades 8-11	70.6	0.66	9.0	469	89.5	1.22	469	1.0	0.08	18.2	469
Grade 12	80.7	5.65	21.8	89	101.9	6.61	89	1.0	0.19	19.4	89
Higher	*	*	*	11	*	*	11	*	*	*	11
<b>Population group</b>											
African	72.4	1.12	11.0	544	91.8	1.54	544	1.0	0.07	18.3	544
Afr. urban	74.3	1.84	15.2	304	93.9	2.58	304	1.0	0.11	17.7	304
Afr. non-urban	69.9	0.82	5.5	239	89.0	1.16	239	0.9	0.08	19.1	239
Coloured	71.0	2.31	13.2	59	92.1	2.55	59	0.9	0.17	13.7	59
White	*	*	*	15	*	*	15	*	*	*	15
Indian	(64.3)	(1.53)	(2.8)	12	(83.9)	(3.82)	12	(0.8)	(0.03)	(27.0)	12
Total	72.0	0.99	5.4	631	91.6	1.35	631	1.0	0.06	8.9	631

Note: Std error = Standard deviation of the mean.

1 case reported population group as Other.

Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

## 9.8 Blood Pressure in Adolescents

Tables 9.21 and 9.22 provide the summary of the blood pressure measurements, the pulse rates and the prevalence of hypertension in the adolescent men and women. For some categories there are insufficient numbers of study participants to report the results. The categories that had data for less than 25 participants are suppressed and indicated with an asterisk. Those with between 25 and 49 participants are presented in brackets. It also needs to be kept in mind that serious problems were experienced in the BP readings and any interpretations of the BP data in the youth should be made cautiously.

For adolescent men the mean systolic BP is 115 mmHg and for adolescent women the mean is 110 mmHg. The mean diastolic BP for males is 66 mmHg and for females 67 mmHg. These values are very similar to those found in 1998. As found in 1998 for males the systolic BP levels increased between the ages of 15-19 years while this was not observed for females. The diastolic BP showed a similar trend but less marked than of the systolic BP.

Table 9.21 Blood pressure and pulse rate in adolescent men								
Mean and standard error of diastolic and systolic blood pressure (mmHg) and pulse rate (beats per minute) and the percentage of males aged 15-19 with BP $\geq$ 140/90 or taking appropriate drugs for hypertension by background characteristics, South Africa 2003								
Background characteristic	Systolic blood pressure (mmHg)		Diastolic blood pressure (mmHg)		Pulse rate (beats per min)		Hypertension % BP $\geq$ 140/90 and/or taking drugs	Number
	Mean	Std error	Mean	Std error	Mean	Std error		
<b>Age</b>								
15	111	1.40	64	1.41	74	1.83	1.6	103
16	116	1.30	67	0.97	73	1.26	5.4	147
17	114	1.56	68	1.45	73	1.38	7.4	111
18	115	1.05	65	0.94	72	1.04	2.8	142
19	118	1.38	67	1.08	70	1.46	8.5	121
<b>Residence</b>								
Urban	115	0.81	66	0.87	73	1.00	15.6	298
Non-urban	114	2.25	67	1.81	74	1.87	0.0	73
<b>Province</b>								
Western Cape	(114)	(1.71)	(63)	(1.75)	(68)	(1.93)	(2.7)	60
Eastern Cape	114	1.64	65	1.55	71	1.70	2.2	66
Northern Cape	119	1.22	64	1.54	72	1.46	0.1	10
Free State	117	1.57	67	1.18	71	1.14	2.3	50
KwaZulu-Natal	115	1.26	71	1.00	71	1.19	9.0	121
North West	113	1.22	65	1.64	74	1.73	0.6	42
Gauteng	115	1.46	67	1.45	75	1.65	5.7	148
Mpumalanga	116	1.29	64	1.17	73	1.47	2.9	53
Limpopo	115	1.53	62	1.20	73	1.75	0.0	74
<b>Education</b>								
No education	*	*	*	*	*	*	*	7
Grades 1-5	(115)	(2.74)	(65)	(1.86)	(76)	(2.15)	(1.5)	44
Grades 6-7	115	1.30	64	1.15	73	1.64	2.6	77
Grades 8-11	115	0.65	66	0.63	72	0.75	13.0	413
Grade 12	(119)	(1.49)	(70)	(2.44)	(70)	(2.33)	(6.1)	62
Higher	*	*	*	*	*	*	*	20
<b>Population group</b>								
African	115	0.58	66	0.56	72	0.67	18.3	556
Afr. urban	115	0.84	66	0.80	73	0.97	8.4	310
Afr. non-urban	114	0.76	66	0.76	71	0.83	9.9	246
Coloured	115	2.45	64	1.79	74	2.72	1.5	44
White	*	*	*	*	*	*	*	14
Indian	(118)	(3.10)	(75)	(9.10)	(75)	(2.15)	(3.7)	10
Total	115	0.56	66	0.55	72	0.64	2.0	625
Note: Std error = Standard deviation of the mean.								
1 case had population group recorded as Other.								
Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.								

The prevalence of hypertension defined as a BP  $\geq$  140/90 mmHg or taking anti-hypertension medication is much lower in 2003 than in 1998. The prevalence is 2 percent for both adolescent men and women compared to 8 percent and 5 percent respectively in 1998. These findings should be interpreted with caution and may reflect the problems in the data rather than a real change.

The mean pulse rate of adolescent men is 72 beats per minute and lower than that of adolescent women whose mean pulse rate is 76 beats per minute. A similar pattern was observed in 1998 when the mean level for the pulse rate of the males was 71 beats per minute and for females 78 beats per minute.

Mean and standard error of diastolic and systolic blood pressure (mmHg) and pulse rate (beats per minute) and the percentage of females aged 15-19 with BP $\geq$ 140/90 or taking appropriate drugs for hypertension by background characteristics, South Africa 2003								
Background characteristic	Systolic blood pressure (mmHg)		Diastolic blood pressure (mmHg)		Pulse rate (beats per min)		Hypertension % BP $\geq$ 140/90 and/or taking drugs	Number
	Mean	Std error	Mean	Std error	Mean	Std error		
<b>Age</b>								
15	110	1.79	67	1.08	77	1.39	5.9	119
16	111	1.22	69	1.18	76	1.44	4.3	129
17	109	1.09	66	1.15	76	2.25	4.6	127
18	108	0.91	67	0.97	75	0.91	6.1	141
19	111	1.01	68	0.83	77	1.42	1.2	118
<b>Residence</b>								
Urban	110	0.93	68	0.73	76	1.13	11.9	314
Non-urban	112	2.04	71	1.39	78	2.00	4.9	73
<b>Province</b>								
Western Cape	109	1.32	69	1.11	80	1.78	1.6	80
Eastern Cape	112	1.42	69	1.31	75	2.25	1.1	79
Northern Cape	113	1.44	68	1.22	80	1.68	0.3	13
Free State	112	1.54	69	1.26	79	1.93	2.4	47
KwaZulu-Natal	110	1.85	68	1.08	72	1.12	8.5	124
North West	108	2.11	66	1.54	76	1.27	1.5	40
Gauteng	(110)	(1.60)	(69)	(1.64)	(74)	(2.75)	(5.1)	105
Mpumalanga	111	1.31	67	1.14	79	1.48	1.6	45
Limpopo	108	1.10	63	1.03	80	1.09	0.0	100
<b>Education</b>								
No education	*	*	*	*	*	*	*	4
Grades 1-5	*	*	*	*	*	*	*	11
Grades 6-7	112	1.64	69	1.27	80	2.35	0.6	48
Grades 8-11	110	0.67	67	0.57	76	0.68	20.3	471
Grade 12	108	1.23	67	1.40	73	2.99	0.6	89
Higher	*	*	*	*	*	*	*	11
<b>Population Group</b>								
African	110	0.64	67	0.53	76	0.78	20.4	547
Afr. urban	111	1.01	68	0.78	76	1.19	15.2	308
Afr. non-urban	109	0.68	66	0.68	76	0.91	5.1	239
Coloured	108	1.33	69	1.19	78	1.62	1.5	59
White	*	*	*	*	*	*	*	15
Indian	(108)	(1.45)	(70)	(2.60)	(75)	(3.03)	(0.2)	12
Total	110	0.57	67	0.47	76	0.70	1.8	634

Note: Std error = Standard deviation of the mean.  
 1 case reported population group as Other.  
 Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

## 9.9 Chronic Respiratory Symptoms and Peak Flow Expiratory Rates in Adolescents

A worldwide increase in asthma in children and adolescents has been noted in recent decades, associated with urbanisation and other as yet poorly understood markers of “development”. In South Africa, there are now studies showing both a positive rural urban gradient and a secular increase in the prevalence of asthma, as measured by symptoms and response to exercise or to short-acting pharmacological challenge (Van Niekerk, 1979; Calvert, 2005). Both trends have been demonstrated in the rural Transkei and Cape Town over the 20-year period between these studies. An increase in the prevalence of asthma symptoms over a shorter period of seven years has also been demonstrated in Cape Town among schoolchildren aged 13 to 14 years (Zar, 1997). Besides urbanisation, an increase in body mass index has been shown to be associated with an increased prevalence of asthmatic response to exercise (Calvert, 2005).

Table 9.23 shows the responses to the questions in the SADHS on respiratory symptoms in adolescents which have been combined to form two composite indices: airflow limitation in the past year and chronic bronchitis (see Chapter 12, pp 248 and 249 for definitions). The table also indicates the proportion with abnormal lung functions as measured by a peak flow meter in the field. These reference values were derived from the 1998 SADHS [See Appendix D of that report (Department of Health of the Republic of South Africa, 2002)].

The prevalence of symptoms of airflow limitation in the past year was 6 percent among both adolescent males and females. This represents an increase in airflow limitation prevalence compared to that found in the 1998 survey, when it was 3 percent among males and 5 percent among females. There is a parallel increase in the proportion with abnormal peak flow: in males from 2 percent in 1998 to 6 percent in 2003 and in females from 3 percent in 1998 to 7 percent in 2003. In this age group, the most likely cause of symptoms of airflow obstruction and peak flow abnormality is asthma. The data are thus compatible with an increase in the prevalence of asthma in this age group over the five-year interval between the two surveys.

Stratified analyses must be treated with caution because of small numbers in some strata. However, the increase in airflow limitation appears to be confined to the urban sample. Specifically, among urban African male adolescents, the prevalence of airflow limitation increased from 3.2 percent in 1998 to 9 percent in 2003, paralleled by an increase in the prevalence of abnormal peak flow from 2 percent to 10 percent. A similar, though smaller increase was noted among urban African females.

Table 9.23 Lung disease in adolescents

Percentage of men and women aged 15-19 who reported symptoms of airflow limitation or chronic bronchitis or who have abnormal peak flow rates, according to background characteristics, South Africa 2003

Background characteristic	Adolescent men 15 -19				Adolescent women 15 -19			
	Percentage with airflow limitation	Percentage with chronic bronchitis	Percentage with abnormal peak flow rate	Number	Percentage with airflow limitation	Percentage with chronic bronchitis	Percentage with abnormal peak flow rate	Number
<b>Age</b>								
15	4.9	0.8	10.6	110	6.3	0.5	7.6	122
16	7.2	1.5	5.3	150	4.2	1.5	4.5	135
17	6.3	0.0	4.6	111	5.2	1.2	9.5	131
18	2.2	0.1	4.0	145	5.0	2.0	5.1	148
19	7.7	1.9	7.7	127	9.3	1.5	8.5	120
<b>Residence</b>								
Urban	8.1	0.8	8.7	381	7.2	1.0	9.7	399
Non-urban	2.1	1.1	2.7	261	4.0	1.9	2.7	258
<b>Province</b>								
Western Cape	(11.4)	(4.5)	(4.5)	60	12.9	3.4	11.2	80
Eastern Cape	6.2	1.6	9.4	66	2.5	1.3	12.2	87
Northern Cape	1.9	0.0	5.4	10	5.1	0.0	23.1	13
Free State	5.8	0.0	5.8	51	2.9	2.1	4.5	48
KwaZulu-Natal	1.8	0.1	4.0	131	0.8	0.0	5.6	130
North West	5.1	0.0	3.5	44	6.8	1.6	0.0	41
Gauteng	9.5	0.0	12.5	150	(8.4)	(0.0)	(7.9)	109
Mpumalanga	4.4	0.0	2.2	54	13.0	1.5	1.1	46
Limpopo	1.2	2.4	1.2	76	5.3	2.7	4.2	104
<b>Education</b>								
No education	*	*	*	7	*	*	*	6
Grades 1-5	(14.3)	(2.4)	(14.6)	44	*	*	*	12
Grades 6-7	3.2	0.2	1.2	79	11.6	3.3	8.2	50
Grades 8-11	4.6	1.1	6.5	424	5.2	1.3	6.3	486
Grade 12	5.2	0.0	7.8	67	5.7	0.0	9.9	92
Higher	*	*	*	20	*	*	*	11
<b>Population group</b>								
African	5.9	1.0	6.6	572	5.6	1.3	6.1	568
Afr. urban	8.8	0.9	9.6	319	6.8	0.8	9.1	317
Afr. non-urban	2.1	1.2	2.8	253	4.1	2.0	2.3	250
Coloured	6.0	0.0	5.4	46	9.5	0.0	16.3	61
White	*	*	*	14	*	*	*	15
Indian	(0.0)	(0.0)	(1.6)	10	(10.5)	(0.0)	(7.7)	12
<b>Total</b>	<b>5.6</b>	<b>0.9</b>	<b>6.2</b>	<b>642</b>	<b>5.9</b>	<b>1.3</b>	<b>6.9</b>	<b>657</b>

Note: 1 male and 1 female reported population group as Other.

Parenthesis indicates that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Chronic bronchitis remains uncommon in this age group. Among males the prevalence is less than 1 percent as it was in 1998, and among females the prevalence is 1 percent compared to 2 percent in 1998. This is not surprising as chronic bronchitis is generally a disease of older adults, associated with the cumulative effect of smoking, occupational exposures, smoky domestic fuel and, in South Africa, previous pulmonary tuberculosis. Of note is that the higher prevalence of chronic bronchitis noted in 1998 among adult women in South Africa, particularly non-urban African women (Ehrlich, 2004), is echoed in the excess among non-urban African adolescent females (2 percent) in the 2003 survey. In the absence of other explanations, exposure to smoky domestic fuel is the most likely culprit.

## **9.10 Dietary Intakes of Adolescents**

The micronutrient adequacy of dietary intakes is a new measure included in the 2003 SADHS. Details about the methodology for collection and calculation of the scores can be found in section 13.10 of Chapter 13 and Appendix D. Based on the frequency of eating selected foods, a score ranging from 0 to 45 points is calculated with a low score indication for a better intake of micronutrients. The fat intake is scored from 1 to 6 points with a low score indicating a lower fat intake. The total score combines the micronutrient and fat scores and has a range from 1 to 51 where a low score is indicative of a better quality diet. The salt intake is scored from 0-11 with a low score indicating a lower salt intake.

Tables 9.24 and 9.25 provide the findings of the nutrient intakes of adolescents. In men and women there are no big differences in micro-nutrient intake between age groups. However there are large urban-non-urban and provincial differences. Urban subjects have better mean micronutrient scores (21.0 in men and 20.0 for women) compared with non-urban subjects (24.6 percent for men and 24.7 percent for women). Furthermore, the mean micronutrient scores are better in Gauteng and in KwaZulu-Natal and poorest in Mpumalanga, the Northern Cape, and Limpopo. African non-urban participants have the poorest mean micronutrient intake scores (24.8 for men and 24.4 for women).

Salt intake is similar for adolescent men and women (3.9 for men and 4.0 for women). Although there no clear association with age, salt intake scores increase with education by 1 point from the lowest level of education to the highest level of education.

**Table 9.24 Dietary intake of adolescent men**

Mean and standard error (SE) of the micronutrient, fat, total and salt intake scores and ranked categories based on total dietary score for men aged 15-19 years, by background characteristics, South Africa 2003

Background characteristics	Micronutrient score <sup>1</sup>			Fat score <sup>2</sup>			Total dietary score <sup>3</sup>			Total dietary score categorised			Salt score <sup>4</sup>			Number of men
	Mean	SE	Mean	SE	Mean	SE	Good < 33.3%	Intermediate 33.3-66.7 %	Poor >= 66.67 %	Total	Mean	SE				
<b>Age</b>																
15	22.4	1.33	2.3	0.09	24.7	1.36	27.6	46.2	26.2	100.0	4.2	0.18	110			
16	23.9	1.33	2.3	0.10	26.2	1.32	24.2	40.7	35.1	100.0	3.9	0.13	150			
17	23.4	1.28	2.4	0.09	25.8	1.27	23.4	43.9	32.7	100.0	3.7	0.14	111			
18	21.2	1.13	2.3	0.09	23.5	1.17	35.9	34.6	29.5	100.0	3.8	0.12	144			
19	21.3	1.38	2.4	0.10	23.6	1.36	26.0	49.6	24.4	100.0	4.1	0.18	127			
<b>Residence</b>																
Urban	21.0	0.85	2.3	0.06	23.3	0.85	30.8	44.7	24.5	100.0	4.1	0.10	381			
Non-urban	24.6	0.83	2.3	0.07	26.9	0.84	22.9	39.5	37.6	100.0	3.6	0.09	260			
<b>Province</b>																
Western Cape	26.0	1.41	2.2	0.13	28.1	1.39	16.7	49.6	33.7	100.0	3.8	0.27	60			
Eastern Cape	27.4	2.16	2.5	0.11	30.0	2.13	20.9	30.6	48.6	100.0	3.6	0.19	66			
Northern Cape	30.6	1.30	2.1	0.12	32.7	1.34	5.4	40.2	54.4	100.0	3.5	0.19	10			
Free State	27.4	1.56	2.2	0.10	29.6	1.56	15.2	40.5	44.3	100.0	3.9	0.20	51			
KwaZulu-Natal	13.8	1.00	2.5	0.11	16.3	1.02	46.6	52.3	1.1	100.0	4.5	0.16	131			
North West	27.3	1.52	2.1	0.17	29.4	1.55	10.3	48.6	41.1	100.0	3.4	0.18	44			
Gauteng	15.9	1.73	2.4	0.10	18.3	1.73	47.1	39.0	13.9	100.0	4.3	0.16	150			
Mpumalanga	30.8	1.10	2.2	0.12	33.0	1.13	5.3	39.8	54.9	100.0	3.5	0.15	54			
Limpopo	30.1	1.16	2.2	0.11	32.3	1.16	7.4	38.1	54.5	100.0	3.1	0.13	75			
<b>Education</b>																
No education	26.5	2.01	2.3	0.04	28.8	2.04	0.0	49.8	50.2	100.0	3.7	0.64	7			
Grades 1-5	27.2	2.67	2.2	0.11	29.4	2.65	19.6	31.8	48.6	100.0	3.4	0.25	44			
Grades 6-7	28.1	1.45	2.3	0.09	30.4	1.44	15.0	32.4	52.6	100.0	3.4	0.14	79			
Grades 8-11	22.0	0.66	2.3	0.05	24.3	0.66	28.0	45.8	26.2	100.0	4.0	0.09	424			
Grade 12	16.4	1.86	2.5	0.14	18.9	1.85	43.6	39.9	16.5	100.0	4.2	0.31	67			
Higher	17.6	3.25	2.7	0.24	20.3	3.24	42.7	46.4	10.9	100.0	4.6	0.46	20			
<b>Population group</b>																
African	22.6	0.64	2.3	0.04	24.9	0.64	28.5	40.0	31.5	100.0	3.9	0.08	571			
Afr. urban	20.8	0.93	2.4	0.06	23.2	0.93	33.6	40.2	26.2	100.0	4.1	0.11	319			
Afr. non-urban	24.8	0.85	2.3	0.07	27.1	0.85	22.0	39.8	38.2	100.0	3.6	0.09	252			
Coloured	21.5	2.19	2.3	0.09	23.9	2.18	20.8	58.8	20.5	100.0	4.0	0.24	46			
White	21.3	0.61	2.2	0.46	23.5	0.51	10.9	89.1	0.0	100.0	5.2	0.64	14			
Indian	19.6	5.36	1.6	0.29	21.2	5.12	32.7	50.6	16.7	100.0	4.6	0.20	10			
Total	22.4	0.62	2.3	0.04	24.8	0.62	27.6	42.6	29.8	100.0	3.9	0.07	641			

1. This score ranged from 0 to 45 points with a low score indicating a better intake micronutrients.

2. This score ranged from 1 to 6 points with a low score indicating a lower fat intake.

3. This score combines the micronutrient and fat scores (45 + 6). A low score is indicative of a better quality diet.

4. This score ranges from 0-11 with a low score indicating a lower salt intake.

Note: Only cases with complete information on education and population group are included.



Table 9.25 Dietary intake of adolescent women

Mean and standard error (SE) of the micronutrient, fat, total and salt intake scores and ranked categories based on total dietary scores for women aged 15-19 years, by background characteristics, South Africa 2003

Background characteristics	Micronutrient score <sup>1</sup>			Fat score <sup>2</sup>			Total dietary score <sup>3</sup>			Total dietary score categorized			Salt score <sup>4</sup>		Number of women	
	Mean	SE		Mean	SE		Mean	SE		Good < 33.3%	Intermediate 33.3-66.7 %	Poor >= 66.67 %	Total	Mean		SE
<b>Age</b>																
15	23.0	1.15		2.2	0.10		25.2	1.15		24.1	46.2	29.7	100.0	3.8	0.14	122
16	20.4	1.45		2.1	0.09		22.6	1.45		35.3	36.5	28.2	100.0	3.9	0.14	135
17	22.2	1.08		2.3	0.09		24.6	1.08		26.0	47.5	26.5	100.0	4.2	0.11	131
18	19.9	1.37		2.2	0.11		22.1	1.34		33.4	45.0	21.7	100.0	4.3	0.17	147
19	24.4	0.99		2.2	0.12		26.6	1.00		22.1	44.9	33.0	100.0	3.7	0.14	120
<b>Residence</b>																
Urban	20.0	1.01		2.1	0.07		22.2	1.00		32.3	47.7	20.0	100.0	4.2	0.10	397
Non-urban	24.7	0.76		2.3	0.06		27.1	0.74		22.7	38.1	39.1	100.0	3.7	0.08	258
<b>Province</b>																
Western Cape	22.6	1.39		1.9	0.16		24.5	1.42		21.3	54.9	23.7	100.0	3.9	0.21	78
Eastern Cape	25.3	1.80		2.4	0.12		27.7	1.78		24.7	32.9	42.5	100.0	3.8	0.22	87
Northern Cape	28.6	1.28		2.0	0.11		30.6	1.27		10.8	43.3	46.0	100.0	3.9	0.18	13
Free State	28.8	1.79		2.1	0.10		30.9	1.82		15.7	32.2	52.1	100.0	3.6	0.18	48
KwaZulu-Natal	12.4	1.42		2.2	0.11		14.6	1.39		56.4	38.8	4.8	100.0	4.4	0.15	130
North West	26.4	1.45		2.2	0.14		28.6	1.46		12.2	51.0	36.9	100.0	3.9	0.18	41
Gauteng	15.0	2.19		2.2	0.16		17.2	2.12		44.6	50.7	4.7	100.0	4.3	0.20	109
Mpumalanga	30.9	1.19		2.4	0.12		33.3	1.13		2.9	43.1	54.0	100.0	4.0	0.12	46
Limpopo	27.8	1.01		2.3	0.10		30.1	1.02		11.3	47.3	41.4	100.0	3.5	0.13	104
<b>Education</b>																
No education	9.9	5.99		2.1	0.27		12.0	5.71		74.9	2.7	22.5	100.0	3.4	0.67	6
Grades 1-5	28.1	1.46		2.0	0.27		30.1	1.54		7.7	47.3	45.0	100.0	3.5	0.21	12
Grades 6-7	28.0	1.67		2.4	0.13		30.4	1.62		13.0	40.4	46.6	100.0	3.7	0.22	50
Grades 8-11	22.3	0.82		2.3	0.05		24.5	0.82		27.8	43.9	28.4	100.0	4.0	0.08	485
Grade 12	16.4	1.44		2.0	0.15		18.5	1.40		41.1	46.3	12.6	100.0	4.3	0.25	92
Higher	22.9	1.29		1.3	0.17		24.2	1.44		22.6	64.1	13.3	100.0	4.4	0.24	11
<b>Population group</b>																
African	21.9	0.76		2.3	0.05		24.2	0.75		29.3	41.8	28.9	100.0	3.9	0.08	568
Afr. urban	20.0	1.19		2.3	0.08		22.2	1.17		35.8	49.0	15.2	100.0	4.1	0.12	317
Afr. non-urban	24.4	0.78		2.3	0.06		26.7	0.76		21.4	64.7	13.9	100.0	3.7	0.08	250
Coloured	22.1	1.36		1.8	0.18		23.9	1.47		34.0	44.1	21.9	100.0	4.3	0.25	61
White	21.7	0.54		1.8	0.08		23.5	0.48		20.9	58.1	21.0	100.0	4.7	0.18	15
Indian	20.2	3.55		0.9	0.16		21.1	3.64		23.5	38.8	37.7	100.0	4.4	0.21	12
Total	21.9	0.70		2.2	0.05		24.1	0.69		28.5	43.9	27.6	100.0	4.0	0.07	655

1. This score ranged from 0 to 45 points with a low score indicating a better intake micronutrients.

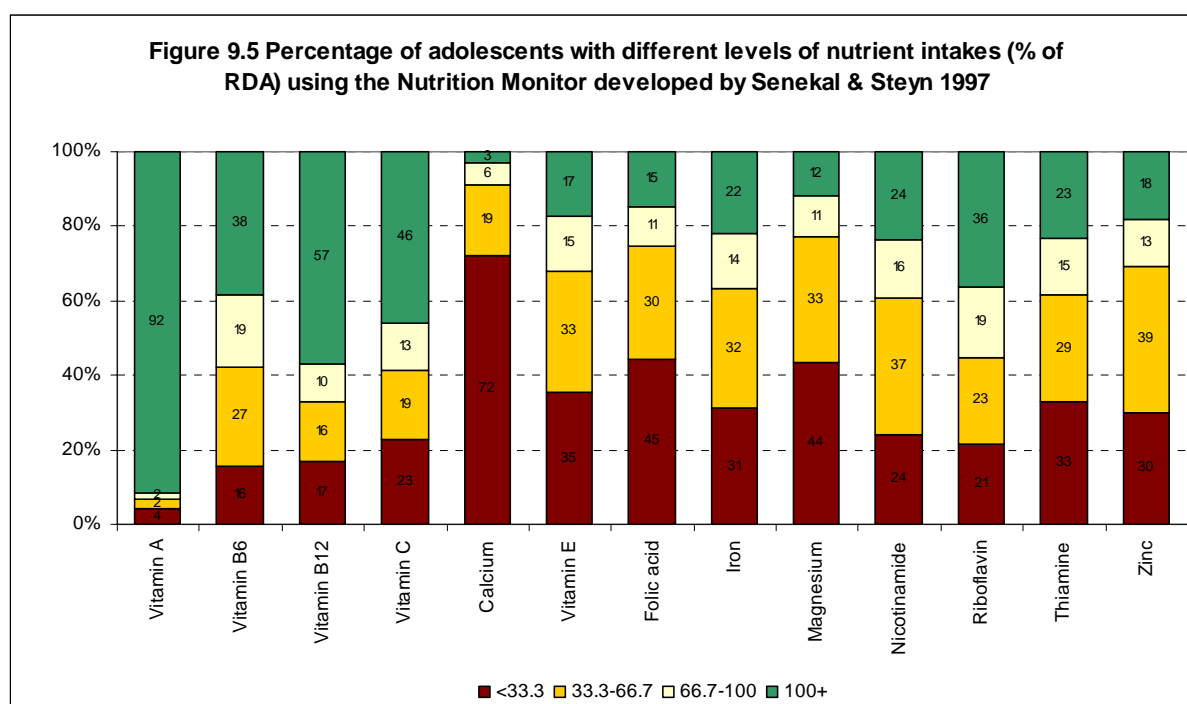
2. This score ranged from 1 to 6 points with a low score indicating a lower fat intake.

3. This score combines the micronutrient and fat scores (45 + 6). A low score is indicative of a better quality diet.

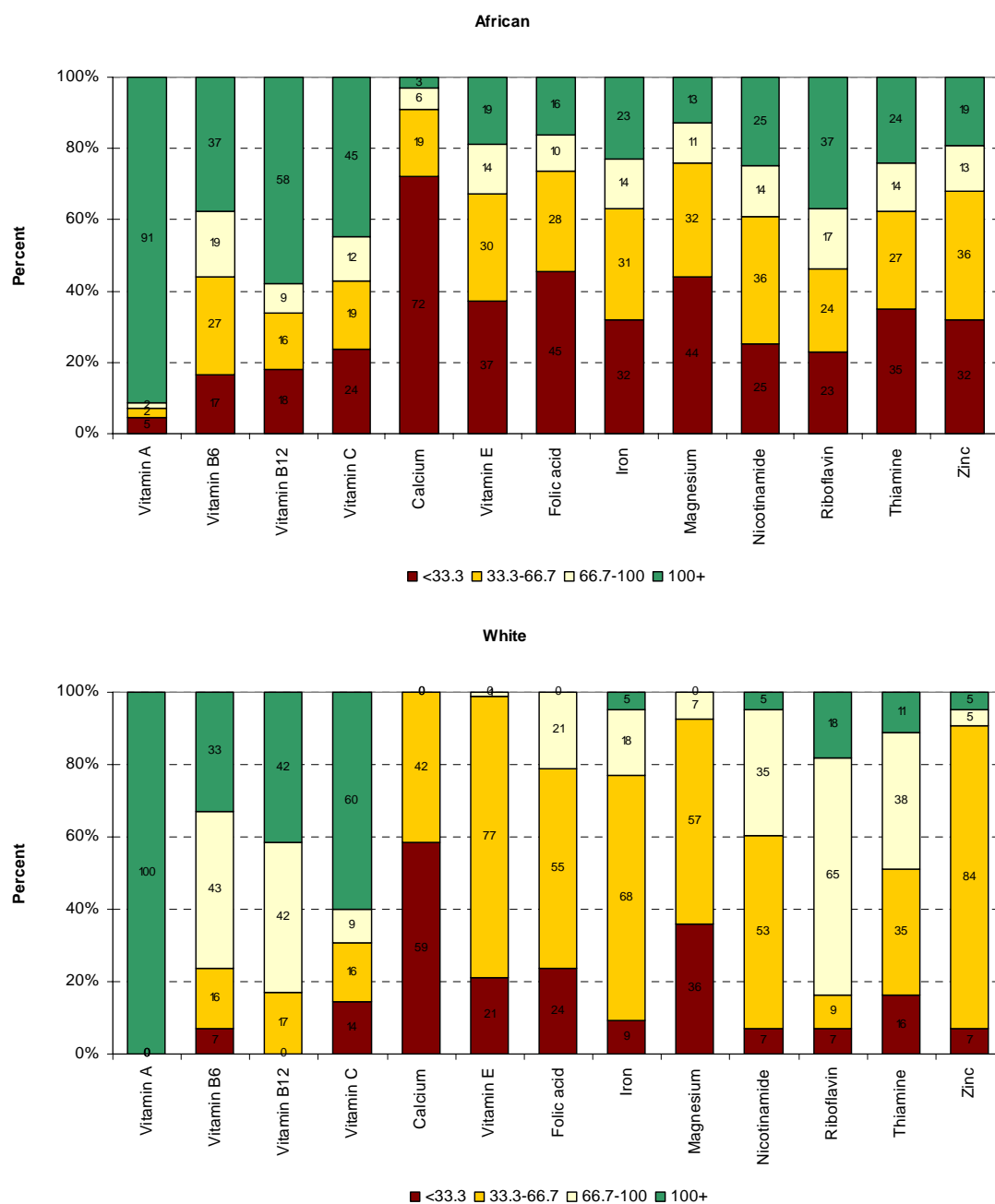
4. This score ranges from 0-11 with a low score indicating a lower salt intake.

Note: Only cases with complete information on education and population group are included.

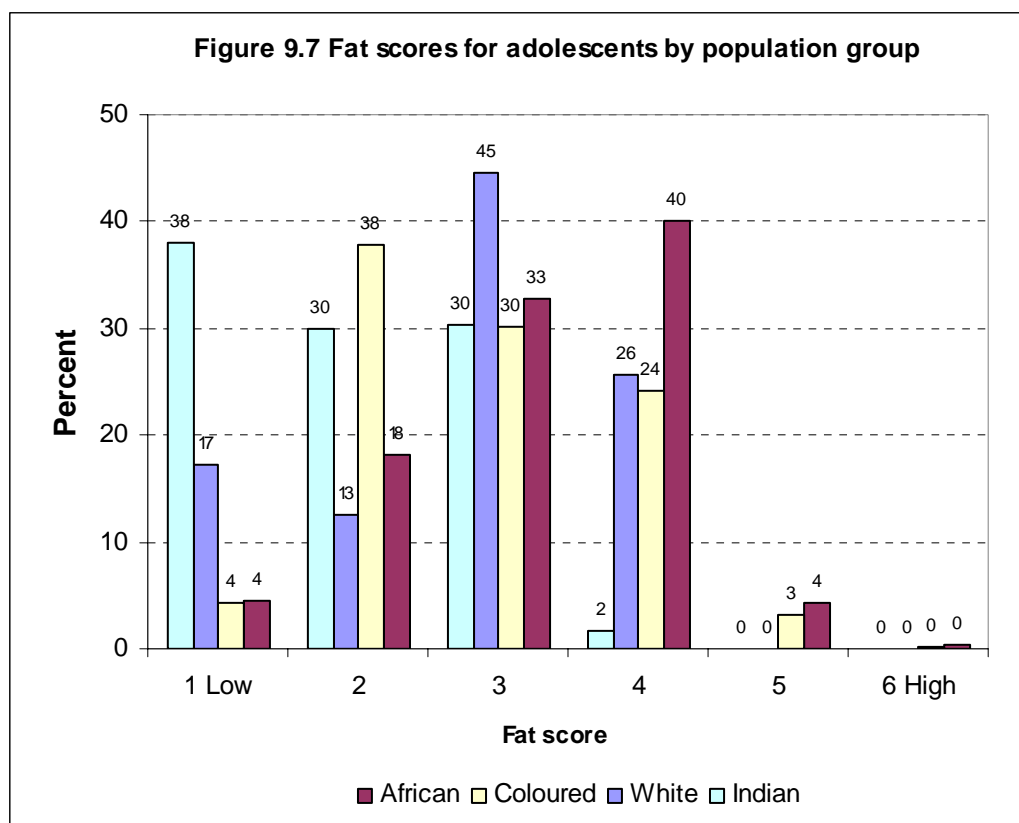
Overall the nutrient density of the diet consumed by the adolescents is poor. Figure 9.5 shows that more than 50 percent of adolescents had a value of less than 67 percent of the recommended dietary allowance (RDA) for calcium, folate, magnesium, vitamin E, thiamine, niacin and iron. Furthermore, more than 60 percent are getting less than 33 percent of the RDA for calcium. Micronutrients which are least deficient are vitamin A, vitamin B6, vitamin B12 and vitamin C. These patterns are repeated in all the provinces and in urban-rural areas to different degrees (data not shown). However, the profile for white adolescents is different. Figure 9.6 shows the nutrient intakes of African and white adolescents. For all nutrients, white participants show a lower prevalence of deficiency than African participants. Despite this, calcium and magnesium intake are deficient in all groups. It is important to note that the SADHS took place before the mandatory fortification of maize and wheat flour. Currently, all maize and wheat flour in South Africa are fortified to provide a person 10 years and older with the following percentage of the RDA (per 200 g raw flour): vitamin A-31 percent; thiamine-25 percent; niacin-25 percent; vitamin-B6 25 percent; riboflavin-17 percent; iron-25 percent; folic acid and zinc-20 percent. Hence one would expect the mean values of these micronutrients to have increased since the survey. The next SADHS dietary results will hopefully show an improvement in the mean score of micro-nutrient intakes.



**Figure 9.6 Nutrient intake (%RDA) of African and white adolescents, SADHS 2003**



Fat intake is based on questions about the customary intake of fat. Out of the total of 6 questions about 40 percent answered more than 3 questions positively, indicative of an overall moderate fat intake. The distribution of the scores is shown for each population group in Figure 9.7. Africans appear to have the highest scores and Indians the lowest. From Tables 9.24 and 9.25, it can be seen that this is particularly the case for adolescent women.



### 9.11 Physical Activity in Adolescents

There is a recent global trend of increasing prevalence of obesity in children and adolescents. Physical inactivity is an important health behaviour associated with obesity. This is especially relevant for children and adolescents, as physical inactivity levels have been shown to track into adulthood with individuals who participate in physical activity as children being more likely to remain active as adults (Malina, 1996). Sedentary behaviour, in particular television viewing time, has been implicated in the increasing rates of obesity in children and the youth. This has been demonstrated in a variety of settings, including developing countries and under-resourced, low-income communities (Caballero, 2004). Physical inactivity in children and the youth has been attributed in part, to the lack of safe environments to play, lack of delivery of physical education within the school curriculum and lack of prioritisation of or access to sports programmes and facilities. In addition, children and youth may experience barriers in the form of financial or health-related impediments or even certain socio-cultural constraints to participation in physical activity. It may also be argued that physical education and sport are not only regarded as tools for health and physical development, they can be considered tools for acquiring values necessary for social cohesion and intercultural dialogue (UN, 2003). These factors highlight the need for surveillance of inactivity and associated determinants in

adolescents and young adults to address or prevent those factors contributing to low levels of physical activity, with a view to developing targeted interventions.

There are limited data concerning patterns and prevalence of physical activity in children and adolescents, particularly in developing country settings. From the YRBS, conducted in 2002, we know that less than half of school attenders aged 11-20 years, are meeting the public health recommendations for physical activity of at least 20 min of vigorous activity three times a week (44 percent) or 60 min of moderate activity daily (34 percent) (Reddy *et al.*, 2003). The survey also indicates that less than half of South African adolescents reported physical education classes within the school timetable at least once a week, and shows that at least 25 percent of 11-20 year old school children report 3 or more hours of television viewing, daily.

The prevalence of inactivity/insufficient activity ( $< 600$  MET-min/wk) for adolescent men and women aged 15-19 years in the 2003 SADHS are presented by background characteristics in Table 9.26. These are based on 587 adolescent women and 539 adolescent men and the details of the methods used for collecting the data, the criteria for exclusion and the cut-offs for categorizing the results are described in section 13.11 of Chapter 13. Overall, 32 percent of adolescent men are reportedly inactive, with 31 percent reporting minimal activity and 37 percent reporting sufficient health-enhancing physical activity. A higher proportion of adolescent women are inactive (47 percent) and conversely a lower proportion is sufficiently active (21 percent). The gender group difference appears to increase with age. The prevalence of inactivity in the 15 year olds is similar for men and women. However, the prevalence of inactivity tends to increase with age as does the gender difference. It should be noted that the relatively small sample sizes in the single year age categories may result in fluctuations attributed to sampling. However, a similar gender difference was observed in the YRBS, which found that 31 percent of male school attenders and 43 percent of female school attenders were inactive (Reddy *et al.*, 2003). It is not clear whether the differences between the surveys are related to different target populations, different methodologies or the small sample size of the SADHS. Irrespective of the survey method, the data highlight the need for early interventions to increase opportunities for physical activity for adolescents and school leavers, with the view to increase lifetime participation in physical activity and with special recognition for vulnerable groups such as girls and young women.

Table 9.26 also shows that young women in KwaZulu-Natal have the highest reported prevalence of inactivity (74 percent), while men in the same province reported 47 percent prevalence of inactivity. These results are followed for men by those of the Western Cape, with 38 percent men inactive and for women, by Northern Cape (63 percent inactive). It is interesting to note that these results are contradictory to those of adults in the same province discussed in Chapter 13, which suggests that the “coastal effect” may not apply to younger age groups. These differences may be attributed to a lack of appropriate activities or programmes for these age groups. Also, contrary to the adult results in the Eastern Cape, 40 percent of young women and 54 percent of young men are sufficiently active.

This may be attributed to the geographical landscape and socio-economic status of this province. It may further be argued that these results may reflect data drawn, to a larger extent, from rural areas. The higher levels of physical activity are related to transport and occupational (household) activities. Most of the youth in the Eastern Cape areas walk to school, collect wood and fetch water.

Background characteristics	MEN					WOMEN				
	Inactive 0-<600 MET-min	Minimally active 600-<3000 MET-min	Sufficiently active ≥ 3000 MET-min	Total	Number of men	Inactive 0-<600 MET-min	Minimally active 600-<3000 MET-min	Sufficiently active ≥ 3000 MET-min	Total	Number of women
<b>Age</b>										
15	37.0	28.4	34.6	100.0	94	38.4	38.2	23.3	100.0	118
16	33.4	35.9	30.8	100.0	123	49.8	28.8	21.3	100.0	117
17	23.5	33.7	42.8	100.0	100	43.8	33.7	22.5	100.0	111
18	43.2	27.4	29.4	100.0	118	53.1	32.3	14.6	100.0	133
19	19.0	29.2	51.9	100.0	104	47.8	27.6	24.6	100.0	108
<b>Residence</b>										
Urban	35.4	30.8	33.8	100.0	307	49.1	32.7	18.2	100.0	347
Non-urban	26.4	31.4	42.2	100.0	233	43.4	31.5	25.1	100.0	240
<b>Province</b>										
Western Cape	38.3	23.5	38.3	100.0	47	51.5	38.2	10.3	100.0	66
Eastern Cape	18.7	27.7	53.6	100.0	58	24.9	35.3	39.8	100.0	81
Northern Cape	34.3	45.1	20.6	100.0	9	63.1	26.0	10.9	100.0	12
Free State	41.0	32.2	26.8	100.0	45	49.8	31.2	19.0	100.0	47
Kwa-Zulu-Natal	46.9	29.1	24.0	100.0	120	73.5	20.0	6.5	100.0	121
North West	17.3	46.7	36.0	100.0	39	46.3	45.9	7.9	100.0	35
Gauteng	37.2	25.4	37.5	100.0	103	54.2	25.2	20.7	100.0	83
Mpumalanga	14.6	34.3	51.1	100.0	51	29.8	43.4	26.8	100.0	44
Limpopo	16.4	36.9	46.7	100.0	68	26.8	38.0	35.2	100.0	98
<b>Education</b>										
No education	15.4	69.2	15.4	100.0	4	39.4	60.6	0.0	100.0	6
Grades 1-5	28.1	28.7	43.2	100.0	31	49.8	40.5	9.7	100.0	9
Grades 6-7	31.0	32.3	36.7	100.0	70	50.5	22.6	26.9	100.0	47
Grades 8-11	33.3	30.2	36.5	100.0	360	45.5	34.5	20.0	100.0	437
Grade 12	30.2	20.3	49.6	100.0	58	50.3	21.9	27.8	100.0	78
Higher	9.7	80.4	9.9	100.0	15	58.3	33.7	8.0	100.0	10
<b>Population group</b>										
African	32.4	29.3	38.3	100.0	480	47.6	30.6	21.7	100.0	514
Afr. urban	37.2	27.1	35.6	100.0	253	51.2	30.2	18.6	100.0	280
Afr. non-urban	27.0	31.8	41.3	100.0	227	43.3	31.1	25.5	100.0	234
Coloured	20.1	54.1	25.9	100.0	35	44.3	43.1	12.6	100.0	51
White	39.4	40.4	20.2	100.0	14	22.0	61.4	16.5	100.0	10
Indian	20.7	17.4	61.9	100.0	10	40.5	29.5	29.9	100.0	12
<b>Total</b>	<b>31.6</b>	<b>31.0</b>	<b>37.4</b>	<b>100.0</b>	<b>539</b>	<b>46.8</b>	<b>32.2</b>	<b>21.0</b>	<b>100.0</b>	<b>587</b>

\*METs are multiples of the resting metabolic rate and yield a score in MET-minutes, which is computed by multiplying the MET score (8 for vigorous and 4 for moderate activity and transport related walking/cycling) by the minutes performed.

Different levels of education influence inactivity prevalence in young women, with those with higher education reporting 58 percent. Men with a Grade 12 education level report a high level of sufficient physical activity at 50 percent as compared to only 28 percent of women at the same level of education, which is the highest reported level of sufficient physical activity among women. Young white men reported the highest prevalence (39 percent) of inactivity, followed by African urban men at 37 percent. In women, young African urban women have the highest prevalence of inactivity at 51 percent followed by women of coloured origin at 44 percent. Young white women reported a minimal physical activity level at 61 percent. Differences in the prevalence of activity/inactivity in young women may be related to cultural factors, which may limit their involvement.

## **CHAPTER 10**

### **MORTALITY AND MORBIDITY IN ADULTS**

#### **10.1 Introduction**

The lack of information on the health of adults, in particular chronic diseases, was recognised in the planning of the first SADHS in 1998, and a module developed to fill this gap. A clinical examination of the respondents was not possible, but hypertension and lung disease were identified as sentinel conditions, which could be measured objectively by lay interviewers. The adult health module focused on information related to hypertension and lung disease, and includes risk behaviours, self-reported history of conditions, utilisation of services and long-term medication use. It also includes occupational illnesses and oral health. The 2003 SADHS was extended to include information on violence, physical activity and dietary intake. Combining information from the Household, Women's and Adult Health questionnaires, the extent of adult mortality and self-reported morbidity are investigated in this chapter.

#### **10.2 Adult Mortality**

As in 1998, the 2003 SADHS included questions about the vital status of the siblings of women aged 15-49 years. Data on the age at death of brothers and sisters together with the date of birth of the respondent, provided the data are reasonable comprehensive, can be used to derive direct estimates of the age-specific mortality rates of adults. Unfortunately, the sibling history section of the Women's questionnaire was not well answered. For nearly half of the siblings reported to have died, information on either their age or the year of death was missing, and no information at all was provided for 30 percent of the siblings. Thus it was not possible to produce reliable estimates of adult mortality or maternal mortality ratios from these data.

#### **10.3 Chronic Diseases**

The participants were asked if a doctor or a member of the health profession had informed them that they suffered from selected chronic conditions. In addition to the conditions selected for the 1998 SADHS, this survey included arthritis, osteoporosis and epilepsy. Data from participants on such self-reported conditions should be treated with caution, since they are frequently under-reported or incorrectly reported. As many chronic conditions tend to have a familial pattern, a positive family history for specific chronic diseases can potentially be put to good use in cost-effectively identifying persons at higher risk than the general population. For this reason questions on family history of selected chronic diseases were included.

##### ***Family history of chronic diseases***

The data in Table 10.1 present the reported prevalence of family history for a number of common chronic diseases that are known to follow a familial pattern. Of the conditions included in the survey, a family history of hypertension is the most common and is reported by 27 percent of men and 37 percent of women. Figure 10.1 shows that a similar prevalence of family history was found in the 1998 survey. There is an increase in both the urban and non-urban reporting of a family history of hypertension. As in the 1998 survey, a family history of hypertension is reported more frequently in the urban than non-urban areas.

With the exception of KwaZulu-Natal, all the provinces have increases in the reported prevalence of a family history of hypertension. The largest increase occurred in Limpopo, which has almost

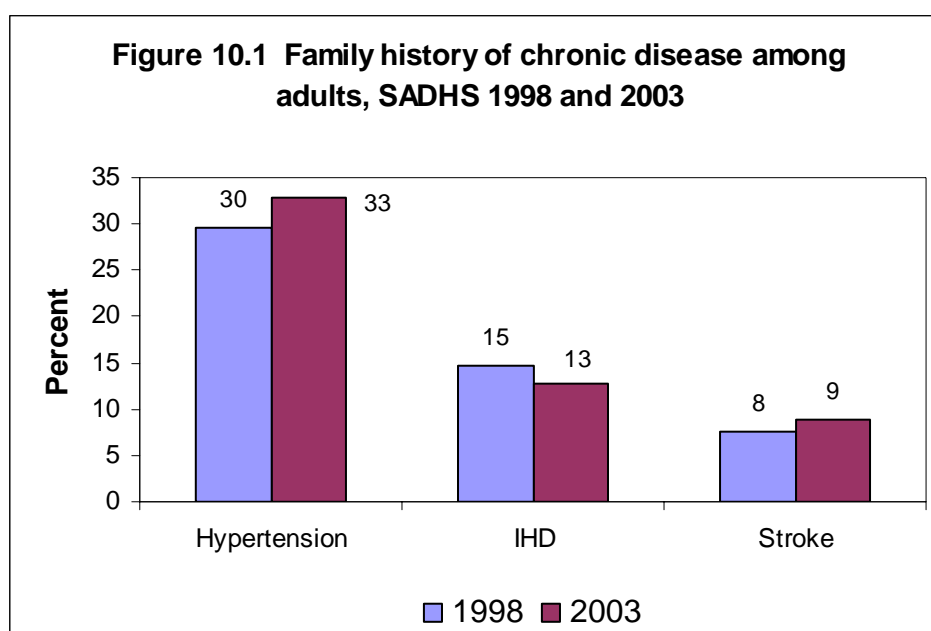


doubled the reported family history of hypertension (13 percent in 1998 and 25 percent in 2003), while the Western Cape continues to have the highest prevalence (40 percent in 1998 and 46 percent in 2003). In KwaZulu-Natal the prevalence of a family history of hypertension dropped from 33 percent in 1998 to 26 percent in 2003.

People with higher education report more family history of hypertension compared to those with less education. This was similar to the 1998 findings. Indians most frequently report a family history of hypertension, closely followed by coloureds. Reporting among whites fell from 40 percent in 1998 to 34 percent in 2003. Urban Africans have a higher frequency of reporting a family history of hypertension at 37 percent, an increase of 5 percent from 1998.

A family history of ischaemic heart disease (IHD), commonly known as a heart attack or of having angina is reported by 11 percent of men and 14 percent of women, a slight decrease from the 1998 figures of 13 and 16 percent respectively. The provincial distribution changed, with the Free State and Western Cape now reporting the highest frequency. KwaZulu-Natal data show the lowest reported family history of IHD at 6 percent, which is less than half that reported in 1998 and possibly spurious.

Those with higher education also have a higher frequency of a family history of IHD, although less so than in the 1998 survey. Indians have the highest frequency at 36 percent; this figure, together with those of most other race groups, remains unchanged from the 1998 findings. The exception was the Whites, with a 10 percent reduction in their reported family history of IHD from 38 to 28 percent.



**Table 10.1 Family history of chronic diseases**

Percentage of adult men and women who reported a family history of hypertension, ischaemic heart disease (IHD) and stroke, according to background characteristic, South Africa 2003

Background characteristic	Hypertension	IHD	IHD before 50 years	Stroke	Number
<b>Age</b>					
15-24	28.1	8.9	40.7	5.1	2 377
25-34	32.5	12.1	37.2	8.1	1 714
35-44	34.6	14.4	38.5	9.1	1 476
45-54	38.8	16.6	28.0	14.4	1 152
55-64	35.8	16.7	24.5	13.1	779
65+	33.7	12.3	34.0	9.8	618
<b>Sex</b>					
Male	27.0	11.4	37.6	7.7	3 422
Female	37.2	13.6	32.8	9.8	4 693
<b>Residence</b>					
Urban	37.6	14.6	33.6	10.6	5 285
Non-urban	24.1	9.1	37.7	5.7	2 830
<b>Province</b>					
Western Cape	45.6	19.4	28.4	16.1	910
Eastern Cape	33.6	12.0	33.4	9.1	929
Northern Cape	44.1	11.8	31.2	11.1	152
Free State	41.4	19.6	37.4	6.7	537
KwaZulu-Natal	25.5	6.0	30.3	4.2	1 669
North West	31.6	14.8	43.0	8.0	621
Gauteng	33.9	13.0	32.9	11.2	1 988
Mpumalanga	30.1	13.9	36.7	8.7	509
Limpopo	25.2	12.0	44.9	6.8	800
<b>Education</b>					
No education	29.7	12.1	38.0	6.7	874
Grades 1-5	28.2	11.0	39.0	7.6	783
Grades 6-7	34.5	12.4	30.9	9.3	884
Grades 8-11	32.4	12.8	36.2	9.3	3 239
Grade 12	33.8	11.9	38.8	6.9	1 626
Higher	39.9	16.7	19.5	15.5	653
Unknown	45.8	18.4	22.5	16.0	55
<b>Population group</b>					
African	31.4	10.3	37.7	7.2	6 695
Afr. urban	36.9	11.3	36.6	8.6	3 997
Afr. non-urban	23.2	8.9	39.8	5.1	2 698
Coloured	42.0	17.7	31.3	14.5	724
Indian	43.9	35.9	34.3	22.2	195
White	34.0	27.8	26.3	17.9	477
Other	74.2	21.1	22.4	32.8	25
<b>Total</b>	<b>32.9</b>	<b>12.7</b>	<b>34.6</b>	<b>8.9</b>	<b>8 115</b>

Reported family history of IHD before 50 years of age has decreased significantly, from 46 percent in 1998 to 35 percent in 2003, with the predominant decrease found among women. Similar to 1998, the frequency is higher in the non-urban than urban areas. However, unlike 1998, the highest frequencies are found in the poorer provinces of Limpopo and North West, while there is a dramatically lower rate of reported family history of IHD before 50 years of age in Gauteng and Mpumalanga. The lowest frequency is reported among those with higher education.

There is a slight increase in the reported family history of stroke, with the largest increase, i.e. from 13 percent in 1998 to 16 percent in 2003, found in the Western Cape. Again KwaZulu-Natal is the only province where the frequency not only decreased but implausibly reduced by half. Family history of stroke is most frequently reported in those with higher education and in urban areas, at almost double that reported in non-urban areas.

### ***Self-reported prevalence of chronic conditions***

Tables 10.2 and 10.3 demonstrate the self-reported prevalence of some commonly occurring chronic conditions according to the background characteristics. Similar to the 1998 survey, the 2003 results show that more than twice as many women as men report suffering from hypertension.

The differences in self-reported hypertension prevalence between the urban and non-urban areas for men and women in 2003 are similar to those found in 1998, with a higher prevalence in the urban areas. However, the provincial distribution changed, with the highest self-reported prevalence found in the Western Cape for men (15 percent)—a marked increase from 9 percent in 1998, and the lowest rate of 3 percent found in Mpumalanga—a decrease from 5 percent in 1998. The self-reported prevalence among women is highest in the Free State at 27 percent—a significant increase from 20 percent in 1998, and the lowest in KwaZulu-Natal at 11 percent—a marked decrease from

the 21 percent found in 1998. To reiterate, the KwaZulu-Natal data should be viewed with caution as there is no obvious reason for these changes.

With regard to education level, the highest self-reported hypertension prevalence is among those with no education for both men (15 percent) and women (32 percent). White men (24 percent) and coloured women (25 percent) most frequently report having hypertension, while African non-urban men (6 percent) and white women (9 percent) report it least frequently. The population distributions for self-reported hypertension prevalence were similar in 1998 and 2003, apart from an increase in coloured men from 9 percent to 15 percent and a decrease in white women from 21 percent to 9 percent. However, it is difficult to analyse the data as a large percentage are unaccounted for under the 'other' category.

As seen in the 1998 survey, inaccuracy of self-reported conditions is once again illustrated in 2003 by the lower self-reported prevalence of IHD among men (< 3 percent) than women (4 percent). In reality IHD is known to affect more men than women, with female gender being a protective factor against IHD. As expected, among men the self-reported prevalence of IHD increased with increasing age, is highest among Indians (8 percent), lowest among Whites (1 percent), most frequent in the Western Cape (6 percent), and least frequent in Limpopo Province (< 1 percent).

The self-reported prevalence of IHD among women decreases with higher education levels, with the least educated having the highest prevalence. Self-reported IHD in women is reported most frequently among Indians (7 percent), least frequently among coloureds (2 percent), most frequently in the Free State (9 percent) and least frequently in KwaZulu-Natal (2 percent). The highest self-reported prevalence of IHD among both men and women is found in Indians, who predominantly reside in KwaZulu-Natal, and once again illustrates the poor quality of the data in this province.

Of interest is the slightly higher prevalence among women in non-urban rather than urban areas, considering that IHD is generally more prevalent in urbanised centres. While the prevalence of IHD among African non-urban men is the second lowest, that among African non-urban women is the second highest at 5 percent. However, with the known association of urbanisation with IHD, these data should be regarded with caution.

Low levels of stroke and hyperlipidaemia are generally reported, with the highest self-reported prevalence among both men and women for Whites (10 and 8 percent respectively), and followed by Indians (8 and 7 percent respectively). This is unlikely to be a true reflection of the actual trend, as high cholesterol levels are on the increase even in non-urban areas in South Africa.

Similar to the 1998 survey results for stroke and hyperlipidaemia, the overall self-reported diabetes prevalence remain unchanged at 3 percent for men and 4 percent for women. The exception is a marked increase from 1998 to 2003 in prevalence among Indian men to equal that of Indian women, with the highest prevalence at 12 percent for men and 12 for women in both surveys. The highest self-reported diabetes prevalence is found in the pre-retirement age groups for both men and women, suggesting earlier onset in a Third World setting. There is a notable increase in self-reported diabetes prevalence among women aged 55-64 years, from 8 percent in 1998 to 12 percent in 2003.

The self-reported prevalence of cancer in men, although low, more than doubled in the urban areas from 0.3 percent in 1998 to 0.7 percent in 2003, and increased from 0.2 to 0.4 percent in non-urban areas over the same period. However, no information is available about the type of cancer reported.

Figure 10.2 and 10.3 show prevalence of self-reported chronic conditions among men and women who participated in the 2003 survey. These clearly show that high blood pressure is the most

common condition, and that it is much more prevalent among women than men. This is followed by arthritis.

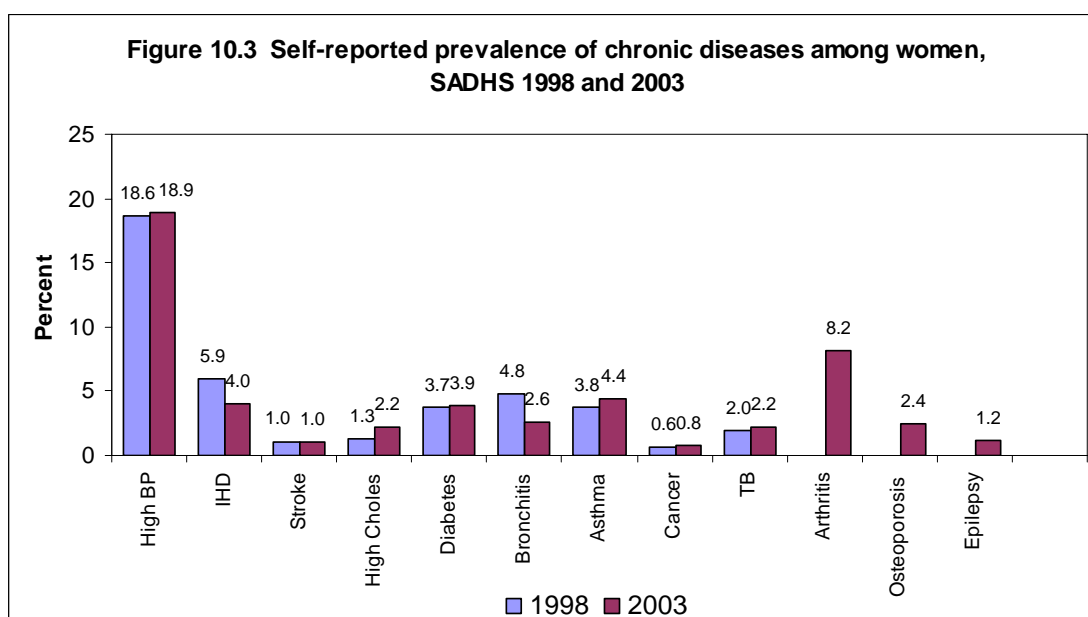
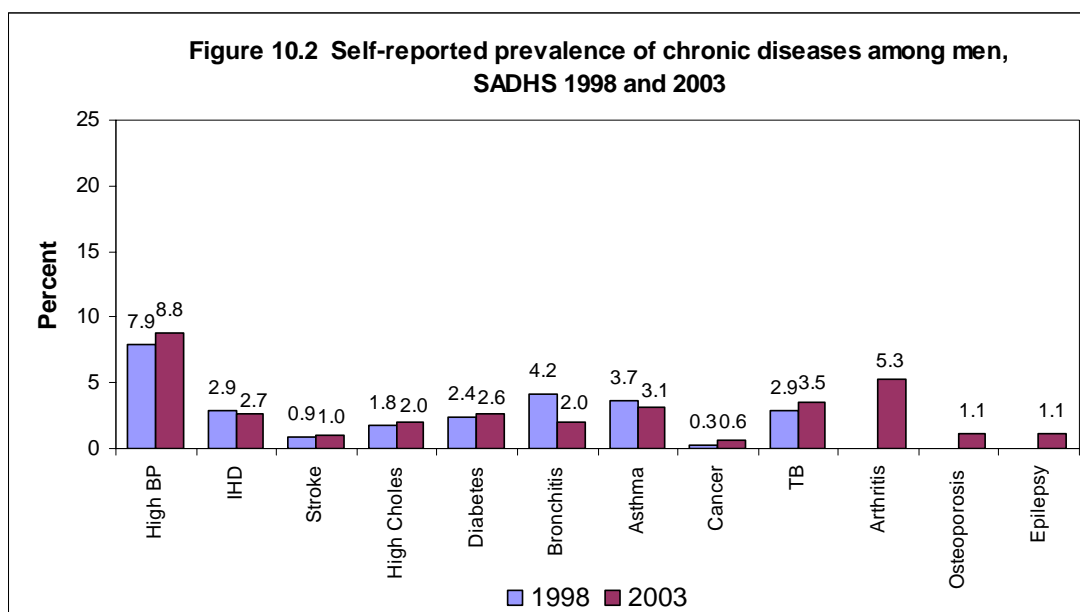


Table 10.2 Chronic disease prevalence among men

Percentage of men aged 15 and over who reported ever having been told by a doctor or nurse or staff member at a hospital or clinic that they had various chronic health conditions, according to background characteristic, South Africa 2003

Background characteristic	High BP	IHD	Stroke	High Cholesterol	Diabetes	Bronchitis	Asthma	Arthritis	Osteoporosis	Epilepsy	TB	Cancer	Number
<b>Age</b>													
15-24	1.8	1.0	0.2	0.2	1.3	0.8	2.1	1.5	0.4	0.6	1.7	0.6	1 121
25-34	3.0	2.0	0.7	0.7	0.4	1.2	2.6	3.2	0.9	0.8	3.4	0.1	735
35-44	10.3	2.6	0.5	3.0	1.8	1.7	2.5	4.3	0.6	1.6	2.8	0.2	593
45-54	18.4	4.5	1.0	6.9	5.9	4.4	4.1	10.6	1.4	1.1	6.8	1.2	438
55-64	18.2	5.1	4.9	1.8	7.2	5.0	5.3	12.4	1.7	0.9	4.0	1.0	297
65+	26.5	7.3	1.7	2.7	5.3	2.6	5.9	13.0	4.4	3.1	7.0	1.8	240
<b>Residence</b>													
Urban	10.2	3.2	0.7	2.8	2.9	2.3	3.0	5.8	0.8	1.1	3.8	0.7	2 289
Non-urban	6.0	1.7	1.4	0.4	1.9	1.3	3.3	4.2	1.6	0.9	2.8	0.4	1 133
<b>Province</b>													
Western Cape	14.8	5.8	1.1	5.4	3.7	3.4	5.7	8.6	0.4	0.0	7.8	1.4	337
Eastern Cape	9.1	3.5	0.9	2.3	2.7	6.3	4.0	5.5	0.6	2.5	8.4	0.6	367
Northern Cape	13.9	2.8	1.4	1.4	3.0	2.6	1.9	6.2	2.3	2.9	2.5	0.3	60
Free State	13.3	3.7	0.8	1.2	1.8	1.9	2.0	4.0	2.1	2.5	4.4	0.3	224
KwaZulu-Natal	6.3	1.7	0.6	1.0	2.6	0.6	1.4	3.4	0.5	0.3	0.9	0.4	781
North West	9.0	3.7	2.1	0.4	1.5	1.3	3.7	6.2	5.8	1.7	4.9	0.4	248
Gauteng	9.2	2.4	0.6	2.3	2.6	1.8	4.0	6.4	0.0	0.6	2.7	0.9	914
Mpumalanga	3.1	2.6	1.9	1.6	2.5	1.1	2.7	3.0	1.4	1.4	0.0	0.0	209
Limpopo	6.6	0.6	1.6	1.1	2.4	0.6	1.6	4.1	1.7	1.6	2.1	0.3	282
<b>Education</b>													
No education	15.2	5.5	2.7	0.6	3.5	2.4	4.1	9.5	3.5	2.7	7.2	0.4	296
Grades 1-5	10.7	5.7	2.0	3.2	3.9	4.0	3.9	7.5	1.7	1.5	7.6	0.6	335
Grades 6-7	10.6	3.6	2.5	1.3	4.0	3.0	3.4	6.5	1.5	1.0	3.5	0.2	384
Grades 8-11	6.9	2.4	0.4	2.2	2.3	1.7	3.9	4.6	0.9	1.2	2.9	0.6	1 366
Grade 12	6.0	1.2	0.2	1.7	1.6	1.7	1.1	2.3	0.1	0.2	1.4	0.5	703
Higher	12.6	0.5	0.3	2.7	1.8	0.4	2.3	6.8	0.6	1.0	1.0	1.9	309
<b>Population group</b>													
African	6.9	2.8	1.0	0.8	1.6	1.6	2.5	4.1	1.2	1.0	3.6	0.3	2 838
Afr. urban	7.6	3.6	0.8	1.3	1.4	1.7	2.2	4.3	0.9	1.1	4.2	0.3	1 747
Afr. non-urban	5.7	1.4	1.3	0.2	1.9	1.4	3.2	3.9	1.6	0.9	2.7	0.3	1 091
Coloured	15.4	2.3	1.5	4.7	3.5	4.3	3.8	8.2	0.9	0.7	4.6	0.9	268
Indian	13.3	8.1	0.8	8.4	11.5	2.5	5.8	7.0	0.4	0.3	0.7	0.0	83
White	23.9	1.0	0.3	10.1	8.8	3.9	8.4	13.3	0.1	2.6	1.3	4.8	220
<b>Total</b>	<b>8.8</b>	<b>2.7</b>	<b>1.0</b>	<b>2.0</b>	<b>2.6</b>	<b>2.0</b>	<b>3.1</b>	<b>5.3</b>	<b>1.1</b>	<b>1.1</b>	<b>3.5</b>	<b>0.6</b>	<b>3 422</b>

13 cases reported population group as other or missing.  
22 cases had education unknown.

Table 10.3 Chronic disease prevalence among women

Percentage of women aged 15 and over who reported ever having been told by a doctor or nurse or staff member at a hospital or clinic that they had various chronic health conditions, according to background characteristic, South Africa 2003

Background characteristic	High BP	IHD	Stroke	Cholesterol High	Diabetes	Bronchitis	Asthma	Arthritis	Osteoporosis	Epilepsy	TB	Cancer	Number
<b>Age</b>													
15-24	3.2	0.9	0.0	0.8	0.5	1.0	2.7	1.3	0.1	0.9	1.9	0.4	1 256
25-34	8.6	2.8	0.1	0.7	1.1	1.7	3.6	3.0	1.1	0.6	1.3	0.8	979
35-44	18.3	2.7	1.0	2.5	2.7	2.1	4.4	7.0	1.4	0.9	2.6	0.6	883
45-54	34.7	7.7	1.6	3.6	6.9	4.0	6.3	17.0	4.7	2.3	3.1	1.1	714
55-64	38.7	8.3	3.7	4.9	11.9	4.7	6.5	19.6	4.4	1.5	1.9	2.0	483
65+	43.8	8.3	2.4	3.4	9.2	5.8	6.3	16.1	8.4	2.7	3.8	1.1	378
<b>Residence</b>													
Urban	21.0	3.7	1.1	2.6	4.3	3.0	4.7	9.7	2.5	1.3	2.3	0.9	2 995
Non-urban	15.2	4.6	1.0	1.4	3.0	1.8	4.0	5.5	2.3	1.2	2.1	0.7	1 697
<b>Province</b>													
Western Cape	23.4	2.7	1.3	3.2	6.6	5.7	8.9	10.5	1.8	1.0	4.1	1.3	573
Eastern Cape	22.0	3.8	0.4	2.1	3.8	2.5	8.1	13.0	1.2	0.8	6.1	0.4	562
Northern Cape	25.1	3.3	1.6	2.3	3.0	3.7	4.4	10.1	2.6	1.8	2.3	0.5	92
Free State	26.6	8.9	0.9	1.7	4.0	1.7	2.7	5.9	0.6	0.9	3.0	0.9	313
KwaZulu-Natal	11.1	2.2	0.2	1.4	4.3	0.7	2.3	6.1	0.7	0.9	0.4	0.5	888
North West	20.7	7.0	2.0	2.1	1.9	2.9	3.6	8.7	10.0	2.2	3.0	0.3	373
Gauteng	21.2	3.1	1.6	2.6	3.6	2.2	3.7	8.8	2.1	0.7	1.0	1.2	1 074
Mpumalanga	14.7	4.5	1.1	1.3	2.1	2.1	4.2	3.9	2.2	1.3	1.6	0.5	300
Limpopo	14.3	5.5	1.0	2.2	3.5	3.5	2.5	5.6	3.5	1.3	0.9	1.2	519
<b>Education</b>													
No education	32.4	8.2	1.5	2.5	6.4	3.4	5.9	12.8	4.6	1.8	4.2	0.8	578
Grades 1-5	31.4	6.7	1.5	1.4	7.1	2.4	6.4	14.8	1.8	2.7	4.5	1.5	448
Grades 6-7	25.5	5.8	2.2	2.9	4.1	2.9	6.3	8.6	2.9	1.5	2.1	0.6	501
Grades 8-11	15.9	3.3	0.6	2.4	3.3	2.4	3.8	6.8	2.6	1.0	1.8	1.0	1 873
Grade 12	8.1	1.4	0.4	1.5	1.6	2.3	4.0	5.4	0.9	0.6	1.3	0.7	923
Higher	11.8	0.7	2.1	1.7	3.7	2.2	1.7	4.2	1.0	1.0	1.1	0.1	344
Unknown	65.8	19.6	2.6	0.7	11.2	8.4	0.0	32.3	9.1	0.7	0.0	0.0	26
<b>Population group</b>													
African	18.8	4.2	0.9	1.6	3.6	2.0	3.7	7.4	2.4	1.3	2.1	0.7	3 857
Afr. urban	22.2	3.9	0.9	1.7	4.0	2.2	3.8	8.9	2.5	1.3	2.2	0.8	2 250
Afr. non-urban	14.0	4.5	1.0	1.4	3.1	1.7	3.5	5.3	2.3	1.2	2.0	0.6	1 607
Coloured	24.8	2.3	1.2	2.8	5.9	5.1	8.1	10.7	0.9	1.0	5.0	1.3	456
Indian	19.6	6.9	1.1	7.1	11.7	4.5	6.4	17.5	1.2	2.4	0.0	0.6	112
White	9.0	2.8	2.5	7.8	1.2	6.4	7.5	11.3	5.4	0.2	0.0	1.9	257
Other	31.8	19.2	0.0	2.0	0.0	0.0	20.9	0.0	0.0	0.0	0.0	0.0	11
<b>Total</b>	18.9	4.0	1.0	2.2	3.9	2.6	4.4	8.2	2.4	1.2	2.2	0.8	4 693
12 cases reported population group as other or missing.													
17 cases had education unknown.													

## 10.4 Self-reported Prevalence of Tuberculosis

In this survey the “prevalence” of tuberculosis is a self-reported lifetime prevalence of recognised tuberculosis. This should be distinguished from the prevalence of tuberculosis infection as determined by tuberculin sensitivity testing or the prevalence of active tuberculosis determined by bacteriological testing, which were not part of this survey.

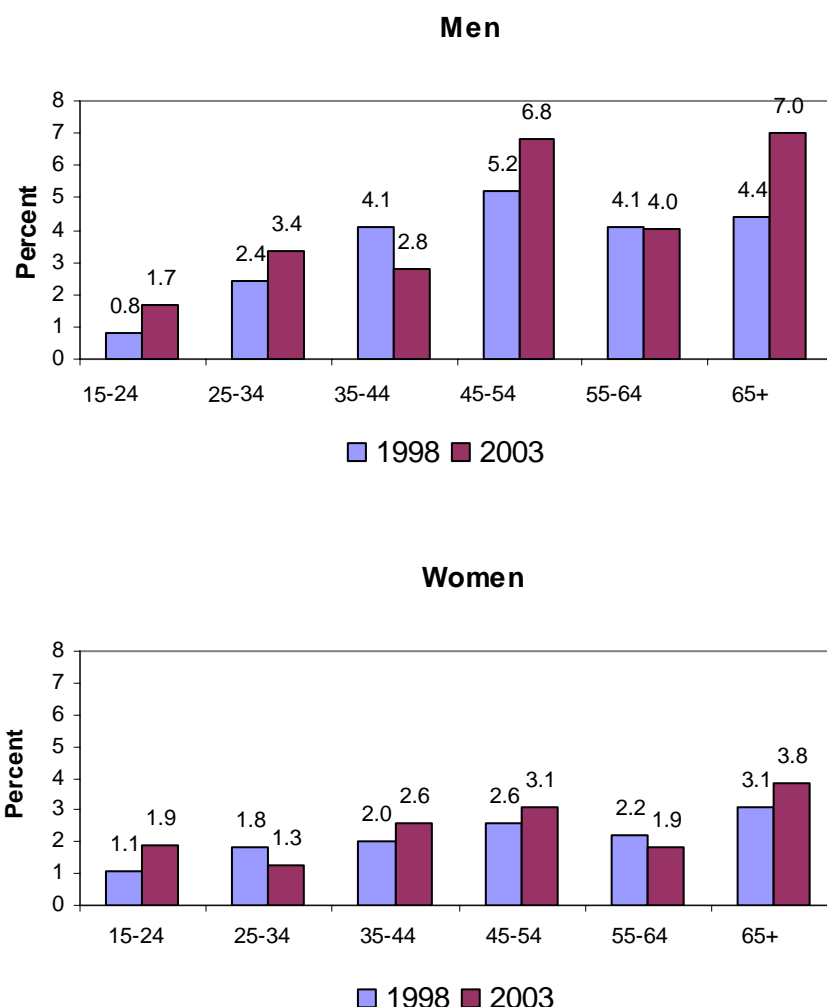
Tuberculosis remains the most commonly notified disease in South Africa, with approximately 339 000 cases (all forms) having been notified in 2004, and an extremely high incidence of 718 per 100 000 population (World Health Organisation, 2006). In this survey the prevalence of tuberculosis was 3.5 percent among men (up from 2.9 percent in 1998) and 2.2 percent among women (similar to the 1998 figure of 2.0 percent) (Tables 10.2 and 10.3). Figure 10.4 compares the age-specific prevalence of tuberculosis in 1998 and 2003

Although it is difficult to draw definite conclusions without taking sampling error into account, there are some interesting observations in comparing the latest results with those of 1998. While a history of tuberculosis was more common in non-urban areas in the earlier survey, this is reversed in the current survey with urban respondents reporting a higher prevalence. The prevalence remained highest in the Eastern Cape, which also recorded a relatively large increase across the two surveys, from 4.3 percent to 6.1 percent among women and 5.8 percent to 8.4 percent among men. This geographic distribution remains unexplained, as it is unlikely that better case finding explains the high Eastern Cape figure.

Low education remains a strong risk factor for having had tuberculosis (prevalence ratio, lowest to highest education level: 7.2 among men and 4.2 among women). Male gender is a moderate risk factor (prevalence ratio, male to female: 1.6). Regarding health disparities by race, coloured women record the highest prevalence of 5.0 percent, followed by coloured men at 4.6 percent and urban African men at 4.2 percent.

While tuberculosis remains one of the most common manifestations of HIV infection in South Africa, its impact is surprisingly inapparent in this survey. For example, KwaZulu-Natal, with the highest HIV seroprevalence rate nationally, has the lowest tuberculosis prevalence. Furthermore, the reported prevalence of tuberculosis among women aged 25 to 34 years, the age group with the highest national HIV seroprevalence (Department of Health, 2004), fell from the earlier to the later survey. One possible explanation is that AIDS-related mortality is resulting in HIV-infected people being under-represented in the surveyed population.

**Figure 10.4 Prevalence of history of TB by age and sex, SADHS 1998 and 2003**



## 10.5 Injury and Violence

### *Household injuries in last month*

The SADHS is currently the only source of information about the incidence of non-fatal injuries at a national level. Monthly injury rates based on the Household Questionnaire administered among adult respondents (15 years and older) are summarised in Table 10.4. Among male respondents, every month 1 809 per 100 000 population sustain injuries severe enough to warrant medical attention, compared to 1 094 per 100 000 among females (significantly higher than the rate of 805 per 100 000 recorded among adult females in 1998). The estimated annual injury rate in South Africa is 21 713 per 100 000 population for males and 13 123 for females, i.e. one in five males and one in eight females require medical attention for an injury each year. Men are at least 60 percent more likely to seek medical treatment for injuries than women - for both intentional and unintentional injuries.

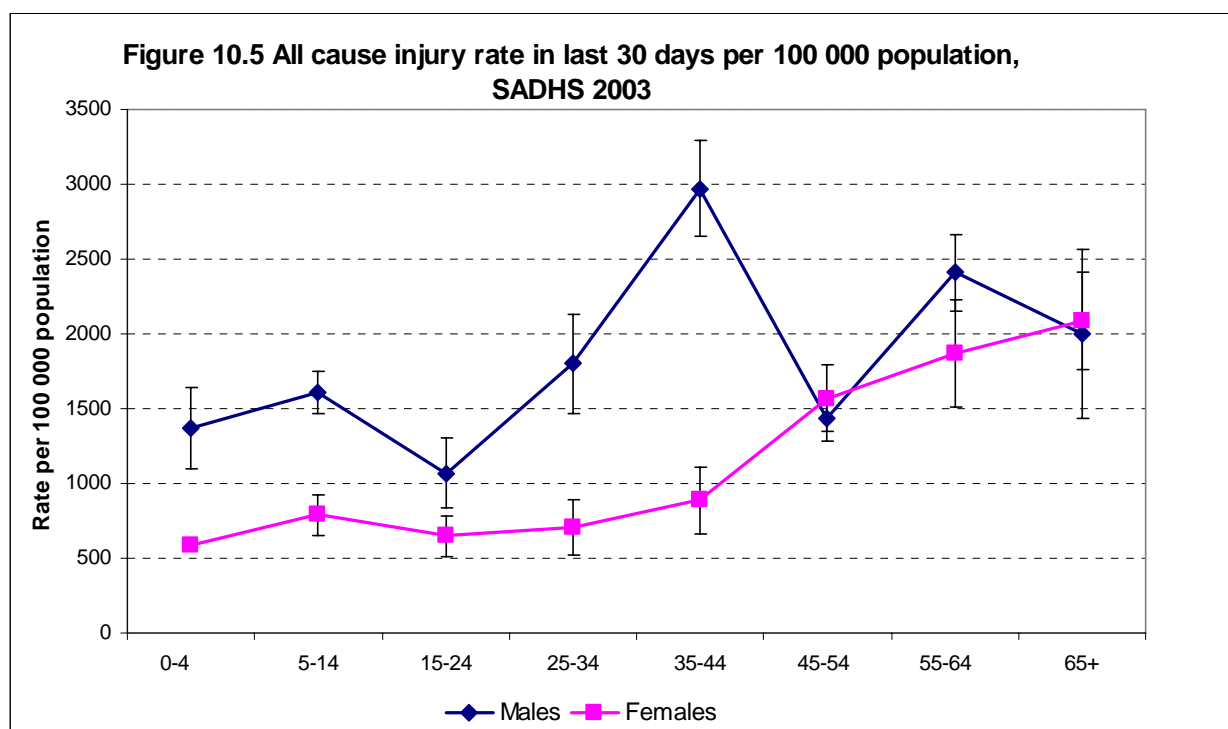


Table 10.4 Injury rates

Monthly injury rates per 100 000 adult men and women, according to whether injury was intentional or unintentional and by background characteristic, South Africa 2003

Background characteristic	Intentional injuries		Unintentional injuries		All injuries		Number	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>Age</b>								
15-24	393.0	149.4	674.0	499.5	1 067.1	648.9	2 772	3 020
25-34	519.8	192.5	1 280.1	516.5	1 799.9	709.0	1 898	2 199
35-44	426.8	252.7	2 542.1	634.6	2 968.8	887.3	1 624	2 056
45-54	66.0	228.7	1 370.1	1 340.8	1 436.1	1 569.5	1 110	1 632
55-64	143.1	403.6	2 266.9	1 462.6	2 410.1	1 866.2	798	1 139
65+	489.7	258.5	1 510.3	1 827.3	2 000.1	2 085.8	673	963
<b>Residence</b>								
Urban	386.8	170.8	1 539.8	873.1	1 926.5	1 044.0	5 953	7 016
Non-urban	336.7	319.9	1 233.9	860.8	1 570.6	1 180.7	2 922	3 994
<b>Province</b>								
Western Cape	337.3	0.0	1 544.0	999.0	1 881.4	999.0	1 015	1 257
Eastern Cape	942.9	490.1	1 060.5	490.1	2 003.4	980.1	961	1 410
Northern Cape	372.4	61.7	1 454.2	1 486.0	1 826.5	1 547.7	157	196
Free State	110.9	398.1	1 928.8	1 094.5	2 039.6	1 492.7	540	703
KwaZulu-Natal	17.2	21.6	530.3	805.7	547.5	827.4	1 964	2 003
North West	289.1	246.3	1 580.3	657.4	1 869.4	903.8	598	862
Gauteng	458.0	213.9	2 068.4	1 046.7	2 526.4	1 260.6	2 362	2 672
Mpumalanga	790.6	174.6	908.8	421.8	1 699.4	596.4	546	680
Limpopo	272.0	446.1	2 115.4	1 053.6	2 387.4	1 499.7	731	1 227
<b>Education</b>								
No education	114.6	454.7	1 885.8	984.6	2 000.5	1 439.3	813	1 397
Grades 1-5	23.6	564.7	1 833.7	845.4	1 857.2	1 410.1	827	1 024
Grades 6-7	278.5	50.2	1 172.9	861.3	1 451.4	911.6	925	1 192
Grades 8-11	453.2	238.6	1 521.6	865.3	1 974.9	1 103.8	3 448	4 308
Grade 12	448.3	40.0	1 001.6	847.4	1 449.9	887.4	1 964	2 161
Higher	440.6	104.7	1 676.3	871.3	2 116.9	975.9	813	846
Unknown	1 355.3	0.0	710.8	0.0	2 066.1	0.0	84	82
<b>Total</b>	<b>370.3</b>	<b>224.9</b>	<b>1 439.1</b>	<b>868.7</b>	<b>1 809.4</b>	<b>1 093.6</b>	<b>8 874</b>	<b>11 010</b>

Note: The number of injuries in some cells is very small. Consequently the rates are subject to high levels of sampling error and should be interpreted cautiously.



The age pattern of the incidence of injuries is shown for males and females in Figure 10.5. Male rates are generally higher than for females, except in the 75+ age group where the male rate is unexpectedly low. Below the age of 45 the male rates are significantly higher than the female rates, and this difference is particularly marked in the 35-44-year age group.

Unintentional injuries (traffic collisions, burns, falls, poisoning, etc.) account for nearly 80 percent of all injuries requiring medical treatment in both males and females (Table 10.4). This is slightly higher than the 78 percent recorded in the 1998 survey. The monthly unintentional injury rates of 1 439 per 100 000 population among males and 869 per 100 000 among females are 5 percent higher among males and nearly 38 percent higher among females than in the 1998 survey. The annual unintentional injury rate for adult males is 17 269 per 100 000 population and for adult females 10 424 per 100 000, i.e. one in six males and one in ten females require medical attention for an unintentional injury each year.

Among males the highest rates of unintentional injuries are recorded in the 35-44- and 55-64-year age categories (2 542 per 100 000 and 2 267 per 100 000 respectively), whereas for women the highest rate is recorded in the category of 65 years and older (1 827 per 100 000 population). Unintentional injury rates for men are higher than for women in all age groups, except in the 65 years and older age category.

Unintentional injury rates among males in urban areas are approximately 20 percent higher than in non-urban areas, whereas for females the rates are similar in both areas. This represents a slight increase in unintentional injury rates among males in non-urban areas, whereas among females unintentional injuries increased more than two-fold in non-urban areas between 1998 and 2003.

Intentional injuries (violence, assault and self-inflicted injuries) account for just over 20 percent of injuries requiring medical treatment. The monthly intentional injury rates of 370 per 100 000 population among males and 225 per 100 000 among females are 3 percent lower among males and nearly 29 percent higher among females than those recorded in 1998. The annual intentional injury rate for adult males is 4 444 per 100 000 population and for adult females 2 699 per 100 000, i.e. one in 23 males and one in 37 females require medical attention for an intentional injury each year.

Among males the highest rates of intentional injuries are recorded in the 25-34-year and 65 years and older age categories (520 per 100 000 and 490 per 100 000 respectively), whereas for women the highest rate is recorded in the 55-64-year age category (404 per 100 000). Intentional injury rates for men are higher than for women in all age groups except the 45-64-year age categories.

Intentional injury rates among males in urban areas are approximately 15 percent higher than in non-urban areas, whereas for females the non-urban rates are higher by almost 90 percent. This represents a 13 percent decrease in intentional injury rates among males and a 5 percent increase among females in urban areas, compared to a 20 percent increase among males and a 65 percent increase among females in non-urban areas between 1998 and 2003.

### ***Violence among adults***

The control and prevention of violence and crime have become national priorities in South Africa. The risk of becoming a victim in South Africa has been found to be high for residents of most of the larger cities—and mostly the urban poor (Louw *et al.*, 1998). Victim surveys have been conducted across the world over the past 30 years with the aim of complementing police data. However, victim surveys have limitations relating to the ability to recall events and when they happened, reluctance to discuss experiences (especially in the case of sexual violence and domestic violence), and failure to recognise that some incidents are relevant to the survey. These factors are likely to result in an undercount (Louw *et al.*, 1998).

Questions on physical attacks were included in the SADHS questionnaire for the first time, to gauge the frequency of violent attacks in the broader population. One respondent per household was selected according to specified criteria. Emphasis was placed on the fact that privacy had to be ensured, otherwise questions around violence should not be asked. It was decided not to ask questions and for details relating to the perpetrator so that respondents did not feel anxious in cases where the perpetrator was an intimate partner or where the perpetrator was present in the home.

Of the 1 298 men that were asked these questions, 13 percent said they had been attacked one or more times during the 12 months preceding the survey. Most of cases were due to pushing/shaking and slapping/arm twisting (7 percent and 5 percent respectively). The more severe cases of being punched with a fist (5 percent), kicked or dragged (3 percent), and attempts to strangle the victim (2 percent) happened less frequently. Nearly 5 percent of the victims were threatened with a weapon, including knives and guns, and another 3 percent were actually shot at or stabbed.

Physical attacks on women followed the same pattern as for the men as far as severity is concerned, but happened less frequently (Table 10.5). Of the 1 833 women interviewed, 7 percent indicate that they had been attacked one or more times in the 12 months preceding the survey. Most indicate that they were pushed or shaken (4 percent and 3 percent respectively). Lower proportions, 3 percent and 2 percent, were punched or kicked/dragged, and just over 1 percent were subject to strangulation attempts or burns. Two percent of the women were threatened with a knife or gun, and 1 percent were effectively shot at or stabbed.

Age seems to play a role in terms of being the victim of an attack as well as the type of attack. Men between the ages of 15 and 34 and women within the age category 35 to 44 seem to be more vulnerable to being attacked (all types of attacks) than the other age groups. However, it needs to be emphasised that the older age group of 55 to 64 (both men and women) also seems vulnerable to attack, with type of attack not specified in most cases. People living in urban areas seem to have a slightly higher chance of being the victim of an attack than those living in non-urban areas. Education does not seem to have an influence on the chances of being attacked, although men as well as women with a higher education have a lower chance throughout.

From Table 10.6 it can be seen that of the men that indicate that they had been attacked at least once in the past 12 months, the majority were attacked on a public road (53 percent) or in a club/shebeen or crowded place (12 percent and 7 percent respectively). Eighteen percent of the men were attacked in their homes. In contrast, nearly half of the women indicate that they were attacked in their homes (48 percent) and a third on public roads (33 percent). A global trend is that men are much more likely to be attacked by a stranger or an acquaintance than by someone in their close circle of relationships, whereas in women one of the most common forms of violence is that performed by intimate partners and acquaintances, and mostly in their homes (Krug *et al.*, 2002).

The majority of men and women who were attacked indicate that aches and pains and bruises or cuts that bled were the consequences (Table 10.7). More serious consequences, such as broken bones and other types of injury, were more than three times higher among women than men. Half of the women that were attacked sought medical attention, and 21 percent of these women were admitted to hospital. Just over 40 percent of the men sought medical attention, with 27 percent admitted to hospital.

More or less one-quarter of the sample of men and women who sought medical attention indicate that in their view, alcohol or drugs played a role in the attack. Alcohol has been identified as a risk factor for violence in general (Parry and Dewing, 2007), but also specifically for partner violence (Krug *et al.*, 2002; Jewkes *et al.*, 2002).

Table 10.5 Violence in the last 12 months

Percentage distribution of adult men and women 15 years and over who reported being physically attacked in the last 12 months according to selected background variables, South Africa 2003

Background characteristic	MEN						WOMEN							
	Slapping you or twisting your arm			Punching you with their fist or something that could hurt you		Kicking or dragging you		Threatening you with a knife, gun, or other type of weapon		Shooting or stabbing you		Any other way	Any attack	Number of women/men
	Pushing, shaking or throwing something at you	Slapping you or twisting your arm	Punching you with their fist or something that could hurt you	Kicking or dragging you	Trying to strangle or burn you	Threatening you with a knife, gun, or other type of weapon	Shooting or stabbing you							
MEN														
Age														
15-24	10.5	7.0	7.4	4.4	2.0	6.0	3.5	1.1	18.5					377
25-34	8.7	5.5	7.6	3.8	0.3	8.2	3.8	1.5	15.3					280
35-44	2.8	2.6	0.8	1.7	2.5	3.2	2.2	0.4	9.3					252
45-54	4.6	4.1	4.2	3.1	1.4	2.2	1.6	0.9	7.3					168
55-64	2.7	2.9	3.3	0.5	0.5	2.7	0.0	3.3	10.6					107
65+	2.2	0.2	1.4	1.4	1.4	0.0	0.0	1.4	3.8					114
Residence														
Urban	6.4	4.4	4.8	3.0	1.6	6.1	2.9	1.4	13.3					843
Non-urban	6.5	4.7	5.0	2.9	1.3	2.0	1.7	1.1	11.3					455
Education														
No education	5.3	3.6	5.1	5.1	4.1	1.9	0.0	2.6	9.1					121
Primary	6.5	5.3	4.5	2.8	1.2	5.1	1.7	1.8	13.3					273
Secondary	6.8	4.9	5.2	3.1	1.2	5.3	3.4	0.8	13.9					776
Higher	5.7	1.5	3.7	0.9	1.4	2.8	0.9	1.9	7.1					120
Total	6.5	4.5	4.9	3.0	1.5	4.7	2.5	1.3	12.6					1 298
WOMEN														
Age														
15-24	3.8	3.8	3.1	2.0	1.2	2.7	1.6	1.3	8.6					420
25-34	4.1	2.8	2.2	1.4	0.2	0.6	0.3	0.8	6.8					388
35-44	4.6	5.3	4.9	4.2	2.5	2.2	0.5	0.7	7.5					377
45-54	4.4	2.5	1.7	1.8	2.0	2.4	1.4	0.3	6.5					308
55-64	3.4	1.8	3.5	1.3	1.3	3.7	0.5	7.1	8.1					178
65+	1.4	1.0	0.0	1.3	1.0	2.0	0.7	0.4	3.5					162
Residence														
Urban	4.7	4.0	3.1	2.6	1.7	2.9	0.9	1.4	7.9					1 097
Non-urban	2.7	2.0	2.4	1.5	0.9	0.9	0.8	1.4	6.0					735
Education														
No education	1.4	2.1	2.4	0.7	0.2	0.5	0.7	0.8	3.2					241
Primary	5.5	3.8	3.8	3.8	1.9	1.3	0.8	2.4	8.9					408
Secondary	3.7	3.4	2.4	1.9	1.4	2.6	1.1	1.0	7.3					1 033
Higher	1.5	1.2	0.5	0.0	0.4	1.6	0.0	0.0	4.4					142
Unknown	59.3	26.2	59.3	26.2	26.2	33.1	0.0	33.1	59.3					8
Total	3.9	3.2	2.8	2.1	1.4	2.1	0.9	1.4	7.2					1 833

Table 10.6 Place and result of attack

Percentage distribution of adult men and women 15 years and over who had been physically attacked in the last 12 months, by place and result of attack, according to selected background variables, South Africa 2003

Background characteristic	Mean number of attacks in last 12 months	Place of attack						Result of the attack					Number of men/women with at least one attack	
		Public road	Place of work	Place of education	Club/shebeen/disco/bar	Crowded venue	MEN							
							Home	Other	Missing	Aches and pains	Bruises or cuts that bled	Broken bones or other types of injuries		Collapsed or went into a coma
MEN														
Age														
15-24	1.7	54.3	2.2	6.7	11.3	12.2	13.2	0.0	0.0	49.9	32.7	4.9	6.3	70
25-34	3.1	57.4	13.8	0.0	17.5	3.6	7.7	0.0	0.0	56.7	45.0	15.6	19.6	43
35-44	1.3	50.7	0.0	0.0	10.1	2.7	36.6	0.0	0.0	42.2	33.2	32.7	10.4	23
45-54	7.0	63.9	12.7	0.0	3.6	7.1	12.8	0.0	0.0	71.9	54.8	25.5	16.4	12
55-64	1.4	32.0	0.0	0.0	5.5	0.0	43.5	0.0	19.0	56.5	48.7	6.6	0.0	11
65+	2.5	41.0	14.7	0.0	0.0	0.0	44.2	0.0	0.0	57.3	0.0	0.0	0.0	4
Residence														
Urban	2.3	61.0	4.7	0.7	9.0	3.9	18.8	0.0	1.9	51.1	41.7	10.6	9.9	112
Non-urban	2.8	36.9	8.6	7.5	17.0	13.9	16.1	0.0	0.0	56.9	29.7	19.0	11.9	51
Education														
No education	2.5	56.4	5.7	0.0	6.3	5.2	26.4	0.0	0.0	78.0	19.2	10.3	8.3	11
Primary	1.7	59.0	2.8	1.9	10.4	8.7	11.3	0.0	6.0	45.5	31.8	22.0	13.9	36
Secondary	2.2	50.6	5.4	3.7	13.3	7.2	19.9	0.0	0.0	52.1	40.5	11.6	10.5	108
Higher	8.7	62.2	26.3	0.0	0.0	0.0	11.5	0.0	0.0	62.0	55.4	0.0	0.0	9
Total	2.43	53.4	5.9	2.8	11.5	7.1	18.0	0.0	1.3	61.9	36.1	3.7	13.5	164
WOMEN														
Age														
15-24	1.8	41.8	0.5	13.5	0.0	12.7	25.2	3.1	3.1	55.6	32.0	8.2	18.9	36
25-34	2.2	29.4	5.2	0.0	7.5	0.0	57.8	0.0	0.0	49.1	23.6	0.0	3.4	26
35-44	2.04	36.7	0.0	0.0	3.2	0.0	55.9	2.2	2.0	67.6	53.6	6.9	21.2	28
45-54	2.2	15.1	17.5	0.0	10.9	8.4	48.1	0.0	0.0	77.3	18.8	0.0	12.0	20
55-64	4.84	40.3	0.0	0.0	0.0	0.0	58.4	0.0	1.3	61.6	42.5	0.0	10.2	14
65+	3.55	9.8	0.0	0.0	0.0	19.7	70.5	0.0	0.0	79.8	77.1	0.0	0.0	6
Residence														
Urban	2.7	32.0	4.2	1.3	3.5	3.9	52.8	2.0	0.2	64.4	36.8	4.4	12.4	87
Non-urban	1.72	33.7	3.1	8.6	4.5	9.1	37.2	0.0	3.8	57.1	34.8	2.5	15.5	44
Education														
No education	3.17	54.7	0.0	0.0	0.0	0.0	45.3	0.0	0.0	85.4	81.7	0.0	38.6	8
Primary	3.06	27.3	0.0	0.0	6.1	1.9	61.5	1.7	1.6	61.3	47.6	5.4	14.4	36
Secondary	2	31.8	6.7	6.4	3.8	7.3	40.8	1.5	1.7	59.2	28.0	3.9	12.4	76
Higher	1.1	71.7	0.0	0.0	0.0	18.2	10.1	0.0	0.0	39.5	39.5	0.0	0.0	6
Unknown	3.44	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	5
Total	2.36	32.6	3.8	3.7	3.9	5.6	47.6	1.3	1.4	52.9	37.9	13.2	10.5	131

Table 10.7 Medical outcome of attack

Percentage distribution of adult men and women aged 15 years and over who had been physically attacked in the last 12 months, who had sought medical attention, those who were admitted to hospital, and whether alcohol or drugs played a role in the attack, according to selected background characteristic, South Africa 2003

Background characteristic	MEN				WOMEN			
	Sought medical attention	Admitted to hospital	Alcohol/drugs contributed to attack	Number of men	Sought medical attention	Admitted to hospital	Alcohol/drugs contributed to attack	Number of women
<b>Age</b>								
15-24	28.6	14.7	25.0	39	38.4	21.5	12.9	23
25-34	46.2	39.2	27.2	28	43.9	34.1	43.9	13
35-44	81.4	42.6	36.2	13	65.4	22.0	30.1	22
45-54	31.2	15.1	4.2	10	55.6	0.0	19.0	15
55-64	12.7	9.8	9.8	6	48.5	48.5	48.5	9
65+	92.1	92.1	92.1	2	28.0	0.0	28.0	5
<b>Residence</b>								
Urban	38.3	29.6	26.8	64	50.0	21.3	26.4	60
Non-urban	46.4	21.9	23.4	35	48.8	21.6	29.9	27
<b>Education</b>								
No education	52.4	37.0	44.3	9	62.7	0.0	14.7	7
Primary	51.7	28.4	35.2	24	55.1	24.4	40.1	22
Secondary	36.1	27.2	20.3	62	44.6	17.9	19.5	50
Higher	34.3	0.0	13.2	5	53.9	53.9	53.9	2
Total	41.2	26.8	25.6	99	49.6	21.4	27.5	87

5 women with education unknown.

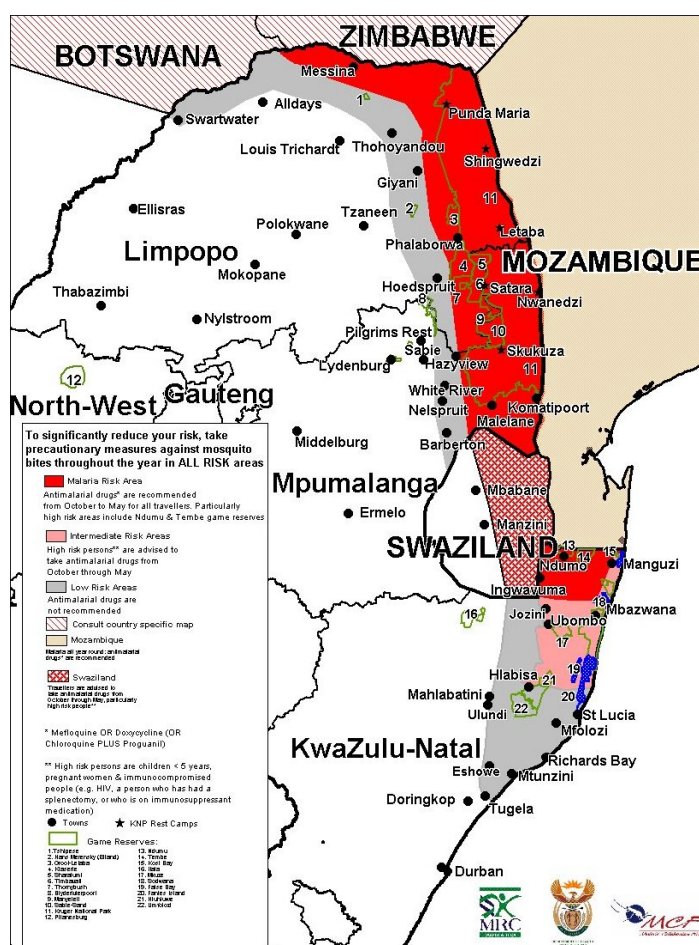
## 10.6 Malaria

Malaria is the most devastating disease affecting sub-Saharan Africa, accounting for large numbers of cases of death and illness in the region, particularly among children. The disease results from a class of parasites that follow a complex lifecycle, involving specific mosquitoes as an essential vector in the transmission of the disease. The manifestations of malaria infection include fever, headaches, cerebral malaria (caused by clotting of red blood cells in the brain blood capillaries), severe anaemia and failure of organs such as the kidneys, liver and spleen. Women are particularly susceptible to symptoms when pregnant, and are four times more likely to get sick and twice as likely to die from malaria if they are pregnant.

Malaria is endemic in the north-eastern region of South Africa, occurring in the low altitude areas of Mpumalanga, in the north-eastern part of Limpopo Province, and the north-eastern parts of KwaZulu-Natal. Figure 10.6 shows the regions that are at risk for malaria, as well as the distribution of the disease before control efforts were implemented in the 1940s - when malaria extended as far south as Durban along the eastern coast and as far south as Pretoria in the interior. According to Mabaso *et al.* (2004), malaria transmission is highly seasonal, with the greatest number of cases in the summer months from October to May. It can also be affected by the amount of rainfall.

South Africa has a comprehensive malaria control policy. The two main focuses are disease management, which entails detecting, diagnosing and treating malaria cases, and disease prevention, which includes vector control, parasite control and protection of individuals. The vector control programme targets high-risk areas, with indoor residual spraying of insecticides (mostly DDT). The malaria control programme in the affected provinces involves spraying the inside walls and ceilings of houses and buildings with effective insecticides that kill the anopheles mosquitoes that tend to rest and feed indoors. Parasite control involves identifying and treating people that are infected in order to disrupt the parasite's lifecycle and reduce the rate of transmission. Protecting individuals by preventing malaria bites is recommended, and insecticide-impregnated bed nets have been introduced in trials in recent years. Chemoprophylaxis is an option available for the protection of individuals who travel into high-risk areas.

**Figure 10.6 Map of malaria risk in South Africa in 2004**



Source: MRC Malaria Research Programme

The rapid increase of malaria cases in the late 1990s resulted in the National Malaria Control Programme reverting to the use of DDT after the introduction of pyrethriums. In addition, artemisinin combination therapy (ACT) was introduced as the front-line medication after the emergence of resistance to Fansidar and chloroquine. The malaria notification data suggest that the annual number of cases in South Africa has fallen from a peak of 65 000 cases in 2000 to a level of about 15 000 in 2003 and 2004 (Department of Health, 2005).

Malaria-related questions were introduced for the first time in the 2003 SADHS and applied in the three provinces affected by malaria. Questions included information about the use of bed nets and other anti-malarial activities, as well as whether anybody in the household had malaria in the preceding 12 months. Questions were asked about seeking treatment and medication in cases where there was a member of the household who had malaria. In addition, questions were asked in the Women's Questionnaire about having malaria during pregnancy and taking malaria prophylaxis to avoid malaria. In addition, women who had a young child who experienced the symptoms of acute respiratory illness in the 2 weeks preceding the survey were asked whether the child had received anti-malarial medication.

## Prevention efforts

Of the 3 005 households in the three provinces affected by Malaria, only 17 report owning bed nets (less than 0.1 percent). Thirteen households had only a single bed net in the house. Nine households report that the nets were not in use at the time of the survey. There were 140 households (4 percent) that were sprayed for mosquitoes in the previous 12 months. A further 36 households (1 percent)



were unsure. The majority of the households that had been sprayed indicated that it was done by the government (82 percent); 14 percent said that they or another household member did it. Six percent of households that were sprayed reported that it had been done by a private company.

Thirty-seven percent of households in the three provinces concerned, report that measures are taken to avoid mosquito bites. Of those who report taking measures, the most common is the use of coils (64 percent) and repellents (33 percent).

Seventeen households (less than 0.1 percent) report that a member of the household had taken medication to prevent malaria in the preceding 12 months, but the name of the medication could be provided in only three cases.

### **Illness and treatment**

Out of the 3 005 households, 43 (1.5 percent) report that in the preceding 12 months somebody had been diagnosed with malaria. Most of the people sought treatment, with only seven not receiving any treatment. There were a further 26 households where the respondent was not sure whether anybody in the household had been diagnosed with malaria. It is difficult to assess the medication provided for malaria as in most of the cases the respondent was not aware of the name of the medication. Medication was obtained on the same day for about half of the cases, but for some it was three or more days later.

When women were asked about malaria during pregnancy, 17 report that they had this illness during their last pregnancy (0.8 percent of women who have ever been pregnant). Interestingly, the women who report having malaria came from across all the provinces, except Mpumalanga. Nine of the women report that they had taken malaria treatment during pregnancy, but generally could not recall the name of the medication. Of the 2 088 women who had ever been pregnant, 27 women were unsure whether they had taken an antimalarial drug during pregnancy. However, 22 report that they had taken such medication; three took Daramal, three took Mirquin, three took Doximal, three took Plasmoquine and a further 12 took a medication but could not remember the name. (These add up to 24 medications, indicating that some women took more than one drug.)

Out of the 387 children who had a fever and cough in the preceding 2 weeks, 43 percent had received no medication. Just over 6 percent had received malaria medication, either Fansidar or chloroquine. However, 39 percent had received non-malaria medication. Since malaria is confined to certain geographic areas, it is very difficult to assess whether the treatment is appropriate.

### **Overview of malaria findings**

The survey shows that spraying and protection from mosquito bites are the most commonly used methods of preventing malaria in South Africa. Bed nets were generally not used in 2003. The small numbers of people who had malaria is consistent with the notification data that suggest that the incidence of the disease has dropped. However, given the relatively small numbers of malaria cases, the survey cannot offer much insight into the practicalities of the diagnosis and treatment of malaria.

## **10.7 Self-reported Illness and Health Problems Caused by Work**

As in 1998, this survey included questions about work-related illness and health problems. Although the questions are not identical, they are able to provide similar information.

Only 32 percent of respondents worked in the past 12 months (Table 10.8). This is a low percentage, but when one takes into account the age of people not available for work because they are students, homemakers or disabled, the 2001 Census indicates that 42 percent were not eligible and only 34 percent were employed. The reported employment figure in this survey is comparable with the Census.

Of respondents who worked in the past 12 months, 6 percent reported an injury or health problem caused by work (Table 10.8). This is similar to the prevalence obtained in the last household survey. Projecting it to the population who were employed (11 600 000 assuming similar risk profiles) translates into 730 800 incidences where workers consult health services because of illness or problems caused by work. Of the respondents who worked in the past 12 months, almost 4 percent had been absent from work, resulting in approximately 440 000 individuals who stayed away from work, with an average duration of 15.1 (95% CI, 9.6-20.6) days absent from work. This would result in approximately 6.6 million worker-days loss to the economy.

Injuries are a much more common problem in the workplace than disease. The majority of problems reported are injuries, with 120 incident cases in the survey. This accounts for 5 percent of the respondents who had worked in the last 12 months. Reported disease prevalence is very low and may not reflect the true situation with regard to occupational disease. In the last survey 3 percent of respondents reported a disease. It is possible that the interviewers for the 2003 SADHS were not able to elicit the correct response from participants, since 1 percent of recorded responses are for unknown conditions, either disease or injury.

**Table 10.8 Work-caused illness**

Frequency of self-reported conditions caused by work in the past 12 months, South Africa 2003

Respondents by work status and conditions	Number	Percentage
<b>Work status of respondents</b>		
Worked <sup>1</sup>	2 557	31.5
Had not worked	5 536	68.2
Missing	22	0.3
Total	8 115	100.0
<b>Any injury or health problem caused by work</b>		
Yes	162	6.3
No	2 380	93.1
Missing	15	0.6
Total	2 557	100.0
<b>Conditions related to work</b>		
Disease	6	0.2
Injury	120	4.7
Unknown conditions <sup>2</sup>	36	1.4
Total		
<b>Stay away from work?</b>		
Yes	97	3.8
No	62	2.4
Missing	1	0.0
Total	160	6.2
	<b>Mean</b>	<b>SE</b>
How long?	15.1	2.8

<sup>1</sup>Respondents who earned money in the 12 months prior to survey.

<sup>2</sup>Unknown conditions are unspecified diseases or injuries, or missing data.

The type of work-caused injury is presented in Table 10.9. Lower limb (25 percent) and upper limb (22 percent) injuries constitute the majority of those reported. Multiple parts affected constitute 13 percent, followed by head (8 percent), neck (5 percent) and thorax (3 percent).

The fieldwork did not elicit much information on the work-related disease experienced by respondents. Nevertheless, despite these limitations this crude estimate of the burden of avoidable occupational illness in society is available, illustrating the potential impact on health services and the economy.

**Table 10.9 Type of work-caused injuries**

Among adults who worked in past 12 months preceding the survey and had a work-caused injury, percentage distribution by specific injuries, South Africa 2003

Injury	ICD Code	Number	Percentage
<b>Sprains, dislocation, fractures, lacerations</b>			
Head	S00-S09	9	7.5
Neck	S10-S19	6	5.0
Thorax	S20-S29	3	2.5
Abdomen, spine and pelvis	S30-S39	14	11.7
Upper limbs	S40-S69	26	21.7
Shoulder, arm			
Elbow, forearm			
Wrist, hand			
Lower limbs	S70-S99	30	25.0
Hip, thigh			
Ankle and foot			
Multiple body parts affected	T00-T07	16	13.3
Unspecified injury	T08-T14	2	1.7
Total sprains, dislocations, etc.		106	88.3
<b>Other injuries</b>			
Accidents			
Foreign object through orifice	T15-T19	1	0.8
Burns	T20-T32	1	0.8
Transport	V01-V99	2	1.7
Other accidents	T33-T98	10	8.3
Total other injuries		14	11.7
Number		120	100.0

## **CHAPTER 11**

### **UTILIZATION OF HEALTH SERVICES AND CHRONIC MEDICATION**

#### **11.1 Introduction**

This chapter describes utilization of health services, satisfaction with these, and access to medical aid schemes for adults of 15 years and older. Women aged 15-49 years were asked whether they experienced problems with access to care, and if so what these problems were. The findings are reported in this chapter as they relate to health care utilization. Details about prescribed medications that are used regularly by adults of 15 years and older for chronic conditions are also reported.

#### **11.2 Health Services Attended**

Generally, adult women attended health services in the 30 days preceding the survey more than adult men, regardless of the type of facility (Table 11.1). Overall, 15 percent of adult men and 24 percent of adult women reported that they sought care at a public facility in the preceding 30 days. The results from both the 1998 and the 2003 SADHS show that attendance of public health services in the 30 days before the survey was higher for the age groups over 45 years (Figure 11.1). With the exception of males in the age group of 35-44 years, comparison of the two surveys shows a slight increase in attendance in all age groups in 2003.

Table 11.1 Health services attended, by age and sex

Percentage of adults who sought care in last 30 days at facilities/providers in the public sector, the private sector, at chemists, traditional healers, faith healers and dentists, by age and sex, South Africa 2003													
Age group	Public sector		Private sector		Chemist		Traditional healer		Faith healer		Dentist		Number
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	
15-24	10.9	19.1	7.8	10.4	2.3	4.4	1.9	1.5	2.0	2.5	1.1	1.2	1 256
25-34	12.9	20.9	11.2	16.9	5.5	7.4	3.6	2.4	3.3	3.6	1.5	2.1	735
35-44	11.1	19.8	14.1	22.5	4.9	7.4	2.6	2.7	1.7	2.6	1.9	3.8	883
45-54	18.9	31.0	15.8	19.8	8.2	9.0	1.0	3.9	1.9	4.5	2.1	3.3	714
55-64	25.0	31.4	18.8	21.0	9.0	8.3	1.6	3.2	2.6	5.7	1.5	3.4	483
65+	28.2	32.8	19.6	19.5	10.5	7.3	5.0	4.1	3.3	4.6	5.1	2.3	378
Total	14.8	23.8	12.4	17.3	5.4	6.9	2.5	2.7	2.4	3.6	1.8	2.5	4 693

Figure 11.1 Percentage of adults using public health facilities in last 30 days, SADHS 1998 and 2003

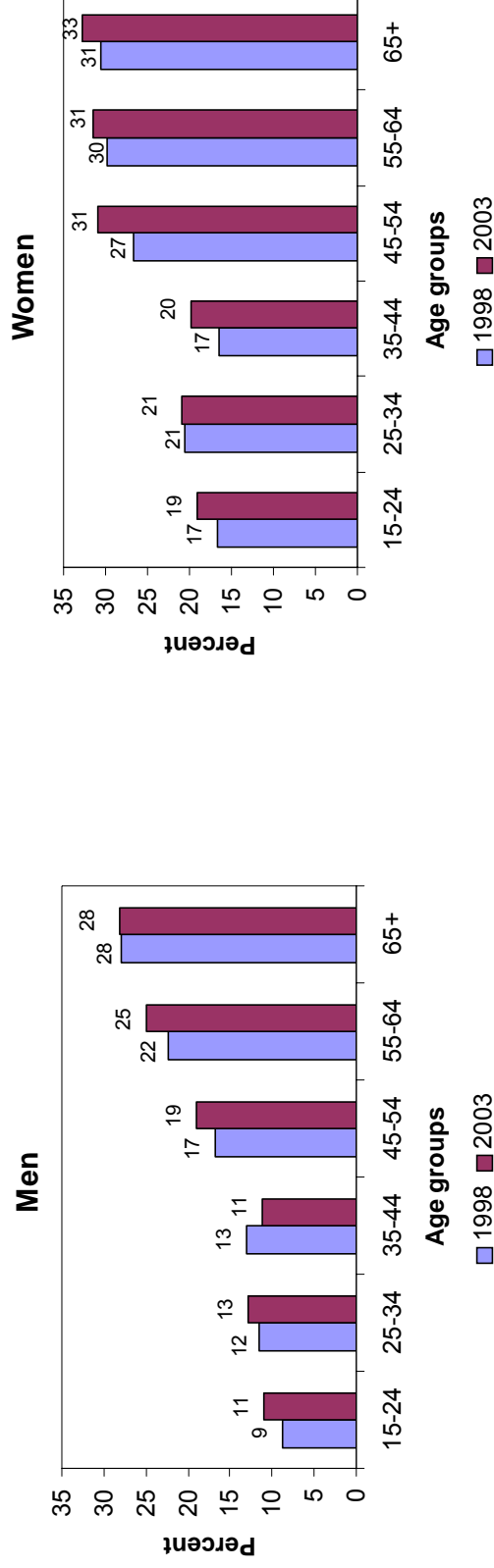
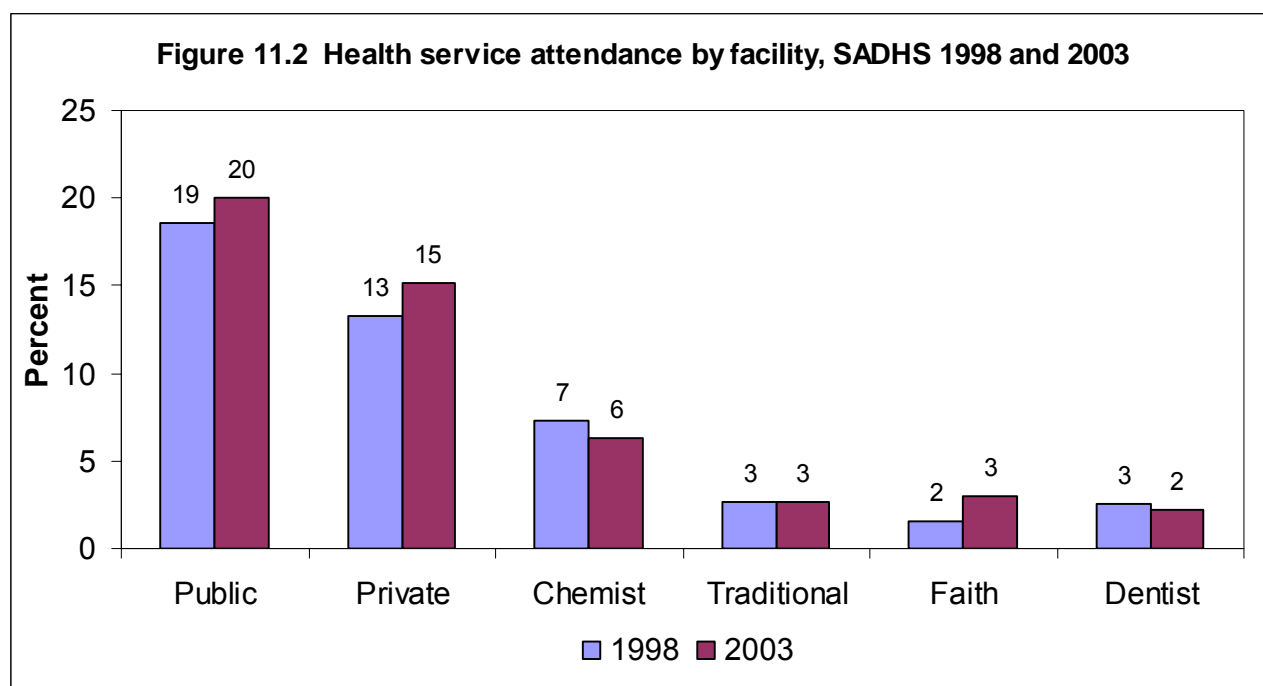


Figure 11.2 compares the attendance at health services in the last 30 days reported in the 1998 and the 2003 SADHS. Public sector facilities are used the most frequently, followed by the private sector. There has been a marginal increase, from 19 to 20 percent, in those who report having attended a public health service. The attendance of private hospitals or clinics increased from 13 percent in 1998 to 15 percent in 2003. The data show a marginal decline in the use of chemists, from 7 percent in 1998 to 6 percent in 2003. The proportion is slightly higher for women than men, and increases with age (Table 11.2). An equal proportion (about 3 percent) of adults sought care from a traditional healer and faith healer in the last 30 days, and just over 2 percent sought care from a dentist.

**Table 11.2 Health services sought**

Percentage of adults who sought care in last 30 days at facilities/providers in the public sector, the private sector, chemists, traditional healers, faith healers and dentists, by selected background characteristic, South Africa 2003

Background characteristic	Public sector	Private sector	Chemist	Traditional healer	Faith healer	Dentist	Number
<b>Age</b>							
15-24	15.3	9.2	3.4	1.7	2.2	1.1	2 377
25-34	17.5	14.4	6.6	3.0	3.5	1.8	1 714
35-44	16.3	19.1	6.4	2.7	2.3	3.0	1 476
45-54	26.4	18.3	8.7	2.8	3.5	2.8	1 152
55-64	29.0	20.1	8.6	2.6	4.5	2.7	779
65+	31.0	19.5	8.6	4.4	4.1	3.4	618
<b>Sex</b>							
Male	14.8	12.4	5.4	2.5	2.4	1.8	3 422
Female	23.8	17.3	6.9	2.7	3.6	2.5	4 693
<b>Residence</b>							
Urban	20.1	16.5	7.8	2.2	2.2	2.5	5 285
Non-urban	19.9	12.9	3.4	3.3	4.6	1.6	2 830
<b>Province</b>							
Western Cape	20.7	15.8	11.2	0.6	1.1	2.0	910
Eastern Cape	22.6	14.8	6.8	3.5	1.5	2.6	929
Northern Cape	26.7	11.3	5.1	0.5	0.5	2.1	152
Free State	22.8	15.6	5.2	2.6	2.5	2.4	537
KwaZulu-Natal	23.0	13.7	6.9	3.7	5.6	1.9	1 669
North West	6.5	24.9	1.7	1.4	2.0	1.2	621
Gauteng	20.6	16.9	7.1	2.2	2.7	3.6	1 988
Mpumalanga	13.5	10.2	3.1	1.6	1.9	0.6	509
Limpopo	20.0	10.2	3.2	4.3	5.1	0.7	800
<b>Education</b>							
No education	25.5	16.8	3.4	5.5	5.1	1.0	874
Grades 1-5	29.5	14.1	3.8	3.2	6.8	2.4	783
Grades 6-7	23.1	16.7	4.1	3.1	3.6	2.2	884
Grades 8-11	20.5	12.4	5.2	2.1	2.5	1.8	3 239
Grade 12	15.1	16.0	7.6	1.9	1.8	2.5	1 626
Higher	5.7	24.6	17.6	1.6	0.9	4.5	653
Unknown	31.7	17.1	9.9	0.0	0.0	2.5	55
<b>Population group</b>							
African	20.8	14.4	4.5	2.9	3.6	1.8	6 695
African urban	21.6	15.2	5.2	2.5	2.7	2.0	3 997
African non-urban	19.6	13.2	3.5	3.4	4.8	1.7	2 698
Coloured	21.6	13.6	7.9	1.4	1.2	1.4	724
Indian	20.3	24.2	20.2	0.1	0.4	6.0	195
White	5.3	25.1	21.8	0.6	0.0	6.3	477
Other	47.7	36.3	29.9	8.5	0.0	6.9	25
<b>Total</b>	<b>20.0</b>	<b>15.2</b>	<b>6.3</b>	<b>2.6</b>	<b>3.0</b>	<b>2.2</b>	<b>8 115</b>



### 11.3 Satisfaction with Health Services

Table 11.3 presents the results regarding people's dissatisfaction with various categories of health facilities, including hospitals, community health centres, chemists and health providers including private doctors, faith healers, traditional healers, dentists and rehabilitation therapists. Figure 11.3 shows a comparison of the proportions of adult users who express dissatisfaction with health services.

There was an increase in the percentage of adults who express dissatisfaction with all types of services, except traditional healers. Generally, the results show that considerably more people are dissatisfied with the services rendered in hospitals, both public and private. Even the levels of dissatisfaction with the services rendered by solo practitioners in the private sector seem to be on the increase during the period between the surveys. Data on satisfaction with care from rehabilitation therapists or home-based care are not shown in Table 11.3 as the numbers of respondents who sought such care were relatively small. Only 59 adults received services from a rehabilitation therapist in the preceding 30 days. Of these respondents, about 3 percent report dissatisfaction. Similarly, the 30 adults who received home-based care in the preceding 30 days are generally satisfied, as less than 3 percent report dissatisfaction. The proportion of respondents dissatisfied with a dentist increased significantly from 3 percent in 1998 to 13 percent in 2003.

From Table 11.3 it can be seen that more users living in the urban compared to non-urban areas express dissatisfaction with public sector facilities, private doctors, chemists and dentists. Slightly more users living in non-urban compared to urban areas express dissatisfaction with faith healers, traditional healers and rehabilitation therapists. Dissatisfaction with the public hospitals and community health centres is highest in Gauteng, followed by Eastern Cape.

Table 11.3 Dissatisfaction with health services

Percentage of care-seekers who were dissatisfied, by selected background characteristic, South Africa 2003

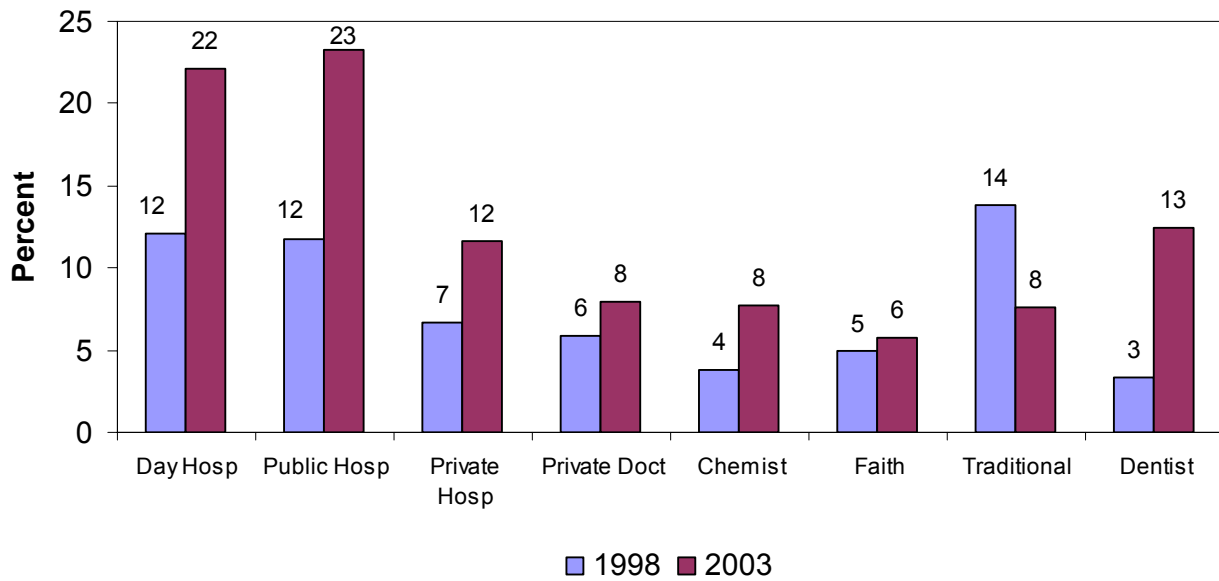
Background characteristic	PUBLIC SECTOR						PRIVATE SECTOR																			
	Community health centre			Government hospital/clinic <sup>1</sup>			Private hospital/clinic			Private doctor			Chemist			Faith healer			Traditional healer			Health services at workplace			Dentist	
	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number		
<b>Age</b>																										
15-24	20.9	87	20.6	310	11.9	107	10.3	135	8.6	81	5.8	53	0.5	40	0.0	14	22.3	26								
25-34	20.7	92	20.9	255	9.3	96	7.8	183	9.3	112	5.9	60	10.4	51	5.7	13	20.6	31								
35-44	16.5	64	26.0	206	8.5	100	3.4	198	1.4	94	2.8	33	5.1	39	0.0	26	0.9	45								
45-54	20.7	82	24.9	260	12.9	89	7.0	142	5.7	100	10.7	41	12.9	32	14.2	15	20.7	33								
55-64	31.7	60	21.5	205	18.7	90	11.9	84	13.4	67	3.4	35	21.6	20	0.0	1	12.1	21								
65+	24.7	50	28.7	167	7.9	65	12.7	70	10.3	53	5.4	25	0.0	27	0.0	3	0.6	21								
<b>Sex</b>																										
Male	23.1	120	21.1	452	7.6	188	7.8	276	7.5	183	8.9	81	4.9	84	10.6	27	6.0	60								
Female	21.7	316	24.4	952	13.7	358	7.9	537	7.8	324	4.3	166	9.4	125	0.0	45	15.9	117								
<b>Residence</b>																										
Urban	26.0	328	26.3	903	11.8	345	8.8	607	8.5	412	5.4	117	5.9	116	4.0	57	14.5	131								
Non-urban	10.3	108	17.9	500	11.3	201	5.2	205	3.9	95	6.2	130	9.7	93	4.3	15	6.9	46								
<b>Province</b>																										
Western Cape	18.6	67	25.5	149	6.1	45	13.0	117	8.3	102	27.5	10	23.4	6	0.0	14	7.5	18								
Eastern Cape	30.9	75	29.2	156	16.1	47	7.3	88	12.1	63	7.8	14	0.0	32	33.3	6	0.0	24								
Northern Cape	19.6	6	10.5	37	7.2	7	2.6	12	0.0	8	26.8	1	26.8	1	0.0	1	10.0	3								
Free State	13.2	41	18.2	107	10.8	36	12.1	50	3.5	28	14.3	14	14.0	14	0.0	3	23.0	13								
KwaZulu-Natal	8.3	48	21.1	370	5.2	100	6.6	170	7.8	115	4.2	94	10.9	61	0.9	14	11.3	32								
North West	15.8	14	9.6	26	18.5	125	8.1	37	23.0	10	0.0	13	7.2	9	20.0	3	11.9	7								
Gauteng	36.8	116	31.5	372	11.1	130	5.7	253	6.4	141	4.3	53	5.1	44	0.0	20	15.3	71								
Mpumalanga	7.7	30	12.9	48	3.3	20	2.8	37	3.2	16	5.3	10	0.0	8	0.0	3	16.2	3								
Limpopo	7.1	39	12.4	140	14.9	36	13.2	46	3.6	25	4.5	40	8.1	34	0.0	8	31.1	5								
<b>Education</b>																										
No education	21.1	53	24.0	196	12.1	79	7.6	78	0.0	29	14.2	45	10.8	48	0.0	5	1.6	9								
Grades 1-5	26.8	60	23.2	201	10.8	59	4.9	63	26.0	30	7.2	53	1.6	25	0.0	3	9.3	19								
Grades 6-7	14.8	44	23.6	186	13.8	77	8.3	71	6.1	36	2.9	31	4.8	27	14.2	15	14.3	19								
Grades 8-11	20.7	181	22.0	559	14.4	168	8.4	272	4.6	167	4.1	82	10.7	67	0.0	27	14.8	59								
Grade 12	25.7	81	25.5	215	7.0	97	7.3	199	7.9	124	0.0	30	5.8	31	4.6	14	18.6	40								
Higher	26.5	17	41.8	28	10.1	60	9.3	126	9.9	115	0.0	6	0.0	11	1.5	8	2.0	29								
Unknown	0.0	1	0.0	18	0.0	7	0.0	3	0.0	5	-	-	-	-	-	-	-	1								
<b>Population group</b>																										
African	23.4	362	23.4	1210	12.1	447	7.7	602	6.0	299	6.0	238	8.1	194	5.2	54	16.5	123								
African urban	28.3	262	26.4	744	12.8	249	8.8	406	6.9	206	5.7	108	6.6	101	5.5	39	22.2	78								
African non-urban	10.9	101	18.7	466	11.1	197	5.4	196	4.0	93	6.2	130	9.7	93	4.4	15	6.7	46								
Coloured	10.9	53	21.4	126	1.2	40	7.3	67	12.2	57	2.1	9	1.9	10	0.0	11	1.3	10								
Indian	45.0	6	26.7	38	5.1	11	1.2	40	2.9	39	0.0	1	0.0	0	6.2	2	2.7	12								
White	30.0	10	35.4	19	17.2	46	12.2	98	11.0	104	-	0	0.0	3	0.0	1	4.6	30								
Other	0.0	5	0.0	10	28.8	2	0.0	5	18.6	7	-	0	0.0	2	0.0	3	0.0	2								
<b>Total</b>	22.1	436	23.3	1404	11.6	546	7.9	812	7.7	507	5.8	247	7.6	209	4.0	72	12.5	177								

<sup>1</sup> "Government hospital" and "government clinic" are assessed together in the questionnaire.

<sup>1</sup> "Government hospital" and "government clinic" are assessed together in the questionnaire.



**Figure 11.3 Percentage of users dissatisfied by health facility, SADHS 1998 and 2003**



The users of public health care facilities in Limpopo, Mpumalanga and KwaZulu-Natal appear to be least dissatisfied with community health centres and other public health facilities, whereas users in the North West and Northern Cape appear to be least dissatisfied with government hospital services.

More users with no education appear to be most dissatisfied with services of faith healers and traditional healers. On the other hand, users with Grade 12 level of education are dissatisfied with the services of dentists. More users with higher education (42 percent) express dissatisfaction with government hospitals. A large percentage (45 percent) of public facilities users from the Indian population group express dissatisfaction with government community health centres. A large percentage of whites are also dissatisfied with government hospitals (35 percent) and private hospitals (17 percent). Compared with Africans living in urban areas, Africans living in non-urban areas express less dissatisfaction with government hospitals, community health centres and dentists.

The major reasons for dissatisfaction with the public sector hospitals and community health centres are long waiting times, staff attitudes, prescribed medication not being available and shortages of staff (doctors/pharmacists) (Table 11.4). Long waiting time is the most common reason for dissatisfaction in government hospitals, community health centres and private hospitals or clinics, with staff attitude and lack of drugs other important reasons for dissatisfaction. Lack of drugs is also an important reason in the public sector. Major reasons for dissatisfaction in the private hospital/clinic sector are long waiting times, staff attitude, and doctors and pharmacists being too expensive. For private doctors major reasons cited for dissatisfaction are short consultations (33 percent) and cost (25 percent).

Table 11.4 Reasons for dissatisfaction

Percentage distribution of recent health seekers by reported reasons for dissatisfaction with health services, according to health care facility/provider, South Africa 2003

Background characteristic	Long wait	Staff rude/unkind	Short consultation	Did not see doctor/ pharmacist, too expensive	No prescribed drugs available	Other	Missing	Total	Number
<b>Public sector</b>									
Community health centre	38.1	25.9	7.0	10.6	17.7	0.0	0.6	100	99
Government hospital/clinic	41.5	22.8	5.6	6.3	15.8	4.3	3.7	100	328
<b>Private sector</b>									
Private hospital/clinic	26.7	18.0	10.8	15.2	7.9	13.1	8.4	100	63
Private doctor	7.4	7.1	33.4	24.8	0.0	17.6	9.7	100	64

Note: Home-based care, faith healers, traditional healers, health services at workplace, dentists and rehabilitation therapists had fewer than 25 respondents and have been omitted from the table.

## 11.4 Problems in Accessing Health Care among Women

Just over half the women aged 15-49 years have at least one major problem with access to health care when they are ill (Table 11.5). The most common problem is money for treatment (39 percent), followed by problems with transport (32 percent) and distance from the health service (31 percent). Some women report not being keen to go alone (17 percent), concern that there may not be a female provider (12 percent), needing to get permission to go for treatment (9 percent), and knowledge about where to go for treatment (8 percent). From Table 11.5 it can be seen that women in non-urban areas experience more problems than women in the urban areas (66 percent compared with 44 percent). Cost, distance and transport are the most common concerns.

The percentage of women living in Limpopo who report any of the specified problems, is very high (76 percent). They had the highest proportion of all the concerns about access to health care. Cost, distance and transport are also the most common concerns in this province. Fewer white women report problems with access to health care (16 percent) than other population groups. The most common concern in this group is about not wanting to go alone (9 percent). African women report the most problems (55 percent). The proportion of women with problems is inversely related to level of education. In terms of education, the highest proportion experiencing any problem is women with a Grade 1-5 level of education. However, with the exception of distance to health care, women with no education have the highest proportions reporting a specific problem.

The number of children that women live with seems to be positively associated with experiencing problems with getting money for treatment, distance to health facilities and having to take transport to health facilities. Women who were never married or divorced/separated/widowed are affected mostly by problems of getting money for treatment followed by having to take transport, then by distance to health facilities and lastly by concern that there may not be a female provider. Women in marriage/cohabiting relationships reported being affected by similar problems to lesser extent than other groups. The percentage of never married women who reported problems with knowing where to go and getting permission to go for treatment is higher than for both married/cohabiting women and divorced/separated/widowed women.

Table 11.5 Problems in accessing health care

Percentage of women 15-49 years who reported they have major problems in accessing health care for themselves when they are sick, by type of problem and background characteristics, South Africa 2003

Background characteristic	Problems in accessing health care							Number of women
	Knowing where to go for treatment	Getting permission to go for treatment	Getting money for treatment	Distance to health facility	Having to take transport	Not wanting to go alone	Concern there may not be a female provider	
<b>Age</b>								
15-19	10.5	12.3	37.3	29.3	30.4	23.1	20.5	1 395
20-29	8.7	9.2	39.8	29.9	31.7	15.2	11.0	2 257
30-39	7.8	7.8	40.0	31.8	32.5	13.8	9.9	1 909
40-49	6.3	6.3	39.7	31.5	32.3	16.8	9.4	1 480
<b>Number of living children</b>								
0	9.6	10.3	37.4	28.6	30.5	19.4	15.8	2 539
1-2	7.6	7.6	38.7	30.3	30.5	14.2	9.6	2 771
3-4	7.7	8.5	41.7	32.2	33.8	15.9	10.5	1 326
5+	7.0	9.4	49.3	40.1	41.9	19.9	14.1	404
<b>Marital status</b>								
Never married	9.7	10.4	41.1	31.8	33.2	18.5	14.3	3 821
Married or living together	6.7	7.1	35.8	28.9	29.4	14.0	9.7	2 658
Divorced/separated/widowed	6.3	6.1	44.4	30.7	33.7	17.5	10.8	562
<b>Residence</b>								
Urban	6.4	6.9	32.2	21.8	23.2	14.5	11.0	4 678
Non-urban	12.1	12.6	53.7	48.2	48.8	21.2	14.7	2 363
<b>Region</b>								
Western Cape	2.7	3.4	29.8	22.7	25.9	8.1	5.9	892
Eastern Cape	5.6	7.0	39.8	36.0	36.3	20.0	12.5	804
Northern Cape	2.2	3.2	30.7	20.9	20.4	10.5	10.9	125
Free State	7.5	8.3	36.5	22.6	25.5	16.9	12.3	443
KwaZulu-Natal	8.4	9.4	40.7	36.8	35.7	17.0	9.5	1 177
North West	8.2	7.5	43.1	23.7	26.0	12.7	8.1	523
Gauteng	10.5	11.4	33.9	23.9	24.8	18.8	14.0	1 854
Mpumalanga	6.5	10.6	47.1	37.8	36.6	12.7	15.2	451
Limpopo	14.8	11.1	57.2	47.6	51.2	23.9	20.7	772
<b>Education</b>								
No education	14.0	16.5	55.5	40.6	37.9	22.1	16.9	302
Grades 1-5	12.1	13.0	55.0	47.2	48.9	19.8	15.3	438
Grades 6-7	10.7	11.5	48.3	38.1	36.6	19.0	15.8	721
Grades 8-11	8.2	9.7	41.7	32.8	34.6	19.4	13.7	3 285
Grade 12	7.6	6.1	33.2	25.0	26.1	12.2	8.3	1 683
Higher	2.4	1.8	14.2	8.9	11.7	7.5	6.7	609
<b>Population</b>								
African	9.4	10.0	43.4	34.0	35.1	18.2	13.2	5 831
African urban	7.3	8.1	36.4	24.4	25.9	15.9	11.9	3 586
African non-urban	12.7	13.0	54.6	49.3	49.8	22.0	15.3	2 246
Coloured	3.2	3.0	29.4	22.8	24.2	8.2	8.1	665
Indian	1.7	1.5	13.4	9.2	14.7	17.3	11.4	141
White	3.3	3.9	6.9	2.0	2.2	9.0	6.0	402
<b>Employment</b>								
Total	8.3	8.8	39.4	30.6	31.8	16.7	12.3	7 041

One case has education missing; four cases reported population group as 'Other'.

## 11.5 Access to Medical Aid

Just over 14 percent of adults have access to some form of medical scheme coverage or benefit (Table 11.6). The 1998 SADHS found 18 percent of the population aged 15 years and above to have access, which suggests a decline in the 5-year period between the surveys. The only increase found is among people with no education, with an increase from 2 percent in 1998 to 4 percent in 2003, and among the African population group with a slight increase from 8 percent in 1998 to 9 percent in 2003. Similar to the results of the 1998 SADHS, access remained highest among people in the age group 35-44 years and lowest in the youth (15-24 years) and elderly (65 years and above). The highest disparity in access to medical aid remains unchanged among people residing in urban and non-urban areas (19 percent and 6 percent respectively).

The proportion of people with access to medical aid is lowest in the Limpopo, although the data show a slight increase from below 7 percent in 1998 to over 8 percent in 2003. Gauteng and Western Cape have the highest proportion of the population with access to medical aid (22 and 20 percent respectively). Even though the membership of medical schemes seems to be declining, it is clear that access to medical aid continued to be positively associated with educational level. As clearly demonstrated by the above, an unexpected increase in enrolment to medical schemes is reported among people with no education. This could possibly be related to the number of union agreements that have included medical aid cover.

In terms of population group distribution with respect to access to medical schemes, 68 percent of whites, 32 percent of Indians, 20 percent of coloureds and 9 percent of Africans report access to medical aid. The proportion of Africans residing in non-urban areas who have medical benefits seems to have increased, from 4 percent in 1998 to 6 percent in 2003. This information needs to be interpreted with some caution, as there may be some bias with regard to increase in medical schemes enrolment in rural areas.

**Table 11.6 Access to medical aid**

Percentage of adults who reported that they have medical aid by selected background characteristic, South Africa 2003

Background characteristic	Percentage with medical aid
<b>Age</b>	
15-24	11.0
25-34	13.9
35-44	18.2
45-54	16.5
55-64	16.2
65+	10.5
<b>Sex</b>	
Male	14.2
Female	14.1
<b>Residence</b>	
Urban	18.5
Non-urban	6.2
<b>Province</b>	
Western Cape	20.3
Eastern Cape	10.3
Northern Cape	15.8
Free State	11.0
KwaZulu-Natal	9.6
North West	9.4
Gauteng	22.0
Mpumalanga	12.5
Limpopo	8.4
<b>Education</b>	
No education	4.1
Grades 1-5	3.9
Grades 6-7	5.8
Grades 8-11	10.4
Grade 12	21.2
Higher	53.0
Unknown	8.3
<b>Population group</b>	
African	9.2
African urban	11.5
African non-urban	5.8
Coloured	19.8
Indian	31.8
White	68.0
Other	18.1
Total	14.2

## 11.6 Self-Reported Chronic Disease Drugs Used

Tables 11.7 and 11.8 present the self-reported patterns of medication for chronic diseases used by men and women, as well as the pattern of drugs listed by the field workers from the drug containers presented by participants in their homes. Overall, 11 percent of men and 19 percent of women report taking prescribed medication regularly. Per age category, more women than men report using these medications. Among men there is increasing frequency of drug usage with increasing age, but among women the highest frequency is reported in the 55-64 age category. More urban than non-urban men and women report using prescribed medication. These findings are similar to the 1998 survey, apart from increasing drug usage with age among both men and women in that survey.

Table 11.7 Medication for chronic conditions in men

Percentage of all adult men interviewed who report taking prescribed medication and whose medication could be listed by interviewers, and of these, percentage distribution by number of medications listed, South Africa 2003

Background characteristics	% who reported taking prescribed medication	Number of men	% who have listed drugs	Number of men	Among those with medicine listed:			Number with listed drugs
					% who had 1 listed drug	% who had 2 or 3 listed drugs	% who had 4 or more listed drugs	
<b>Age</b>								
15-24	3.0	1 116	2.1	1 121	57.2	42.8	0.0	23
25-34	7.3	734	5.5	735	34.1	58.8	7.1	41
35-44	12.6	590	10.1	593	47.2	45.2	7.6	60
45-54	18.4	437	17.1	438	40.3	35.2	24.6	75
55-64	24.6	294	18.7	297	38.0	31.3	30.7	56
65+	29.4	240	22.3	240	32.7	44.9	22.3	53
<b>Residence</b>								
Urban	13.2	2 280	10.8	2 289	38.7	43.0	18.4	246
Non-urban	7.3	1 131	5.4	1 133	47.1	37.2	15.8	61
<b>Province</b>								
Western Cape	14.0	337	10.6	337	40.2	24.6	35.2	36
Eastern Cape	14.2	367	11.2	367	47.9	42.2	10.0	41
Northern Cape	20.5	60	19.5	60	41.1	51.9	7.0	12
Free State	15.2	222	11.9	224	41.4	40.8	17.8	27
KwaZulu-Natal	6.5	778	4.3	781	52.2	27.1	20.6	33
North West	10.9	248	7.6	248	29.9	52.4	17.7	19
Gauteng	13.0	909	11.6	914	35.3	48.5	16.2	106
Mpumalanga	7.9	209	7.1	209	34.1	46.0	19.8	15
Limpopo	9.3	281	6.8	282	45.2	42.7	12.0	19
<b>Education</b>								
No education	19.2	296	15.3	296	55.0	33.6	11.5	45
Grades 1-5	15.6	335	13.0	335	45.4	41.2	13.4	44
Grades 6-7	10.8	383	7.9	384	30.0	49.4	20.6	30
Grades 8-11	8.7	1 357	6.9	1 366	37.3	38.5	24.2	94
Grade 12	8.8	701	7.4	703	41.9	46.1	12.0	52
Higher	15.9	308	12.2	309	28.7	48.5	22.8	38
<b>Population group</b>								
African	9.1	2 829	7.2	2 838	42.1	46.1	11.7	205
Afr. urban	10.4	1 741	8.7	1 747	39.7	47.9	12.4	152
Afr. non-urban	6.9	1 089	4.9	1 091	49.3	41.1	9.7	53
Coloured	12.8	268	8.2	268	35.7	33.9	30.3	22
Indian	21.1	83	19.0	83	30.1	34.9	35.0	16
White	33.1	217	27.5	220	37.3	32.0	30.7	61
<b>Total</b>	<b>11.2</b>	<b>3 411</b>	<b>9.0</b>	<b>3 422</b>	<b>40.4</b>	<b>41.8</b>	<b>17.8</b>	<b>307</b>

22 cases had education unknown; 13 cases reported population group as 'Other'.

**Table 11.8 Medication for chronic conditions in women**

Percentage of all adult women interviewed who report taking prescribed medication and whose medication could be listed by interviewers, and of these, percentage distribution by number of medications listed, South Africa 2003

	% who reported taking prescribed medication	Number of women	% who have listed drugs	Among those with medicine listed:				
				Number	% who had 1 listed drug	% who had 2 or 3 listed drugs	% who had 4 or more listed drugs	Number with listed drugs
<b>Age</b>								
15-24	5.6	1 254	4.0	1 256	50.8	42.1	7.1	50
25-34	9.3	979	7.0	979	35.9	54.7	9.4	69
35-44	15.0	880	12.1	883	36.3	53.0	10.8	107
45-54	35.5	713	29.6	714	33.8	45.3	21.0	212
55-64	41.7	483	35.4	483	35.7	45.5	18.8	171
65+	36.1	378	31.0	378	24.2	42.9	32.9	117
<b>Residence</b>								
Urban	22.1	2 993	18.5	2 995	34.4	47.0	18.7	553
Non-urban	13.2	1 694	10.2	1 697	34.6	46.1	19.3	172
<b>Province</b>								
Western Cape	27.8	571	22.9	573	34.7	46.7	18.6	131
Eastern Cape	22.8	561	17.3	562	34.7	44.9	20.4	97
Northern Cape	25.0	92	21.1	92	42.3	40.0	17.8	19
Free State	23.3	313	20.3	313	26.5	50.6	22.9	64
KwaZulu-Natal	9.4	886	6.5	888	30.7	38.0	31.3	58
North West	20.4	373	16.8	373	32.4	49.1	18.5	63
Gauteng	22.8	1 073	20.3	1 074	34.8	49.7	15.5	218
Mpumalanga	11.3	300	9.2	300	48.6	36.6	14.8	27
Limpopo	11.9	519	9.1	519	37.4	48.4	14.2	47
<b>Education</b>								
No education	24.4	578	20.6	578	32.5	51.2	16.3	119
Grades 1-5	27.3	447	21.3	448	27.3	50.1	22.6	95
Grades 6-7	25.7	501	21.2	501	33.3	41.4	25.3	106
Grades 8-11	17.1	1 867	14.0	1 873	34.5	45.2	20.3	262
Grade 12	9.5	923	7.2	923	43.2	48.6	8.3	67
Higher	19.3	344	17.1	344	42.0	50.6	7.4	59
<b>Population group</b>								
African	17.0	3 853	13.9	3 857	33.3	48.0	18.7	535
African urban	20.6	2 248	17.2	2 250	32.6	48.4	19.0	386
African non-urban	12.1	1 606	9.2	1 607	35.2	47.1	17.8	148
Coloured	25.2	454	20.5	456	40.6	40.9	18.4	94
Indian	34.8	112	32.0	112	37.6	30.5	31.9	36
White	26.6	257	22.9	257	34.0	56.2	9.8	59
<b>Total</b>	<b>18.8</b>	<b>4 687</b>	<b>15.5</b>	<b>4 693</b>	<b>34.4</b>	<b>46.7</b>	<b>18.8</b>	<b>725</b>

17 cases had education unknown; 12 cases reported population group as 'Other'.

Prescription drug use for men is most frequently reported in the Northern Cape (21 percent) and Free State (15 percent). It is reported least frequently in KwaZulu-Natal (less than 7 percent). Among women, the most frequently reported use of prescription drugs is from Western Cape (28 percent) followed by Northern Cape (25 percent), Gauteng (23 percent) and Eastern Cape (23 percent), with the least frequent reporting from KwaZulu-Natal (9 percent). The geographic pattern is different from what it was in 1998, when reported prevalence for men in KwaZulu-Natal was twice as high (14 percent) and that for Free State was much lower (9 percent). Among women the rate of prescription drug use in the 1998 survey was 18 percent in KwaZulu-Natal, twice that of the present prevalence, and lower frequencies were found in Eastern Cape, Free State and North West than in 2003.

Sixty percent of men and two-thirds of women taking regular chronic disease medication report using more than one prescribed drug (Tables 11.7 and 11.8). Forty percent of men report using only one drug, with 18 percent report using four or more listed drugs regularly. Among the women, 34 percent use one drug while 19 percent report using four or more drugs regularly. Among the men, those with the least or higher education most frequently report using prescribed medication regularly.

White men and Indian women are the most frequent users of prescribed medication. African men and women, especially from non-urban areas, report least frequent use of prescribed medication. The 2003 survey reports similar prescribed medication usage to the 1998 survey among most population groups, except for white women whose usage decreased significantly, from 48 percent to 27 percent.

Almost 90 percent of African men use three drugs or less, while approximately a third of coloured, Indian and white men use four or more drugs. From 1998 to 2003 there has been a decrease in the use of four or more drugs among African men, from 18 to 12 percent, while there is an increase in the use of four or more drugs among other men, from about 20 percent to over 30 percent. Among African and coloured women the use of four drugs or more has not changed much between 1998 and 2003, at around 20 percent. However, there has been a decrease for white women, from over 20 percent to less than 10 percent, and an increase from 22 percent to 32 percent for Indian women.

### **11.7 Payment for Prescribed Medication for Chronic Diseases**

Table 11.9 shows the payment method used by the respondents for their chronic medications. Thirty-nine percent of men and 53 percent of women receive their medication from the public health care sector, an increase since the 1998 survey of 5 percent and 14 percent among the men and women respectively. Self-payment of the prescribed medication is made by 26 percent and 22 percent of men and women respectively, a small decrease from the 1998 survey. Medication is paid for by medical aids for 23 percent of the men and 12 percent of the women, a decrease compared to the 1998 survey. Those with the highest medical aid cover live in Gauteng and the Western Cape. White respondents have the highest medical aid cover, while African respondents have the lowest medical aid cover for chronic medication payment. The oldest age groups receive their medication from the public health sector and have a low level of medical aid cover. Employers pay for less than 2 percent and less than 1 percent of medication for men and women respectively.

Table 11.9 Payment for medication for chronic conditions

Table 11.9 Payment for medication for chronic conditions														
Percentage of men and women taking regular prescription medication according to source of payment, by selected background characteristic, South Africa 2003														
Background characteristic	MEN						WOMEN							
	Respondent	Family	Medical Aid	Public health care sector	Employer	Other	Total	Respondent	Family	Medical Aid	Public health care sector	Employer	Other	Total
<b>Age</b>														
15-24	17.9	42.7	17.4	19.4	0.0	0.0	33	11.9	18.3	14.1	49.9	0.0	0.0	70
25-34	31.2	12.2	6.9	45.3	2.3	0.0	54	27.9	9.0	16.8	37.9	0.0	0.0	91
35-44	36.0	3.1	32.3	18.4	2.5	0.8	74	26.3	12.6	6.6	51.0	0.4	0.0	132
45-54	14.0	0.2	31.6	48.5	5.3	0.0	81	24.0	4.6	12.9	53.4	2.1	0.0	253
55-64	34.2	3.6	22.0	39.1	0.0	0.0	72	18.0	5.1	12.1	57.7	0.0	0.7	201
65+	21.1	1.9	17.6	56.1	0.0	0.0	70	22.0	2.5	8.6	59.5	0.0	0.0	136
<b>Residence</b>														
Urban	24.1	5.2	28.3	38.2	1.3	0.2	301	21.2	7.1	14.3	51.8	0.9	0.2	660
Non-urban	33.4	13.6	2.4	43.7	4.2	0.0	83	24.9	7.3	3.8	57.0	0.0	0.0	223
<b>Province</b>														
Western Cape	23.1	11.6	32.4	32.9	0.0	0.0	47	21.6	8.4	17.7	47.1	0.9	0.9	159
Eastern Cape	38.5	5.8	0.0	52.1	0.0	0.0	52	25.2	6.7	7.4	54.8	0.0	0.0	128
Northern Cape	21.2	2.8	15.0	59.5	1.5	0.0	12	18.1	2.4	11.2	63.5	1.6	0.0	23
Free State	22.1	7.0	5.2	55.8	0.0	1.7	34	19.6	10.8	4.0	60.7	1.6	0.0	73
KwaZulu-Natal	24.5	8.1	17.9	48.9	0.0	0.0	51	26.1	5.3	9.3	54.8	0.0	0.0	83
North West	24.1	16.2	0.0	47.3	0.0	0.0	27	13.0	7.6	3.4	68.9	0.0	0.0	76
Gauteng	17.6	2.4	46.8	28.9	2.5	0.0	118	16.6	4.3	17.7	53.8	1.2	0.0	245
Mpumalanga	34.9	16.0	18.3	30.8	0.0	0.0	17	37.7	8.5	6.5	38.3	0.0	0.0	34
Limpopo	52.1	7.0	3.5	21.1	16.2	0.0	26	40.5	14.3	5.9	36.3	0.0	0.0	62
<b>Education</b>														
No education	31.0	5.4	3.6	48.7	4.6	0.0	57	28.8	3.8	0.2	62.0	0.0	0.0	141
Grades 1-5	26.3	9.8	12.7	48.6	0.0	0.0	52	11.6	3.7	2.2	73.5	1.6	0.0	122
Grades 6-7	48.8	3.8	1.8	37.0	4.0	0.0	41	26.6	5.4	6.2	59.0	0.5	1.1	129
Grades 8-11	20.1	11.1	16.0	48.4	2.5	0.5	118	21.9	8.6	12.9	51.6	1.0	0.0	320
Grade 12	19.5	6.6	38.9	32.3	0.0	0.0	62	24.4	18.2	24.0	22.9	0.0	0.0	88
Higher	22.0	0.3	71.1	6.2	0.4	0.0	49	22.1	3.8	44.3	20.4	0.0	0.0	66
<b>Population group</b>														
African	28.5	9.3	8.4	46.8	2.7	0.2	256	22.5	7.3	6.5	58.0	0.9	0.0	463
African urban	26.3	6.9	10.8	49.2	1.9	0.3	181	24.0	7.3	3.3	57.5	0.0	0.0	194
African non-urban	33.7	15.0	2.6	41.0	4.7	0.0	75	22.9	7.3	5.6	57.9	0.6	0.0	656
Coloured	27.8	4.5	21.4	46.4	0.0	0.0	34	22.1	5.6	17.0	50.0	1.4	1.2	115
Indian	22.7	2.1	21.7	49.9	1.9	0.0	17	13.9	11.7	11.3	56.5	0.0	0.0	39
White	13.7	1.9	75.5	8.8	0.0	0.0	72	16.3	6.2	61.6	11.7	0.0	0.0	68
Total	26.1	7.0	22.7	39.4	1.9	0.2	384	22.1	7.1	11.6	53.1	0.7	0.2	883
Three men and 17 women had education unknown; Three men and 44 women reported population groups as 'Other'.														

Three men and 17 women had education unknown; Three men and 44 women reported population groups as 'Other'.



## 11.8 Patterns of Prescribed Medication for Common Chronic Diseases

Table 11.10 shows the results of the coded medication used by respondents for tuberculosis, asthma and chronic bronchitis, diabetes, hyperlipidaemia, hypertension, atherosclerosis, stroke-related conditions, arthritis, osteoporosis and epilepsy. The Anatomical Therapeutic Chemical (ATC) classification codes were used to classify the medications for these eleven chronic conditions. The detailed coding list containing all the medication on the market in South Africa at the time of the survey can be obtained on request.

A total of 746 respondents provided containers for the eleven conditions, and accounted for 10 percent of all adults. The total number of drugs taken for the different conditions adds up to more than the total number of people who had drugs coded, since some respondents used medications for more than one condition. Overall, a higher proportion of women (12 percent) than men (7 percent) use prescribed medications regularly for these chronic conditions. However, a higher proportion of men use medication for tuberculosis, diabetes, hyperlipidaemia, atherosclerosis and stroke-related conditions, and epilepsy.

From Table 11.10 it can be seen that respondents presented a total of 1 673 different drug items for the chronic conditions. The least commonly prescribed drugs among adults are for tuberculosis and hyperlipidaemia (about 2 percent). The most frequently prescribed drugs are for hypertension (52 percent), followed by diabetes and arthritis (just less than 12 percent). Details of the prescribed medication for the chronic conditions are presented in Table 11.11, and the source of the medication in terms of the public and private sector is presented in Table 11.12.

**Table 11.10 Use of prescribed medication for eleven common chronic conditions**

The number and percentage of men and women using prescribed medication regularly and the number and percentage of all regularly used prescribed medications for tuberculosis, asthma, chronic bronchitis, diabetes, hyperlipidaemia, hypertension, atherosclerosis or stroke-related conditions, arthritis, osteoporosis and epilepsy using Anatomical Therapeutic Chemical Classification (ATC) codes, South Africa 2003

Chronic conditions	ATC Code	People taking chronic medication						Medication taken					
		Men		Women		Total		Men		Women		Total	
		Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Tuberculosis	J04A	16	0.5	8	0.2	24	0.3	21	4.4	8	0.7	29	1.7
Asthma and chronic bronchitis	R03	33	1.0	88	1.9	121	1.5	46	9.8	133	11.0	179	10.7
Diabetes	A10	46	1.3	95	2.0	141	1.7	61	12.9	136	11.3	197	11.8
Hyperlipidaemia	C10a	15	0.4	19	0.4	34	0.4	15	3.3	19	1.6	34	2.1
Hypertension	C02/03/07/08/09	141	4.1	395	8.4	536	6.6	226	48.2	649	53.9	875	52.3
Atherosclerosis and stroke-related	B01AC/C01A/B/DA	23	0.7	38	0.8	61	0.8	26	5.6	46	3.9	73	4.4
Arthritis	M01A/B/C,M04	44	1.3	141	3.0	184	2.3	46	9.7	152	12.6	197	11.8
Osteoporosis	A12,M05B	12	0.3	36	0.8	48	0.6	13	2.7	36	3.0	49	2.9
Epilepsy	N03	14	0.4	21	0.5	35	0.4	16	3.5	23	2.0	40	2.4
Any condition		240	7.0	576	12.3	816	10.1	470	100.0	1 203	100.0	1 673	100.0

Table 11.11 Prescribed medication for eleven common chronic conditions

Percentage of people taking regular medications for tuberculosis, asthma, chronic bronchitis, diabetes, hyperlipidaemia, hypertension, atherosclerosis or stroke-related conditions, arthritis, osteoporosis and epilepsy, the total number of drugs used for each condition and the percent distribution of common subclasses of prescribed medication for each condition using Anatomical Therapeutic Chemical Classification (ATC) codes, South Africa 2003

	Men	Women	Total
Number of persons taking prescribed medication (denominator)	219	528	746
<b>TUBERCULOSIS</b> Code J04A			
% of persons taking drugs for tuberculosis	7.4	1.5	3.2
Number of tuberculosis drugs used	21	8	29
Antibiotics (J04AB) as % of tuberculosis drugs	14.0	0.0	10.0
Hydrazides (J04AC) as % of tuberculosis drugs	7.1	0.0	5.1
Thiocarbamides (J04AD) as % of tuberculosis drugs	14.0	0.0	10.0
Others (J04AK) as % of tuberculosis drugs	9.6	17.0	11.7
<b>ASTHMA AND CHRONIC BRONCHITIS</b> Code R03			
% of persons taking drugs for asthma and chronic bronchitis	15.1	16.8	16.3
Number of asthma drugs used	46	133	179
Adrenergic inhalers (R03A) as % of asthma drugs	14.2	7.2	9.0
Glucocorticoids for inhalation (R03BA) as % of asthma drugs	16.2	15.7	15.8
Anticholinergics for inhalation (R03BB) as % of asthma drugs	0.0	0.5	0.4
Adrenergics for systemic use as (R03C) % of asthma drugs	23.1	33.9	31.1
Xanthines (R03DA) as % of asthma drugs	46.5	42.6	43.6
Combination preparations (R03DA54 / R03DA55) as % of asthma drugs	9.0	11.4	10.8
<b>DIABETES</b> Code A10			
% of persons taking drugs for diabetes	20.9	18.0	18.9
Number of diabetic drugs used	61	136	197
Insulin (A10A) as % of diabetic drugs	29.9	9.4	15.7
Oral agents (A10B) as % of diabetic drugs	70.1	90.6	84.3
Biguanides (A10BA) as % of diabetic drugs	32.4	43.7	40.2
Sulphonamides, urea derivatives (A10BB) as % of diabetic drugs	37.7	46.9	44.1
<b>HYPERLIPIDAEMIA</b> Code C10A			
% of persons taking drugs for hyperlipidaemia	6.9	3.6	4.6
Number of hyperlipidaemic drugs used	15	19	34
<b>HYPERTENSION</b> Codes C02, C03, C07, C08, C09*			
% of persons taking drugs for hypertension	64.4	74.9	71.9
Number of hypertensive drugs used	226	649	875
Diuretics as % of hypertension drugs	31.0	46.1	42.2
Diuretics on their own as % of hypertension drugs	31.0	45.4	41.7
Low-ceiling diuretics (thiazide, others) (C03A/B) as % of hypertension drugs	22.3	36.3	32.7
High-ceiling diuretics (C03C) as % of hypertension drugs	6.3	4.3	4.9
Potassium-sparing agents (C03D) as % of hypertension drugs	0.1	0.4	0.4
Diuretics and potassium sparing agents (C03E) as % of hypertension drugs	2.3	4.2	3.7
Diuretics in combination (C02AA52/53) as % of hypertension drugs	0.0	0.7	0.5
Reserpine/diuretic and/or vasodilator	0.0	0.0	0.0
ACE inhibitors with diuretics (C09BA) as % of hypertension drugs	0.0	0.6	0.5
Beta-blocking agents & diuretics (C07B/C/D) as % of hypertension drugs	0.0	0.0	0.0
Beta-blocking agents (C07A/B/D) as % of hypertension drugs	10.9	8.4	9.0
Calcium-channel blockers (C08)	11.3	8.1	8.9
Agents acting on renin-angiotensin system (C09) as % of hypertension drugs	38.7	22.1	26.4
Plain ACE inhibitors (C09AA) as % of hypertension drugs	34.5	20.1	23.9
ACE inhibitors with diuretics (C09BA) as % of hypertension drugs	0.0	0.6	0.5
Anti-adrenergic and other agents as % of hypertension drugs			
Anti-adrenergic agents - central acting (C02A) as % of hypertension drugs	6.6	15.1	12.9
Reserpine (C02AA02) as % of hypertension drugs	0.0	0.1	0.1
Reserpine / diuretic and/or vasodilator (C02AA52/53) as % of hypertension drug			
Methyldopa (C02AB01) as % of hypertension drug	2.8	3.8	3.6
Anti-adrenergic agents - peripherally acting (C02C) as % of hypertension drugs	1.5	0.3	0.6
Agents acting on arteriolar smooth muscle (C02D) as % of hypertension drugs	0.0	0.6	0.5

<b>DRUGS FOR OTHER ATHEROSCLEROSIS OR STROKE-RELATED CONDITIONS</b> Codes: B01AC, C01DA, C01A, C01B			
% of persons taking chronic drugs	10.4	7.3	8.2
Number of atherosclerosis drugs used	26	46	73
Vasodilators - nitrates (C01DA) as % of atherosclerosis drugs	16.2	27.2	23.2
(B01AC) as % of atherosclerosis drugs	52.3	51.8	52.0
Aspirin (B01AC06) as % of atherosclerosis drugs	52.3	51.1	51.5
Cardiac glycosides (C01A) as % of atherosclerosis drugs	31.5	21.0	24.8
Anti-arrhythmics (C01B) as % of atherosclerosis drugs	0.0	0.0	0.0
<b>DRUGS TAKEN FOR ARTHRITIS</b>			
% of persons taking chronic drugs	4.7	0.7	1.9
Number of arthritis drugs used	46	152	197
Non-steroidal anti-inflammatory and anti-rheumatic drug (M01A) as % of arthritis drugs	77.5	97.5	92.9
Anti-gout preparations (M04) as % of arthritis drugs	22.5	2.5	7.1
Allopurinol (M04AA01) as % of arthritis drugs	22.5	2.4	7.1
<b>DRUGS TAKEN FOR OSTEOPOROSIS</b>			
% of persons taking chronic drugs	5.5	6.8	6.4
Number of osteoporosis drugs used	13	36	49.0
Calcium supplements (A12A) as % of osteoporosis drugs	31.3	45.6	41.9
Drugs affecting mineralization (M05B) as % of osteoporosis drugs	2.5	0.0	0.7
Alendronic acid (M05BA04) as % of osteoporosis drugs	2.5	0.0	0.7
<b>DRUGS TAKEN FOR EPILEPSY</b>			
% of persons taking chronic drugs	6.4	4.1	4.7
Number of epilepsy drugs used	16	23	40
Barbiturates (N03AA) as % of epilepsy drugs	4.3	4.7	4.5
Hydantoin derivatives (N03AB) as % of epilepsy drugs	38.5	42.0	40.6
Carboxamide derivatives (N03AF) as % of epilepsy drugs	36.8	49.4	44.2

## ***Tuberculosis***

Among adults 15 years and older 0.3 percent reported taking anti-tuberculosis medication. In 1998 this figure was 0.2 percent. A low proportion of respondents on chronic medication, 3 percent, are on TB medication; however, this is twice that reported in the 1998 survey. This may be because many more TB patients take their medication under direct supervision. The rates of patients on TB treatment remain very low. This is of grave concern as there is a marked increase in TB cases, caseloads and mortality in the country. Of the TB drug names presented by the respondents, more were provided by the public than the private sector, although the ratio of private to public sector facilities has increased since the 1998 survey, from 0.3 to 0.6.

## ***Asthma and chronic bronchitis***

Less than 2 percent (1.5 percent) of respondents aged 15 years or older use prescribed medication regularly for asthma or chronic bronchitis. In 1998 this figure was 1.7 percent. Of the respondents on chronic drugs, 16 percent are on regular asthma or chronic bronchitis medication, with a slightly higher proportion receiving their medication from the public sector compared to the private sector, a reversal of the 1998 findings. Xanthines followed by systemic anti-cholinergics are the most commonly used anti-asthmatic drugs in both sectors. This is similar to the 1998 findings, but unlike the previous report there is a marked reduction in the use of inhalers in 2003, especially in the private sector. This is of some concern, as inhalers would be expected to be the drug of choice/first-line treatment recommended in the guidelines for South Africa.

## ***Diabetes***

Diabetes medication was taken by less than 2 percent of all adult participants in both 1998 and 2003. Diabetes medication accounted for 19 percent of all chronic medication usage. Oral agents are the predominant diabetes medication used, with insulin accounting for nearly a third of treatment in men and less than 10 percent in women. A slightly higher proportion of men than women receive diabetes medication and a slightly higher proportion receive treatment from the public compared to the private sector.

### ***Hyperlipidaemia***

Less than half a percent of respondents use lipid-lowering drugs in both 2003 and 1998. This accounts for close to 5 percent of all chronic medications used. It is a higher rate than recorded in 1998, but remains very low considering that the estimated number of South Africans with hyperlipidaemia is 5.7 million.

### ***Hypertension***

Between 6 and 7 percent of the respondents in the study are taking chronic medication for hypertension in 2003, while less than 6 percent did so in 1998. Fifty two percent of the chronic drugs used are for hypertension, while 72 percent of respondents using chronic medication are taking antihypertension drugs. In this survey, a higher proportion of chronic medication respondents are using antihypertension drugs (72 percent compared to 57 percent in 1998). More than twice as many women as men report taking chronic medication for hypertension. In 2003 more women use medication for hypertension than men, which accounts for the higher rate of use found in 2003 compared to 1998. Of the respondents on chronic medication, 64 percent of the men and 75 percent of the women are on antihypertension drugs.

Among the men the most frequently used antihypertensive drug classes, including compounds in combination formulations, are ACE inhibitors (39 percent), and followed by diuretics (31 percent), calcium-channel blockers (11 percent) and beta-blockers (11 percent). Among the women the most frequently used antihypertensive drug classes are diuretics (46 percent), followed by ACE inhibitors (22 percent), beta-blockers (8 percent) and calcium-channel blockers (8 percent). These data differ notably from the 1998 report, in that ACE inhibitors have replaced diuretics among men as the most frequently used antihypertensive drug, and that methyldopa and reserpine use have dropped dramatically among women. The increased use of ACE inhibitors, especially among men, may be due to the increased availability of generic and cheaper ACE inhibitors. However, diuretics are still the recommended first-line treatment.

### ***Atherosclerosis- and stroke-related conditions***

Included under this heading are drugs used for angina, after a heart attack, a stroke, or for any other heart condition. Beta-blocking agents and calcium antagonists can be used for both angina and hypertension. The data set does not distinguish between angina and hypertension for the use of these two drug classes, and therefore, their use is reported for hypertension.

Of all participants, 0.8 percent have prescribed drugs for these conditions in 2003, while 1 percent was recorded in 1998. These drugs accounted for 4 percent of all chronic medication. More men (10 percent) than women (7 percent) use these classes of drugs, which is not surprising as men suffer from atherosclerosis-related conditions more frequently than women. The most commonly used drug was aspirin, especially in the public sector. Aspirin accounts for 52 percent of drugs used for atherosclerosis-related conditions.

### ***Arthritis***

Just over two percent of adult participants have drugs for arthritis. Of the persons taking drugs for chronic conditions, only 2 percent are for arthritis, with women predominating (5 percent). Less than 1 percent of men report using drugs for this condition. Ninety three percent are non-steroidal anti-inflammatory agents, and 7 percent of these are anti-gout medication. It is not possible to describe trends in the use of medications for arthritis as the 1998 SADHS did not include it.

## *Osteoporosis*

Of the adults, less than 1 percent use drugs for osteoporosis, representing almost 6 percent of men and 7 percent of women using chronic medication. Most patients are using calcium supplements for this condition. No comparison is possible since this condition was not included in the 1998 SADHS.

## *Epilepsy*

Of the adults, less than half a percent use drugs for epilepsy, representing 6 percent and 4 percent of men and women respectively. Most people are using phenytoin and carboxamide derivatives as medication. The 1998 SADHS did not include epilepsy, making it impossible to make a comparison.

## **11.9 Chronic Disease Drug Utilization in Private and Public Sectors**

Table 11.12 presents the distribution of the chronic disease drug classes provided by the public and private sectors. Payments made to the private sector include those made by the participant, their family, their employer or their medical aid fund. Forty-seven percent of participants on chronic medication receive their drugs from the private sector, and 53 percent from the public sector health services. This represents a shift from the 1998 report, where the majority of participants (58 percent) received their medication from the private health care sector. The mean number of chronic disease drugs used is 2.2 in the private sector and 2.4 in the public sector, an increase from the 1998 report for both sectors. A larger proportion of participants on chronic medication are taking four or more drugs, both in the private and public sectors (18 percent and 19 percent respectively), a marked increase from 1998, when the figures were 10 percent and 12 percent respectively. In the private sector similar proportions of participants are taking either 1, or 2 to 3 drugs, although in the public sector almost half of the participants are on 2 to 3 drugs.

The ratio of private to public sector chronic drug provision is considerably greater than one for hyperlipidaemia, indicating that drugs for this condition are used almost exclusively in the private sector. The ratio is markedly less than one for tuberculosis, hypertension and atherosclerosis-related conditions, signifying that drugs for these conditions are more frequently used in the public than in the private sector. A similar pattern was observed in the 1998 SADHS.

Diuretics in combination, beta-blockers and calcium-channel blockers are used more in the private than in the public sector, while anti-adrenergic agents, reserpine, methyldopa and diuretics alone are used more frequently in the public sector. Cardiac glycosides usage has markedly decreased in the public sector, resulting in its more frequent use in the private sector. Aspirin use has decreased across both sectors since the 1998 report, but more so in the private sector, resulting in the more frequent use of aspirin in the public sector.

The use of asthma and chronic bronchitis/obstructive pulmonary disease medication occurs slightly more frequently in the public than the private sector, a change from 1998. Adrenergic inhalers and combination medications are still used more frequently in the private sector. The use of steroid inhalers is markedly reduced in the private sector compared to 1998, resulting in its more frequent use in the public sector.

Table 11.12 Public and private sector provision of medication for chronic conditions

Comparison between public and private sector of number of respondents, number of drugs and proportion of type of chronic medication, South Africa 2003

	Private sector	Public sector	Ratio of private to public
Number of people taking drug	490	542	
Number of drugs taken	1107	1332	
Mean number per respondent	2.2	2.4	
SD	1.4	1.4	
% Taking 1 drug	40.7	32.1	
% Taking 2 - 3 drugs	41.8	48.4	
% Taking ≥ 4 drugs	17.5	19.4	
<b>DRUGS FOR CONDITIONS (% of number of drugs used)*</b>			
<b>TUBERCULOSIS (J04A)</b>	0.8	1.4	0.59
<b>ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE MEDICATION (R03)</b>	6.8	7.7	0.88
Adrenergic inhalers (R03A)	0.8	0.5	1.49
Steroid inhalers (R03BA)	1.0	1.3	0.77
Anticholinergic inhalers (R03BB)	0.0	0.1	0.00
Systemic anticholinergics (R03C)	2.2	2.3	0.95
Xanthines (R03DA)	2.8	3.5	0.80
Combinations (R03DA54, R03DA55)	1.1	0.5	2.29
<b>DIABETES TOTAL (A10)</b>	7.6	8.4	0.90
Insulin (A10A)	1.4	1.2	1.15
Oral agents (A10B)	6.3	7.3	0.86
Biguanides (A10BA)	3.3	3.2	1.01
Sulphonamides (A10BB)	3.0	4.0	0.75
<b>HYPERLIPIDAEMIA (C10A)</b>	2.8	0.3	9.65
<b>HYPERTENSION TOTAL (C02, C03, C07, C08, C09)</b>	28.4	42.1	0.68
Anti-adrenergic agents, centrally acting (C02A)	2.1	6.7	0.31
Reserpine-containing agents (C02AA02, C02AA52)	2.9	12.2	0.24
Methyldopa (C02AB01)	0.8	1.7	0.50
Anti-adrenergic agents - peripherally acting (C02C)	0.2	0.2	0.93
Arteriolar smooth muscle agents (C02D)	0.1	0.2	0.60
Diuretics (C03A, C03B, C03C, C03D, C03E)▲	10.1	19.0	0.53
Diuretics in combination (C02AA52, C02AA53, C09BA, C07B, C07C, C07D)●	0.4	0.0	53.36
Total Diuretics (▲+ ●)	10.5	19.0	0.56
ACE inhibitors (C09)	8.8	10.0	0.88
Beta-blocking agents (C07A, C07B, C07C, C07D)	3.6	2.9	1.23
Calcium-channel blockers (C08)	3.4	3.0	1.12
<b>DRUGS FOR OTHER ATHEROSCLEROSIS-RELATED CONDITIONS (B01AC, C01DA, C01A, C01B)</b>	2.5	3.4	0.75
Vasodilators - nitrates (C01DA)	0.3	1.0	0.30
Anti-arrhythmics (C01B)	0.0	0.0	
Cardiac glycosides (C01A)	1.1	0.5	2.23
Aspirin (B01AC06)	1.1	1.9	0.59
<b>ARTHRITIS (M01, M04)</b>	7.1	8.9	0.80
Non-steroidal anti-inflammatory and anti-rheumatic drugs (M01A)	6.3	8.5	0.74
Anti-gout preparations (M04)	0.8	0.4	2.10
Allopurinol (M04AA01)	0.8	0.4	2.06
<b>OSTEOPOROSIS (A12, M05B)</b>	2.5	1.6	1.52
Calcium supplements (A12A)	1.3	0.4	3.20
Drugs affecting mineralization (M05B)	0.0	0.0	
<b>EPILEPSY (N03)</b>	1.7	1.6	1.10
Barbiturates (N03AA)	0.1	0.0	10.60
Hydantoin derivatives (N03AB)	0.7	0.6	1.06
Carboxamide derivatives (N03AF)	0.6	0.9	0.65

The denominator for private sector is 1 107 and for public sector it is 1 332.

## 11.10 Patient Knowledge of their Chronic Disease Drugs

Most of the respondents taking chronic medication for diabetes (89 percent) and hypertension (93 percent) report that they know what the drugs are for, with similar levels of awareness in men and women (Table 11.13). The proportion is lower for arthritis (62 percent). Knowledge of medication used is generally similar in urban and non-urban residents for diabetes and hypertension. With regard to age, there is no difference in knowledge in respondents taking antihypertensive medication, the 45-60 age group know the most for diabetes, and there is decreasing knowledge with increasing age for asthma and chronic bronchitis.

Table 11.13 Knowledge about prescribed medication								
Proportion of participants taking medication for selected diseases who know the condition and the medication, South Africa 2003								
Background characteristic	Asthma and chronic bronchitis (R03)		Diabetes (A10)		Hypertension (C02, C03, C07, C08, C09)		Arthritis (M01A, M04)	
	%	Number	%	Number	%	Number	%	Number
<b>Sex</b>								
Female	87.9	88	87.1	95	92.0	395	62.2	141
Male	(65.6)	33	92.9	46	94.0	141	61.0	44
<b>Residence</b>								
Urban	80.3	85	89.1	119	91.8	414	65.7	148
Non-urban	(85.5)	36	88.4	22	94.9	123	46.6	36
<b>Age</b>								
15-45	85.9	46	73.1	24	90.9	96	71.6	41
45-60	(78.0)	40	98.9	65	92.1	242	64.2	86
60+	(80.9)	35	84.0	52	93.9	198	51.5	57
Total	81.8	121	89.0	141	92.5	536	61.9	184

Note: Percentages shown in brackets are based on fewer than 50 respondents.

## 11.11 Discussion

Health service utilization by adults has not changed much between the 1998 and 2003 surveys, but access to medical aid has declined slightly. Higher proportions of users report dissatisfaction with the health service, with the exception of respondents attended to by traditional healers. For the first time the 2003 SADHS included questions about problems with access to health care to women aged 15-49 years. About half of these women report problems, mostly related to payment, distance and transport. The findings about prescribed medications in the 2003 SADHS are very similar to those in the 1998 SADHS. However, while the utilization of public sector facilities has not changed much, there appears to have been a bit of a shift towards the public sector for the provision of prescribed medications for chronic conditions. It is possible that this could reflect the tendency for patients to revert to the public sector if their benefits from a medical fund are depleted before the year-end.

## CHAPTER 12

### HYPERTENSION, CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ASTHMA IN ADULTS

#### 12.1 Introduction

Two conditions, hypertension and chronic lung disease were chosen in the SADHS as indicator conditions to assess the status of chronic disease care in South Africa. The motivation for choosing these two conditions is that they can be measured objectively and reliably by lay interviewers after suitable training. In large community surveys it is easier to determine hypertension and its treatment status than most other chronic conditions or risk factors that require the collection of blood samples or other technically difficult and costly measures. Good quality blood pressure (BP) data can be collected if field workers are properly trained use the correct equipment and if quality control procedures are followed throughout the field work period. It is also possible to collect good quality data on respiratory conditions using standardised questions on symptoms experienced by the respondent.

Several community-based surveys in South Africa (Alberts *et al.*, 2005, Steyn, *et al.*, 1996; Steyn *et al.*, 1986; Steyn, *et al.*, 1993; Metcalf *et al.*, 1996) have found that hypertension is usually inadequately diagnosed and poorly treated. Studies have found similar indications of inadequate care for most of the risk factors for chronic diseases in adults including conditions such as diabetes, hyperlipidaemia and chronic lung diseases (Levitt, *et al.*, 1997; Steyn, *et al.*, 1998).

The 1998 SADHS highlighted that about 20 percent of both adult men and women were hypertensive. For men with hypertension, the level of awareness, taking antihypertensive medication and having controlled BP were lower than for women (Steyn *et al.*, 2001). The 2003 SADHS set out to collect similar data using the equipment and a slightly modified questionnaire. This chapter reviews the quality of the data collected in the 2003 SADHS, and reports the findings related to the BP measurements and the peak flow measurements reflecting lung function. It reports on the distribution of BP and pulse rate in South Africa, along with the treatment status of hypertensive South Africans and the distribution of the related risk factors for hypertension in the community. The chapter also describes the distribution of diagnoses and symptoms related to chronic obstructive pulmonary disease (COPD) and asthma in the South African population aged 15 years and above, and draws comparisons between the 2003 and 1998 findings.

#### 12.2 Hypertension

The impact of untreated or poorly treated hypertension on the health of people is a major contributor to the overall burden of adult diseases in any population. However, the impact of poorly controlled hypertension can be avoided if early detection and cost-effective management of the condition occurs. The major outcomes of poorly treated hypertension and that contribute to this burden of diseases include strokes (cerebrovascular diseases), heart attack (myocardial infarction), kidney disease or failure, as well as heart enlargement due to left ventricular hypertrophy, which could predispose to congestive heart failure (WHO Guidelines Sub-committee, 1999).



The measurement of BP has indeed become much easier since good quality accurate electronic tools have become available. This development led to the decision to include electronically measured BPs in the adult section of the Demographic and Health Survey as a means to identify hypertension in South Africa. In addition, it was decided to study hypertension, its determinants, and treatment status in detail, and to use this as a proxy measure for the overall quality of care provided for adult chronic diseases.

BP measurements for this survey were taken after the participant had been seated for 5 minutes with the use of an Omron M1 electronic BP monitor. Three BP and pulse readings were taken on the left arm resting at heart level. In accordance with accepted definitions (Joint National Committee, 1997) if the second systolic or diastolic BP differed by more than 5 mmHg, the first BP reading was excluded. A BP reading was retained in the data set if the systolic BP was 80 mmHg or higher, and if the systolic BP was at least 15 mmHg higher than the diastolic BP level. Thereafter a mean systolic and diastolic BP was calculated from the remaining BPs. The pulse pressure of each patient was calculated as the difference between these mean systolic and diastolic BPs. In all cases the name of the prescribed medication was recorded by the fieldworker and verified as a medication for hypertension using the Anatomical Therapeutic Chemical Classification (ATC) Index for hypertension medication (WHO Collaborating Centre for Drugs, 1998).

### **12.3 Blood Pressure Data Quality**

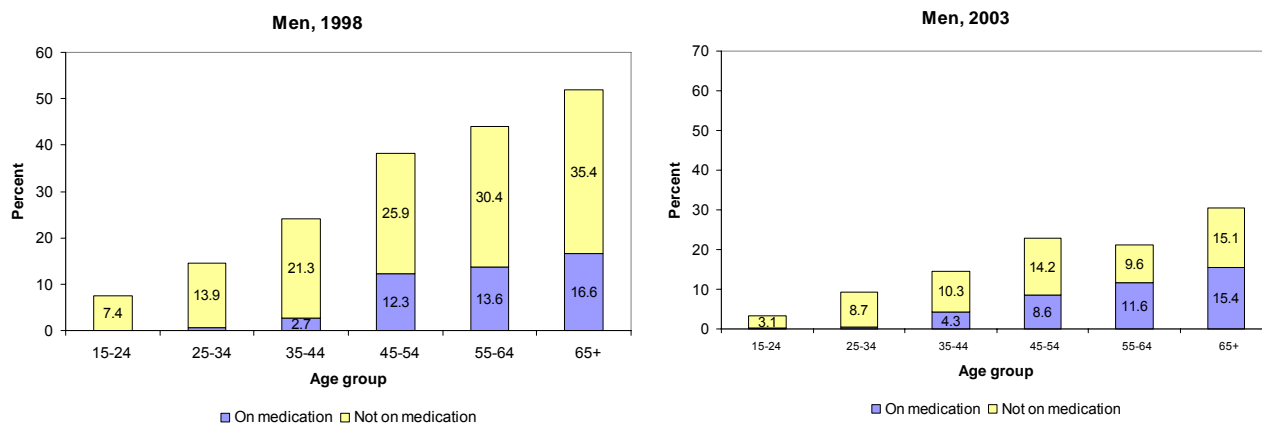
Quality BP data is collected in household surveys if the field workers are properly trained to use the right equipment correctly, and if ongoing quality assurance procedures are conducted throughout the data collection period. The recorded BP levels of participants in the 2003 survey, particularly the diastolic BP, were much lower than was recorded in 1998. The consequence of this is that the apparent prevalence rate of hypertension in 2003 was reduced by almost half. This unrealistic finding prompted a series of exploratory analyses to attempt an explanation for this phenomenon. This included assessing whether the risk factor profile was significantly different or whether the use of anti-hypertensive medication had changed.

The pattern of the risk factors for hypertension, overweight, obesity and alcohol use, was mostly unchanged from the findings in 1998 (see Chapter 13). The proportion of respondents for whom anti-hypertension medication was recorded in 1998 and 2003 was similar (Figures 12.1 and 12.2), indicating that there were no major shifts in the management of hypertension.

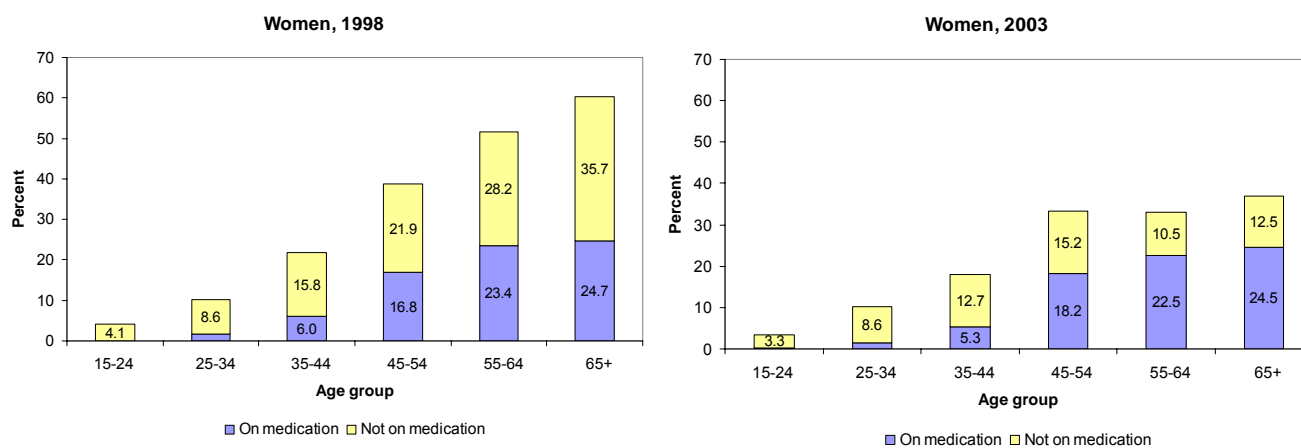
The major difference between the BP findings in 1998 and 2003 resides predominantly in a reduction in the mean diastolic BP. Figure 12.3 shows the mean systolic and diastolic BP for men and women by age. It can be seen that the values of the diastolic BP of men, and women over 55 years is somewhat lower in 2003 than in 1998. Further analyses showed that the prevalence rate of purely diastolic hypertension was reduced much more than the purely systolic hypertension. The difference could neither be explained by a shift in major risk factors, nor by an increase in the proportion of adults taking anti-hypertensive medication. The instruments used in both surveys were manufactured by a reputable company, OMRON. As many models of their BP equipment are listed by independent international agencies as accurate after testing the equipment, it is likely that the measurements were not taken correctly by the field-workers.

Although the results of the survey are presented in this chapter, caution should be exercised in interpretation as it is likely that the BP data do not reflect the true situation regarding hypertension in South Africa. Furthermore, the proportion of participants with hypertension who were taking drugs was unrealistically increased by the lower BP levels, as was the proportion with controlled BP.

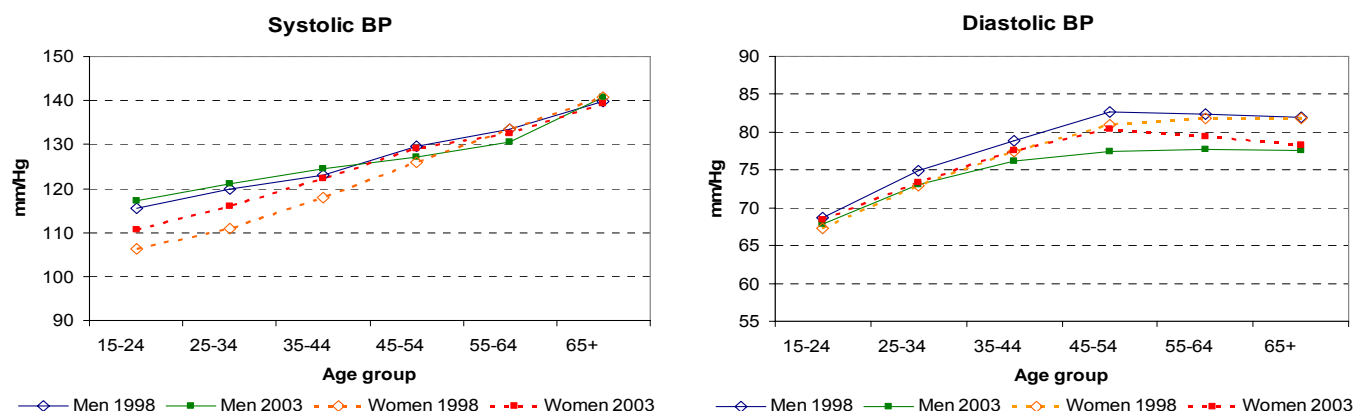
**Figure 12.1 Prevalence of hypertension according to medication status, 1998 and 2003 SADHS**



**Figure 12.2 Prevalence of hypertension according to medication status, 1998 and 2003 SADHS**



**Figure 12.3 Mean systolic and diastolic blood pressure by age and sex, 1998 and 2003 SADHS**



## 12.4 Mean Blood Pressure, Pulse Rates and Pulse Pressure of Adults

Table 12.1 and 12.2 show the mean systolic and diastolic BP (mm/Hg) as well as the mean pulse rate and pulse pressures (mm/Hg) of men and women according to background characteristics. For both men and women the systolic BP increases with age. However in contrast with the 1998 SADHS, the diastolic BP is not found to increase with age. It needs to be kept in mind that the data has not been corrected for the influence of age when considering the other socio-demographic characteristic.

In contrast to the findings in the 1998 SADHS there is little difference between the mean systolic BP for men and women or the diastolic BP. For men and women the highest mean systolic BP level is recorded in the Northern Cape. White men have higher BPs than men from the other population groups, while the lowest rates are recorded for non-urban African men. Indian women have the highest systolic BP, and white women the lowest.

The mean pulse rate of women is higher (77 compared with 72) than that of men with relatively little variation between the different groups of people. The mean pulse pressure also increased with age for both men and women and the mean pulse pressure is higher in men than women. Similarly to the pulse rate, there is little variation between the groups of people considered.

**Table 12.1 Mean blood pressure, pulse rate and pulse pressure among men**

Mean levels of systolic and diastolic blood pressure (BP) and pulse rates and standard error (SE) of men aged 15 and over, according to background characteristic, South Africa 2003

Background characteristic	Mean systolic BP	SE	Mean diastolic BP	SE	Mean pulse rate	SE	Mean pulse pressure	SE	Number
<b>Age</b>									
15-24	117	0.53	68	0.52	72	0.47	49	0.50	1 072
25-34	121	0.72	73	0.58	71	0.71	48	0.60	679
35-44	124	0.97	76	0.77	73	0.65	48	0.68	538
45-54	127	1.29	78	0.95	73	0.90	49	0.88	415
55-64	131	1.50	78	0.95	73	1.08	53	1.27	284
65+	141	1.95	77	1.14	73	1.00	63	1.37	244
<b>Residence</b>									
Urban	125	0.64	74	0.50	73	0.45	51	0.42	1 882
Non-urban	121	0.58	71	0.45	71	0.42	49	0.58	1 350
<b>Province</b>									
Western Cape	125	1.43	74	1.22	71	0.86	50	0.68	229
Eastern Cape	126	1.40	73	0.98	72	0.72	53	1.13	244
Northern Cape	128	1.03	75	0.93	74	0.93	54	0.73	346
Free State	125	1.03	72	0.65	73	0.85	52	0.92	384
KwaZulu-Natal	119	0.83	73	0.62	72	0.76	46	0.88	713
North West	122	1.02	72	0.92	71	0.86	50	0.87	332
Gauteng	126	1.24	76	1.04	73	0.83	51	0.71	353
Mpumalanga	122	1.13	69	0.75	73	0.86	53	0.95	356
Limpopo	120	0.96	69	0.91	71	0.92	51	0.80	275
<b>Education</b>									
No education	129	1.56	75	1.00	73	0.96	54	1.23	323
Grades 1-5	128	1.56	75	0.89	71	0.83	53	1.27	347
Grades 6-7	123	1.13	72	0.81	72	0.76	51	0.85	419
Grades 8-11	122	0.61	72	0.54	73	0.53	49	0.44	1 301
Grade 12	121	0.77	73	0.71	72	0.59	48	0.62	598
Higher	126	1.64	76	1.48	71	1.09	50	1.31	244
<b>Population group</b>									
African	122	0.49	72	0.36	72	0.35	50	0.37	2491
Afr. urban	123	0.70	73	0.51	72	0.49	51	0.47	1225
Afr. non-urban	121	0.59	71	0.45	71	0.44	49	0.59	1266
Coloured	127	1.42	76	1.08	74	1.27	50	1.03	339
Indian	128	2.15	79	4.38	77	1.42	49	2.85	291
White	131	2.20	80	1.92	76	1.69	51	1.37	111
<b>Total</b>	<b>123</b>	<b>0.46</b>	<b>73</b>	<b>0.36</b>	<b>72</b>	<b>0.33</b>	<b>50</b>	<b>0.34</b>	<b>3 232</b>

Only cases with complete information on education and population group included.

These data should be read with caution. See text for details.

Table 12.2 Mean blood pressure, pulse rate and pulse pressure among women

Mean levels of systolic and diastolic blood pressure (BP) and pulse rates and standard error (SE) of women aged 15 and over, according to background characteristic, South Africa 2003

Background characteristic	Mean systolic BP	SE	Mean diastolic BP	SE	Mean pulse rate	SE	Mean pulse pressure	SE	Number
<b>Age</b>									
15-24	111	0.41	68	0.42	77	0.43	42	0.48	1 262
25-34	116	0.63	73	0.50	78	0.49	43	0.60	940
35-44	122	0.84	78	0.60	78	0.55	45	0.62	828
45-54	129	0.98	80	0.56	76	0.54	49	0.79	736
55-64	132	1.50	79	0.68	75	0.68	53	1.19	471
65+	139	1.63	78	0.85	76	0.76	61	1.25	402
<b>Residence</b>									
Urban	121	0.55	75	0.32	77	0.35	46	0.43	2 601
Non-urban	121	0.54	74	0.33	77	0.39	47	0.48	2 038
<b>Province</b>									
Western Cape	121	1.35	76	0.65	76	0.74	45	0.95	388
Eastern Cape	124	0.93	75	0.59	76	0.71	48	0.71	382
Northern Cape	126	1.08	78	0.59	81	0.72	48	0.75	531
Free State	124	1.00	76	0.66	79	0.71	48	0.74	528
KwaZulu-Natal	119	0.95	74	0.51	75	0.54	44	0.93	885
North West	122	1.17	75	0.60	78	0.66	47	0.95	497
Gauteng	122	0.99	76	0.67	78	0.73	46	0.79	404
Mpumalanga	122	0.99	75	0.54	77	0.70	48	0.85	507
Limpopo	119	1.24	71	0.77	77	0.79	48	0.81	517
<b>Education</b>									
No education	133	1.30	79	0.69	77	0.66	54	0.98	658
Grades 1-5	128	1.25	78	0.69	78	0.65	49	1.02	497
Grades 6-7	124	1.20	76	0.65	78	0.64	48	0.91	549
Grades 8-11	118	0.59	74	0.41	77	0.39	44	0.47	1 800
Grade 12	116	0.71	72	0.57	76	0.51	44	0.65	811
Higher	119	1.15	74	0.90	75	0.85	44	0.95	324
<b>Population group</b>									
African	121	0.43	75	0.27	77	0.29	46	0.36	3 444
Afr. urban	121	0.63	75	0.39	77	0.42	46	0.50	1 580
Afr. non-urban	121	0.55	74	0.34	76	0.38	47	0.50	1 864
Coloured	122	1.48	77	0.72	77	0.90	45	1.05	626
Indian	126	1.31	77	0.92	78	0.84	49	1.18	405
White	120	1.51	75	0.72	75	1.00	46	1.28	164
<b>Total</b>	<b>121</b>	<b>0.40</b>	<b>75</b>	<b>0.23</b>	<b>77</b>	<b>0.26</b>	<b>46</b>	<b>0.33</b>	<b>4 639</b>

Only cases with complete information on education and population group included.

These data should be read with caution. See text for details.

## 12.5 Prevalence of Hypertension and Treatment Status of Hypertensive Participants

This analysis has made use of the new South African hypertension guideline (Seedat *et al.*, 2006) and the World Health Organisation-International Society of Hypertension Guidelines for the Management of Hypertension (WHO Guidelines Sub-committee, 1999) that suggest that a person be considered as hypertensive with a BP equal or above 140/90 mmHg, and/or taking anti-hypertensive medication. Tables 12.3 and 12.4 show the prevalence of hypertension and the treatment status achieved for hypertensive men and women respectively. Of all the participants, only 9 percent of men and 19 percent of women report having been told by a health professional that they are hypertensive. For men and women identified as having any hypertension (BP equal or above 140/90 mmHg) this figure goes up to 40 percent and 51 percent, respectively. This difference between men and women highlights that more women than men know they suffer from the condition. Considerably fewer hypertensive men in the non-urban areas know that they suffer from the condition than their urban counterparts. Furthermore, hypertensive men in KwaZulu-Natal (27 percent) are the least aware of being hypertensive. These data identify men as having the most undiagnosed hypertension in the country, particularly if they are younger than 45 years and live in certain areas. A similar finding was recorded in 1998. These groups still need to be targeted specifically to improve the rate of hypertension diagnoses.

Of the men, 18 percent are found to have a BP below 140/90 mmHg or are taking appropriate medication. For women the equivalent prevalence is 22 percent. Given the concerns about the BP values, these figures should not be used as indicators of the quality of care.

**Table 12.3 Hypertension prevalence and treatment status of men**

Percentage of men aged 15 and over who report having hypertension, percentage who are measured as being hypertensive using cut-off points of 140/90, and of those with hypertension: the percentage who report being hypertensive, who use medication, who have controlled their hypertension, according to selected background characteristic, South Africa 2003

Background characteristic	Prevalence of hypertension			Among those with any hypertension, using cut-off of 140/90 mmHg (percentage)			
	Self-reported hypertension	BP $\geq$ 140/90 mmHg $\pm$ treatment	Number of men	Who reported hypertension	Who use medication	With controlled BP <140/90 mmHg	Number of men
<b>Age</b>							
15-24	1.8	3.4	1 121	35.1	8.1	8.1	38
25-34	3.0	9.2	735	35.2	5.5	4.5	68
35-44	10.3	14.6	593	44.5	29.5	15.6	87
45-54	18.4	22.8	438	41.5	37.7	22.9	100
55-64	18.2	21.2	297	44.5	54.5	31.2	63
65+	26.5	30.5	240	33.3	50.4	17.4	73
<b>Residence</b>							
Urban	10.2	14.5	2 289	45.0	35.7	18.6	331
Non-urban	6.0	8.5	1 133	21.1	23.5	13.4	97
<b>Province</b>							
Western Cape	14.8	18.3	337	54.7	33.6	14.8	62
Eastern Cape	9.1	10.9	367	40.6	27.1	8.1	40
Northern Cape	13.9	17.7	60	40.0	43.8	15.9	11
Free State	13.3	11.6	224	41.9	42.5	21.3	26
KwaZulu-Natal	6.3	9.7	781	27.4	29.6	18.6	76
North West	9.0	11.2	248	33.4	30.3	21.4	28
Gauteng	9.2	17.3	914	40.0	33.1	17.8	158
Mpumalanga	3.1	6.2	209	31.2	45.4	36.3	13
Limpopo	6.6	5.4	282	45.8	31.9	15.1	15
<b>Education</b>							
No education	15.2	17.9	296	35.2	32.7	16.5	53
Grades 1-5	10.7	14.7	335	27.7	46.3	14.0	49
Grades 6-7	10.6	10.9	384	22.4	23.1	15.6	42
Grades 8-11	6.9	10.2	1 366	42.8	29.8	15.2	139
Grade 12	6.0	10.8	703	45.0	27.7	19.6	76
Higher	12.6	20.7	309	46.2	41.3	22.4	64
<b>Population group</b>							
African	6.9	10.0	2 838	36.3	26.7	17.3	283
Afr. urban	7.6	11.0	1 747	51.2	30.0	20.0	192
Afr. non-urban	5.7	8.3	1 091	65.7	19.6	11.6	91
Coloured	15.4	16.1	268	45.0	23.0	5.5	43
Indian	13.3	27.0	83	44.6	43.9	20.4	22
White	23.9	35.8	220	47.0	57.9	23.6	79
<b>Total</b>	<b>8.8</b>	<b>12.5</b>	<b>3 422</b>	<b>39.6</b>	<b>33.0</b>	<b>17.5</b>	<b>428</b>

22 cases had education unknown, and 13 cases reported population group as "Other", or are missing.

These data should be read with caution. See text for details.

Table 12.4 Hypertension prevalence and treatment status of women

Percentage of women aged 15 and over who report having hypertension, percentage who are measured as being hypertensive using cut-off points of 140/90 and of those with hypertension: the percentage who report being hypertensive, who use medication, who have controlled their hypertension, according to selected background characteristic, South Africa 2003

Background characteristic	Prevalence of hypertension			Among those with any hypertension, using cut-off of 140/90 mmHg (percentage)			
	Self-reported hyper-tension	BP $\geq$ 140/90 mmHg +treatment	Number of women	Who reported hyper-tension	Who use medication	With controlled BP <140/90 mmHg	Number of women
<b>Age</b>							
15-24	3.2	3.5	1 256	33.8	6.6	0.0	44
25-34	8.6	10.1	979	40.1	14.4	9.0	99
35-44	18.3	18.0	883	54.0	29.5	16.8	159
45-54	34.7	33.4	714	57.9	54.6	28.2	238
55-64	38.7	33.0	483	55.9	68.2	29.3	159
65+	43.8	37.0	378	42.7	66.2	21.9	140
<b>Residence</b>							
Urban	21.0	19.8	2 995	56.0	49.7	23.1	594
Non-urban	15.2	14.4	1 697	38.5	40.8	17.6	245
<b>Province</b>							
Western Cape	23.4	21.4	573	64.1	59.2	28.0	122
Eastern Cape	22.0	19.2	562	49.9	50.7	19.3	108
Northern Cape	25.1	27.9	92	57.0	49.6	22.3	26
Free State	26.6	23.9	313	49.0	55.0	23.8	75
KwaZulu-Natal	11.1	12.9	888	43.9	31.3	15.4	115
North West	20.7	18.7	373	49.1	58.1	25.8	70
Gauteng	21.2	20.7	1 074	53.1	46.4	21.1	223
Mpumalanga	14.7	14.8	300	41.8	31.4	12.0	44
Limpopo	14.3	11.0	519	39.2	36.3	24.0	57
<b>Education</b>							
No education	32.4	26.7	578	43.6	51.9	18.4	154
Grades 1-5	31.4	27.5	448	47.0	50.3	22.2	123
Grades 6-7	25.5	20.0	501	59.0	59.0	23.6	100
Grades 8-11	15.9	16.1	1 873	53.9	44.7	21.6	301
Grade 12	8.1	9.6	923	43.4	24.8	14.1	89
Higher	11.8	15.2	344	63.7	44.7	28.3	52
<b>Population group</b>							
African	18.8	17.4	3 857	50.3	45.6	20.7	669
Afr. urban	22.2	19.8	2 250	39.64	48.9	22.1	445
Afr. non-urban	14.0	13.9	1 607	60.44	39.0	17.9	224
Coloured	24.8	21.0	456	60.4	53.7	23.9	96
Indian	19.6	29.1	112	56.0	54.6	24.2	33
White	9.0	15.3	257	32.3	48.6	28.0	39
Total	18.9	17.9	4 693	50.9	47.1	21.5	839

17 cases had education unknown, and 12 cases reported population group as "Other" or are missing.

These data should be read with caution. See text for details.

As expected, older South Africans are more hypertensive than younger ones. The urban rates were higher than the non-urban rates. The highest prevalence rates for hypertension in men are found in the Western Cape, followed by Northern Cape and Gauteng. For women the highest rates were recorded in the Northern Cape followed by Free State, Western Cape and Gauteng. The lowest rates were recorded in Limpopo, Mpumalanga and KwaZulu-Natal. For men the highest rates were found in the most educated group, while for women the highest rates were in the least educated women. It must be noted that these figures have not been adjusted for age. For men the highest rate is found in the white population group, followed by Indians and coloureds, while for women the highest rates are found in the Indian and coloured groups.

In this survey strict criteria were used to identify those participants who were using anti-hypertensive medication. For many surveys self-reported anti-hypertensive medication use has been used to identify those hypertensive participants who had controlled BP, but were identified as being hypertensive by virtue of the fact that they reported using medication. Thus the data might

not be comparable with some other surveys. Although it is impossible to interpret these results, it is disturbing to note the poor level of hypertension control in young patients with hypertension compared to older patients. This was also found in the 1998 survey. As these hypertensive patients have the longest working life ahead of them as members of the labour force of the country, it can be argued that they require even better control than older patients in order to prevent related complications such as organ damage. For men the worst level of control is reported in the young men as well as the African and coloured group, while for women it is found in young women and the non-urban African women.

## **12.6 Hypertension Risk Factors**

Tables 12.5 and 12.6 show the salt use behaviour of all participants with hypertension compared with the overall population along with other hypertension-related risk factors. Salt-seeking behaviour is reported more frequently in men than women, including the hypertensive participants. The most common features of the salt-seeking behaviour include the fact that younger participants report consuming more salt than older participants, as generally do urban participants compared to non-urban participants. In fact, the urban African participants report markedly high salt-seeking behaviour, as do those with more education. It has been suggested that the African people in South Africa are more salt-sensitive than other population groups (Worthington *et al.*, 1993). Should this be the case, it is of great concern that the younger urban Africans are consuming so much more salt than other groups, as they may be more prone to develop hypertension when they grow older. Already this group has a significant level of hypertension, and they suffer the consequences of high stroke rates.



Table 12.5 Hypertension risk factors among men

Percentage of all men and men with hypertension aged 15 or over who eat salty foods, who add salt before tasting, and who eat salty snacks more than three times a week and, among those with hypertension, percentage who drink alcohol, who had their blood pressure (BP) measured in the previous year, who say they know it is high, who are obese, according to selected background characteristic, South Africa 2003

Background characteristic	Among all men, percentage				Among those with hypertension, percentage								Who are obese	
	Who eat food very salty	Who add salt before tasting food	Who eat salty snacks >3 times/week	Number	Who eat food very salty	Who add salt before tasting food	Who eat salty snacks >3 times/week	Who drink alcohol	Who abuse alcohol	Who had their BP measured during last year	Who say they know their BP is high	Number	Number	Number
<b>Age</b>														
15-24	10.2	5.7	47.7	1 121	0.0	21.9	49.1	33.4	12.7	24.8	14.7	38	3.7	37
25-34	12.9	6.9	40.3	735	16.3	7.6	43.5	51.1	39.7	34.0	15.9	68	14.8	65
35-44	15.1	7.5	33.2	593	12.7	9.7	34.2	52.1	19.7	53.6	40.3	87	26.5	82
45-54	15.2	9.7	28.2	438	16.4	17.1	32.8	50.4	23.4	51.9	49.5	100	27.1	100
55-64	13.1	4.9	22.6	297	13.1	4.7	19.9	40.9	21.2	61.8	50.0	63	21.7	59
65+	7.6	2.8	11.2	240	9.7	4.2	9.8	39.1	22.6	41.1	56.0	73	18.9	67
<b>Residence</b>														
Urban	12.8	7.8	40.0	2 289	12.2	12.1	31.7	51.8	24.8	53.2	43.3	331	23.6	313
Non-urban	11.3	3.8	29.1	1 133	13.7	5.0	25.8	26.2	20.4	24.2	30.5	97	11.8	95
<b>Province</b>														
Western Cape	8.5	7.8	28.9	337	11.6	13.3	30.5	65.4	35.5	61.3	46.5	62	32.5	60
Eastern Cape	14.9	4.6	25.3	367	16.3	2.7	24.4	31.9	43.7	40.6	43.3	40	17.1	38
Northern Cape	22.0	5.5	19.0	60	17.2	6.9	12.9	50.5	42.5	52.9	42.0	11	17.9	11
Free State	11.8	5.3	36.3	224	8.4	2.3	28.1	51.3	33.1	38.0	49.4	26	27.2	25
KwaZulu-Natal	5.6	3.8	29.1	781	6.2	3.7	22.7	8.8	6.4	30.0	35.9	76	10.8	70
North West	11.7	2.8	27.7	248	4.9	2.3	10.3	55.7	35.5	37.4	47.4	28	24.5	27
Gauteng	18.8	12.2	54.2	914	17.8	19.2	44.1	59.9	18.2	52.9	37.3	158	19.0	149
Mpumalanga	11.5	4.1	23.1	209	7.9	4.0	17.6	33.0	12.5	55.1	22.1	13	24.5	13
Limpopo	10.6	2.7	43.2	282	6.0	0.0	6.0	27.1	28.9	41.0	50.0	15	28.9	15
<b>Education</b>														
No education	11.1	4.3	23.3	296	10.3	8.0	10.5	40.5	23.4	31.5	56.3	53	16.4	50
Grades 1-5	13.4	6.0	27.0	335	9.5	1.5	23.3	22.3	34.3	43.1	44.6	49	14.9	49
Grades 6-7	15.8	4.3	35.0	384	14.9	16.0	41.3	49.3	23.3	37.5	28.2	42	15.6	40
Grades 8-11	13.8	7.3	41.4	1 366	14.1	14.1	32.6	45.8	27.6	45.2	39.7	139	26.4	134
Grade 12	7.7	6.1	38.5	703	13.3	11.8	34.6	47.7	21.1	52.4	33.4	76	13.2	68
Higher	11.1	7.9	33.0	309	11.0	7.2	35.0	67.3	11.8	64.1	41.4	64	26.4	64
<b>Population group</b>														
African	12.3	5.4	38.6	2 838	10.8	7.6	34.1	34.0	26.3	33.7	35.9	283	16.4	273
Afr. urban	13.0	6.4	44.5	1 747	9.2	8.7	38.5	39.4	29.8	40.0	40.0	192	18.4	183
Afr. non-urban	11.3	4.0	29.2	1 091	14.3	5.3	25.0	22.6	18.9	20.4	27.2	91	12.2	90
Coloured	15.2	10.2	31.2	268	13.6	10.4	29.7	59.1	39.9	50.6	35.4	43	27.6	41
Indian	4.2	5.1	28.0	83	0.0	13.8	41.3	61.0	6.9	82.6	40.5	22	14.8	22
White	12.8	16.5	18.2	220	21.8	19.9	14.3	78.0	10.9	80.8	59.6	79	35.5	73
Total	12.3	6.5	36.4	3 422	12.6	10.5	30.4	46.0	23.8	46.6	40.5	428	20.8	409

22 cases had education unknown, and 13 cases reported population group as "Other".

Table 12.6 Hypertension risk factors among women

Percentage of all women, and women with hypertension aged 15 or over who eat salty foods, who add salt before tasting and who eat salty snacks more than three times a week and, among those with hypertension, percentage who drink alcohol, who had their blood pressure (BP) measured in the previous year, who say they know it is high, who are obese, according to selected background characteristic, South Africa 2003

Background characteristic	Among all men, percentage				Among those with hypertension, percentage										Who are obese	Number
	Who eat food very salty	Who add salt before tasting food	Who eat salty snacks >3 times/week	Number	Who eat food salty	Who eat very salty food	Who add salt before tasting food	Who eat salty snacks >3 times/week	Who drink alcohol	Who abuse alcohol	Who had their BP measured during last year	Who say they know their BP is high	Who know their BP is high	Number		
<b>Age</b>																
15-24	13.2	4.1	48.4	1 256	9.6	10.7	0.0	35.5	3.4	2.2	9.9	13.2	6.6	44	9.5	43
25-34	12.1	6.0	38.6	979	10.7	10.0	7.1	32.0	9.8	5.9	39.9	27.4	8.5	99	32.3	95
35-44	10.9	3.9	33.1	883	10.0	6.4	7.1	29.8	28.3	10.2	51.2	53.3	18.3	159	51.2	158
45-54	10.6	2.4	25.3	714	6.4	6.8	0.9	20.4	16.1	10.1	61.5	69.1	26.8	238	59.3	231
55-64	9.2	1.9	17.0	483	6.8	4.9	2.2	13.8	17.2	9.5	66.6	74.9	23.1	159	40.8	151
65+	4.6	2.4	13.5	378	4.9	7.8	5.3	11.9	12.1	5.3	59.0	72.7	25.3	140	45.7	135
<b>Residence</b>														839		
Urban	11.9	4.4	37.3	2 995	7.8	7.0	4.4	23.5	19.1	9.3	60.5	63.1	24.0	594	49.0	575
Non-urban	9.6	2.8	28.0	1 697	7.0	7.8	2.2	17.3	10.4	5.9	41.3	52.5	13.8	245	39.6	239
<b>Province</b>																
Western Cape	13.4	3.8	39.0	573	2.2	17.3	4.5	32.0	19.9	7.6	78.6	74.9	27.8	122	49.1	120
Eastern Cape	19.4	3.4	20.7	562	17.3	18.2	2.8	9.8	11.0	7.0	60.2	70.4	23.7	108	53.1	105
Northern Cape	20.7	4.9	22.6	92	18.2	4.6	2.4	12.3	24.4	15.0	62.5	56.0	20.0	26	38.7	25
Free State	11.7	3.4	28.8	313	4.6	5.5	0.8	14.7	28.5	19.9	56.1	66.6	18.4	75	45.1	73
KwaZulu-Natal	7.6	2.4	31.7	888	5.5	9.0	3.1	18.6	2.4	0.7	31.9	34.8	9.3	115	37.6	110
North West	9.7	2.4	22.5	373	9.0	6.5	2.2	6.9	23.7	14.2	53.0	65.6	20.1	70	53.9	68
Gauteng	10.4	7.0	43.3	1 074	6.5	9.4	6.4	30.3	17.8	6.2	55.7	60.2	25.4	223	47.0	214
Mpumalanga	5.7	2.3	27.9	300	9.4	4.9	2.7	16.5	10.7	7.2	43.6	52.0	16.4	44	48.0	44
Limpopo	8.8	2.1	43.9	519	4.9	7.8	1.6	30.1	20.6	11.5	42.4	50.5	16.9	57	35.5	56
<b>Education</b>																
No education	9.1	1.6	17.3	578	8.3	10.4	2.8	16.7	15.4	9.7	48.4	65.2	22.4	154	40.0	148
Grades 1-5	13.0	1.8	26.9	448	10.4	10.5	0.2	24.8	17.0	13.9	51.3	62.0	19.6	123	42.6	122
Grades 6-7	10.6	4.2	29.0	501	10.5	5.1	2.7	15.6	12.0	10.3	61.4	69.0	28.1	100	56.5	99
Grades 8-11	10.6	4.2	39.2	1 873	5.0	5.0	4.8	21.0	14.7	7.0	58.2	61.2	25.2	301	48.4	290
Grade 12	11.9	5.8	40.8	923	5.7	7.4	8.9	33.6	13.6	1.0	37.4	38.0	8.6	89	43.9	88
Higher	11.8	2.6	31.4	344	5.7	7.8	2.6	22.4	44.9	6.6	68.7	43.3	11.7	52	29.2	48
<b>Population group</b>																
African	10.4	3.4	35.9	3 857	7.7	7.8	3.0	23.2	15.9	10.1	55.8	63.7	25.4	669	47.7	648
Afr. urban	10.9	3.9	41.3	2 250	7.8	7.4	3.4	26.0	9.8	5.4	38.7	49.9	12.0	445	51.5	431
Afr. non-urban	9.7	2.7	28.3	1 607	7.4	8.1	2.2	17.7	16.9	12.3	86.6	70.2	26.9	224	40.2	218
Coloured	13.4	5.0	31.7	456	8.1	7.9	7.9	19.0	16.6	2.4	100.0	53.5	13.3	96	41.6	94
Indian	12.8	1.0	16.8	112	4.6	4.6	1.2	6.1	62.5	0.0	13.2	54.2	16.5	33	36.8	32
White	15.8	9.3	14.7	257	7.8	7.8	7.3	14.9	0.0	0.0	27.4	100.0	0.0	39	37.3	37
<b>Total</b>	11.1	3.8	33.9	4 693	7.6	7.6	3.7	21.7	16.6	8.3	54.9	60.0	21.0	839	46.2	814

17 cases had education unknown, and 12 cases reported population group as "Other".

When the alcohol consumption pattern of the hypertensive men and women is compared with that of non hypertensive participants it is clear that more hypertensive participants consume alcohol at present than is the case for other participants. Of the hypertensive men, 46 percent consume alcohol and of hypertensive women 17 percent consume alcohol. The CAGE questionnaire identifies people who may have a pattern of excess alcohol use. The prevalence of CAGE-positive hypertensive men and women, respectively, is 24 percent and 8 percent. In the 1998 SADHS these figures were 29 percent and 12 percent respectively. A possible explanation for the slightly lower rates in 2003 could be as a higher proportion of the patients with hypertension identified in 2003 were diagnosed and were receiving treatment. As in 1998 these data suggest that heavy alcohol use is associated with being hypertensive, particularly in men in South Africa. This finding is an issue that needs consideration when South Africa formulates a policy related to alcohol consumption and the management of hypertension.

The prevalence of obesity ( $\text{BMI} \geq 30$ ) in the hypertensive men and women, respectively is 21 percent and 46 percent. When comparing this to Tables 13.10 and 13.11, it is clear that this obesity prevalence in hypertensives is much higher than in the general study population, where it is 9 percent for men and 27 percent for women. This association is well established and identifies the need to respond to the high rates of obesity among South Africans and, in particular, in African women.

## 12.7 Comparison of BP Control between Public and Private Health Care Services

From the preceding data and the different patterns of prescribed drug use for hypertension between the private and public health care sector, the question arises as to which of these sectors are achieving the best hypertension control. In Table 12.7 the data presented attempt to answer this question by comparing hypertension control between the private and public health care sector. As stated earlier the current guidelines for hypertension definition and control are based on a BP level of 140/90 mmHg. Table 12.7 shows the prevalence of controlled BP in the public and private sector of those patients with hypertension, and the subsection of patients on anti-hypertensive drugs. In addition, the table shows the comparison of uncontrolled BP in the two sectors, and the total group of patients with hypertension and only those who are taking anti-hypertensive medication. In both groups of patients the level of BP control is better in the private sector than in the public sector, and the level of uncontrolled BP higher in the public than private sector.

Table 12.7 Public versus private sector source of hypertension medication			
Percentage of hypertensive patients who received their medication from either the public or private sector, according to level of control of blood pressure (BP), South Africa 2003			
Percentage of hypertensives who received drugs from:	Controlled BP < 140/90 mmHg	Uncontrolled BP $\geq$ 140/90	Number
<b>Among those taking medication</b>			
Public sector	46.3	51.0	447
Private sector	53.9	42.7	89
<b>Among those with any hypertension</b>			
Public sector	19.1	79.8	1 082
Private sector	26.2	72.1	183

## 12.8 Chronic Obstructive Pulmonary Diseases and Asthma

Chronic obstructive pulmonary disease (COPD) and asthma make up a large part of chronic lung disease in developed countries, and increasingly in developing countries. COPD includes chronic bronchitis, a condition characterised by excessive mucus production in the airways (bronchi) and emphysema, in which there is damage to the gas exchange part of the lung. Asthma is a condition which overlaps with COPD in adults, but in which the limitation of airflow is reversible. COPD and asthma result in episodic or persistent symptoms including wheeze, cough, phlegm and/or breathlessness.

These chronic conditions account for a huge burden of morbidity, health service and medication costs. The mortality burden of COPD is also rising, particularly in middle and low income countries. Worldwide in 2001, COPD was the fifth most common cause of death (Pauwels & Rabe, 2004) responsible for 4.7 percent of deaths and 2.0 percent of disability adjusted life years (DALYs) (World Health Organization, 2002). A 30-year projection from 1990 predicted a steady rise in the number of COPD deaths to the third most common cause worldwide by 2020 (Murray & Lopez, 1997). Strikingly, most of the projected DALY burden will fall on developing countries (Enarson, 2004). There is, however, a scarcity of data from Africa.

In South Africa, respiratory disease as a group, but excluding tuberculosis, was ranked as the seventh most important cause of DALYs (4.7 percent) in 2000 (Bradshaw *et al.*, 2003). COPD alone was responsible for 2.3 percent of all deaths in 2000, although only 1.1 percent of years of life lost, indicating its concentration at older ages (Bradshaw *et al.*, 2004). The true proportion of deaths to which COPD contributes is almost certainly higher, since COPD is likely to be under-certified as an underlying cause where the immediate cause is stated as respiratory infection.

Asthma is not ranked among the top fifteen causes of death globally, as it is largely an adequately controlled disease in developed countries. It ranked only at 30th as a cause of DALYs in 2001 (World Health Organization, 2002), responsible for one percent of DALYs lost (comparable to diabetes) and 0.4 percent of all deaths (Global Initiative for Asthma, 2002, 2004). In South Africa, asthma ranked somewhat higher, at 13th as a cause of death (1.5 percent of all deaths) and 18th as a cause of years of life lost (0.9 percent) (Bradshaw *et al.*, 2004). It is notable that while South Africa is ranked 25th worldwide in the prevalence of asthma (estimated at 8.1 percent over all ages), it runs fourth in asthma mortality rate in the 5-34 year age group, at approximately 1.5 per 100 000 (Masoli *et al.*, 2003). Similarly, the asthma case fatality rate in South Africa is reported as being the fifth highest in the world at 18.5 per 100 000 asthmatics (Masoli *et al.*, 2003).

## 12.9 Self-reporting of respiratory diagnoses

These diagnoses formed part of a list of chronic conditions in the questionnaire prefaced by the words “Has a doctor or nurse or health worker at a clinic or hospital told you have or have had any of the following conditions?”

### ***“Emphysema/bronchitis”***

Self-reporting of these conditions is an unreliable guide to the prevalence of chronic lung disease for a variety of reasons. First, use of diagnostic terms reflects health service access, which in South Africa varies considerably by socio-economic status and geography. A term such as “emphysema” (which refers to changes in the lung seen on x-ray and under the microscope) is likely to be used inconsistently by medical practitioners based on varying clinical criteria. In recent decades, the term chronic obstructive lung disease (COPD), which includes both emphysema and chronic bronchitis, has gained prominence in official classifications and in authoritative recommendations (Pauwels *et*

*al.*, 2001). Finally, spirometric lung function testing, which is essential for the diagnosis of COPD, is usually available only in specialist facilities.

“Bronchitis” is a non-specific term that would elicit reports of acute bronchitis as well as chronic bronchitis. Acute bronchitis is a common ailment, often a mild and self-limiting viral infection, which may occur without underlying chronic disease. Finally, asthma in adults is frequently misdiagnosed as bronchitis.

The self-reported rates of emphysema/bronchitis (Tables 10.2 and 10.3) are 2 percent in men and 2.6 percent in women. These are lower than the comparable figures reported in the 1998 SADHS of 4.2 percent among men and 4.8 percent among women. Because there are so many factors influencing the response to this question, it is difficult to interpret this decline. The overall prevalences are also lower (non age-standardised) than the estimated 4.5 percent of men and 6.4 percent in women in the United States population who reported in 2003 “ever having been diagnosed with emphysema or having been diagnosed with chronic bronchitis in the previous 12 months” (United States Department of Health and Human Services, 2005). The South African age-specific prevalences are also lower for each gender and age stratum.

In looking at the stratified results (without formal analysis), the prevalence of self-reported emphysema/bronchitis appears to be associated with increasing age, urban residence and lower educational level. In population group comparison, these diagnoses appear less frequently among Africans than other groups.

**Table 12.8 Symptoms of lung disease**

Percentage of men and women aged 15 years and over who report symptoms of airflow limitation or chronic bronchitis or who have abnormal peak flow rates, according to selected background characteristic, South Africa 2003

Background characteristic	MEN				WOMEN			
	Airflow limitation symptoms	Chronic bronchitis	Abnormal peak flow rates	Number of men	Airflow limitation symptoms	Chronic bronchitis	Abnormal peak flow rates	Number of women
<b>Age</b>								
15-24	4.8	0.7	6.0	1 121	5.7	1.3	8.7	1 256
25-34	5.9	1.8	7.3	735	6.4	1.2	9.8	979
35-44	6.5	2.2	8.2	593	7.2	2.5	10.0	883
45-54	10.2	4.8	11.7	438	11.5	2.6	11.2	714
55-64	11.9	4.3	8.6	297	10.7	2.8	13.7	483
65+	12.8	4.6	10.3	240	12.5	2.7	18.8	378
<b>Residence</b>								
Urban	7.8	2.5	9.4	2 289	8.7	1.6	13.8	2 995
Non-urban	6.1	1.9	4.9	1 133	7.0	2.6	5.8	1 697
<b>Province</b>								
Western Cape	14.2	5.3	11.8	337	12.5	2.9	14.4	573
Eastern Cape	9.8	5.5	17.4	367	11.2	4.0	17.7	562
Northern Cape	9.6	3.3	14.7	60	10.8	1.9	22.0	92
Free State	11.1	2.5	8.5	224	7.7	2.5	10.0	313
KwaZulu-Natal	1.4	0.1	3.2	781	3.5	0.0	3.8	888
North West	7.4	1.6	5.3	248	7.8	3.6	7.4	373
Gauteng	7.5	2.1	9.7	914	6.5	0.8	17.0	1 074
Mpumalanga	7.7	1.2	1.9	209	10.9	1.0	4.3	300
Limpopo	6.6	2.5	3.0	282	9.2	3.6	3.9	519
<b>Education</b>								
No education	15.5	5.0	8.8	296	13.2	3.7	12.0	578
Grades 1-5	12.5	5.8	14.4	335	12.1	3.7	11.5	448
Grades 6-7	10.2	2.1	6.7	384	10.1	3.4	13.6	501
Grades 8-11	7.0	2.5	7.9	1 366	7.4	1.8	9.5	1 873
Grade 12	2.2	0.0	6.0	703	4.6	0.2	11.7	923
Higher	1.8	0.0	5.9	309	3.9	0.7	8.9	344
<b>Population group</b>								
African	7.3	2.2	7.7	2 838	7.8	2.1	10.6	3 857
Afr. urban	8.1	2.5	9.5	1 747	8.4	1.7	14.3	2 250
Afr. non-urban	6.0	1.9	4.7	1 091	6.9	2.7	5.4	1 607
Coloured	10.2	4.2	12.1	268	10.8	2.1	12.9	456
Indian	8.6	0.4	6.7	83	14.6	0.3	12.5	112
White	2.2	1.6	6.8	220	5.3	0.0	11.6	257
<b>Total</b>	<b>7.2</b>	<b>2.3</b>	<b>7.9</b>	<b>3 422</b>	<b>8.1</b>	<b>2.0</b>	<b>10.9</b>	<b>4 693</b>

2 men and 17 women had education unknown.

13 men and 12 women reported population group as Other or missing.

**Table 12.9 Lung disease and risk factors**

Percentage of men and women aged 15 years and over who report symptoms of airflow limitation or chronic bronchitis or who have abnormal peak flow rates, by history of various risk factors for lung disease (smoking, past TB, exposure to smoky home fuels, exposure to occupational air pollution), South Africa 2003

Background characteristic	Airflow limitation symptoms			Chronic bronchitis			Abnormal peak flow rate		
	Yes	No	Prevalence ratio*	Yes	No	Prevalence ratio*	Yes	No	Prevalence ratio*
<b>MEN</b>									
Tobacco smoking	11.7	3.8	3.0	4.2	0.9	4.0	10.2	6.8	1.4
Indoor fuel exposure	6.6	8.9	0.7	2.0	3.2	0.6	9.1	6.2	1.4
Occupational exposure	11.7	5.8	1.8	4.1	1.8	1.8	11.7	7.2	1.5
History of TB	34.7	6.3	4.8	19.5	1.7	9.3	20.9	7.9	2.4
<b>WOMEN</b>									
Tobacco smoking	15.8	6.8	2.3	3.2	1.8	1.8	17.1	9.9	1.7
Indoor fuel exposure	8.4	7.3	1.2	1.4	3.4	0.4	13.0	7.3	1.8
Occupational exposure	12.8	7.6	1.6	1.4	2.0	0.6	14.0	11.1	1.2
History of TB	39.1	7.4	4.9	9.9	1.8	5.1	23.5	11.2	2.1

\* Adjusted for age.

## ***“Asthma”***

Self reported asthma prevalences are likely to reflect conflicting influences. On the one hand, under diagnosis of asthma is well established. On the other hand, asthma prevalence may be inflated by confusion with COPD, particularly in older age groups and smokers. Analysis of the 1998 SADHS (Ehrlich *et al.*, 2005) provided evidence that in South Africa the term “asthma” in population studies may be unable to distinguish between asthma and COPD.

Prevalence of reported asthma (Tables 10.2 and 10.3) is 3.1 percent in men and 4.4 percent in women, a significant female excess. A gender gap in asthma diagnosis has thus appeared since the 1998 SADHS in which the comparable figures were 3.7 percent among men and 3.8 percent among women. These values are lower (non age-standardised) than the figures for reported asthma in the United States in 2003 of 8.0 percent in men and 11.3 percent in women (United States Department of Health and Human Services, 2005). Factors associated in the 2003 SADHS with higher self-reported asthma prevalence in men and women are increasing age and lower education level. Africans report the diagnosis less often than other population groups.

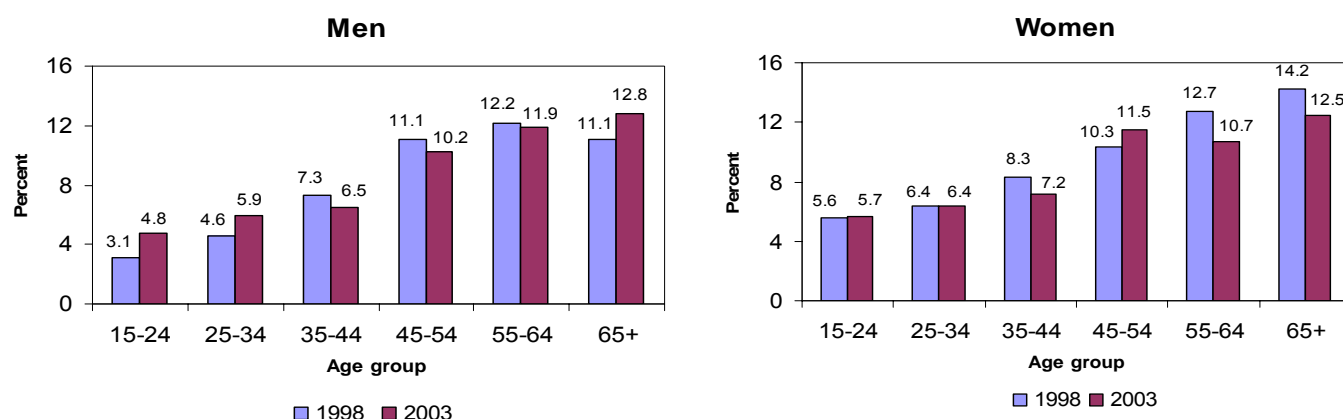
### **12.10 Reporting of symptoms**

#### ***Airflow limitation symptoms***

Reporting of symptoms is less likely to be influenced by contact with health services than is reporting of diagnoses, although interpretation by participants of symptoms questions is still subject to educational, language and cultural variation. Airflow limitation symptoms consist of wheezing/tight chest with breathlessness in the past year associated with sleep interruption by wheezing/tight chest or by coughing. This syndrome is characteristic of airflow limitation. This composite definition is unique to the SADHS and was an attempt to obtain a specific (as opposed to sensitive) questionnaire measure of airflow limitation in the absence of spirometry, the definitive measure of such limitation. If this airflow limitation is reversible, spontaneously or by therapy, it should be diagnosed as asthma. However, people with COPD may have similar symptoms to those with asthma. As the questionnaire did not probe reversibility, the definition can be regarded as suggestive of but not equivalent to asthma. The prevalence of this symptom complex is shown in table 12.8.

The prevalence of airflow limitation symptoms is 7.2 percent in men ( $n = 3\,422$ ), lower than the 8.1 percent in women ( $n = 4\,693$ ) (Table 12.8). Compared to 1998, this is a small increase among men (up from 6.7 percent) and a slight decrease among women (down from 8.6 percent). As in 1998, the prevalence of airflow limitation symptoms increases with age, although in both men and women it shows a sharp “step up” over the age of 44 years (Figure 12.4). Again, lack of education is a powerful risk factor for airflow limitation symptoms. For example, men with no education are approximately seven times more likely to report airflow limitation symptoms than those with higher (post grade 12) education.

**Figure 12.4 Prevalence of airflow limitation symptoms by sex, 1998 and 2003 SADHS**



Differences from 1998 are most pronounced with regard to place of residence and population group. In contrast to 1998, urban respondents now report more airflow limitation symptoms than non-urban. Prevalence appears to have declined sharply among whites, but this may be attributable to relatively small numbers of whites in the latest survey. Indian women again show the highest prevalence (15 percent). A notable finding is the increase in the prevalence of airflow limitation symptoms among African urban men from 5.7 percent in 1998 to 8.1 percent in 2003.

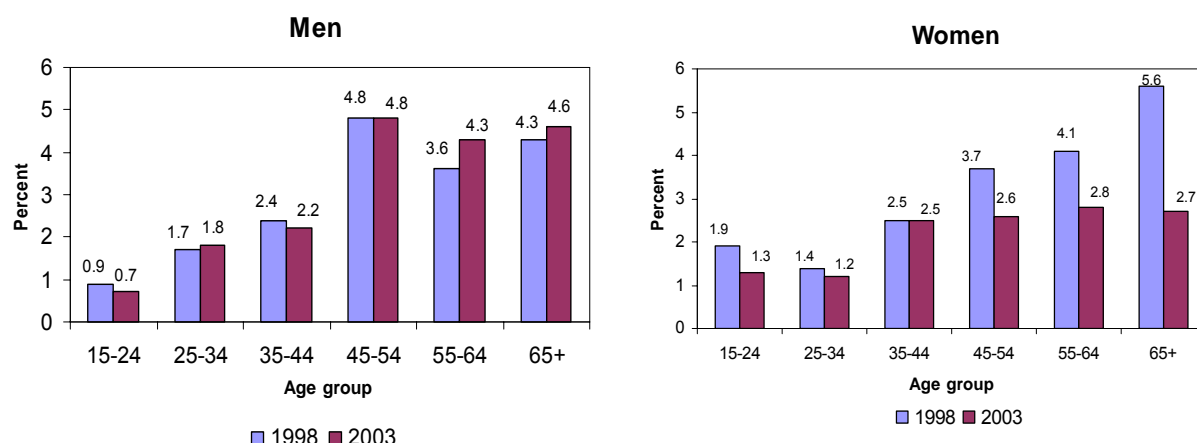
Table 12.9 cross tabulates airflow limitation symptoms across four preventable “environmental” risk factors for chronic lung disease, viz. tobacco smoking, indoor air pollution, occupational exposure (exposure to dust, fumes, vapours and strong smells and/or underground mining for at least a year) and past tuberculosis history. The comparison is expressed as a prevalence ratio, where a ratio of one implies no association, a ratio of two a “moderate” association and a ratio less than one a “protective” association. It should be emphasised that these risk factors may be correlated with each other, and that the resulting associations need to be examined in an analysis that is able to control for competing risk factors so as to isolate the effect of the risk factor of interest more clearly. In Table 12.9, the prevalence ratios were adjusted for age only. The highest prevalence ratio is that for a history of TB – those with a history of TB are almost five times more likely to report symptoms of airflow limitation than those without such a history. Smoking is also relatively strongly associated with such symptoms, but occupational exposures only weakly so.

### ***Chronic bronchitis***

The “chronic bronchitis” symptom complex is defined by chronic cough with phlegm every day for at least 3 months a year, for at least 2 successive years. The prevalence of chronic bronchitis is 2.3 percent among men and 2.0 percent among women (Table 12.8). Among men, there has been no change in prevalence since the 1998 survey, but in women the prevalence has declined from 2.8 percent to 2.0 percent. This decline is most evident among women aged over 44 years as shown in Figure 12.5.



**Figure 12.5 Prevalence of chronic bronchitis by sex, 1998 and 2003 SADHS**



As would be expected in a national survey, the prevalence of chronic bronchitis in men is considerably lower than those reported in working populations and in some general (not necessarily national) populations in Africa including South Africa (Becklake, 1995), which ranged from 10 to 45 percent. If one compares the prevalence in the age stratum 24 to 44 years with those obtained in the European Community Respiratory Health Survey (of adults aged 20 to 44 years), the South African values are also at the low end of the range for European countries (Ehrlich *et al.*, 2004).

The prevalence of chronic bronchitis rises with age from about 1 percent among men and women aged 15 to 24 years to 5 percent among men and 3 percent among women aged 65 years and over (Table 12.8). There is a sharp decline in prevalence with increasing education, with the condition being undetectable in this survey among men with higher (post grade 12) education and uncommon (less than 1 percent) among women with higher education.

An important interaction between gender, residence and population group is observable in these data. Among men, the prevalence of chronic bronchitis is highest in the urban sample and among Coloured men. This accord with the smoking prevalence (Tables 13.1 and 13.2). In contrast, among women, chronic bronchitis is more common among non-urban respondents and among African non-urban women. This latter group also has the lowest smoking prevalence. It is clear that influences in addition to tobacco are at play among women.

Table 12.9 (see earlier description) also shows the prevalence ratios (adjusted for age only) for chronic bronchitis in regard to the four risk factors, tobacco smoking, indoor fuel exposure, occupational exposure and history of TB. As in 1998, a history of tuberculosis shows a powerful association with chronic bronchitis in men and women. Among men, tobacco smoking is strongly associated with chronic bronchitis, while a history of occupational exposure shows a moderate association. Among women, tobacco smoking demonstrates a moderate association with chronic bronchitis.

These associations are similar to those found in 1998 and analysed further in a full statistical analysis (Ehrlich *et al.*, 2004). The one exception is indoor fuel exposure, which in 1998 showed a modest association with chronic bronchitis among women but in the latest survey shows a “protective” association, i.e. the prevalence of chronic bronchitis in those with indoor fuel exposure is lower than in subjects without such exposure (Table 12.9). This is difficult to explain, especially given the excess prevalence among African women living in non-urban areas.

## 12.11 Abnormal peak expiratory flow rates

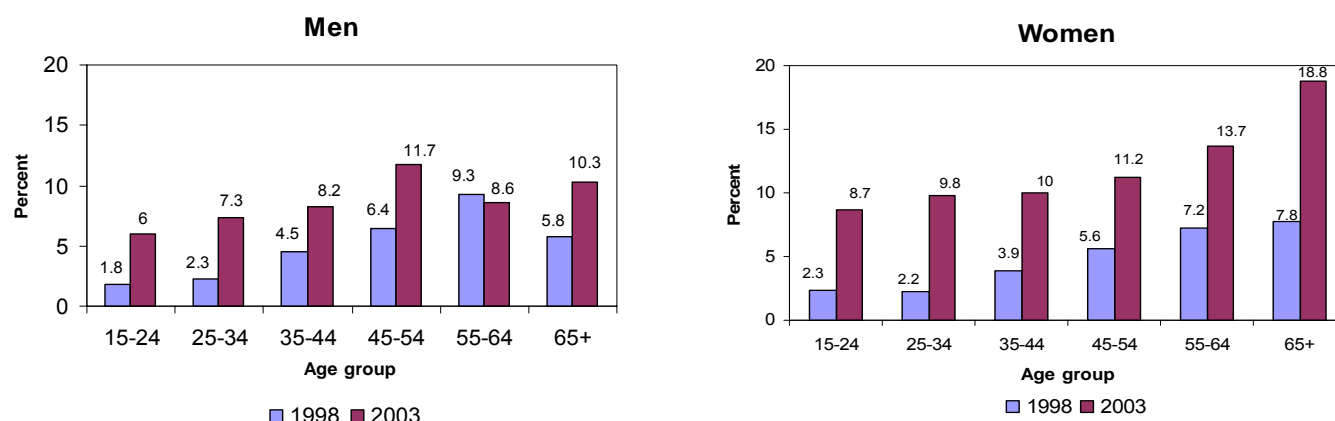
Peak expiratory flow rate (PEFR) is the maximum rate of flow of air expelled during a forced expiration. It is less sensitive and more variable than lung function measured by more sophisticated but less mobile equipment, such as spirometry, and is strongly dependent on how hard the subject tries. The advantage of using PEFR is that it can be measured with a simple portable meter suitable for field studies. It should thus be regarded as a crude measure of airways function. Besides effort, PEFR is strongly dependent on age, body size and sex. Thus, in order to compare PEFR across groups or strata, it is necessary to control for these intrinsic sources of variation. The most common method of doing this is to express PEFR as a percentage of a predicted or reference value drawn from a study of a population suitable for this purpose.

These reference values were derived from the 1998 survey [See Appendix D of that report (Department of Health of the Republic of South Africa, 2002)]. In brief, in order to use a population as close as possible to the one studied, the total sample recruited in that survey was chosen as the reference population. Smokers were excluded from the reference group, as were people who reported asthma, emphysema/bronchitis, lung cancer or tuberculosis, those who met the definition for chronic bronchitis or airflow limitation, and women who reported pregnancy. The final reference group comprised 2 373 men and 5 080 women. A statistical prediction model was developed as a function of age, sex and height and weight. From this a mean or "expected" PEFR value could be calculated for any individual as well as the "lower limit of normal" for PEFR (in this case 2 standard deviations below the prediction mean).

The proportions of the 2003 survey population falling below this abnormal threshold value are reported for each stratum of interest (Table 12.8). The 2003 results are striking for the large increase in the proportion of those with an abnormal peak flow, from 4 percent to 8 percent in men and from 4 percent to 11 percent in women. These increases are not reflected in equivalent changes in symptom prevalences, which suggest that technical factors related to method and not biological factors related to the subjects are responsible for the large jump in values between surveys.

Some trends may still be discernable if one assumes that any technical error is "balanced" across different strata. The much higher prevalence of abnormal peak flow among women than men is evident at all ages (Figure 12.6), for all educational strata and for all population groups. In the latest survey, urban residents have approximately twice the prevalence of abnormal peak flow as non-urban residents, in contrast to the relatively small urban/non-urban differences in 1998.

**Figure 12.6 Prevalence of abnormal peak flow by sex, 1998 and 2003 SADHS**



When looking at environmental factors predictive of abnormal peak flow (Table 12.9), the prevalence ratios are generally lower than for chronic bronchitis and airflow limitation, suggesting weaker associations when peak flow abnormality is the outcome. A history of TB again shows the highest prevalence ratio among men and women.

## 12.12 Discussion

The inaccurate BP levels and prevalence rates reported in this chapter mean that the results unfortunately cannot contribute to the understanding of the trends between 1998 and 2003 regarding BP, hypertension prevalence rates, or patients' treatment status in South Africa.

Despite the limitations of the BP data, it can be concluded that the lifestyle risk factors for hypertension, (obesity, high salt and alcohol intake) are still very common in those persons with hypertension. This emphasizes the urgency with which the National Department of Health must implement its planned national policy to promote a healthy lifestyle. Another aspect that needs to be addressed by the National Department of Health is the regulation of the amount of salt found in foods produced by the food industry. The amount of salt in staple food, such as bread is much higher in this country than elsewhere. The benefit of lowering salt in commonly used foods is a reduction in BP levels. This has been shown in a recently conducted randomised controlled trial in Langa in Cape Town (Unpublished data, Karen Charlton).

Although inaccurate, the magnitude of inadequate hypertension treatment is highlighted in these data. About half the participants with hypertension reported that their BP had been measured in the previous year, yet a very small proportion actually reported that they had a raised BP. This suggests that the empowerment of the patients with hypertension still needs attention. The control of a chronic condition such as hypertension cannot be achieved unless the patient becomes active, informed and motivated to comply with all the steps necessary for BP control. The data show that the private sector achieves better BP control than the public sector; however, both sectors have a long way to go to significantly reduce the impact of hypertension on the burden of disease in South Africa.

In regard to respiratory conditions, the most striking change between the two surveys is the rise in the prevalence of peak flow abnormality in men and women. It is difficult to infer an equivalent increase in COPD or asthma. In women, there has been a rise in self-reported asthma diagnosis, reflecting a gender gap not apparent in 1998. However, the rise in peak flow abnormality in women

is not corroborated by an increase in reported symptoms of airflow limitation or bronchitis. There has also been little change in the overall prevalence of current smoking among women over this period (Figure 13.2).

In men, there has been some rise in airflow limitation symptoms prevalence but in fact an overall decline in asthma diagnosis. The prevalence of chronic bronchitis in men has not changed, and smoking prevalence (Figure 13.1) has declined from 42 percent to 35 percent between the two surveys. The increase in peak flow abnormality may thus be related to study technical factors rather than a real change. To determine whether South Africa is experiencing the rise in COPD predicted for developing countries, population studies using spirometry and standard international definitions such as that of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) are needed (Pauwels *et al.*, 2001).

With regard to risk factors, the predictive power of a past history of tuberculosis in respect of all symptoms complexes and peak flow abnormality underscores the powerful impact that tuberculosis is having on health of the general population in South Africa. What is being reflected is not active tuberculosis but rather the long term effect of damage to the lungs following even successful treatment of tuberculosis. Overall, the results continue to reflect the importance of the triad of tobacco, occupational exposures and tuberculosis (and interaction between them) in producing symptoms of “asthma” and COPD in South African men. Primary prevention of chronic lung disease in adults in South Africa thus requires action on all three fronts, viz. control of tobacco, of dusty working conditions and of the tuberculosis epidemic.

In the 1998 survey, excess chronic bronchitis among women was noted among African women in non-urban areas, despite their very low smoking rates (Ehrlich *et al.*, 2004). Smoky domestic fuel was suggested as an explanation. In this survey, the prevalence of chronic bronchitis has declined among women, particularly in those over 44 years of age, with no association between smoky domestic fuel and chronic bronchitis overall. However, among women, African non-urban women still recorded a prevalence of chronic bronchitis of 2.7 percent despite their very low current smoking prevalence of only 2.7 percent.

The much lower prevalence of chronic respiratory disease with improved education is also striking. Analysis of the 1998 survey data (Ehrlich *et al.*, 2004, Ehrlich *et al.*, 2005) showed that this protective effect of education was independent of other risk factors such as smoking, occupational exposure and past tuberculosis. If education is taken as a proxy for social position or socioeconomic status, the finding is another example of gross health disparity in South Africa. This social gradient may be attributable not to a few observable risk factors in adulthood but rather to the cumulative effect of adverse social position throughout life. This is an example of the “life course” model, in which factors producing susceptibility to chronic lung disease in adults, including nutrition and growth, act from uterine life through childhood to adulthood (Strachan & Sheikh, 2004). The implication is that public health action to produce optimal lung health in adulthood is needed across the whole life course.

## CHAPTER 13

### ADULT HEALTH RISK PROFILES

#### 13.1 Introduction

Monitoring the risk profile of the population is an extremely important step to ensure the health of the nation as future trends in disease burden relate to current trends in risk factors. The importance of this has recently been highlighted in the global health strategy for the prevention of chronic diseases (WHO, 2004). The 1998 SADHS introduced questions on selected risk factors, which have been extended in the 2003 SADHS. Where possible, the measurements and questions are applied in accordance with the training and techniques proposed by the WHO STEP-wise surveillance programme (Bonita *et al.* 2002).

This chapter reports on tobacco smoking, exposure to environmental tobacco smoke, exposure to other fumes and dust, alcohol use, a four item measure of alcohol dependence, dietary intake, physical activity and anthropometric measurements including weight, BMI and the waist-hip ratio. Information on the methods used for these risk behaviours are described under the relevant sections. Furthermore, physical activity and dietary data have been collected and assessed in the 2003 SADHS. Consequently these results represent the first comprehensive, nationally representative dataset concerning adult micronutrient intake and physical activity levels. These are of particular importance in understanding the populations 'at risk' while undergoing epidemiological transition.

#### 13.2 Prevalence of Tobacco use Among Adults

Data on tobacco use were collected using a standard questionnaire recommended by the WHO STEP-wise surveillance programme (Bonita *et al.*, 2002). This was similar to the WHO questionnaire used in 1998 but with greater emphasis on current and daily smoking habits rather than a past history of ever smoking. In accordance with the 1998 questionnaire, the use of tobacco products such as cigarettes, cigars and pipes was ascertained together with the use of smokeless tobacco, exposure to environmental tobacco smoke, and other fumes and dusts.

Tobacco control legislation and rapidly increasing excise taxes have resulted in a significant decrease in smoking in South Africa. The Tobacco Products Control Act of 1993 introduced health warnings on cigarette packs and advertising material, and a 1999 amendment banned tobacco advertising, prohibited smoking in indoor public places and the sale of tobacco to minors. The high price elasticity of local cigarette expenditure to income changes demonstrated the effectiveness of excise tax increases as a mechanism to decrease cigarette consumption (van Walbeek, 2005).

Aggregate cigarette consumption between the early 1990s and 2004 has decreased by more than a third with a per capita cigarette consumption reduction of about half. Smoking prevalence decreased markedly among Africans, men, young adults and poorer individuals while decreases among whites, women, and older and wealthier individuals were less (van Walbeek, 2005).

The current data demonstrate similar trends to those found by van Walbeek (2005) except among women of different race groups and young women who smoke daily or occasionally. These smoking rates increased slightly in women across all race groups, particularly among Indian women. The rates of smoking daily or occasionally increased in young women between the ages of 15 and 24.

Tables 13.1 and 13.2 show the prevalence of tobacco use among men and women, respectively, as well as the mean age at which smokers started and their duration of smoking according to background characteristics. Smoking prevalence has dropped for men but continues to be much more common among men than women; 35 percent of men and 10 percent of women smoke cigarettes either daily or occasionally. In 1998 these figures were 42 percent and 11 percent, respectively. In the age group 15-24 years, 23 percent of men and 7 percent of women already smoke daily or occasionally; a similar prevalence to that reported in 1998 SADHS. In 2003, 45 percent of men and 25 percent of women have ever used any form of tobacco, compared to 53 and 24 percent respectively.

There is a higher prevalence of daily or occasional smoking among men and women living in urban areas (39 percent and 13 percent, respectively) as compared to their rural counterparts (28 percent and 6 percent, respectively).

Like the 1998 SADHS, the highest prevalence of daily or occasional smoking in both men (51 percent) and women (35 percent) is in the Northern Cape. The next highest rates are recorded in the Western Cape. There was an increase in tobacco use from 1998 among the Northern Cape women with no significant change among the men. There has been a provincial decrease in tobacco use among men across most provinces with an unusually marked unexplained decrease in daily or occasional smoking in KwaZulu-Natal (38 percent to 21 percent) that is probably an artefact. In view of the poor quality of data found in the rest of this survey from KwaZulu-Natal, this decrease is probably an artefact.

Table 13.1 Tobacco use among men

Percentage of all men aged 15 years and over who ever used tobacco products, and among those who currently smoked daily the percentage who smoked manufactured cigarettes, the mean duration of smoking and mean starting age, according to background characteristics, South Africa 2003

Background characteristics	Among all men percentage who:					Among men who currently smoked tobacco daily:							
	Ever used any tobacco products	Ever used smokeless tobacco daily	Ever smoked tobacco daily	Currently smoke daily	Currently smoke occasionally	Smoke daily or occasionally	Number of men	Percentage who smoke manufactured cigarettes	Mean duration of smoking in years	Std error	Mean age when started smoking	Std error	Number who ever smoked cigarettes daily
Age													
15-24	28.1	2.1	24.8	20.5	2.4	22.9	1 121	95.1	4.5	0.2	16.0	0.2	229
25-34	49.6	0.6	46.0	37.7	4.2	41.9	735	96.2	11.3	0.3	17.9	0.3	277
35-44	53.6	2.9	51.2	41.3	2.9	44.2	593	86.6	19.5	0.5	19.7	0.5	245
45-54	61.3	2.5	57.7	41.3	4.7	46.0	438	73.3	27.0	0.6	21.6	0.6	181
55-64	48.9	2.0	46.1	31.1	4.1	35.2	297	50.6	35.3	1.4	23.4	1.2	92
65+	52.2	8.7	46.8	25.3	3.1	28.4	240	51.9	43.8	1.8	27.1	2.2	61
Residence													
Urban	49.2	1.9	46.4	35.5	3.2	38.7	2 289	89.6	17.8	0.6	19.1	0.3	812
Non-urban	36.2	3.4	31.7	24.1	3.8	27.9	1 133	65.9	19.0	0.9	20.6	0.4	273
Province													
Western Cape	62.2	0.8	59.9	44.1	5.7	49.8	337	93.1	17.8	1.4	17.3	0.5	149
Eastern Cape	54.4	1.1	49.0	35.2	8.6	43.9	367	69.3	19.3	1.4	20.3	0.6	129
Northern Cape	63.4	1.3	62.1	48.9	2.5	51.4	60	78.4	20.9	1.2	18.8	0.5	29
Free State	49.7	3.1	43.3	34.2	6.4	40.6	224	68.4	18.0	1.0	20.5	0.6	76
KwaZulu-Natal	25.4	2.1	23.5	19.9	1.1	21.0	781	84.9	17.9	1.2	18.2	0.4	156
North West	48.1	4.3	44.6	34.2	3.4	37.6	248	79.3	17.3	1.2	22.0	0.8	85
Gauteng	49.2	1.9	46.4	36.8	1.8	38.5	914	92.9	18.0	1.2	19.2	0.6	336
Mpumalanga	44.0	5.4	40.3	30.8	2.6	33.4	209	78.9	20.3	1.5	19.6	0.6	64
Limpopo	41.8	4.3	36.3	21.3	3.6	24.9	282	68.7	14.4	1.7	23.1	1.4	60
Education													
No education	56.2	6.8	49.8	37.3	4.3	41.6	296	58.1	28.3	2.2	23.8	1.1	110
Grades 1-5	54.8	5.8	50.6	39.1	3.5	42.6	335	57.9	23.0	1.4	20.3	0.8	131
Grades 6-7	50.7	0.5	46.7	35.4	4.8	40.3	384	80.8	18.4	1.0	20.2	0.9	136
Grades 8-11	43.5	2.0	40.3	31.7	3.5	35.2	1 366	91.5	16.1	0.9	18.5	0.4	433
Grades 12	38.5	1.4	36.1	27.5	2.7	30.1	703	95.2	13.4	0.9	18.3	0.5	193
Higher	36.4	1.0	34.6	22.3	2.0	24.3	309	98.8	15.4	2.3	18.9	0.6	69
Population group													
African	41.8	2.5	38.3	29.3	3.5	32.8	2 838	80.3	17.8	0.5	20.1	0.3	831
Afr. urban	45.8	1.8	43.0	33.2	3.4	36.5	1 747	87.0	17.3	0.7	19.7	0.4	580
Afr. non-urban	35.3	3.5	30.8	23.0	3.7	26.7	1 091	64.9	18.8	0.8	20.9	0.5	251
Coloured	60.7	1.8	58.1	48.9	3.3	52.1	268	92.9	19.2	1.7	17.3	0.5	131
White	67.4	2.3	53.8	34.7	1.0	35.7	220	(99.8)	21.8	1.3	(18.1)	(0.9)	77
Indian	56.0	1.4	63.7	50.4	5.1	55.5	83	94.9	16.7	3.4	16.8	0.4	42
Total	44.9	2.4	41.5	31.7	3.4	35.1	3 422	83.6	18.1	0.5	19.5	0.3	1085

Note: Std error = standard deviation of the mean.  
22 cases had education unknown and 13 cases reported population group as Other.

**Table 13.2 Tobacco use among women**

Percentage of all women aged 15 years and over who ever used tobacco products, and among those who currently smoked daily the percentage who smoked manufactured cigarettes, the mean duration of smoking and mean starting age, according to background characteristics, South Africa 2003

Among all women percentage who:												Among women who currently smoked tobacco daily:				
Background characteristics	Ever used any tobacco products	Ever used smokeless tobacco daily	Ever smoke tobacco daily	Currently smoke daily	Currently smoke occasionally	Smoke daily or occasionally	Number of women	Percentage who smoke manufactured cigarettes	Mean duration of smoking in years	Mean age when started smoking		Number who ever smoked cigarettes daily				
										Std error	Std error					
<b>Age</b>																
15-24	12.0	2.8	9.2	6.7	0.2	7.0	1 256	98.1	4.1	0.3	16.1	0.3	85			
25-34	16.6	7.5	8.4	5.8	1.8	7.6	979	96.7	11.9	0.5	18.4	0.7	56			
35-44	29.9	11.3	16.4	12.5	1.8	14.3	883	90.0	20.8	1.0	19.3	0.9	110			
45-54	33.4	16.0	18.0	12.2	1.9	14.0	714	77.2	25.6	1.2	24.3	1.3	87			
55-64	40.0	20.8	21.0	12.6	1.5	14.0	483	63.9	34.8	1.7	23.8	1.8	61			
65+	37.2	23.6	12.4	6.1	0.3	6.5	378	56.4	37.0	4.7	32.0	4.8	23			
<b>Residence</b>																
Urban	26.4	9.1	16.8	11.3	1.4	12.7	2 995	90.6	19.8	1.0	20.5	0.7	340			
Non-urban	21.2	14.0	6.8	4.9	0.9	5.8	1 697	58.2	23.4	2.2	22.8	1.3	82			
<b>Province</b>																
Western Cape	39.6	2.3	37.9	21.5	0.7	28.7	573	94.0	18.5	1.3	19.2	0.9	160			
Eastern Cape	18.1	7.5	9.8	1.9	2.2	8.9	562	*	*	*	*	*	37			
Northern Cape	50.2	9.0	39.9	28.0	3.7	35.0	92	73.3	22.7	1.1	18.6	0.5	29			
Free State	36.2	22.3	12.6	6.7	2.2	11.7	313	58.6	25.2	2.3	24.8	3.7	30			
KwaZulu-Natal	10.5	4.6	5.6	31.4	0.3	4.2	888	(89.2)	(18.2)	(3.5)	(23.7)	(2.1)	34			
North West	31.2	22.7	6.8	9.5	2.5	7.3	373	*	*	*	*	*	18			
Gauteng	26.2	11.8	13.8	8.3	1.1	9.4	1 074	(90.4)	(21.1)	(2.3)	(19.2)	(1.4)	90			
Mpumalanga	18.9	12.9	5.7	3.2	0.8	4.0	300	*	*	*	*	*	10			
Limpopo	21.9	16.8	5.8	2.9	0.9	3.8	519	*	*	*	*	*	15			
<b>Education</b>																
No education	41.0	25.1	15.5	10.7	1.4	12.1	578	53.0	24.5	2.2	28.6	2.6	62			
Grades 1-5	38.9	23.2	17.2	9.4	2.8	12.1	448	64.8	28.7	1.1	21.8	0.8	42			
Grades 6-7	30.8	15.7	16.2	9.4	1.7	11.2	501	88.1	20.5	1.6	18.9	1.5	47			
Grades 8-11	20.8	6.9	13.0	9.1	0.9	10.0	1 873	92.5	19.4	1.6	19.1	0.8	171			
Grades 12	14.4	3.6	9.6	7.0	0.9	7.9	923	97.9	15.5	1.7	19.3	0.9	64			
Higher	16.1	4.6	10.5	9.7	1.0	10.7	344	(91.4)	(19.0)	(4.0)	(19.6)	(1.9)	33			
<b>Population group</b>																
African	20.2	13.0	6.9	4.1	1.1	5.2	3 857	68.8	22.0	1.5	24.6	1.4	157			
Afr. urban	20.9	11.7	8.9	5.1	1.3	6.3	2 250	79.8	20.8	1.8	18.4	0.6	114			
Afr. non-urban	19.2	14.7	4.2	2.7	0.9	3.6	1 607	40.2	25.3	2.2	24.7	3.9	44			
Coloured	52.5	2.2	49.5	39.0	2.7	41.8	456	90.4	18.8	1.1	17.9	0.6	178			
White	37.5	0.1	36.9	26.7	0.5	27.3	112	(100.0)	(15.6)	(2.3)	(26.4)	(1.6)	69			
Indian	24.1	1.1	22.5	13.0	0.2	13.1	257	(99.3)	(22.9)	(2.5)	(23.9)	(1.8)	15			
Total	24.5	10.9	13.2	9.0	1.2	10.2	4 693	84.3	20.5	0.9	20.9	0.6	422			

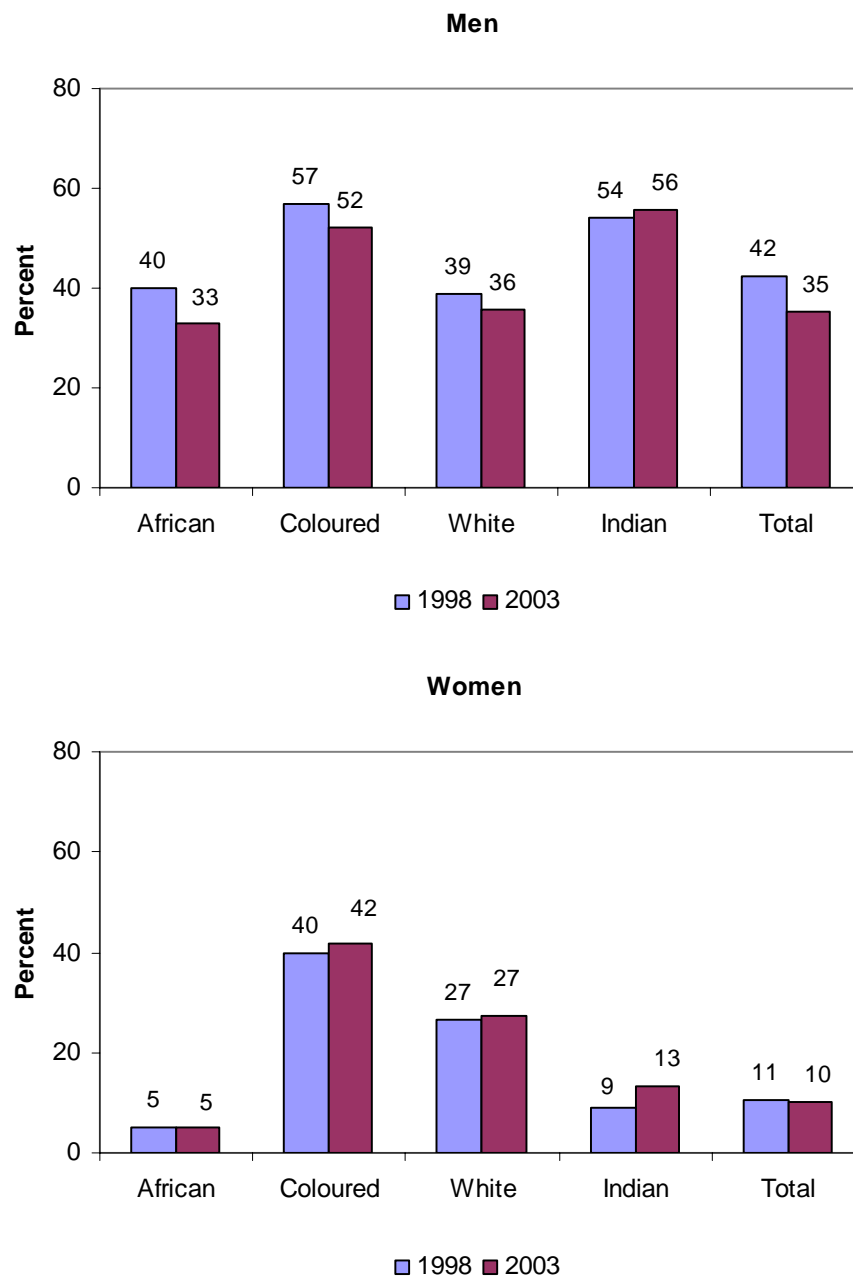
Note: Std error = standard deviation of the mean.  
17 cases had education unknown and 12 cases reported population group as Other.



There is an inverse relationship between education level and the prevalence rates of smoking daily or occasionally particularly for men; those with the lowest education having the highest prevalence of smoking daily or occasionally. These findings may however be influenced by the fact that older people mostly have lower levels of education than young people, especially among the women.

There is a decrease across all race groups for men that smoke daily or occasionally compared to 1998 except for Indian men who had an increase and have the highest prevalence at 56 percent (Figure 13.1). However the number of Indian men in the study is small. The rates in African men have reduced more markedly between 1998 and 2003 than in the other groups. African men and women are less likely to smoke daily or occasionally than the other groups with the lowest rates recorded in non-urban men and women. The proportion of women that smoke daily or occasionally has increased across all race groups from 1998 to 2003. However, the overall prevalence is deceptively lower as a higher proportion of Africans were sampled in 2003 as compared to 1998. African women have the lowest smoking prevalence and this together with their greater sample proportion reduced the total prevalence. Coloured women have the highest rates of daily or occasional smoking of 42 percent, which is similar to the rates recorded in 1998.

**Figure 13.1 Prevalence of smoking by population group and sex, SADHS 2003**



Smokeless tobacco is used most frequently by African women who are older, have limited education and most frequently live in Free State (22 percent), and North West Province (23 percent). There are relatively small differences between those women who live in urban and non-urban settings. There is no increase in the use of smokeless tobacco among women between 1998 and 2003 and men use it infrequently. The prevalence is most frequent in older men, those with no education who live in Mpumalanga, Limpopo or North West provinces.

The highest rates of current smoking are in the Northern Cape and the Western Cape while the lowest rates are in Limpopo Province. Among men those with lower education levels smoke more while those with higher education smoke the least. This trend was also observed in 1998 although at higher overall smoking rates than in 2003. Among women there is little difference in smoking prevalence according to education. Indian (56 percent) and Coloured (52 percent) men are more likely to smoke than White (36 percent) or African (33 percent) men. Coloured women are most likely to be current smokers (42 percent), followed by White (27 percent) and Indian (13 percent) women, while only 5 percent of African women smoke.

Smokers that were older used fewer manufactured cigarettes than their younger counterparts. Similarly, smokers with lower education levels used fewer manufactured cigarettes than those that were more educated. These trends are similar to those found in 1998. Among those who currently smoke daily, the mean duration of smoking is 18 years for men and 21 years for women while their mean age of starting smoking is 20 years for men and 21 years for women.

### **13.3 Exposure to Environmental Tobacco Smoke and Dust/Fumes in the Work Place**

Tables 13.3 and 13.4 also show the exposure of non-smokers to environmental tobacco smoke (ETS). Exposure to tobacco smoke has declined since 1998, an additional benefit of the reduced prevalence of smoking after the introduction of the tobacco control legislation.

Of those who never smoked 30 percent of men and 26 percent of women report living in a home where other people smoke regularly. This occurs more frequently in urban than non-urban areas. The exposure of non-smokers to define first ETS is more frequent in the Coloured community with their high prevalence rates of smoking, than any other. Equally worrying is the number of ex-smokers who are exposed to ETS, of men 69 percent and of women 57 percent. This occurs most frequently for Coloured men who have quit.

The extent of exposure of all participants to ETS in the home and the workplace and who are exposed at work to dust and fumes are also shown in Tables 13.3 and 13.4. Of all the men who participated in the study, 21 percent and 24 percent, respectively, work in smoky areas or spaces with dust and fumes. Of all the women, 8 percent and 10 percent, respectively, work in similar conditions. For both men and women this occurs more frequently in urban than in non-urban environments. For the people who work in environments with dust and fumes the mean number of years of exposure is 8 and 9 years respectively for men and women.

Alongside the prevalence of smoking, Figure 13.2 shows the percentage of all adults who are exposed to ETS in their home and work places as well as those exposed to dust and fumes at work. Interpretation of trends suggested by the current data may be influenced by a change in the questionnaire format as well as possible data quality concerns.

Table 13.3 Environmental Tobacco Smoke (ETS) and fumes or dust exposure among men

Percentage of adult men never-smokers and ex-smokers who are exposed to environmental tobacco smoke (ETS) and percentage of all men 15 years and above who live with smokers, who work with smokers, and who work in a dusty environment, and the mean number of years, and exposure to work in a dusty environment by background characteristics, South Africa 2003

Background characteristics	Never-smoked			Ex-smokers			All men		Exposed to dust or fumes at work		
	Percentage exposed to ETS	Number who never smoked	Percentage exposed to ETS	Number of ex-smokers	Percentage who lives with smokers	Percentage who work in smoking environment	Percentage who work in dust and fumes	Number of all men	Mean number of years exposure	Std error	Number who work in dusty environments
<b>Age</b>											
15-24	26.8	806	58.8	(39)	29.3	11.1	10.9	1 121	1.3	0.21	122
25-34	32.3	370	67.0	(50)	25.7	27.8	25.0	735	3.4	0.39	184
35-44	37.0	275	78.5	(52)	21.8	33.2	34.6	593	7.5	0.65	205
45-54	30.9	169	73.0	63	25.9	26.8	37.9	438	11.0	0.83	166
55-64	31.8	151	77.2	(38)	25.3	16.9	30.8	297	12.3	1.37	91
65+	23.6	114	55.9	(45)	18.7	10.0	24.3	240	17.5	2.45	58
<b>Residence</b>											
Urban	34.3	1 163	68.4	217	28.6	24.4	27.9	2 289	7.9	0.47	639
Non-urban	22.8	722	70.4	71	19.8	13.8	16.5	1 133	6.9	0.79	187
<b>Province</b>											
Western Cape	66.6	127	77.3	(42)	40.0	38.6	47.0	337	7.5	0.96	159
Eastern Cape	28.3	166	82.3	*	22.4	16.5	31.1	367	7.6	1.06	114
Northern Cape	55.6	22	87.0	(7)	46.4	35.6	34.1	60	8.2	0.83	20
Free State	38.6	112	80.7	(16)	37.7	26.9	29.0	224	8.6	0.83	65
KwaZulu-Natal	11.6	583	41.0	(25)	13.7	8.2	7.5	781	8.1	0.86	59
North West	26.1	129	72.9	(21)	20.7	20.3	20.8	248	7.6	1.04	52
Gauteng	39.8	465	61.9	(86)	29.9	24.0	27.0	914	6.9	0.75	247
Mpumalanga	24.0	117	67.2	(17)	24.1	17.8	15.0	209	8.4	1.71	31
Limpopo	38.0	164	71.8	(38)	24.2	26.2	28.3	282	8.9	2.05	80
<b>Education</b>											
No education	24.9	150	71.5	(29)	20.9	20.4	31.3	296	10.6	1.44	93
Grades 1-5	28.4	189	88.2	(34)	29.6	24.7	29.4	335	7.7	1.05	98
Grades 6-7	38.9	772	82.2	(39)	27.9	23.9	27.2	384	7.6	1.03	104
Grades 8-11	28.5	432	66.1	96	28.6	16.7	20.9	1 366	7.2	0.56	286
Grades 12	26.4	196	63.4	(53)	22.0	23.8	22.8	703	6.5	0.92	161
Higher	38.5	16	48.6	(36)	20.1	25.2	24.9	309	8.3	1.72	77
<b>Population group</b>											
African	27.5	1 650	68.9	215	23.3	19.2	20.6	2 838	7.2	0.48	585
Afr. urban	30.9	946	68.2	145	26.2	22.9	23.5	1 747	7.3	0.58	410
Afr. non-urban	22.8	705	70.1	70	18.8	13.4	16.0	1 091	7.0	0.84	175
Coloured	55.6	105	98.1	(20)	43.9	33.1	41.8	268	6.8	0.98	112
White	34.3	97	54.5	*	31.0	20.4	38.5	220	9.6	1.08	40
Indian	55.5	27	67.4	(10)	32.8	40.1	48.0	83	(10.5)	(1.61)	85
<b>Total</b>	29.9	1 885	68.9	287	25.7	20.9	24.1	3 422	7.7	0.41	826

Note: Std error = standard deviation of the mean.

22 cases had education unknown; 13 cases reported population group as Other.

Figures in parentheses are based on 25-49 unweighted cases; an asterisk indicates a suppressed figure based on fewer than 25 unweighted cases.

Table 13.4 Environmental Tobacco Smoke (ETS) and fumes or dust exposure among women

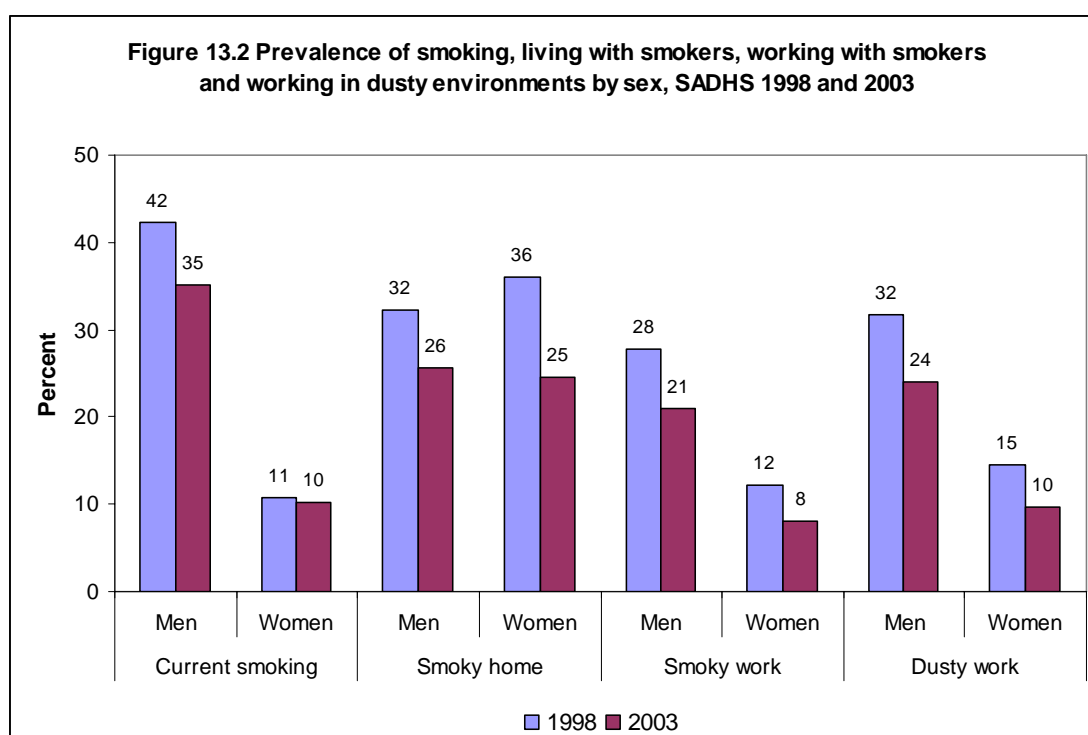
Percentage of adult women never-smokers and ex-smokers who are exposed to environmental tobacco smoke (ETS) and percentage of all women 15 years and above who live with smokers, who work with smokers, and who work in a dusty environment, and the mean number of years, and exposure to work in a dusty environment by background characteristics, South Africa 2003

Background characteristics	Never-smoked				Ex-smokers		All women				Exposed to dust or fumes at work		
	Percentage exposed to ETS	Number who never smoked	Percentage exposed to ETS	Number of ex-smokers	Percentage who lives with smokers	Percentage who work in smoking environment	Percentage who work in dust and fumes	Number of all women	Mean number of years exposure	StdError	Number who work in dusty environments		
Age													
15-24	23.9	1 106	59.6	(31)	23.9	6.3	4.3	1 256	1.1	0.18	53		
25-34	29.3	811	73.7	*	25.9	10.8	10.9	979	5.0	0.58	103		
35-44	28.4	617	52.3	(27)	26.5	10.4	10.1	883	6.3	0.83	89		
45-54	25.8	474	65.4	(38)	23.8	9.2	11.4	714	8.6	0.93	81		
55-64	25.5	289	52.4	(38)	25.1	4.7	18.0	483	10.7	1.41	87		
65+	19.4	237	39.5	*	18.8	4.1	8.6	378	(19.1)	(3.15)	32		
Residence													
Urban	29.7	2 201	58.1	150	27.5	9.2	12.0	2 995	8.0	0.72	358		
Non-urban	19.9	1 335	52.7	(28)	19.3	6.2	5.4	1 697	5.9	1.02	92		
Province													
Western Cape	43.2	346	53.6	(57)	32.6	15.0	23.3	573	7.9	1.15	134		
Eastern Cape	20.8	457	42.4	*	20.1	4.5	6.3	562	*	*	36		
Northern Cape	48.8	46	76.2	(7)	49.2	11.7	16.6	92	8.5	1.28	15		
Free State	30.8	200	68.9	*	31.9	12.4	11.7	313	4.3	0.61	37		
KwaZulu-Natal	18.7	794	53.6	(16)	18.8	3.4	5.1	888	7.2	0.73	45		
North West	22.2	255	17.1	*	23.1	8.5	5.9	373	(6.5)	(1.65)	22		
Gauteng	28.4	789	63.5	*	26.0	7.7	8.0	1 074	(9.2)	(1.55)	86		
Mpumalanga	19.9	243	37.7	*	19.1	7.7	5.2	300	(2.9)	(0.97)	16		
Limpopo	27.9	405	73.2	*	22.6	9.7	11.8	519	7.4	2.60	59		
Education													
No education	18.2	337	42.8	(25)	22.6	7.0	7.6	578	11.6	2.02	44		
Grades 1-5	16.5	273	58.3	(28)	23.9	8.1	9.7	448	12.3	0.99	43		
Grades 6-7	26.2	347	80.5	(31)	29.7	8.7	10.0	501	7.1	1.43	50		
Grades 8-11	27.1	1 483	54.6	(66)	25.6	6.7	9.3	1 873	7.5	0.83	174		
Grades 12	28.6	788	52.9	*	23.9	9.8	10.5	923	5.1	0.64	97		
Higher	29.6	289	18.4	*	15.8	10.8	12.1	344	(5.4)	(1.54)	42		
Population group													
African	22.7	3 071	57.7	95	22.0	6.8	6.3	3 857	7.8	0.93	244		
Afr. urban	25.7	1 776	59.0	77	24.7	7.7	7.4	2 250	9.2	1.29	166		
Afr. non-urban	18.5	1 295	52.3	(18)	18.1	5.5	4.9	1 607	4.6	0.69	78		
Coloured	51.5	216	56.4	44	37.9	16.1	23.9	456	7.9	1.01	109		
White	32.0	160	45.0	*	24.8	10.1	23.1	112	7.3	0.72	32		
Indian	66.4	85	74.9	(11)	52.8	11.2	28.4	257	(6.5)	(1.09)	59		
Total	26.0	3 535	57.2	179	24.5	8.1	9.6	4 693	7.6	0.61	450		

Note: Std error = standard deviation of the mean.

17 cases had education unknown; 12 cases reported population group as Other.

Figures in parentheses are based on 25-49 unweighted cases; an asterisk indicates a suppressed figure based on fewer than 25 unweighted cases.



### 13.4 Patterns of Alcohol Consumption

Nine questions were asked about alcohol use and associated problems. Lifetime ('ever') use of alcohol and the 4 items of the CAGE questionnaire were similar to questions asked in the 1998 survey. Instead of asking about use of alcohol 'now', participants were asked about use in the past 12 months, and instead of asking about the amount of alcohol typically consumed on (a) weekends and (b) weekdays, they were asked how many days they drank on each of the past seven days. In the 2003 survey, participants were also asked how many drinks they consume on average on a day that they drink and how frequently they have had at least one drink in the past 12 months.

Tables 13.5 and 13.6 show the patterns of alcohol consumption based on the questions about ever drinking alcohol, average consumption in the last year and in the past 7 days for men and women respectively. Just under half of men (49 percent) and just over one-fifth of women (22 percent) 15 years and older acknowledge that they have 'ever' drunk alcohol, and only four out of ten men (39 percent) and one out of six women (16 percent) acknowledge that they have drunk alcohol in the past 12 months. The proportion of men and women reporting drinking in the past seven days ('current drinking') is substantially less (30 percent for men and 10 percent for women). Based on data from the 2001 census (Stats SA, 2003) this translates to approximately 27 percent of the population over 15 years of age who have drunk alcohol in the past 12 months amounting to 8.1 million persons. Given the nature of omnibus surveys these prevalence estimates are likely to under-estimate the true levels of drinking in the population. Given social pressures of women in certain cultures not to drink alcohol it is possible that under-reporting may be even greater in certain subpopulations, e.g. African women.

Shisana *et al.* (2005) in a national household survey of HIV prevalence and behaviour in South Africa reported a 30-day prevalence figure for alcohol use of 28 percent, among persons 15 years and older, which is very similar to the past 12 months prevalence found in SADHS 2003. While these results are consistent, given what is known about alcohol consumption in South Africa from estimates of consumption and more localised community surveys, the figures for both the HSRC survey (Shisana *et al.*, 2005) and the SADHS 2003 are likely to grossly underestimate the true prevalence of alcohol use in South Africa.

The proportions of both men and women indicating that they have ever consumed alcohol is substantially less than was reported in SADHS 1998 (58 percent for males and 26 percent for females). Similarly, the proportions who report that they currently drink is lower than in SADHS 1998; 45 percent of men and 17 percent of women compared to 30 and 10 percent in SADHS 2003.

As in 1998, levels of current drinking differ substantially by population group and gender, with the highest levels reported by white males (53 percent), and followed by Coloured and Indian males (36 percent). The lowest levels were reported by African females (7 percent). The rank ordering of the proportion of males reporting consuming alcohol in the past seven days, from highest to lowest is whites, Coloureds and Indians, followed by Africans. Compared to the 1998 SADHS there appears to have been a decrease in the proportion of most of the population groups in terms of levels of current drinking. The ordering for females is the same. Indians and Africans have changed their relative rankings.

For both men and women higher rates of current (past seven days) drinking are recorded in urban as compared to non-urban areas. The same distinction was found in 1998. For both men and women, persons with either no education or tertiary education are more likely to drink than those with levels of education in between. A similar finding was noted in 1998. With regard to the different provinces, for males the highest past 7-day drinking levels occur in the Western Cape, Eastern Cape, North West, Northern Cape, and Gauteng (37 percent or more) and the lowest levels in KwaZulu-Natal (9 percent). For females the lowest levels are also in KwaZulu-Natal (1 percent), with the highest levels being in Western Cape and Northern Cape (19 percent). In general the levels of reported use of alcohol in KwaZulu-Natal for both men and women are too low to be plausible. As compared to the 1998 SADHS, there have been changes in the position of both provinces with the highest and lowest levels of the population who report current drinking. For men the highest levels of current alcohol use are recorded among persons in the 35-44 age group, and the lowest levels in the 15-24 age group. For women, the highest levels reporting current alcohol use were the 35-44 and 55-64 age groups with the 25-34 age group also having the lowest percentage reporting current drinking. This is fairly similar to what was found in the 1998 SADHS.

As indicated earlier, levels of lifetime consumption of alcohol are 49 percent for men and 22 percent for women. The age, population group, education, urban/non-urban and provincial differences described above for current drinking rates are very similar for lifetime consumption of alcohol and drinking during the past 12 months.

Table 13.5 Patterns of drinking, risky drinking and symptoms of alcohol problems among men

Percentage of men aged 15 years and above who ever drank alcohol, who show signs of alcohol problems, who drank alcohol in past 12 months or past 7 days (current drinkers), and the percentage of drinkers with on average responsible, harmful and hazardous levels of use in the past 12 months and the past 7 days by background characteristics, South Africa 2003

Background characteristics	Ever drank alcohol	Average in past 12 months					Average in past 7 days							
		CAGE >2	Drink past 12 months	Abstainers in past 12 months	Responsible <4 drinks	Hazardous 4-<6 drinks	Harmful 6+drinks	Missing	Drink past 7 days	Abstainers in past 7 days	Responsible <4 drinks	Hazardous 4-<6 drinks	Harmful 6+drinks	Number
Age														
15-24	38.5	16.4	32.7	67.4	25.7	1.8	1.4	3.8	21.5	78.5	20.3	0.7	0.5	1 121
25-34	52.8	26.7	43.3	56.7	33.6	3.1	3.2	3.4	34.4	65.6	31.6	2.1	0.7	735
35-44	55.3	25.6	45.0	55.0	35.5	2.5	4.2	2.7	36.8	63.2	33.1	2.4	1.4	593
45-54	55.8	20.3	42.6	57.4	33.9	3.1	2.1	3.5	33.8	66.2	31.8	1.8	0.3	438
55-64	54.6	22.1	41.3	58.7	33.1	2.9	1.9	3.5	29.7	70.3	27.2	1.3	1.3	297
65+	44.7	19.2	32.9	67.1	28.6	0.6	1.9	1.9	27.7	72.3	27.1	0.4	0.2	240
Residence														
Urban	53.4	21.7	43.5	56.5	35.2	3.0	2.7	2.7	34.1	65.9	31.4	1.9	0.9	2 289
Non-urban	38.6	20.7	30.2	69.8	22.5	1.2	2.0	4.6	20.7	79.3	19.6	0.7	0.4	1 133
Province														
Western Cape	70.3	31.0	55.1	44.9	48.2	2.8	2.0	2.0	37.3	62.7	34.0	3.4	0.0	337
Eastern Cape	58.8	35.9	42.5	57.6	35.1	1.2	3.6	2.7	37.0	63.1	33.6	1.4	2.0	367
Northern Cape	61.4	38.0	51.8	48.2	40.3	3.9	4.6	3.0	42.8	57.2	33.9	4.3	4.6	60
Free State	52.5	27.7	45.9	54.1	34.2	2.8	5.5	3.4	32.9	67.1	30.3	2.3	0.3	224
KwaZulu-Natal	22.2	11.4	14.1	85.9	7.8	1.6	0.2	4.5	8.7	91.3	7.6	0.9	0.2	781
North West	57.9	34.5	52.5	47.5	41.8	1.9	6.3	2.6	44.7	55.3	42.7	1.2	0.8	248
Gauteng	56.6	14.6	48.4	51.6	39.8	3.6	2.8	2.1	37.7	62.3	35.5	1.2	0.9	914
Mpumalanga	43.2	18.1	41.0	59.0	34.7	2.3	1.4	2.6	32.9	67.1	30.3	1.8	0.8	209
Limpopo	45.7	23.1	33.6	66.4	23.8	1.3	1.0	7.5	21.8	78.2	21.4	0.3	0.0	282
Education														
No education	50.1	25.2	41.5	58.5	31.6	0.7	4.5	4.8	32.2	67.8	29.0	2.6	0.6	296
Grades 1-5	52.0	29.2	36.7	63.3	28.6	3.6	2.5	2.0	28.9	71.1	27.6	0.9	0.5	335
Grades 6-7	48.1	23.1	38.3	61.7	30.9	3.2	1.8	2.4	31.6	68.4	29.9	1.7	0.1	384
Grades 8-11	45.7	19.9	36.7	63.3	29.0	2.3	2.3	3.3	26.8	73.2	24.2	1.7	0.9	1 366
Grade 12	47.7	19.1	38.7	61.3	29.7	2.7	2.5	3.9	28.9	71.1	27.2	1.0	0.7	703
Higher	57.2	18.0	50.7	49.4	44.4	1.8	0.9	3.5	37.8	62.2	36.0	0.7	1.1	309
Population group														
African	44.2	21.6	35.2	64.8	26.9	2.3	2.5	3.6	27.1	72.9	25.3	1.1	0.8	2 838
Afr. urban	48.0	22.4	38.7	61.3	30.2	2.9	2.8	2.9	31.2	68.8	29.0	1.3	1.0	1 747
Afr. non-urban	38.0	20.4	29.5	70.5	21.6	1.2	2.0	4.7	20.4	79.6	19.4	0.6	0.4	1 091
Coloureds	68.0	31.2	52.3	47.7	43.5	3.5	3.0	2.2	36.4	63.6	32.3	3.4	0.7	268
White	74.5	10.0	69.9	30.1	64.8	1.9	1.9	1.3	53.1	46.9	48.9	4.2	0.0	2 20.0
Indian	66.3	11.0	50.3	49.7	40.6	5.0	1.3	3.5	36.2	63.8	32.8	2.2	1.3	83.0
Total	48.5	21.4	39.1	60.9	31.0	2.4	2.4	3.3	29.6	70.4	27.5	1.5	0.7	3 422

33 men have incomplete data on number of drinks.

22 men had education unknown; 13 men reported population group as Other.

Missing data for past 7 days has not been included



Table 13.6 Patterns of drinking, risky drinking and symptoms of alcohol problems among women

Percentage of women aged 15 years and above who ever drank alcohol, who show signs of alcohol problems, who drank alcohol in past 12 months or past 7 days (current drinkers), and the percentage of drinkers with on average responsible, harmful and hazardous levels of use in the past 12 months and the past 7 days by background characteristics, South Africa 2003

Background characteristics	Average in past 12 months										Average in past 7 days							
	Ever drank alcohol	CAGE ≥2	Drink past 12 months	Abstainers in past 12 months			Responsible <2 drinks	Hazardous 2-<4 drinks	Harmful 4+ drinks	Missing	Drink past 7 days	Abstainers in past 7 days			Responsible <2 drinks	Hazardous 2-<4 drinks	Harmful 4+ drinks	Number
				months	in past 12 months	months						in past 7 days	days					
<b>Age</b>																		
15-24	18.5	6.1	14.7	85.3	11.5	0.5	0.9	1.8	8.2	91.8	6.9	1.2	0.1	1 256				
25-34	20.8	6.9	14.7	85.3	12.4	0.7	0.8	0.9	7.9	92.1	7.5	0.5	0.0	979				
35-44	25.0	8.0	19.6	80.4	15.6	0.9	2.1	1.0	13.3	86.7	11.2	1.6	0.5	883				
45-54	21.0	7.4	13.4	86.6	9.9	1.9	0.7	0.9	9.3	90.7	8.4	0.8	0.1	714				
55-64	27.1	7.9	17.0	83.0	14.0	0.8	1.0	1.2	13.6	86.4	12.5	0.8	0.3	483				
65+	19.8	5.1	12.2	87.8	8.6	2.0	0.7	0.9	8.0	92.0	5.7	1.9	0.3	378				
<b>Residence</b>																		
Urban	26.7	7.5	19.5	80.5	16.0	1.2	1.1	1.3	12.0	88.0	10.6	1.2	0.3	2 995				
Non-urban	12.5	5.9	8.3	91.7	5.7	0.5	1.1	1.0	5.9	94.1	5.0	0.8	0.1	1 697				
<b>Province</b>																		
Western Cape	39.2	9.6	28.8	71.2	22.9	1.9	1.6	2.5	18.8	81.3	15.5	3.1	0.2	573				
Eastern Cape	18.1	9.1	10.5	89.5	7.1	0.8	0.6	2.1	8.0	92.0	7.0	1.0	0.0	562				
Northern Cape	39.1	18.8	29.3	70.7	22.4	2.6	2.9	1.5	19.3	80.7	14.2	3.5	1.6	92				
Free State	27.5	13.2	21.0	79.0	13.4	3.4	2.8	1.4	13.9	86.1	11.2	1.9	0.8	313				
KwaZulu-Natal	6.6	1.9	3.6	96.4	3.0	0.0	0.3	0.3	1.4	98.6	0.8	0.5	0.0	888				
North West	21.5	9.7	18.2	81.8	14.2	1.5	2.0	0.5	11.9	88.1	10.9	0.6	0.4	373				
Gauteng	27.8	4.8	21.0	79.0	18.6	0.8	0.8	0.8	13.2	86.8	12.4	0.5	0.3	1 074				
Mpumalanga	12.3	2.7	8.3	91.7	6.4	0.8	0.7	0.4	5.5	94.5	4.9	0.6	0.0	300				
Limpopo	17.2	9.4	11.3	88.7	8.2	0.2	1.0	1.9	6.1	93.9	5.5	0.5	0.0	519				
<b>Education</b>																		
No education	20.3	10.4	13.9	86.1	9.9	1.4	1.7	1.0	11.4	88.6	9.6	1.3	0.5	578				
Grades 1-5	17.7	8.8	12.8	87.2	9.3	1.2	1.1	1.2	9.1	90.9	8.2	0.8	0.1	448				
Grades 6-7	22.0	9.7	12.4	87.6	10.2	0.8	0.8	0.6	7.6	92.4	6.0	1.5	0.1	501				
Grades 8-11	20.4	7.0	14.9	85.1	11.8	0.7	1.1	1.4	8.8	91.2	7.7	0.7	0.3	1 873				
Grade 12	19.4	3.2	14.2	85.8	11.2	1.1	1.0	0.9	9.2	90.9	7.5	1.6	0.0	923				
Higher	39.3	4.6	32.6	67.4	29.0	1.0	0.4	2.3	18.5	81.5	17.8	0.7	0.0	344				
<b>Population group</b>																		
African	16.4	6.6	11.4	88.6	8.9	0.9	0.8	0.9	7.1	92.9	6.2	0.8	0.2	3 857				
Afr. urban	20.3	7.5	14.2	85.8	11.7	1.1	0.6	0.8	8.5	91.5	7.4	0.8	0.3	2 250				
Afr. non-urban	11.1	5.3	7.5	92.6	5.1	0.5	0.9	0.9	5.3	94.7	4.5	0.7	0.1	1 607				
Coloureds	40.2	14.0	27.7	72.3	20.2	1.0	3.8	2.7	19.7	80.3	16.8	2.4	0.5	456				
White	58.6	1.7	50.9	49.1	43.9	2.9	1.1	3.0	31.3	68.7	27.8	3.5	0.0	257				
Indian	37.7	2.7	24.4	75.6	21.2	0.2	0.3	2.7	12.8	87.2	12.6	0.2	0.0	112				
Total	21.6	6.9	15.5	84.5	12.2	1.0	1.1	1.2	9.8	90.2	9.6	0.1	0.1	4 693				

8 women have incomplete data on number of drinks.

17 women had education unknown; 12 women reported population group as Other.

Missing data for past 7 days has not been included

Using data on the average number of drinks consumed per day and drinking frequency over the past 12 months\*, the proportion of persons drinking 'responsibly' (less than four drinks per day for men and less than two drinks per day for women), drinking at 'harmful levels' (four drinks to less than six drinks per day for men and two drinks to less than four drinks per day for women) and drinking at 'hazardous levels' (six or more drinks per day for men and four or more drinks per day for women) was calculated. These levels were recommended by the Australian National Health and Medical Research Council in 1987 and allow for average body size difference between men and women. For drinking during the past seven days this was calculated directly using information provided by respondents. Using data over the past 12 months, 79 percent of men and women drinkers, on average, drink at responsible levels. Among persons who reported drinking in the past seven days, men reported 5.0 alcohol free days (S.E. = 0.07) compared to 5.6 for women (S.E. = 0.08).

### **13.5 Risky Drinking and Alcohol Problems**

Using the levels of hazardous and harmful drinking referred to in the previous section and the data averaged over the past 12 months, it was found that 12 percent of male and 14 percent of female drinkers drink at "hazardous" or "harmful" levels. Using data on drinking practices during the seven days preceding the interview, it was found that 7 percent of male drinkers and 2 percent of female drinkers drink at such levels. In terms of the total sample of drinkers and non-drinkers, 5 percent of men and 2 percent of women on average drink at hazardous/harmful levels based on the past 12 months (Tables 13.5 and 13.6).

Hazardous and harmful drinking appears to be particularly high over weekends. Using information on the amount of alcohol consumed over the seven days preceding the interview, 23 percent of male drinkers and 25 percent of female drinkers exceeded the recommended levels for responsible drinking on average over the weekend (Friday, Saturday and Sunday) preceding the interview. For weekdays (Monday-Thursday) one percent of male drinkers and four percent of female drinkers drink at hazardous or harmful levels (Table 13.7). Rates of hazardous/harmful drinking are therefore roughly 16 times higher for men over weekends as compared to weekdays and 7 times greater for female drinkers. It is difficult to compare levels of hazardous/harmful drinking over weekdays and weekends with the 1998 SADHS as the 'risky drinking' measures differed in the two surveys.

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\* 5 or more days per week (category 1), 1-4 days per week (2), 1-3 days per month (3), and less than once a month (4). To calculate an average daily amount of alcohol consumed, the daily frequency of alcohol drinking was multiplied by the average daily amount, with persons in category 1 estimated as drinking every day, persons in category 2 at 2.5/7 times a day, category 3 at 1/15 times a day and category 4 at 1/30 times per day.

**Table 13.7 Hazardous and harmful drinking among adults**

Percentage of adult drinkers 15 years and above who drink at hazardous or harmful levels during weekdays and weekends based on past 7 day drinking report by sex and background characteristics, South Africa 2003

Background characteristics	Weekdays (Monday-Thursday)		Weekends (Friday-Sunday)	
	Men	Women	Men	Women
<b>Age</b>				
15-24	0.6	0.9	18.3	28.0
25-34	1.1	2.1	26.8	24.5
35-44	1.6	3.9	31.4	26.4
45-54	1.4	4.6	22.7	23.3
55-64	3.8	3.1	16.2	11.9
65+	1.3	15.9	4.5	42.3
<b>Residence</b>				
Urban	1.4	3.2	25.7	24.2
Non-urban	1.3	5.2	13.4	30.5
<b>Province</b>				
Western Cape	0.8	4.7	22.7	27.0
Eastern Cape	2.8	0.0	21.7	32.8
Northern Cape	8.1	9.0	37.5	38.7
Free State	1.9	7.5	20.8	33.5
KwaZulu-Natal	2.2	0.0	27.3	17.4
North West	0.7	2.9	15.8	24.2
Gauteng	0.6	2.6	26.8	23.7
Mpumalanga	2.6	4.8	16.4	18.2
Limpopo	0.0	3.1	10.0	13.4
<b>Education</b>				
No education	1.7	8.2	18.8	33.3
Grades 1-5	2.7	4.7	12.8	27.3
Grades 6-7	0.3	1.5	24.7	28.7
Grades 8-11	2.0	2.9	23.0	26.9
Grade 12	0.2	4.8	28.3	31.2
Higher	1.1	1.2	17.6	7.0
<b>Population group</b>				
African	1.4	3.3	23.5	28.5
Afr. urban	1.5	3.2	28.6	29.2
Afr. non-urban	1.3	3.8	12.9	26.4
Coloured	2.0	4.0	28.4	38.7
Indian	4.7	0.0	14.7	4.6
White	0.0	4.8	13.8	6.9
<b>Total</b>	<b>1.4</b>	<b>3.6</b>	<b>22.5</b>	<b>25.4</b>

Note: Responsible drinking is defined as less than 4 standard drinks per day, hazardous levels as 4 to less than 6 and harmful drinking as in excess of 6 drinks per day for men.

For women the comparable amounts are less than 2, 2 to less than 4 and more than 4.

For men hazardous/harmful drinking at weekends appears to be highest among drinkers in the middle categories for age (35-44 years), whereas for women the highest proportion of persons drinking at hazardous/harmful levels occurs among persons 65 years and older. With regard to the different population groups, the highest level of hazardous/harmful drinking among men over weekends occurs in Coloureds and urban Africans (28 – 29 percent of drinkers), whereas for women levels are highest among Coloured females (39 percent of drinkers). For men hazardous/harmful drinking over weekends is greatest among persons living in urban areas whereas for women a higher proportion of persons in non-urban areas drink at hazardous/harmful levels. Among both men and women, the Northern Cape stands out as the province having the highest proportion of drinkers drinking at hazardous/harmful levels over weekends (38 – 39 percent of drinkers). For men the highest levels of hazardous/harmful drinking over weekends occurs among persons with a grade 12 education, whereas for females the highest level occurs in persons with no education.

Only 1 percent of pregnant women acknowledged that they had drunk alcohol in the past seven days. Symptoms of alcohol problems were assessed via the 4-item CAGE Questionnaire (Erwing, 1984). Over a fifth of men in the study population (21 percent), both drinkers and non-drinkers, and 7 percent of women were found to score above the cut off point ( $\geq 2$ ) on this 4 item questionnaire (Table 13.5 and 13.6), indicating that they have in their lifetime experienced symptoms of alcohol problems. This is slightly lower than the proportions reported in 1998, 28 percent and 10 percent respectively (Department of Health and South African Medical Research Council, 2002). Shisana *et al.* in their national survey conducted in 2005 reported levels of high risk drinking of 14 percent for men and 2 percent for women. Shisana *et al.* (2005) used the Alcohol Use Disorders Identification Test (AUDIT), a 10 item instrument that takes into account both the quantity and frequency of alcohol consumed as well as symptoms of alcohol problems. The most likely reason, however, for the lower estimates of problematic alcohol use reported by Shisana *et al.* as compared to the 2003 SADHS is because of the different time frame used (past 12 months versus lifetime).

In the 2003 SADHS symptoms of alcohol problems among men are highest among persons in the 25-34 and 35-44 age groups (26-27 percent), persons in the Northern Cape, Eastern Cape and North West (all above 35 percent), persons with the lowest levels of education (29 percent for persons with a grade 1-5 education and 25 percent for persons with no education), and persons who identified themselves as Coloured (31 percent). For females, symptoms of alcohol problems are highest among persons in the 35-44 age group (8 percent), persons in the Northern Cape and Free State (above 10 percent), persons with no education (10 percent), and persons who identified themselves as Coloured (14 percent). There are no major differences between urban and non-urban areas of residence in reported experience of symptoms of alcohol problems. In the 1998 SADHS the highest symptoms of alcohol problems were reported by males (aged 35-44) and females (aged 45-54), persons with the lowest levels of education, and Coloureds and Africans.

Interventions are needed to reduce the high levels of risky drinking over weekends. Some groups appear to be especially at risk from the effects of hazardous and harmful levels of drinking: Coloured men and women and African men. Other groups deserving special attention in intervention planning are persons in the Northern Cape, persons living in urban areas, higher educated men and women with no education, as well as men aged 35-44 and women 65 years of age and older. However, this does not mean that interventions should exclude other sectors of the population such as non-urban populations.

### **13.6 Perceptions of Own Body Weight**

Table 13.8 shows the responses of adult participants to the question about their own body weight. In general, more men perceive themselves as being underweight, while more women perceive themselves as being overweight. Perceptions are related to age, area of residence and education levels. For example, more non-urban compared with urban women perceive themselves as being underweight. On the other hand, more urban men and women perceive themselves as overweight compared with non-urban ones and these perceptions are more common in women with higher levels of education.

The largest percent of adults who perceive themselves as being underweight is in the Eastern Cape while the largest percent of those who perceive themselves as overweight are in the Western Cape. The lowest percent of those who perceive themselves as being underweight are in KwaZulu-Natal and the lowest percent of those who perceive themselves as overweight are men in North West and women in Limpopo.

Of the different population groups the highest prevalence of Coloured men and women perceive themselves as being underweight, 16 and 12 percent, respectively. The lowest percent of a perception of being underweight is reported by African non-urban men (8 percent), and white (6 percent) and Indian (6 percent) women. A large prevalence of white men (23 percent) and women (30 percent) perceive themselves as being overweight, compared to African non-urban men and women who report the lowest percentages, 1 and 5 percent, respectively.

Table 13.8 Adults' self perception of weight

Percentage of men and women 15 years and above who perceive themselves to be underweight, normal weight, and over weight, by background characteristics, South Africa 2003

Background characteristics	MEN				WOMEN			
	Under-weight	Normal weight	Over-weight	Number	Under-weight	Normal weight	Over-weight	Number
<b>Age</b>								
15-24	9.9	80.6	3.2	1 121	8.3	75.6	9.3	1 256
25-34	10.9	76.7	5.6	735	7.9	68.7	16.4	979
35-44	8.5	76.6	6.8	593	9.9	66.8	16.1	883
45-54	14.8	70.1	6.8	438	12.6	60.2	18.3	714
55-64	15.2	64.2	8.6	297	12.7	62.0	14.6	483
65+	16.8	65.5	4.8	240	15.9	60.0	10.7	378
<b>Residence</b>								
Urban	11.2	75.4	6.9	2 289	9.1	65.3	18.3	2 995
Non-urban	11.9	75.0	2.2	1 133	12.3	71.4	6.7	1 697
<b>Province</b>								
Western Cape	14.2	66.2	12.1	337	13.4	50.5	28.9	573
Eastern Cape	28.5	63.0	5.9	367	21.6	64.1	10.9	562
Northern Cape	17.1	67.1	6.1	60	14.5	59.8	17.6	92
Free State	19.0	68.4	3.8	224	12.6	68.7	13.3	313
KwaZulu-Natal	4.7	83.7	3.3	781	1.7	82.3	9.3	888
North West	6.0	70.3	1.8	248	7.2	66.2	10.2	373
Gauteng	6.6	80.7	6.8	914	6.8	69.1	17.9	1 074
Mpumalanga	14.7	67.5	5.2	209	9.4	54.8	7.9	300
Limpopo	15.6	78.1	2.2	282	16.7	70.2	7.5	519
<b>Education</b>								
No education	20.6	60.7	2.7	296	18.3	62.0	7.2	578
Grades 1-5	19.5	62.9	4.7	335	15.6	62.7	9.8	448
Grades 6-7	15.6	68.5	5.0	384	11.9	64.2	13.1	501
Grades 8-11	10.4	78.6	4.0	1 366	10.2	67.7	14.7	1 873
Grades 12	6.6	81.1	7.5	703	4.7	73.7	16.2	923
Higher	4.9	82.8	9.9	309	3.0	70.4	23.5	344
<b>Population group</b>								
African	11.3	77.0	2.9	2 838	10.4	69.8	11.0	3 857
Afr. urban	10.7	78.4	3.3	1 747	11.8	87.9	18.8	2 250
Afr. non-urban	7.6	46.6	1.4	1 091	11.2	66.2	5.4	1 607
Coloured	16.3	67.4	11.0	268	12.2	52.7	26.8	456
White	8.2	67.1	23.3	220	5.7	61.9	30.4	257
Indian	11.5	67.5	19.1	83	5.7	65.0	27.4	112
<b>Total*</b>	<b>11.4</b>	<b>75.2</b>	<b>5.4</b>	<b>3 422</b>	<b>10.2</b>	<b>67.5</b>	<b>14.1</b>	<b>4 693</b>

22 men and 17 women had education unknown.

13 men and 12 women reported population group as Other.

\*missing and unknown are excluded.

## 13.7 Weight and Height

Table 13.9 provides mean values of weight and height for South African men and women aged 15 years and older. Mean height for men is higher than that of women, (1.68 metre vs. 1.59 metre). Variations in height are observed in relation to the level of education and population groups. White and Indian men are the tallest, while African non-urban men are the shortest. Coloured men and Indian women are the shortest within their population groups.

Although on average men are taller than women, their mean weight was lower, a difference of 2.1kg. The heaviest men are

in the 35 to 54-age category, while the heaviest women are in the 25 to 54 age group. Urban men and women are heavier than non-urban ones. The heaviest men and women are residents of KwaZulu-Natal and the lightest of Limpopo and Northern Cape provinces. The highest mean weight is reported in African urban women, and the lowest in Indian women.

A comparison of weight and height data from the current survey with the 1998 survey shows only a few differences. Mean weight and height data remained similar with one exception; data from the 1998 survey shows higher mean weights and heights for white men and women than in the current study. These differences can be partly explained by the fact that the sample sizes of men and women were 536 and 737 respectively, in 1998, and 203 and 236, respectively in 2003.

Table 13.9 Anthropometry of adult men and women

The mean and standard error of weight in kg and height in metres of men and women aged 15 and above by background characteristics, South Africa 2003

Background characteristics	MEN				WOMEN			
	Weight (kg)		Height (m)		Weight (kg)		Height (m)	
	Mean	Std Error	Number	Mean	Std error	Number	Mean	Std error
<b>Age</b>								
15-24	59.2	0.47	1 086	1.67	0.004	1 086	59.2	0.51
25-34	67.5	0.74	702	1.69	0.005	702	68.7	0.65
35-44	69.8	0.83	569	1.69	0.005	569	72.3	0.79
45-54	71.1	1.02	418	1.69	0.005	418	73.9	0.97
55-64	69.0	1.27	282	1.68	0.008	282	71.2	1.09
65+	67.6	1.07	218	1.66	0.008	218	69.4	1.19
<b>Residence</b>								
Urban	67.1	0.59	2 189	1.69	0.003	2 189	69.2	0.56
Non-urban	63.0	0.43	1 086	1.67	0.003	1 086	65.6	0.48
<b>Province</b>								
Western Cape	68.0	1.24	331	1.68	0.007	331	67.4	1.12
Eastern Cape	64.6	1.43	355	1.67	0.009	355	69.8	1.03
Northern Cape	60.4	0.99	58	1.66	0.005	58	62.8	0.84
Free State	62.5	1.13	217	1.66	0.005	217	64.8	0.83
KwaZulu-Natal	68.0	0.59	734	1.67	0.006	734	70.6	0.97
North West	62.6	0.80	243	1.68	0.005	243	65.9	0.93
Gauteng	67.6	1.21	865	1.70	0.006	865	69.4	1.05
Mpumalanga	63.5	0.89	206	1.69	0.004	206	67.2	0.93
Limpopo	61.1	0.78	268	1.68	0.005	268	63.6	1.13
<b>Education</b>								
No education	64.8	0.95	276	1.66	0.007	276	66.5	0.84
Grades 1-5	64.8	1.06	329	1.66	0.005	329	69.4	0.98
Grades 6-7	64.6	0.93	371	1.68	0.005	371	70.4	1.14
Grades 8-11	63.9	0.59	1 300	1.68	0.003	1 300	66.6	0.60
Grades 12	67.1	0.70	669	1.70	0.005	669	68.2	0.73
Higher	74.1	1.56	300	1.72	0.009	300	69.7	1.35
<b>Population group</b>								
African	64.6	0.36	2 720	1.68	0.002	2 720	68.5	0.44
Afr. urban	65.4	0.50	1 673	1.69	0.003	1 673	70.4	0.65
Afr. non-urban	63.2	0.44	1 047	1.67	0.003	1 047	65.8	0.47
Coloured	67.0	1.78	256	1.66	0.010	256	65.3	1.19
White	78.2	2.63	203	1.73	0.012	203	65.7	1.86
Indian	71.3	2.17	82	1.69	0.017	82	63.6	0.93
Total	65.8	0.42	3 275	1.68	0.002	3 275	67.9	0.41

Note: Std Error = standard deviation of the mean.  
 22 men and 17 women had education unknown; 13 men and 11 women reported population group as Other.

### 13.8 Body Mass Index (BMI) and Prevalence of Obesity

Body mass index calculated as weight in kilograms divided by the square of the height in metres ( $\text{kg/m}^2$ ), is a useful measure of nutritional status that combines height and weight data. A person is underweight if the BMI is less than  $18.5 \text{ kg/m}^2$ ; overweight if BMI is  $25\text{--}29.9 \text{ kg/m}^2$ ; and obese if  $\text{BMI} \geq 30 \text{ kg/m}^2$ . Tables 13.10 and 13.11 show the mean BMI for adult men and women, as well as the distribution of the study population by underweight, normal weight, overweight or obesity.

Table 13.10 Body mass index (BMI) of adult men							
Mean and standard error of the BMI (kg/m <sup>2</sup> ) and the percentage of men aged 15 years and above by body mass index categories according to background characteristics, South Africa 2003							
Background characteristics	Body Mass Index		BMI Categories				Number
	Mean	Std error	Underweight <18.5	Normal 18.5-24.9	Overweight 25-29.9	Obese 30+	
<b>Age</b>							
15-24	21.2	0.17	20.3	68.2	9.7	1.8	1 086
25-34	23.8	0.28	8.4	60.9	20.9	9.8	702
35-44	24.6	0.32	8.3	52.2	26.6	12.9	569
45-54	24.9	0.33	8.4	45.9	31.9	13.8	418
55-64	24.5	0.38	9.9	48.0	29.0	13.1	282
65+	24.7	0.40	9.3	44.7	32.0	14.0	218
<b>Residence</b>							
Urban	23.7	0.21	11.8	57.3	20.3	10.6	2 189
Non-urban	22.7	0.15	14.0	58.5	22.4	5.1	1 086
<b>Province</b>							
Western Cape	24.1	0.38	9.2	52.7	23.6	14.5	331
Eastern Cape	23.2	0.67	10.9	63.8	16.5	8.8	355
Northern Cape	21.8	0.29	25.7	55.1	13.8	5.4	58
Free State	22.6	0.34	18.0	60.0	13.5	8.6	217
KwaZulu-Natal	24.5	0.26	4.1	55.0	31.9	9.0	734
North West	22.1	0.26	19.8	57.9	17.5	4.8	243
Gauteng	23.5	0.39	14.3	55.9	20.2	9.7	865
Mpumalanga	22.3	0.28	16.4	61.4	16.3	6.0	206
Limpopo	21.5	0.24	19.5	64.9	11.0	4.6	268
<b>Education</b>							
No education	23.5	0.33	13.9	51.2	24.1	10.8	276
Grades 1-5	23.6	0.41	14.4	51.2	24.5	10.0	329
Grades 6-7	23.0	0.35	16.1	58.6	16.3	9.0	371
Grades 8-11	22.8	0.20	14.1	60.2	19.3	6.3	1 300
Grades 12	23.7	0.32	9.7	60.5	19.9	10.0	669
Higher	25.0	0.41	5.4	51.5	30.3	12.9	300
<b>Population group</b>							
African	22.9	0.13	13.3	59.5	20.1	7.1	2 720
Afr. urban	23.1	0.19	13.0	60.3	18.7	8.1	1 673
Afr. non-urban	22.7	0.15	13.9	58.3	22.5	5.3	1 047
Coloured	24.4	0.89	11.5	52.4	21.3	14.9	256
White	26.3	0.94	4.9	47.0	25.1	23.0	203
Indian	24.8	0.36	10.1	45.2	33.7	10.9	82
Total	23.3	0.15	12.5	57.7	21.0	8.8	3275
Note: Std error = standard deviation of the mean. 22 cases had education unknown. 13 cases reported population group as Other.							

The mean BMI is 23.3 kg/m<sup>2</sup> and 27 kg/m<sup>2</sup> for men and women, respectively. Although the mean values are within the normal limits in relation to age, area of residence, and within provinces, there are variations in relation to level of education and population groups. The prevalence of overweight increases with age and is most prevalent in men over 65 years and in women aged 55 to 64 years. Urban women are more obese than non-urban ones and a difference of 10 percent is observed between urban and non-urban groups. In men the same trend is followed with the prevalence of obesity being 5 percent higher in urban men. For both men and women, the prevalence of overweight is highest in KwaZulu-Natal and lowest in men in Limpopo and women in Northern Cape.

Table 13.11 Body mass index (BMI) for adult women							
Mean and standard error of the BMI (kg/m <sup>2</sup> ) and the percentage of women aged 15 years and above by body mass index categories according to background characteristics, South Africa 2003							
Background characteristics	Body Mass Index		BMI Categories				Number
	Mean	Std error	Underweight <18.5	Normal 18.5-24.9	Overweight 25-29.9	Obese 30+	
<b>Age</b>							
15-24	23.6	0.20	11.1	58.2	19.7	11.0	1 199
25-34	26.8	0.25	5.2	39.3	29.4	26.0	934
35-44	28.6	0.31	4.3	30.5	29.6	35.6	852
45-54	29.4	0.40	2.9	27.7	28.2	41.2	684
55-64	28.5	0.46	4.9	27.0	34.2	33.9	455
65+	28.3	0.46	5.2	29.1	33.9	31.8	357
<b>Residence</b>							
Urban	27.6	0.22	5.7	36.1	27.1	31.0	2 864
Non-urban	25.9	0.18	7.1	43.7	28.2	21.0	1 616
<b>Province</b>							
Western Cape	27.3	0.42	9.5	34.3	25.9	30.3	559
Eastern Cape	27.9	0.44	3.2	36.7	28.2	31.9	527
Northern Cape	25.8	0.28	12.2	41.9	21.6	24.2	89
Free State	26.4	0.31	7.6	42.8	23.3	26.2	298
KwaZulu-Natal	26.9	0.41	3.2	39.3	33.0	24.5	831
North West	26.4	0.35	8.0	42.6	25.1	24.4	361
Gauteng	27.5	0.43	5.6	36.1	28.2	30.1	1 025
Mpumalanga	26.7	0.36	6.0	40.1	25.9	28.0	294
Limpopo	25.6	0.43	9.1	45.0	24.2	21.8	496
<b>Education</b>							
No education	26.9	0.31	6.6	36.7	30.3	26.4	544
Grades 1-5	27.6	0.38	7.1	30.9	32.4	29.5	429
Grades 6-7	28.3	0.45	6.3	32.6	25.8	35.3	485
Grades 8-11	26.6	0.25	7.1	41.6	24.9	26.4	1 796
Grades 12	26.4	0.29	4.8	43.2	27.4	24.6	878
Higher	27.0	0.51	3.9	38.4	33.9	23.8	322
<b>Population group</b>							
African	27.2	0.18	5.6	38.2	27.7	28.5	3 687
Afr. urban	28.1	0.26	5.1	34.0	27.1	33.8	2 161
Afr. non-urban	25.9	0.18	6.3	44.2	28.6	21.0	1 526
Coloured	26.4	0.42	12.1	35.8	25.7	26.5	438
White	25.0	0.69	4.9	57.0	24.3	13.7	236
Indian	26.6	0.37	5.7	35.1	34.4	24.8	110
<b>Total</b>	<b>27.0</b>	<b>0.16</b>	<b>6.2</b>	<b>38.9</b>	<b>27.5</b>	<b>27.4</b>	<b>4 481</b>
Note: Std error = standard deviation of the mean. 17 cases had education unknown. 11 cases reported population group as Other.							



The highest level of obesity in men is seen in those of 65 years and older, in the Western Cape, in men with a tertiary education and amongst whites. In women, obesity is most prevalent in the 45-54 age group, in the Eastern Cape, in those with low education (Grade 6-7) and in African urban women. White women (14 percent) and the 15-24 age group (11 percent) have the lowest prevalence of obesity.

A comparison of data from the 1998 survey with the current one shows that there have been no major changes in BMI data over the 5-year period (Figure 13.3). Mean BMI for men and women has hardly changed from 23.4 kg/m<sup>2</sup> and 27.3 kg/m<sup>2</sup> for men and women respectively. Figure 13.4 shows the BMI categories by population group. The only changes can be seen for White men and women who tend towards less overweight than in 1998 and the Indian women who have a lower proportion underweight in 2003 than in 1998.

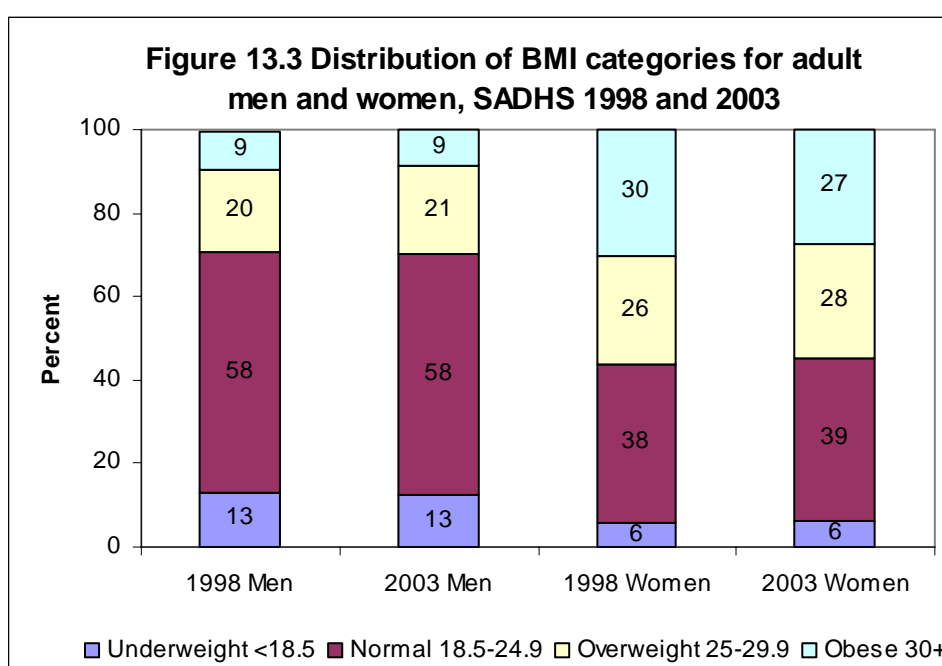
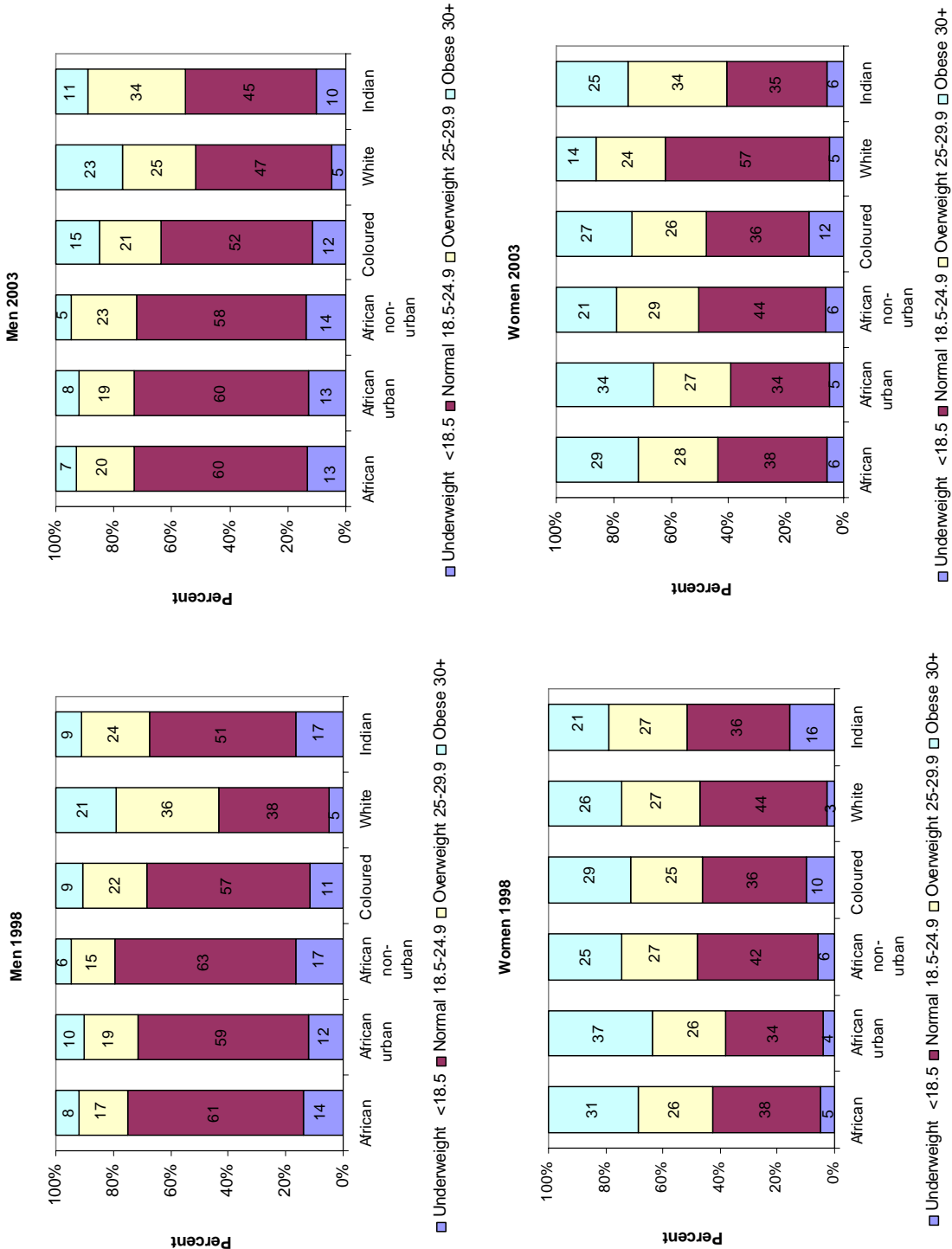


Figure 13.4 Distribution of BMI categories by population group and sex, SADHS 1998 and 2003



### 13.9 Waist and Hip Circumference and Waist/Hip Ratio (WHR)

Tables 13.12 and 13.13 show the mean waist, hip circumference and waist/hip ratios (WHR) of men and women, respectively. They also show the prevalence of those having a WHR above the cut-off points for central obesity indicated by a WHR greater than or equal to 1.0 for men or greater than or equal to 0.85 for women. In addition, the tables show the percentage of men with a waist measurement greater than 102 cm and the percentage of women having a value greater than 88 cm. The mean waist and hip circumference for men and women is 78.2 cm and 91.4 cm and 82.7 cm and 100.3 cm, respectively. For both men and women the mean waist and hip circumference increases with age until about 64 years. In men the highest levels of waist and hip circumference are reported in Gauteng and Western Cape, in whites and in Indians (with tertiary and/or no education).

Table 13.12 Waist and hip circumference of adult men

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for men aged 15 and above; and of men with WHR >1.0 and waist circumference  $\geq 102$  cm by background characteristics, South Africa 2003

Background characteristics	Waist circumference (cm)				Hip Circumference (cm)			Waist Hip Ratio (WHR)			
	Mean	Std error	Percentage with waist $\geq 102$ cm	Number	Mean	Std error	Number	Mean	Std error	Percentage with WHR $\geq 1.0$	Number
<b>Age</b>											
15-24	71.3	0.41	0.9	1 076	87.5	0.49	1074	0.84	0.013	3.1	1 074
25-34	78.3	0.66	3.0	697	90.3	1.16	697	1.06	0.074	7.2	697
35-44	82.4	0.79	8.0	565	95.9	1.16	565	0.88	0.015	6.8	565
45-54	83.1	1.27	8.4	417	94.0	1.17	417	1.02	0.073	7.3	417
55-64	85.0	1.35	11.5	281	94.0	1.18	279	0.94	0.034	11.4	279
65+	83.9	1.22	9.4	216	94.0	0.95	216	0.89	0.010	11.4	216
<b>Residence</b>											
Urban	79.7	0.58	6.2	2 168	92.6	0.64	2166	0.94	0.032	7.9	2 166
Non-urban	75.4	0.47	2.7	1 085	89.0	0.53	1082	0.90	0.024	3.4	1 082
<b>Province</b>											
Western Cape	80.5	1.03	7.3	326	92.2	1.31	326	0.96	0.091	6.8	326
Eastern Cape	77.8	1.07	5.2	352	91.3	1.10	352	0.85	0.007	4.7	352
Northern Cape	76.3	0.85	4.2	57	89.7	0.79	57	0.88	0.029	3.7	57
Free State	76.9	0.92	3.0	217	91.5	0.96	217	0.87	0.024	3.6	217
KwaZulu-Natal	78.0	0.74	3.9	727	90.0	1.09	723	1.00	0.061	7.4	723
North West	76.3	0.67	2.2	242	88.8	0.58	242	0.86	0.005	3.5	242
Gauteng	81.1	1.25	7.3	859	94.8	1.26	859	0.94	0.057	9.3	859
Mpumalanga	74.8	0.69	2.4	206	88.7	0.72	205	0.91	0.040	3.2	205
Limpopo	73.5	0.86	4.0	267	87.9	0.71	267	0.88	0.036	4.3	267
<b>Education</b>											
No education	80.6	0.85	3.8	276	92.0	0.81	275	0.92	0.038	5.7	275
Grades 1-5	79.0	1.10	6.0	329	92.8	1.86	326	0.91	0.050	5.9	326
Grades 6-7	78.5	0.83	6.0	368	91.1	1.02	368	0.92	0.044	6.3	368
Grades 8-11	76.5	0.56	3.7	1 289	90.1	0.63	1289	0.90	0.025	5.5	1 289
Grades 12	77.2	0.85	3.7	664	92.0	1.05	664	0.92	0.041	4.1	664
Higher	84.0	1.45	12.2	298	93.5	1.98	296	1.12	0.114	16.0	296
<b>Population Group</b>											
African	77.0	0.35	3.0	2 708	90.4	0.46	2703	0.93	0.025	5.1	2 703
Afr. urban	78.0	0.47	3.1	1 662	91.4	0.66	1660	0.95	0.038	6.1	1 660
Afr. non-urban	75.4	0.48	2.8	1 046	89.0	0.55	1043	0.90	0.024	3.6	1 043
Coloured	79.5	1.21	7.7	254	92.9	1.74	254	0.93	0.084	8.2	254
White	90.6	3.03	26.5	195	100.0	2.71	195	0.91	0.016	22.1	195
Indian	85.9	1.01	11.7	82	96.8	1.23	82	0.88	0.007	6.7	82
Total	78.2	0.41	5.0	3 253	91.4	0.47	3248	0.93	0.023	6.4	3 248

Note: Std error = standard deviation of the mean.

17 cases had education unknown.

11 cases reported population group as Other.

In women the highest levels of waist circumference are shown in Western Cape and KwaZulu-Natal; hip circumference is highest in Gauteng and North West. African urban women have the highest mean waist and mean hip measurements of all women. Numerous white men (27 percent) have a waist measurement above 102 cm compared with only 3 percent of African men (Figure 13.5). A large percent of urban African women (39 percent) have a waist circumference greater than 88 cm, and the lowest percentage (25 percent) is among Indian women (Figure 13.5). The largest prevalence of women with a waist circumference greater than 88 cm is observed among those who are older, reside in Gauteng and Western Cape and have a low level of education (Grades 1-7) or no education (data not shown).

**Table 13.13 Waist and hip circumference of adult women**

Mean and standard error of the waist (cm), hip circumference (cm) and the waist/hip ratios (WHR) for women aged 15 and above; and of women with WHR >0.85 and waist circumference ≥ 88 cm by background characteristics, South Africa 2003

Background characteristics	Waist circumference (cm)				Hip Circumference (cm)			Waist Hip Ratio (WHR)			
	Mean	Std error	Percentage with waist ≥88 cm	Number	Mean	Std error	Number	Mean	Std error	Percentage with WHR >0.85	Number
<b>Age</b>											
15-24	74.2	0.65	12.9	1 185	94.3	0.91	1 189	0.96	0.047	17.9	1 185
25-34	82.3	0.54	31.0	925	101.1	0.91	926	0.94	0.043	28.0	925
35-44	85.1	0.83	38.4	838	104.1	1.12	838	0.96	0.051	30.4	835
45-54	88.4	0.83	50.7	678	105.5	1.16	677	0.98	0.047	42.3	677
55-64	88.2	1.04	50.1	452	100.6	1.69	452	1.13	0.092	48.1	452
65+	87.8	1.02	46.5	353	99.2	2.34	355	1.23	0.122	53.2	353
<b>Residence</b>											
Urban	83.8	0.49	37.1	2 826	101.5	0.86	2 832	1.05	0.043	31.6	2 825
Non-urban	80.7	0.47	27.8	1 605	98.2	0.62	1 604	0.91	0.027	32.8	1 602
<b>Province</b>											
Western Cape	82.8	1.03	37.9	548	100.9	2.17	549	1.10	0.110	34.1	548
Eastern Cape	82.7	0.92	34.7	525	102.0	1.19	525	0.90	0.045	27.6	525
Northern Cape	78.8	0.65	26.9	89	99.8	0.86	89	0.83	0.027	20.3	89
Free State	81.5	0.94	31.4	297	98.5	1.19	297	1.04	0.060	29.5	297
KwaZulu-Natal	82.8	0.81	32.0	824	93.6	1.71	822	1.31	0.105	48.8	822
North West	82.5	0.85	32.9	360	103.4	0.97	360	0.83	0.023	27.2	360
Gauteng	84.7	1.05	39.5	1 006	104.3	1.49	1 012	0.94	0.060	27.7	1 006
Mpumalanga	80.7	0.77	28.0	293	102.0	0.89	293	0.82	0.021	22.8	293
Limpopo	80.7	0.83	26.0	490	98.9	0.94	490	0.83	0.014	28.0	488
<b>Education</b>											
No education	84.6	0.77	35.9	543	100.1	1.47	543	1.01	0.056	43.1	542
Grades 1-5	85.9	0.94	41.6	426	99.0	1.54	426	1.15	0.107	46.4	426
Grades 6-7	85.7	0.99	43.5	484	103.4	1.45	484	0.97	0.066	34.0	484
Grades 8-11	80.9	0.55	31.1	1 776	99.2	0.82	1 778	1.01	0.041	27.8	1 773
Grades 12	81.9	0.99	28.8	854	100.3	1.14	857	0.96	0.044	27.9	854
Higher	81.8	1.05	28.9	322	102.8	1.57	322	0.90	0.066	25.1	322
<b>Population Group</b>											
African	83.0	0.40	34.2	3 658	100.5	0.66	3 663	1.01	0.034	31.9	3 656
Afr. urban	84.6	0.59	39.1	2 141	102.1	1.05	2 147	1.08	0.053	31.0	2 141
Afr. non-urban	80.7	0.48	27.2	1 517	98.1	0.62	1 516	0.92	0.029	33.2	1 514
Coloured	81.8	1.05	36.1	432	100.9	1.84	434	1.00	0.062	36.1	432
White	80.2	1.74	25.9	222	98.6	1.59	220	0.82	0.013	24.0	220
Indian	79.7	1.04	24.6	109	97.8	1.65	109	0.90	0.040	33.5	109
<b>Total</b>	<b>82.7</b>	<b>0.36</b>	<b>33.7</b>	<b>4 431</b>	<b>100.3</b>	<b>0.59</b>	<b>4 436</b>	<b>1.00</b>	<b>0.029</b>	<b>32.0</b>	<b>4 427</b>

Note: Std error = standard deviation of the mean.

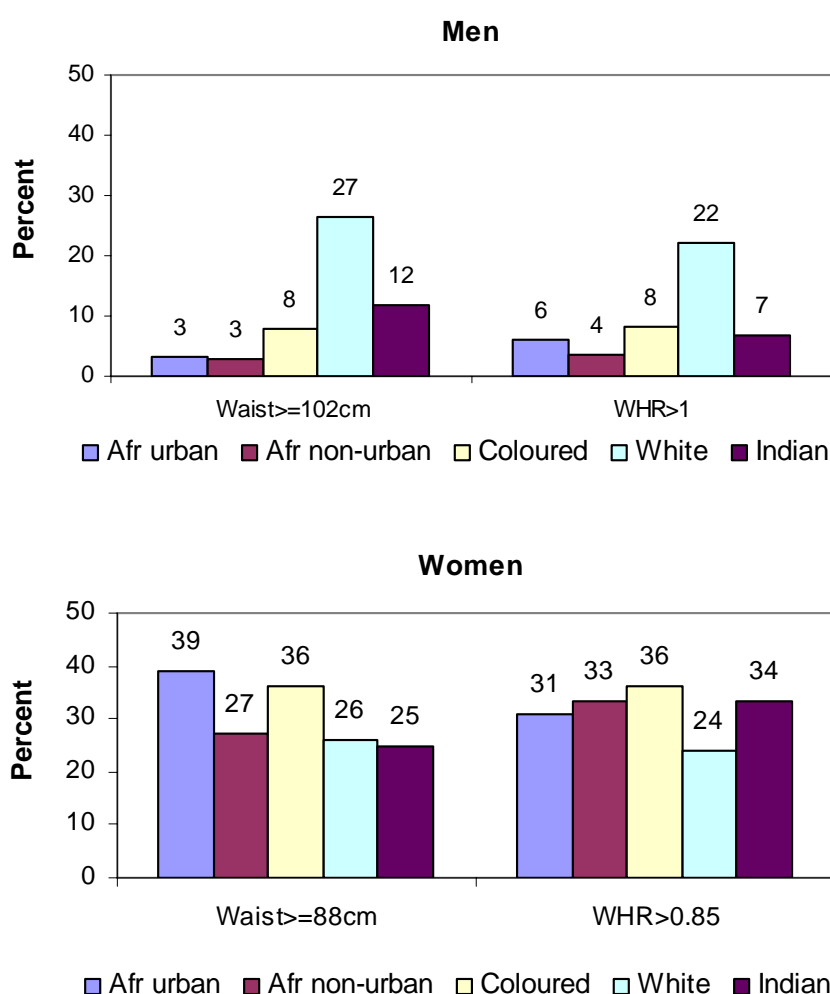
17 cases had education unknown.

11 cases reported population group as Other.

Coloured women have the highest prevalence of WHR above the cut-off point (36 percent), followed by Indians (34 percent) and non-urban Africans (33 percent). Six percent of men and thirty-two percent of women have a WHR above the cut-off point. The percentage with a WHR above the cut-off point is highest in men and women aged 55 years and above. White men have the highest prevalence of high WHR (22 percent) of all men. African-urban men have a higher prevalence of WHR above 1.0 than non-urban men, however, this is not the case for women. In all the provinces the prevalence of WHR above the cut-off for women is above 20 percent while it is less than 8 percent in men.

Perceptions about overweight differ among population groups (Table 13.8). More than half of African and Coloured women are overweight and obese, 56 percent and 52 percent respectively, but only a few (11 percent) African women and (27 percent) Coloured women perceive themselves as being overweight (Tables 13.8 and 13.11). A large number of Indian women are overweight and obese (59 percent) and far less actually perceive themselves as such (27 percent). Similarly a large percentage of white women perceive themselves as being overweight and obese (38 percent) while fewer are actually overweight (24 percent). This difference and actual weight appears to be lowest in white women

**Figure 13.5 Prevalence of central obesity (waist and WHR) in adult men and women, SADHS 2003**



### 13.10 Dietary Intake of Adult Men and Women

Micronutrient intakes have been assessed using a brief 30-item food frequency questionnaire (30-item FFQ) and fat intake using seven questions that were developed as part of the Nutrition Index (N-Index) that was part of an overall nutritional health questionnaire called a Nutrition Monitor (Senekal and Steyn, 2000). Three additional questions reflecting salt intake developed for the SAHDS, were also included. The 30-item FFQ section of the N-Index was developed to rapidly assess micronutrients associated with the development and prevention of chronic diseases of lifestyle, in particular, hypertension, dyslipidaemia, type 2 diabetes, certain cancers, stroke and osteoporosis as well as assessing fat and salt intake. All these micronutrients would also be relevant in terms of micronutrient deficiencies.

The N-Index was developed by identifying from the literature the micronutrients associated with diseases and with deficiency conditions: calcium, magnesium, zinc, iron, vitamin A, vitamin E, thiamine, riboflavin, niacin, vitamin B6, vitamin B12, folate and vitamin C. The main sources of the above micronutrients and fats were then identified from the South African Food Composition Tables and various text books. To ensure ethnic sensitivity, the foods most commonly consumed by the different ethnic groups in South Africa were identified from studies undertaken in South Africa over the past 30 years (Nel and Steyn, 2002). A list of 86 food items was identified as being important sources of the above nutrients. A comprehensive quantified food frequency questionnaire was developed using these 86 items and selected frequency categories. The recall period of the comprehensive food frequency was restricted to one month in order to reduce memory constraints. Using stepwise multiple regression analyses, a short list of foods/questions from the 86 items was then identified to best predict the selected micronutrient and fat intake. This was based on a study conducted on a randomly selected sample of 2100 adult subjects representing all population groups of South Africa, all provinces and urban and rural settings (554 respondents returned questionnaires). In a final step, the validity of the 30-item FFQ was assessed on a convenience sample of 165 adult subjects (Senekal and Steyn, 1997). A detailed summary of the development can be found in Appendix D.

For the SADHS the fieldworkers were trained in the use of the Micronutrient Index and a specially designed colour food manual was used to assist in helping to recall foods eaten. A total of 3 379 men and 4 656 women completed the dietary questionnaire. The micronutrient intake is calculated using the South African Food Composition Table by assuming that an average food helping has been used according to the average frequency of each category.

Tables 13.14 and 13.15 show the mean values and standard errors of the micronutrient, fat and salt scores for men and women aged 15 years and older. Micronutrient score was calculated for each of 13 nutrients: vitamin A, vitamin C, folic acid, vitamin B1, B2, B3, B6, B12, vitamin E, calcium, iron, zinc, magnesium. For each nutrient (except iron and vitamin A) an intake less than 33% RDA provides a score of 3; 33.3-66.6% RDA provides a score of 2; 66.6-99% RDA provides a score of 1 and a value of 100% RDA provides a score of 0. Vitamin A and iron provide double the score in each category because of their status as important nutrients in the SA context. The total micronutrient score was calculated out of 45 points. The perfect score with all nutrients above 100% of the RDA would give a score of zero. A poor score would be closer to 45 points. Furthermore, a fat score was calculated from questions on fat that provide a score between 0-6 with 0 being the ideal score and a salt score of 0-11 with 0 being the ideal.

Some important findings are noted with regard to the micronutrient scores. Firstly, it is considerably better in urban areas and in KwaZulu-Natal and Gauteng. It is poorest in Mpumalanga, Northern

Cape and Limpopo provinces in both men and women. It is interesting to note that mean micronutrient scores improve linearly with level of education, from 24.1 to 17.8 in men and from 24.6 to 17.6 in women. Whites and urban Africans have the best micronutrient scores (19.1 and 19.3 in men; 18.7 and 17.9 in women, respectively) while non-urban Africans and Indians have the worst (23.3 and 23.0 in men and 23.9 and 23.4 in women, respectively).

Table 13.14 Dietary intake of adult men

Mean and standard error of the micronutrient, fat, and salt intake scores for men aged 15 years and above by background characteristics, South Africa 2003

Background characteristics	Micronutrient score <sup>1</sup>			Fat score <sup>2</sup>			Total dietary score <sup>3</sup>			Total dietary score categorised			Salt score <sup>4</sup>		
	Mean	SE		Mean	SE		Mean	SE		Good 0-13.8%	Intermediate >13.8-27.6%	Poor >27.6-45%	Mean	SE	
<b>Age</b>															
15-24	21.5	0.56		2.3	0.04		23.8	0.57		29.7	43.3	27.0	100.0	4.0	0.06
25-34	19.6	0.67		2.2	0.05		21.8	0.67		36.1	41.0	22.9	100.0	3.8	0.07
35-44	20.4	0.72		2.1	0.05		22.5	0.72		32.2	47.8	20.0	100.0	3.7	0.07
45-54	20.4	0.75		1.9	0.07		22.3	0.74		37.3	38.9	23.8	100.0	3.4	0.08
55-64	20.0	0.96		1.8	0.07		21.8	0.95		37.6	38.5	23.9	100.0	3.3	0.10
65+	24.0	0.93		1.8	0.09		25.7	0.94		28.5	35.9	35.6	100.0	3.0	0.09
<b>Residence</b>															
Urban	19.6	0.52		2.1	0.04		21.7	0.52		35.7	44.4	20.0	100.0	3.8	0.05
Non-urban	23.3	0.48		2.1	0.04		25.4	0.48		27.8	37.5	34.7	100.0	3.5	0.05
<b>Province</b>															
Western Cape	24.9	0.83		1.9	0.07		26.8	0.85		19.7	51.4	28.9	100.0	3.6	0.10
Eastern Cape	25.9	1.35		2.3	0.07		28.3	1.35		20.1	36.0	43.9	100.0	3.5	0.12
Northern Cape	29.0	0.88		2.0	0.05		31.0	0.89		10.9	41.7	47.5	100.0	3.1	0.07
Free State	25.2	1.03		2.0	0.05		27.2	1.05		20.5	40.5	39.1	100.0	3.6	0.08
KwaZulu-Natal	13.4	0.70		2.1	0.07		15.5	0.70		54.6	40.2	5.2	100.0	4.0	0.08
North West	26.2	0.84		2.1	0.08		28.3	0.83		14.0	51.9	34.2	100.0	3.3	0.10
Gauteng	15.9	0.77		2.2	0.06		18.0	0.78		47.9	40.6	11.6	100.0	3.8	0.08
Mpumalanga	30.3	0.88		2.2	0.06		32.4	0.89		7.3	38.5	54.2	100.0	3.4	0.07
Limpopo	28.9	0.67		2.2	0.05		31.1	0.68		8.5	44.5	47.1	100.0	3.1	0.06
<b>Education</b>															
No education	24.1	0.93		2.0	0.07		26.0	0.93		28.7	34.0	37.3	100.0	3.1	0.08
Grades 1-5	24.0	0.83		2.0	0.06		26.0	0.83		27.6	35.9	36.5	100.0	3.4	0.08
Grades 6-7	23.9	0.77		2.2	0.06		26.1	0.78		26.3	36.4	37.3	100.0	3.4	0.08
Grades 8-11	20.8	0.56		2.2	0.04		23.0	0.56		32.4	42.8	24.8	100.0	3.8	0.05
Grades 12	17.6	0.64		2.2	0.05		19.8	0.64		39.1	47.0	13.9	100.0	3.9	0.08
Higher	17.8	0.99		2.0	0.09		19.8	0.97		40.6	49.3	10.2	100.0	3.8	0.12
<b>Population group</b>															
African	20.8	0.40		2.2	0.03		23.0	0.40		34.2	38.4	27.4	100.0	3.6	0.04
Afr. urban	19.3	0.56		2.2	0.04		21.5	0.56		38.4	39.2	22.4	100.0	3.7	0.05
Afr. non-urban	23.3	0.48		2.1	0.04		25.4	0.48		27.7	37.1	35.2	100.0	3.5	0.05
Coloured	21.4	1.55		2.0	0.07		23.4	1.56		27.9	52.5	19.6	100.0	3.9	0.13
White	19.1	0.72		1.7	0.10		20.8	0.73		28.4	68.9	2.7	100.0	3.7	0.13
Indian	23.0	2.29		1.3	0.13		24.3	2.18		21.6	61.7	16.7	100.0	3.5	0.20
<b>Total</b>	20.8	0.40		2.1	0.03		22.9	0.40		33.1	42.1	24.9	100	3.7	0.04

Only cases with complete information on education and population group are included.

1. This score ranged from 0 to 45 points with a low score indicating a better intake micronutrients.

2. This score ranged from 1 to 6 points with a low score indicating a lower fat intake.

3. This score combines the micronutrient and fat scores (45 + 6). A low score is indicative of a better quality diet.

4. This score ranges from 0-11 with a low score indicating a lower salt intake.



Table 13.15 Dietary intake of adult women

Mean and standard error of the micronutrient, fat, and salt intake scores for women aged 15 years and above by background characteristics, South Africa 2003

Background characteristics	Micronutrient score <sup>1</sup>			Fat score <sup>2</sup>			Total dietary score <sup>3</sup>			Total dietary score categorised			Salt score <sup>4</sup>		
	Mean	SE		Mean	SE		Mean	SE		Good 0-13.8	Intermediate >13.8-27.6-45 %	Poor ≥ 66.67 %	Total	Mean	SE
<b>Age</b>															
15-24	21.3	0.56		2.2	0.04		23.6	0.55		30.6	42.6	26.8	100.0	3.9	0.06
25-34	20.1	0.59		2.0	0.04		22.1	0.59		35.6	40.2	24.2	100.0	3.8	0.06
35-44	19.5	0.56		2.0	0.04		21.5	0.56		38.0	40.9	21.2	100.0	3.5	0.06
45-54	20.9	0.56		1.7	0.05		22.6	0.57		33.6	42.8	23.6	100.0	3.1	0.06
55-64	19.7	0.75		1.7	0.06		21.4	0.74		38.5	39.2	22.4	100.0	3.1	0.07
65+	21.3	0.81		1.6	0.06		22.9	0.82		38.2	35.6	26.3	100.0	2.9	0.06
<b>Residence</b>															
Urban	18.5	0.49		1.9	0.03		20.4	0.49		40.0	42.2	17.8	100.0	3.7	0.04
Non-urban	24.0	0.43		2.1	0.03		26.0	0.43		26.0	38.6	35.4	100.0	3.3	0.04
<b>Province</b>															
Western Cape	21.7	0.76		1.6	0.07		23.4	0.79		30.0	48.4	21.6	100.0	3.5	0.08
Eastern Cape	27.0	0.85		2.2	0.06		29.2	0.87		17.3	39.4	43.4	100.0	3.3	0.08
Northern Cape	28.7	0.83		1.8	0.05		30.5	0.84		11.3	43.6	45.1	100.0	3.1	0.06
Free State	25.1	0.80		1.8	0.06		27.0	0.83		20.8	40.3	39.0	100.0	3.3	0.07
KwaZulu-Natal	11.2	0.62		2.0	0.08		13.2	0.58		64.2	31.7	4.0	100.0	4.0	0.08
North West	26.8	0.52		1.9	0.05		28.7	0.52		12.7	53.1	34.3	100.0	3.2	0.06
Gauteng	13.5	0.71		1.8	0.05		15.3	0.71		56.2	37.5	6.4	100.0	3.7	0.09
Mpumalanga	29.9	0.81		2.2	0.05		32.1	0.79		6.5	42.5	51.0	100.0	3.5	0.07
Limpopo	28.2	0.62		2.1	0.05		30.3	0.62		10.7	47.1	42.1	100.0	3.1	0.05
<b>Education</b>															
No education	24.6	0.63		1.9	0.05		26.5	0.62		24.1	39.3	36.6	100.0	3.0	0.06
Grades 1-5	22.4	0.65		1.8	0.06		24.2	0.66		33.1	35.1	31.8	100.0	3.1	0.06
Grades 6-7	22.2	0.65		2.0	0.05		24.2	0.66		29.1	41.1	29.7	100.0	3.4	0.08
Grades 8-11	20.7	0.51		2.0	0.03		22.7	0.51		35.1	40.1	24.8	100.0	3.7	0.04
Grades 12	16.9	0.63		1.9	0.05		18.8	0.63		44.0	41.9	14.2	100.0	3.9	0.07
Higher	17.6	0.76		1.7	0.08		19.3	0.75		38.3	52.4	9.3	100.0	3.7	0.09
<b>Population group</b>															
African	20.4	0.38		2.1	0.02		22.5	0.38		35.5	38.8	25.7	100.0	3.6	0.04
Afr. urban	17.9	0.52		2.0	0.03		20.0	0.53		27.9	53.7	18.4	100.0	3.7	0.05
Afr. non-urban	23.9	0.44		2.1	0.03		26.0	0.43		27.6	43.8	28.6	100.0	3.3	0.04
Coloured	21.5	0.95		1.6	0.07		23.1	0.99		31.1	46.1	22.8	100.0	3.5	0.08
White	18.7	0.93		1.3	0.08		20.0	0.93		37.9	54.1	8.0	100.0	3.5	0.14
Indian	23.4	1.14		0.9	0.06		24.4	1.15		21.2	61.4	17.5	100.0	3.1	0.06
<b>Total</b>	20.5	0.37		2.0	0.02		22.5	0.37		34.9	40.9	24.2	100.0	3.5	0.03

Only cases with complete information on education and population group are included.

1. This score ranged from 0 to 45 points with a low score indicating a better intake micronutrients.

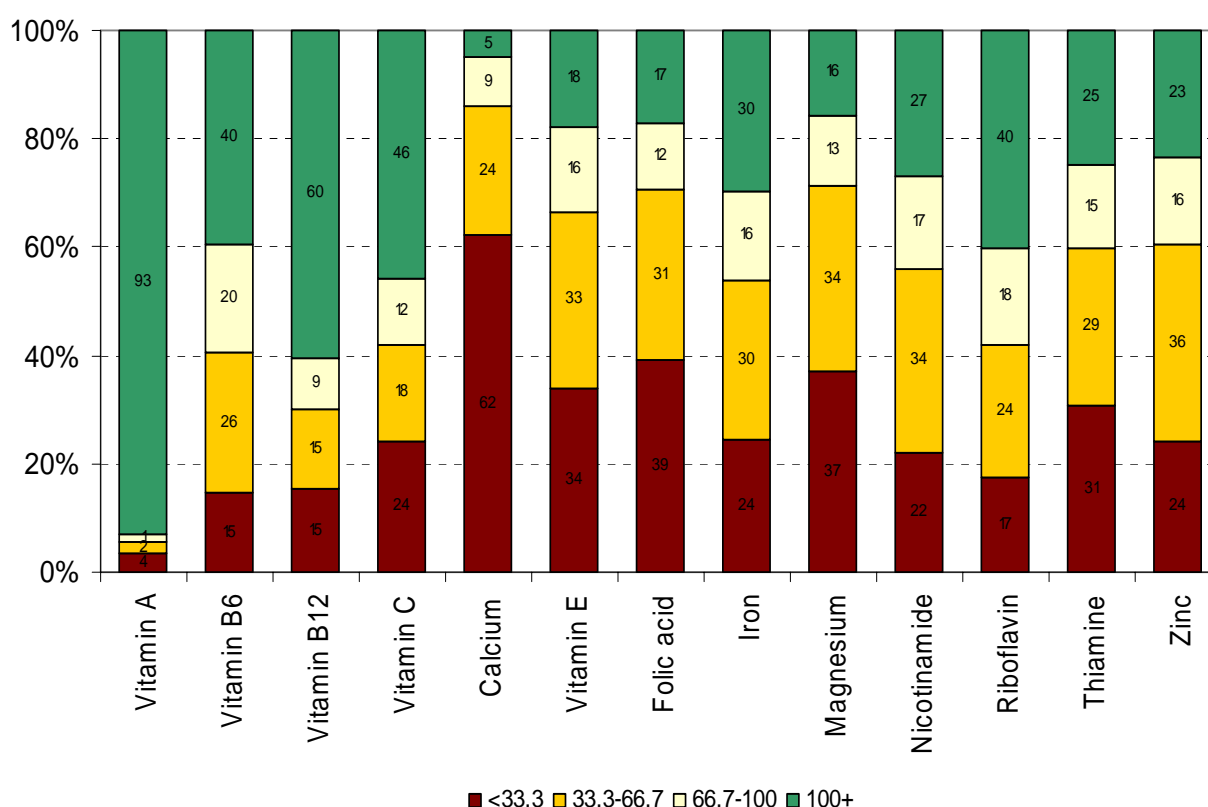
2. This score ranged from 1 to 6 points with a low score indicating a lower fat intake.

3. This score combines the micronutrient and fat scores (45 + 6). A low score is indicative of a better quality diet.

4. This score ranges from 0-11 with a low score indicating a lower salt intake.

In Figure 13.6 it is shown that more than half of adults have a RDA value of less than 67 percent of the recommended dietary allowance (RDA) for calcium, folate, magnesium, vitamin E, thiamine, niacin and iron. Further, more than 60 percent have a calcium value less than 33 percent of the RDA. Micronutrients which are deficient to a lesser degree are vitamin A, vitamin B6, vitamin B12 and vitamin C. These patterns are repeated in all the provinces and in urban-rural areas to different degrees. Overall the nutrient density of the diet consumed by the participants is low in micronutrients.

**Figure 13.6 Nutrient intake ( % of RDA) for adults, SADHS 2003**



For all nutrients, African participants show a higher prevalence of deficiency than white participants (not shown). Despite this, calcium intake is deficient in all groups. This data highlights the need for supplementing the diet of South Africans with essential micronutrients. A National programme for the mandatory fortification of maize and wheat flour was initiated after the DHS survey at the end of 2003. Currently, all maize and wheat flour in South Africa are fortified to provide a person 10 years and older with the following percentage of the RDA (per 200 g raw flour): vitamin A 31 percent; thiamine 25 percent; niacin 25 percent; vitamin B6 25 percent; riboflavin 17 percent; folic acid; iron 25 percent; and zinc 20 percent. Hence one would expect the mean values of these micronutrients to be increased after 2003. The next SADHS dietary results will hopefully show an improvement in the mean values of micronutrients being added to maize and wheat flour.

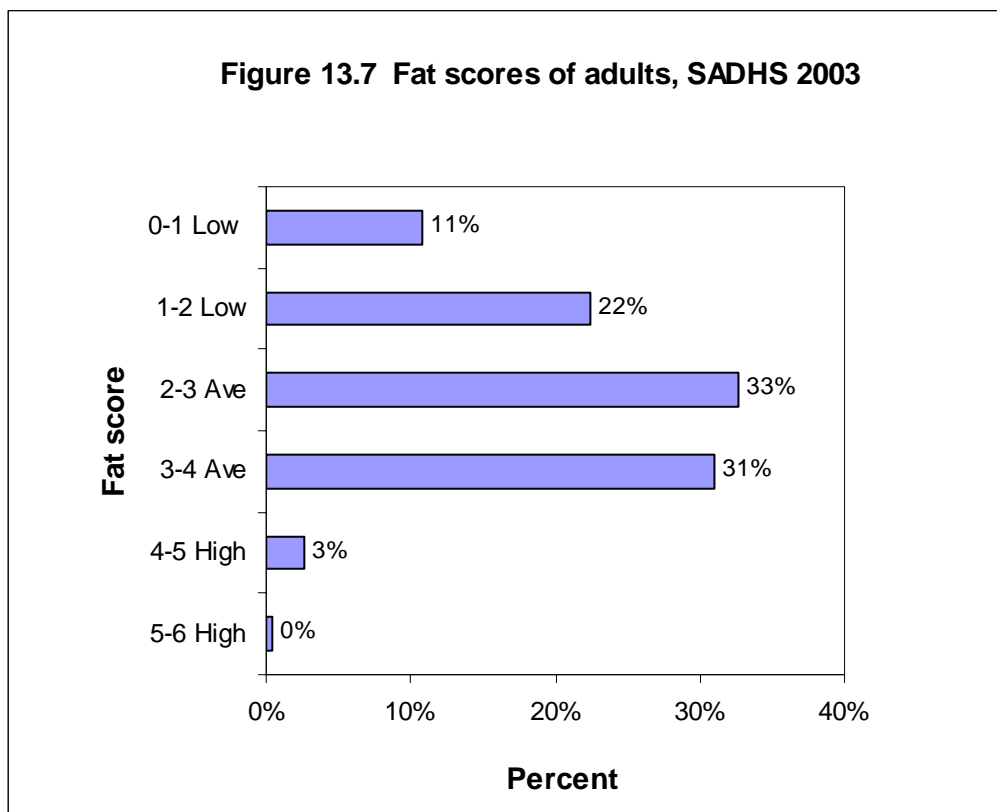
**Table 13.16 Eating fatty and salty foods**

Percentage distribution of frequency of eating selected fatty and salty foods for men and women 15 years and above, South Africa 2003

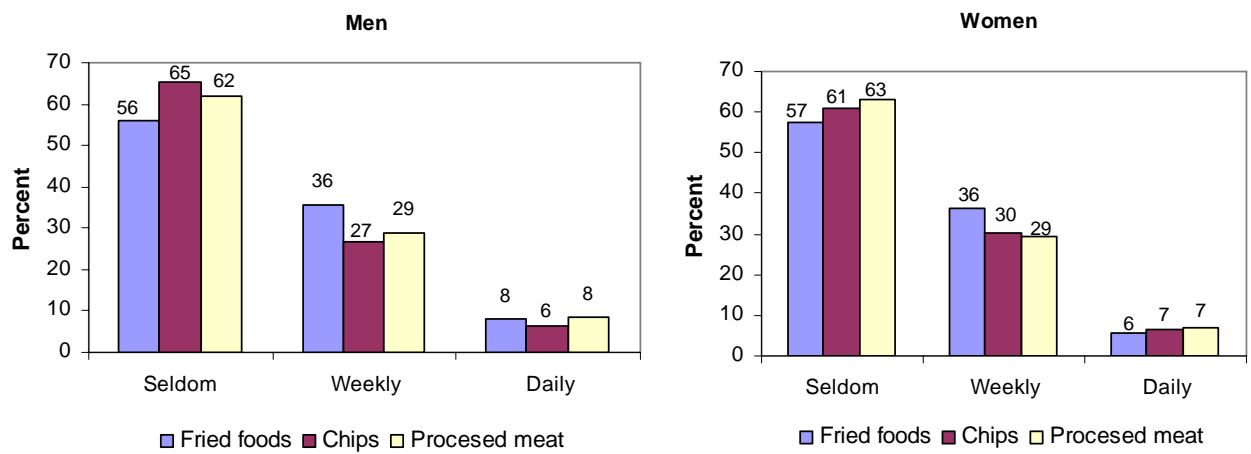
Food item	Men	Women	Total
<b>Chicken</b>			
With skin	78.1	71.9	74.5
Without skin	19.8	26.3	23.6
None	2.0	1.5	1.7
Missing	0.1	0.3	0.2
<b>Red meat</b>			
Fatty meat	57.2	46.9	51.3
Lean meat	34.6	43.4	39.7
None	7.7	9.2	8.6
Missing	0.5	0.5	0.5
<b>Spread</b>			
Butter	24.4	24.1	24.2
Hard margarine	31.6	34.2	33.1
Soft margarine	31.2	29.0	30.0
None	12.2	11.6	11.9
Missing	0.6	1.0	0.8
<b>Milk</b>			
Full cream	74.8	72.9	73.7
Low fat	10.1	9.9	10.0
Skim	3.2	3.8	3.5
Blends	4.0	4.5	4.3
None	7.2	8.2	7.8
Missing	0.7	0.8	0.8
<b>Fried food</b>			
Occasionally	56.0	57.5	56.9
Weekly	35.5	36.2	35.9
Daily	8.0	5.7	6.7
Missing	0.5	0.6	0.6
<b>Chips</b>			
Occasionally	65.3	61.0	62.8
Weekly	26.6	30.0	28.6
Daily	6.3	6.5	6.4
Missing	1.8	2.5	2.2
<b>Processed meat</b>			
Occasionally	62.0	63.2	62.7
Weekly	28.9	29.3	29.1
Daily	8.4	7.0	7.6
Missing	0.7	0.5	0.6
<b>Usually eat salty food</b>			
Very salty	12.3	11.1	11.6
Lightly salted	83.3	83.4	83.3
Not salted	3.8	4.9	4.5
DK/Missing	0.5	0.7	0.6
<b>Usually add salt</b>			
Never	31.0	41.6	37.1
After tasting	61.2	53.0	56.5
Before tasting	6.5	3.8	5.0
DK/Missing	1.3	1.6	1.5
<b>Eat salty snack</b>			
Yes	36.4	33.9	35.0
No	63.1	65.4	64.4
Missing	0.6	0.7	0.6
Total	100.0	100.0	100.0
Number	3 422	4 693	8 115

From Tables 13.14 and 13.15 it can be seen that the mean fat scores are lowest in Western Cape, Free State and Northern Cape. In addition, mean fat scores improve linearly with age. Table 13.16 shows the frequency of eating selected fatty foods and Figure 13.7 presents the overall fat intake based on a score from these questions. Out of a possible six fatty items on customary fat intake about 40 percent answer more than three questions positively, indicative of an overall moderate fat intake.

This is further illustrated in Figure 13.8 which indicates that about 30 percent of adults consume fatty foods on a weekly basis and less than 10 percent on a daily basis.

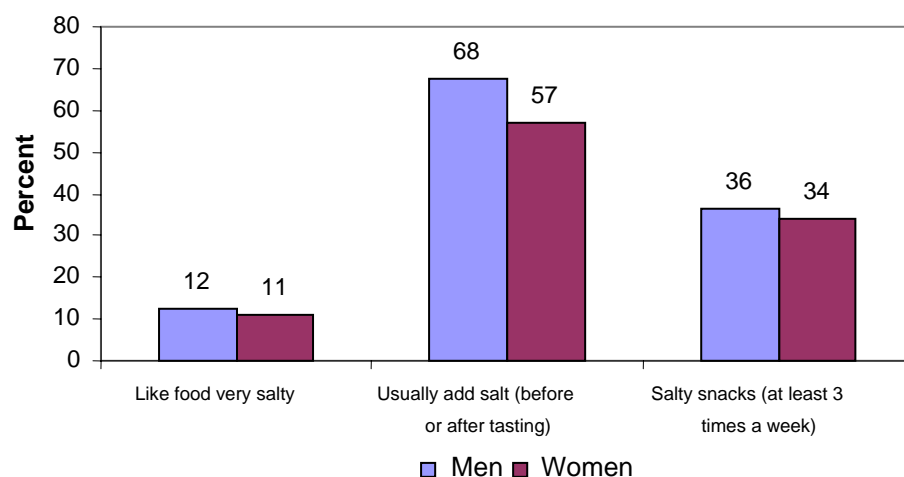


**Figure 13.8 Frequency of consuming fatty foods among adults 15+ years, SADHS 2003**



Tables 13.14 and 13.15 also show that salt scores improve linearly with age. Salt scores are worst (mean scores of 3.7-3.9) in those with higher levels of education and lowest in those with little education (mean scores of 3.0-3.1). Coloured men and African urban women have the highest salt scores (3.9 and 3.7, respectively) and non-urban residents have a better salt score than urban ones (3.5 and 3.8, respectively). With regard to habits on salt, more than 30 percent indicate that they add salt to food at the table (additional to that in cooking) and that they consume salty snacks 3 or more times a week (Figure 13.9).

**Figure 13.9 Salt use habits of adults by sex, SADHS 2003**



### 13.11 Physical Activity Levels of Adults

The WHO Global Strategy for Diet and Physical Activity for Health (WHO, 2004) identified the need for national surveillance of levels of activity. Since 1998, the WHO has been involved in collaborative initiatives to enable comparison of physical activity levels as a risk factor for chronic diseases on a global scale. Instruments that have been validated in multiple country sites include the International Physical Activity Questionnaire (IPAQ) developed by Craig *et al.* (2003) and the Global Physical Activity Questionnaire (GPAQ) (Tshabangu *et al.*, in preparation), and have been found to be similarly reliable and valid. The GPAQ, introduced as part of the WHO STEP-wise approach to surveillance, provides for an overall measure of physical activity on the basis of intensity and duration, as well as physical activity levels within specific domains, including occupation, transport, and leisure time. The validated GPAQ was used in this survey and has previously been evaluated in South Africa. Of a sample of 215 men and women studied in South Africa, the GPAQ was found to be reliable ( $r = 0.74$ ;  $r = 0.74$ ;  $r = 0.71$  for occupational, transport and leisure time physical activity respectively), with reasonable concurrent and criterion validity (Tshabangu, unpublished data). The same investigator involved in the initial validation study conducted training of the field workers for SADHS.

Subjects were excluded if they had physical impairments, which prevented them from participating in physical activity, or if they were innumerate and unable to report times adequately. Maximum duration 'cut-points' were devised for the reported activity domains for this survey. All subjects who reported duration of physical activity exceeding those indicated below were excluded from final analysis:

#### *Occupational domain*

- 12 hours (720 minutes) work time
- 8 hours (480 minutes) moderate or vigorous occupational activity

#### *Leisure domain*

- 4 hours (240 minutes) vigorous activity
- 8 hours (480 minutes) moderate activity

#### *Transport*

- 5 hours (300 minutes) transport time

#### *Sedentary*

- 12 hours (720 minutes) inactive time (sitting, sleeping etc).

Of the adults that participated in this survey, complete and valid data were analysed on 6 909 adults (2 778 men and 4 131 women) who also had data on education and population group. Only those physical activities, which were maintained for at least 10 consecutive minutes were included in the calculations of the activity levels. This has been done using METs (multiples of the resting metabolic rate) to yield a score in MET-minutes, which is computed by multiplying the MET score (8 for vigorous and 4 for moderate activity and transport related walking/cycling) by the minutes performed. A MET-minute is approximately equal to 3.5ml O<sub>2</sub> per kg of body weight per minute (Brooks *et al.*, 1999). For purposes of this survey, the following definitions, as taken from the IPAQ Committee Scoring Protocol, November 2005 (<http://www.ipaq.ki.se>) are used for the overall reported activity:

#### ***Low (Category 1)/Inactive or insufficiently active***

No activity is reported OR

Some activity is reported but not enough to meet Categories 2 or 3 OR < 600 MET-minutes/wk

***Moderate (Category 2)/Minimally active***

Any one of the following criteria:

Three or more days of vigorous activity of at least 20 minutes per day OR 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR 5 or more days.

***High (Category 3)/ Sufficiently active***

Any one of the following 2 criteria:

Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/week OR 7 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 3000 MET-minutes/week.

The prevalence of inactivity/insufficient activity (< 600 MET-minutes/wk) minimal activity (600- <3000 MET-minutes/week) and sufficient activity (>3000 MET-minutes/week) are presented by background characteristics in Table 13.17. Overall, 48 percent of adult men and 63 percent of adult women are reportedly inactive (Table 13.17). The World Health Survey (WHS) conducted in 2003 by the WHO found that 43 percent of men and 49 percent of women were inactive. While the WHS used a different methodology, it highlighted that SA had the third highest prevalence of inactivity, after Mauritania and the United Arab Emirates among the thirty-eight participating developing countries (WHO-WHS Report, 2005). These are the first national surveys that have collected such data for South Africa. Researchers are encouraged by the robustness of the measurements, which suggests that the instruments were understood across levels of education, language and age. As physical activity was not included in the 1998 SADHS, no comparisons could be made to determine patterns within the past five years.

The 2003 SADHS shows a strong gender pattern. A quarter of men (24 percent), and only 14 percent of women are sufficiently active. As expected, levels of activity decline with increasing age. For men, the prevalence of sufficiently active decreases from 34 percent among the 15-24 year olds to 7 percent among the 65+ group. In the case of women, the prevalence is consistently lower than that for men and decreases from 18 percent in the youngest group to 8 percent in the oldest group. While part of this decrease may result from functional limitations that occur with ageing, the high rates of inactivity, even at relatively young ages, are a matter of concern.

The Youth Risk Behaviour Survey of Grade 8-11 learners (Reddy *et al.*, 2003) observed a similar gender pattern to that observed in the SADHS. In the Youth Risk Behaviour Survey, 34 percent of boys and 43 percent of girls reported that they did not participate in the seven days preceding the survey in health-benefiting physical activity. The youngest age group in the 2003 SADHS (15-24 years) reported that 36 percent of men and 52 percent of women are inactive. The differences between the surveys in the prevalence of inactivity may be a result of the different ages of the respondents in the surveys, but is more likely to be a result of different indicators.

From Table 13.17, it can also be seen that the prevalence of inactivity is higher in the urban than non-urban dwelling adults. The prevalence of inactivity among urban adults is 49 percent for men and 66 percent for women while that for the non-urban men and women is 46 percent and 59 percent respectively. This highlights the contribution of inactivity to increased risk of chronic diseases in the urban population.

There appears to be province-specific patterns of inactivity. However, it is difficult to interpret the differences in levels of activity by province, as they represent mixed contributions of urban and non-urban populations. KwaZulu-Natal has the highest levels of inactivity for both men and women

(66 percent and 81 percent respectively) followed by Northern Cape (58 percent and 78 percent respectively). A “coastal effect” has been described previously in which persons living in a coastal catchment area tend to have higher levels of activity. In a survey by Bauman *et al.* (1999), it was found that participants who lived in the coastal areas in New South Wales, Australia, were 23 percent less likely to be classified as sedentary, 27 percent more likely to report activity adequate for health, and 38 percent more likely to report high levels of physical activity than those who lived inland. The country’s provinces, generally, do not reflect this coastal effect, with the coastal KwaZulu-Natal and the landlocked Limpopo, in particular, challenging the existence of the coastal effect in the SADHS data. However, this would be confounded with the urban/rural effect.

Table 13.17 Physical activity of adult men and women

Percentage distribution across physical activity categories of inactive, minimally active and sufficiently active for adult men and women based on MET-minutes* per week by background characteristics, South Africa 2003										
Background characteristic	MEN					WOMEN				
	Inactive 0-<600 MET-min	Minimally active 600- <3000 MET-min	Sufficiently active >=3000ME T-min	Total	Number of men	Inactive -<600 MET-min	Minimally active 600- <3000 MET-min	Sufficiently active >=3000 MET-min	Total	Number of women
<b>Age</b>										
15-24	36.3	29.7	34.0	100.0	935	52.3	29.8	18.0	100.0	1 104
25-34	47.2	27.3	25.4	100.0	553	68.5	18.6	12.9	100.0	854
35-44	50.3	30.6	19.1	100.0	480	63.7	22.0	14.2	100.0	788
45-54	56.2	30.1	13.7	100.0	387	64.1	23.7	12.2	100.0	610
55-64	67.0	16.8	16.2	100.0	241	67.3	20.1	12.6	100.0	429
65+	62.1	30.8	7.1	100.0	182	76.6	15.5	8.0	100.0	346
<b>Residence</b>										
Urban	49.2	29.6	21.3	100.0	1 788	65.8	22.1	12.1	100.0	2 578
Non-urban	45.9	26.2	27.8	100.0	990	58.8	24.2	17.0	100.0	1 553
<b>Province</b>										
Western Cape	36.5	41.7	21.9	100.0	249	66.3	26.2	7.5	100.0	476
Eastern Cape	24.6	34.0	41.3	100.0	313	48.2	28.1	23.7	100.0	521
Northern Cape	58.1	26.3	15.7	100.0	55	78.3	16.7	5.0	100.0	87
Free State	53.5	29.8	16.7	100.0	198	66.8	25.2	8.0	100.0	299
KwaZulu-Natal	66.0	19.4	14.6	100.0	674	80.5	13.4	6.0	100.0	810
North West	45.1	30.0	24.9	100.0	220	74.6	19.7	5.8	100.0	333
Gauteng	57.2	24.8	18.0	100.0	644	67.2	18.7	14.1	100.0	852
Mpumalanga	31.4	34.8	33.8	100.0	182	49.2	30.3	20.5	100.0	270
Limpopo	24.1	35.1	40.8	100.0	243	35.1	34.8	30.1	100.0	483
<b>Education</b>										
No education	60.3	27.8	11.9	100.0	241	68.4	19.6	11.9	100.0	522
Grades 1-5	49.8	29.7	20.5	100.0	277	65.1	20.2	14.6	100.0	420
Grades 6-7	46.6	28.9	24.5	100.0	321	62.4	23.9	13.8	100.0	456
Grades 8-11	45.7	27.8	26.5	100.0	1 126	60.7	25.1	14.2	100.0	1 658
Grades 12	48.0	26.1	26.0	100.0	563	65.9	19.6	14.5	100.0	786
Higher	46.5	34.5	19.0	100.0	250	58.8	27.1	14.1	100.0	290
<b>Population group</b>										
African	47.7	27.6	24.6	100.0	2 310	62.6	22.7	14.7	100.0	3 428
Afr. urban	49.4	28.5	22.2	100.0	1 355	66.0	21.6	12.4	100.0	1 947
Afr. non-urban	45.4	26.5	28.1	100.0	955	58.3	24.1	17.6	100.0	1 481
Coloured	41.2	39.9	18.9	100.0	201	66.0	25.6	8.4	100.0	382
Indian	43.1	33.4	23.4	100.0	72	62.6	20.5	17.0	100.0	109
White	60.2	23.3	16.5	100.0	195	66.8	22.4	10.8	100.0	212
<b>Total</b>	<b>48.0</b>	<b>28.4</b>	<b>23.6</b>	<b>100.0</b>	<b>2 778</b>	<b>63.2</b>	<b>22.9</b>	<b>14.0</b>	<b>100.0</b>	<b>4 131</b>

\*METs are multiples of the resting metabolic rate and yield a score in MET-minutes, which is computed by multiplying the MET score (8 for vigorous and 4 for moderate activity and transport related walking/cycling) by the minutes performed.



Various researchers have debated the influence of the level of education on physical activity. It has been argued that lack of education may influence the choice not to engage in physical activity due to not knowing and understanding its value. However, not engaging in physical activity may be confounded with lower socio-economic status associated with lack of education. In this survey, the highest reported prevalence of inactivity is seen in men and women with no formal education (60 percent and 68 percent respectively).

The highest prevalence of inactivity is noted in white men (60 percent) and women (67 percent), while population group variations are not marked for the non-white men, neither for the women.

One of the unique opportunities of this survey was to characterise levels of activity across the various domains of activity, e.g. occupational, transport and leisure time. Tables 13.18 and 13.19 depict physical inactivity prevalence in the three domains, as mean MET-minutes/wk and as a percentage of total moderate and vigorous physical activity (total MET-minutes/wk). These show that the overall contribution of occupational activity to total activity is 18 percent in both men and women. Leisure time energy expenditure accounts for 48 percent in men and 54 percent in women, while transport accounts for 34 percent in men and 28 percent in women. The transport domain is less than expected, but this may be, in part, attributed to environmental factors. South Africa has few dedicated walking and cycling paths that may encourage people to walk and cycle more to get to and from places. The other factor could be that of safety and security discussed in other chapters of this survey.

Table 13.18 Physical activity domains of adult men							
Average MET-minutes per week in work, leisure and transport domains and proportion of total physical activity of each domain for adult men 15 years and older, SADHS 2003							
Background characteristics	Mean MET-minutes/wk			Total	Percentage of total physical activity		
	Work	Leisure	Transport		Work	Leisure	Transport
<b>Age</b>							
15-24	170.2	1 316.7	1 264.9	2 751.8	6.2	47.8	46.0
25-34	601.4	1 083.7	745.1	2 430.2	24.7	44.6	30.7
35-44	613.6	914.1	461.3	1 989.0	30.8	46.0	23.2
45-54	389.1	771.3	284.6	1 445.0	26.9	53.4	19.7
55-64	395.5	721.5	250.9	1 367.9	28.9	52.7	18.3
65+	289.3	659.6	170.6	1 119.5	25.8	58.9	15.2
<b>Residence</b>							
Urban	347.8	987.6	665.5	2 000.9	17.4	49.4	33.3
Non-urban	467.4	1 107.1	836.9	2 411.5	19.4	45.9	34.7
<b>Province</b>							
Western Cape	490.4	1 045.1	817.7	2 353.2	20.8	44.4	34.7
Eastern Cape	698.8	1 984.6	974.4	3 657.8	19.1	54.3	26.6
Northern Cape	537.9	530.0	498.3	1 566.2	34.3	33.8	31.8
Free State	275.2	849.2	551.1	1 675.4	16.4	50.7	32.9
KwaZulu-Natal	263.7	462.5	475.1	1 201.3	22.0	38.5	39.5
North West	1 223.0	642.1	693.7	2 558.8	47.8	25.1	27.1
Gauteng	110.1	1 017.1	587.1	1 714.2	6.4	59.3	34.2
Mpumalanga	537.6	1 511.8	1 032.2	3 081.6	17.4	49.1	33.5
Limpopo	180.8	1 646.2	1 376.8	3 203.8	5.6	51.4	43.0
<b>Education</b>							
No education	335.5	675.8	298.5	1 309.8	25.6	51.6	22.8
Grades 1-5	452.7	1 137.9	409.0	1 999.6	22.6	56.9	20.5
Grades 6-7	540.8	1 132.4	607.6	2 280.8	23.7	49.6	26.6
Grades 8-11	366.4	1 146.5	875.4	2 388.3	15.3	48.0	36.7
Grade 12	465.9	944.7	778.7	2 189.3	21.3	43.2	35.6
Higher	120.0	789.5	855.1	1 764.6	6.8	44.7	48.5
<b>Population group</b>							
African	368.0	1 100.0	730.8	2 198.8	16.7	50.0	33.2
Afr. urban	484.1	1 110.9	833.0	2 427.9	19.9	45.8	34.3
Afr. non-urban	286.1	1 092.3	658.7	2 037.1	14.0	53.6	32.3
Coloured	531.1	1 019.3	647.7	2 198.1	24.2	46.4	29.5
Indian	603.8	722.5	854.1	2 180.4	27.7	33.1	39.2
White	432.5	329.3	710.8	1 472.6	29.4	22.4	48.3
Total	390.4	1 030.2	726.6	2 147.2	18.2	48.0	33.8

From Tables 13.18 and 13.19, it can be seen that the 65+ age group in both men and women report the highest levels (59 and 60 percent respectively) of leisure time activity as compared to all the age groups in the study. This can be attributed to the stage they are at in their lives, i.e. when the relative contributions from work and transport activity are generally reduced as people grow older.

In both men and women, the highest transport-related components of total activity are reported in Limpopo and KwaZulu-Natal. Gauteng (59 percent) and Eastern Cape (54 percent) men, and Northern Cape (79 percent) and Free State (73 percent) women report the highest relative contribution of leisure time activity compared to the other provinces. People with less education tend to do more physically-active labour. This is reflected in the men's work-related data which shows that 26 percent of total physical activity in men with no education is made up of work-related activity, in contrast to 7 percent of men with a post-matric education. However this does not hold in the case of women. These data suggest further investigation into factors that may play a role in work-related physical activity.

Table 13.19 Physical activity domains of adult women							
Average MET-minutes per week in work, leisure and transport domains and proportion of total physical activity of each domain for adult women 15 years and older, SADHS 2003							
Background characteristics	Mean MET-minutes/wk				Percentage of total physical activity		
	Work	Leisure	Transport	Total	Work	Leisure	Transport
<b>Age</b>							
15-24	178.7	882.0	536.4	1 597.0	11.2	55.2	33.6
25-34	242.6	633.8	306.7	1 183.1	20.5	53.6	25.9
35-44	174.5	778.8	366.8	1 320.1	13.2	59.0	27.8
45-54	398.8	630.4	344.0	1 373.2	29.0	45.9	25.1
55-64	382.7	640.9	251.9	1 275.4	30.0	50.2	19.8
65+	164.6	447.8	138.6	751.0	21.9	59.6	18.5
<b>Residence</b>							
Urban	201.4	683.5	310.7	1 195.6	16.8	57.2	26.0
Non-urban	313.8	760.3	455.8	1 529.8	20.5	49.7	29.8
<b>Province</b>							
Western Cape	217.0	501.0	226.9	944.9	23.0	53.0	24.0
Eastern Cape	628.0	967.0	605.6	2 200.6	28.5	43.9	27.5
Northern Cape	24.0	440.5	94.9	559.3	4.3	78.8	17.0
Free State	49.0	606.7	180.0	835.7	5.9	72.6	21.5
KwaZulu-Natal	98.9	297.3	219.5	615.7	16.1	48.3	35.7
North West	91.3	373.8	166.8	631.8	14.5	59.2	26.4
Gauteng	194.4	856.0	252.8	1 303.2	14.9	65.7	19.4
Mpumalanga	494.0	1 076.3	178.7	1 749.0	28.2	61.5	10.2
Limpopo	310.3	1 233.0	1 089.2	2 632.5	11.8	46.8	41.4
<b>Education</b>							
No education	240.8	640.3	341.3	1 222.4	19.7	52.4	27.9
Grades 1-5	461.8	653.4	321.1	1 436.2	32.2	45.5	22.4
Grades 6-7	272.2	729.3	466.8	1 468.3	18.5	49.7	31.8
Grades 8-11	196.2	720.2	350.5	1 266.9	15.5	56.8	27.7
Grade 12	226.7	777.3	326.9	1 331.0	17.0	58.4	24.6
Higher	205.1	679.8	500.4	1 385.4	14.8	49.1	36.1
<b>Population group</b>							
African	229.1	752.3	355.0	1 336.4	17.1	56.3	26.6
Afr. urban	306.4	775.8	476.5	1 558.7	19.7	49.8	30.6
Afr. non-urban	170.3	734.4	262.6	1 167.3	14.6	62.9	22.5
Coloured	295.0	515.4	303.7	1 114.1	26.5	46.3	27.3
Indian	116.7	462.6	816.2	1 395.5	8.4	33.1	58.5
White	451.5	550.2	409.9	1 411.6	32.0	39.0	29.0
Total	243.6	712.4	365.2	1 321.2	18.4	53.9	27.6

For men, the reported relative contribution of physical activity in the various domains is more or less similar across the four population groups, except for African men showing a particularly low work-related contribution (17 percent), white men showing a particularly low leisure (22 percent) and a particularly large transport (48 percent) contribution. For women, the relative contribution in the various domains indicate a slight measure of similarity across the population groups, but Indian women report a considerably lower proportion of work (8 percent) and leisure activity (33 percent) compared to the other population groups, but a particularly high proportion of transport activity.

The new national data on physical activity illustrates that a large proportion of South African adults have an unhealthy lifestyle with no or insufficient physical activity. This finding corresponds with the high levels of overweight and obesity observed among adults, particularly among women. The new data also shows some unexpected patterns and differences with the WHS results, offering opportunity for further analyses and research.

### **13.12 Discussion**

This chapter presents data on risk factors for chronic diseases including tobacco use, alcohol use, anthropometry, nutrient intake and physical inactivity. Monitoring these risk factors is timely in South Africa as we undergo the health transition, and is the first step in responding to reducing the burden of chronic diseases. A recent Lancet series acknowledges that developing countries with stressed health systems may be faced with a difficult task to address the escalating demands of chronic disease and their risk factors, but also argues that every country, regardless of the level of its resources, has the potential to make improvements in preventing and controlling chronic disease (Epping-Jordon *et al.*, 2005).

The data presented in this chapter make it clear that there is a need for a national strategy that comprehensively promotes healthy lifestyles, including programmes that promote appropriate, health-enhancing physical activity among all citizens, prevents tobacco use and alcohol abuse, and promotes a healthy diet. Otherwise, the current trends in South African lifestyles can be expected to contribute to the continued development of high blood glucose, hypertension and high blood lipids, which will ultimately result in chronic diseases such as heart disease, stroke, type 2 diabetes mellitus and some cancers. South Africa, like several other developing countries, has been highlighted as experiencing a unique demographic moment to focus on introducing policies that will reduce the future impact of chronic disease, and to minimise the rise in cardiovascular disease in particular (Leeder *et al.*, 2004).

## **CHAPTER 14**

### **OLDER PERSONS**

#### **14.1 Introduction**

Older persons usually do not form part of DHS reporting. However, this SADHS report includes a chapter on older persons as a result of the increasing recognition of both individual and population ageing that is taking place in South Africa. ‘Individual ageing’ refers to the ageing process within a person, whereas ‘population ageing’ refers to the ageing process within a country or region when the number of older persons becomes a proportionally larger part of a country’s or region’s total population.

The population of South Africa is ageing at a rapid rate, with the older population currently growing at a pace over four times the rate of the total population (ASSA, 2004). Population Census 2001 counted 3.28 million older persons, then accounting for 7.3% of the total population (Statistics South Africa, 2003). These figures mean that by the turn of the century, South Africa housed in terms of numbers the second largest population 60 years or older, and in terms of proportions, the third oldest population in sub-Saharan Africa (United Nations, 2002a). Despite the demographic impact of HIV/AIDS, the proportion and numbers are projected to increase over the next two decades, and by 2025 more than one in ten persons will be 60 years or older, then expected to count 5.23 million people (Joubert & Bradshaw, 2006).

Population ageing and older persons’ health, well-being and their protection are central to various international instruments such as the International Year for Older Persons, the Madrid International Plan of Action on Ageing, the United Nations Principles for Older Persons, the Valetta Declaration, the WHO Policy Framework on Active Ageing and the African Union’s Policy Framework and Plan of Action on Ageing. The central themes of the Madrid Plan include the achievement of secure ageing which involves eradicating poverty in old age; the empowerment of older persons to fully participate in the economic, political and social lives of their societies; the provision of opportunities for individual development, self-fulfilment and well-being throughout life, through for example, access to lifelong learning; ensuring the full enjoyment of economic, social, cultural, civil and political rights and the elimination of all forms of violence and discrimination against older persons; commitment to gender equality among older persons; and the provision of health care, support and social protection for older persons, including preventive and rehabilitative health care (United Nations, 2002b).

The South African government has shown commitment towards older persons and their interests through various policy and legislative measures. Various acts contain provisions of either direct or indirect relevance to older persons, including the Constitution Act of 1996, Aged Persons Amendment Act of 1998, Domestic Violence Act of 1998, Housing Development Schemes Act for Retired Persons of 1988 and Social Assistance Act of 2004. Provisions in the Constitution’s Bill of Rights that are relevant to older persons include prohibition against unfair discrimination on the ground of age; freedom from all forms of violence; the right to have one’s dignity respected and protected; the right to bodily and psychological integrity; equality before the law; and the right to have access to food, water, social security and adequate housing. Similar to the approach underlying the United Nations Principles for Older Persons, these provisions provide the foundation for a rights-based approach to issues affecting older persons.

The government has furthermore observed the 1999 International Year for Older Persons with its theme “A society for all ages”; is signatory to the 2002 Political Declaration that commits countries to the Madrid Plan; has recently participated in the drafting of the Valetta Declaration at the Commonwealth Heads of Government Meeting in Malta in November 2005; and has shown remarkable support to various international responses by integrating these aims and principles into the different drafts of the South African policy for older persons which has culminated in the Older Persons Bill. In March 2006, the Older Persons Bill was passed by Parliament, and in November 2006 the State President signed the Older Persons Act, Act no. 13 of 2006. The Department of Social Development will develop regulations for the implementation of the act.

The Government provides social services for older persons directly facilitated by the Department of Social Development, and by subsidies to a range of NGO's. These services include social work services such as counselling, organisation of community and inter-sectoral programmes, and subsidies to community-based care that provides support to older persons who live in the community, or who visit luncheon clubs and community centres. A particularly important and longstanding governmental commitment is the provision of the non-contributory Older Persons Grant. In a poor continent like Africa, the social security offered to older South Africans through this grant, and the economic impacts thereof, are extraordinary and incomparable (Institute of Development and Policy Management & HelpAge International, 2003; Case & Deaton, 1998). At the policy and legislative level, it is clear that South Africa has a strong commitment towards the well-being of its older persons.

Increased age in adulthood is generally associated with a larger demand for health and related care by the individual, and an ageing population usually contributes to a rise in health care costs (Mendelson & Schwartz, 1993; National Academy of Science, 2001; WHO, 2002). For planning purposes, it therefore becomes important to describe older persons' socio-demographic characteristics, health service utilization patterns and health status. This chapter makes use of the data available in the 2003 SADHS to serve as an indication of the extent to which the macro-level commitment has filtered through to the community, institutional and individual level by describing selected socio-demographic characteristics, and reported health-related experiences and health conditions of older persons.

## **14.2 Characteristics of the Older Population**

### **Age and Residence**

The broad age distribution of the household population as well as the median age in this survey is compared with the 1998 SADHS and 1996 and 2001 Censuses (Table 14.1). The 2003 SADHS appears to have less under-representation of the 15-59 year age group than in 1998. Comparing the 1996 and 2001 Census data shows an increase in the proportion of persons 60+, 65+, 70+ and 80+, compared to a decrease in the proportion of children under 15 years. Changes in the composition of the broad age groups between the 1998 and 2003 SADHS surveys also show decreasing proportions in the young (under 15 years) compared to increasing proportions in those 15 years or older. However, the median age shows an unusually large increase for a 5-year period between these surveys, and further analysis could indicate whether this is an effect of a rapidly ageing population, the way individuals were selected into the sample, or the way they were listed onto the questionnaire.

**Table 14.1 Comparison of broad age structures**

Percentage distribution of the population in broad age groups, and the median age as indicated by 1998 SADHS, 1996 Census, 2003 SADHS and 2001 Census

	SADHS 1998	Census 1996 <sup>1</sup>	SADHS 2003	Census 2001 <sup>1</sup>
<b>MALES</b>				
Less than 15 years	40.1	35.2	34.9	33.4
15-59 years	52.8	57.8	57.2	60.7
60+ years	7.0	5.7	7.9	5.9
Missing	0.2	1.3	0.0	0.0
Total	100.0	100.0	100.0	100.0
65+	4.6	3.8	5.0	3.8
70+	2.5	2.3	2.7	2.4
80+	0.6	0.5	0.6	0.7
Number	24 340	19 490 045	13 713	21 404 934
<b>FEMALES</b>				
Less than 15 years	35.9	32.8	30.2	30.7
15-59 years	53.8	57.9	60.0	60.6
60+ years	10.1	8.2	9.7	8.7
Missing	0.1	1.1	0.0	0.0
Total	100.0	100.0	100.0	100.0
65+	6.7	5.7	6.1	6.0
70+	4.1	3.5	3.7	4.0
80+	1.1	1.0	1.1	1.3
Number	27 632	21 088 844	5 864	23 363 750
<b>PERSONS</b>				
Less than 15 years	37.8	34.0	32.4	32.0
15-59 years	53.4	57.9	58.7	60.7
60+ years	8.6	7.0	8.8	7.3
Missing	0.2	1.2	0.0	0.0
Total	100.0	100.0	100.0	100.0
65+	5.8	4.8	5.6	5.0
70+	3.4	2.9	3.2	3.2
80+	0.9	0.8	0.9	1.0
Median age	21.2	22.7	23.7	23.5
Number	51 972	40 578 889	29 577	44 768 684

<sup>1</sup> Source: Statistics South Africa.

Table 14.2 shows the distribution by urban/non-urban residence of the *de facto* older household population according to sex, ten-year age groups and selected older-age categories. Over half of older persons in all age groups and categories were listed as urban-living, with small differences between older men and women. However, older populations worldwide are generally urbanizing at a slower pace than younger age groups. Given the substantial urbanization delay of Africans over the past 100 years, and considering that Africans constitute the great majority of the older population, it is likely that Table 14.2 reflects a substantial urban bias in the sample. This is confirmed when comparing the data with the 2001 Census data (Figure 14.1). The 2001 Census data, in all mentioned age groups, also suggest a larger sex difference than reported in the 2003 survey, with older men than women living in urban areas.

**Figure 14.1 Urban/non-urban residence of the older household population: Census 2001 and SADHS 2003**

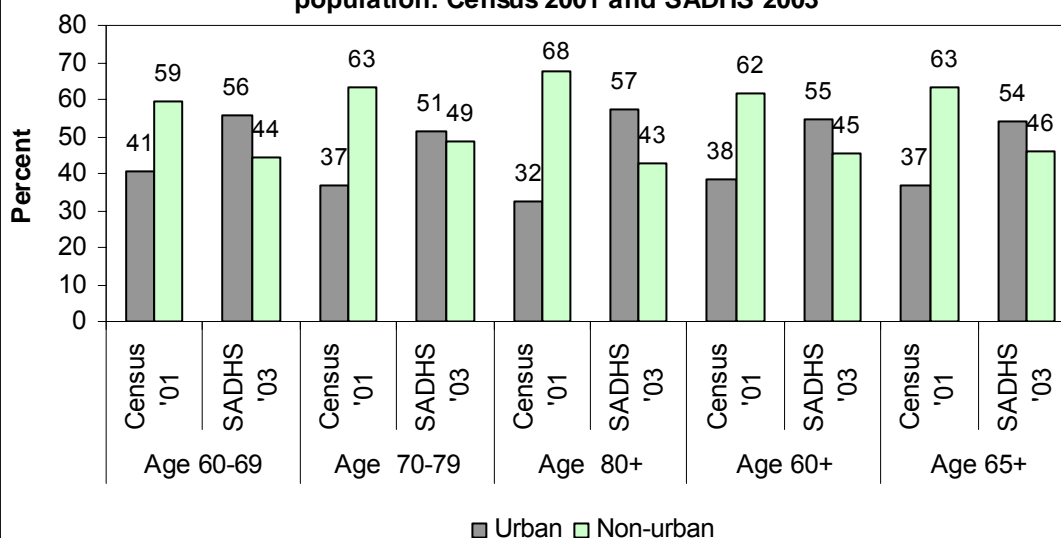


Table 14.2 Residence of older population					
Percentage distribution of urban/non-urban residence of the <i>de facto</i> household older population by ten-year age groups, 80+, 60+ and 65+, and sex, South Africa 2003					
Age group	60-69	70-79	80+	60+	65+
<b>MEN</b>					
Urban	55.1	51.6	(61.9)	54.7	55.9
Non-urban	44.9	48.4	(38.1)	45.3	44.1
Total	100.0	100.0	100.0	100.0	100.0
Number	708	283	81	1 072	673
<b>WOMEN</b>					
Urban	55.9	50.7	55.4	54.5	52.8
Non-urban	44.1	49.3	44.6	45.5	47.2
Total	100.0	100.0	100.0	100.0	100.0
Number	942	405	176	1 523	963
<b>PERSONS</b>					
Urban	55.6	51.1	57.4	54.6	54.1
Non-urban	44.4	48.9	42.6	45.4	45.9
Total	100.0	100.0	100.0	100.0	100.0
Number	1 650	688	257	2 594	1 636
Note: Figures in parentheses are based on 25-49 unweighted cases.					
The data in this table reflect a considerable urban bias in the sampling and/or fieldwork procedure. See related text and Figure 14.1. This urban bias is likely to influence other findings related to the older population.					

## Educational Level and Population Group

Table 14.3 shows the highest completed educational level of the older household population. A discouraging picture is portrayed, showing that 42 percent of older females and 36 percent of older males have had no education, starkly contrasted by 12 percent of all females and 10 percent of all males aged six years or older enumerated in the household population (compare Table 2.5 in Chapter 2). For several background characteristics, the largest proportions of older persons are seen in the “no education” category. Generally, increasing age shows a negative relationship with education for all levels of education, whereas for “no education”, the proportions of older persons increase as age increase. A male advantage is illustrated as more older males (6.7 percent) than females (5.2 percent) completed Grade 12 level education, and almost double the proportion of older males (7.2 percent) compared to females (4.1 percent) have a tertiary qualification. In contrast, more females (42 percent) than males (36 percent) have never been to school.

Substantial differences exist between the provinces, particularly in terms of having had no education and having completed Grade 12. Seventeen percent of Western Cape older females compared to 72 percent of Limpopo older females have had no education, and 17 percent of Western Cape older males compared to 0.8 percent of Eastern Cape older males completed Grade 12. Vast differences show up between urban and non-urban residence, for example, 27 percent of urban females compared to 60 percent of non-urban females have had no education, and though somewhat less pronounced, a considerable urban/non-urban difference is reflected in males too where 23 percent of urban versus 50 percent of non-urban males have had no education. This could be a reflection of residential differences related to access to educational institutions, affordability and the need for education to make a living.



Table 14.3 Level of education and population group of older persons

Percentage distribution of the highest education completed, and population group of the *de facto* household population 60 years or older by sex, South Africa 2003

Background characteristic	Population												Number
	No Education	Education					Total	African	Coloured	Indian	White	Other/missing	
		Grades 1-5	Grades 6-7	Grades 8-11	Grade 12	Higher							
WOMEN													
Age													
60-64	33.8	18.4	11.9	23.6	6.5	4.9	0.9	100.0	75.3	7.5	3.1	14.1	0.0
65-69	39.7	18.2	13.2	18.8	5.1	4.3	0.7	100.0	81.6	5.7	1.6	10.8	0.3
70-74	46.4	18.8	13.6	14.8	4.6	1.8	0.0	100.0	85.2	6.3	2.2	6.3	0.0
75-79	54.2	14.6	5.7	15.4	4.9	2.9	2.2	100.0	79.9	5.9	2.4	11.8	0.0
80-89	56.5	12.1	12.1	7.9	2.6	5.9	2.9	100.0	85.7	4.6	2.5	7.2	0.0
90+	(58.3)	(12.1)	(6.0)	(4.2)	(0.0)	(5.5)	(13.8)	100.0	(87.1)	(12.9)	(0.0)	(0.0)	(0.0)
Residence													
Urban	26.8	15.4	14.0	26.7	8.4	6.8	2.0	100.0	66.4	10.0	4.3	19.1	0.2
Non-urban	60.3	19.6	9.4	8.2	1.3	1.0	0.2	100.0	96.8	2.2	0.1	0.9	0.0
Province													
Western Cape	16.7	12.0	17.8	32.3	9.6	9.6	1.9	100.0	25.7	46.7	2.6	24.0	1.0
Eastern Cape	44.6	17.0	15.5	18.7	0.5	3.0	0.8	100.0	96.1	0.7	0.0	3.2	0.0
Northern Cape	32.7	20.7	17.1	20.2	4.4	2.8	2.1	100.0	31.8	59.2	0.7	7.6	0.7
Free State	41.9	29.9	8.1	10.2	3.5	6.3	0.0	100.0	87.2	1.6	0.0	11.2	0.0
KwaZulu-Natal	36.5	25.4	10.5	22.9	2.7	1.9	0.0	100.0	77.4	6.8	9.1	6.7	0.0
North West	41.9	21.0	18.7	15.7	1.2	1.0	0.4	100.0	97.0	0.0	0.0	3.0	0.0
Gauteng	24.4	9.2	11.3	22.3	18.5	9.8	4.5	100.0	66.4	0.0	2.0	31.5	0.0
Mpumalanga	69.9	13.1	4.9	9.1	1.5	1.5	0.0	100.0	94.2	2.1	0.0	3.7	0.0
Limpopo	72.0	12.8	6.0	6.8	0.7	1.2	0.5	100.0	97.8	0.0	0.0	2.2	0.0
Total 60+	42.0	17.3	11.9	18.2	5.2	4.1	1.2	100.0	80.2	6.5	2.4	10.8	0.1
Total 65+	46.8	16.7	11.9	15.1	4.4	3.7	1.4	100.0	83.1	5.9	2.0	8.9	0.1
MEN													
Age													
60-64	24.1	21.5	13.5	24.9	6.8	7.4	1.8	100.0	72.0	10.5	3.4	14.2	0.0
65-69	37.0	18.9	7.4	19.1	6.8	8.5	2.2	100.0	74.2	4.8	1.9	18.7	0.4
70-74	47.6	16.0	5.8	15.3	7.2	6.9	1.2	100.0	84.6	2.3	2.3	10.8	0.0
75-79	50.7	17.2	8.2	15.9	1.4	5.9	0.5	100.0	88.5	6.9	2.4	2.2	0.0
80-89	42.2	19.9	8.1	14.2	10.6	3.5	1.5	100.0	76.8	4.7	1.5	16.9	0.2
90+	*	*	*	*	*	*	*	*	*	*	*	*	*
Residence													
Urban	23.4	15.6	8.4	28.3	10.5	12.1	1.7	100.0	61.1	9.8	4.4	24.5	0.2
Non-urban	50.4	23.8	10.7	10.0	2.2	1.3	1.6	100.0	95.5	2.8	0.3	1.4	0.0
Province													
Western Cape	23.6	21.9	8.6	20.1	17.0	6.4	2.6	100.0	29.2	44.3	2.0	23.0	1.4
Eastern Cape	38.6	19.3	18.9	18.1	0.8	3.6	0.8	100.0	91.1	2.6	0.8	5.5	0.0
Northern Cape	37.3	13.9	12.8	25.5	5.1	4.6	0.8	100.0	36.6	49.1	0.8	13.5	0.0
Free State	44.6	18.2	5.8	16.2	7.7	5.5	1.9	100.0	86.4	1.9	0.0	11.6	0.0
KwaZulu-Natal	34.9	22.3	11.3	23.1	6.6	1.6	0.2	100.0	83.2	2.3	6.3	8.3	0.0
North West	50.4	18.4	10.6	14.0	2.6	3.3	0.7	100.0	97.1	0.0	0.0	2.9	0.0
Gauteng	16.5	17.0	3.0	25.9	11.1	23.6	2.9	100.0	59.2	2.8	1.9	36.1	0.0
Mpumalanga	52.2	22.3	4.8	13.9	3.4	3.4	0.0	100.0	85.7	3.1	0.0	11.2	0.0
Limpopo	51.8	14.9	7.4	13.3	3.8	3.3	5.6	100.0	92.8	0.0	2.9	4.3	0.0
Total 60+	35.6	19.3	9.5	20.0	6.7	7.2	1.7	100.0	76.7	6.6	2.5	14.1	0.1
Total 65+	42.4	18.0	7.1	17.1	6.7	7.1	1.6	100.0	79.5	4.3	2.1	14.0	0.2

Population group unknown for two women and two men.

Note: Figures in parentheses are based on 25-49 unweighted cases, and asterisks are based on &lt;25 unweighted cases.

A slight improvement is suggested in the 2003 educational levels of the population 65+ compared to the 1998 levels as slightly more males and females completed Grade 12 in the 2003 survey. However, unexpectedly, in the 2003 survey, slightly more males (42 percent) and females (47 percent) in the population 65+ have had no education compared to the 1998 survey when 39 percent of males and 45 percent of females reported to have had no education.

Table 14.3 also shows the percent distribution of older females and males by population group. Africans account for 80 percent of older females and 77 percent of older males and the data generally show increased proportions of Africans at each of the older age cut-offs. Whites and coloureds account for the second and third largest proportions of older persons, and Indians for the smallest. Of the non-urban older population, 97 percent are African. Except for the Western Cape and Northern Cape where coloureds show the largest proportions, the large majority of the provincial older populations are African.

### **Grants and Pensions**

The percentage of older males and females receiving a grant, pension or allowance, is indicated in Table 14.4. The grants offered to the South African eligible population, include the older persons, disability, war veteran, care dependency, foster child, child support and social relief of distress grants. Males aged 65 years or older and females aged 60 years or older may apply for an older persons grant provided their income is below a specified level. The majority of females 65 years or older (87 percent) and males 65 years or older (71 percent) report receiving a grant. In both older males and females, the proportion receiving a grant generally increases with age. A general pattern of decreasing proportions is shown as educational level increases. Among the population groups, African older males and females have the highest proportions of grant recipients, followed by Indians, coloureds and whites. Compared to the other population groups, small proportions of older whites receive a grant. In both males and females, a considerably larger proportion of non-urban compared to urban older persons receive a grant. The only provinces with less than 6 in 10 older males receiving a grant, are the Western Cape and Gauteng where about 4 in 10 older males receive a grant. Similarly are the Western Cape and Gauteng the only provinces where about 6 in 10 older females receive a grant, compared to 8-9 in 10 older females in the other provinces.

From the 1998 to the 2003 survey, the percentage of the female population 65 years or older that receive a grant has increased from 81 to 87 percent, and the male proportion has increased from 66 to 71 percent.

Table 14.4 Grants and pensions of older persons

Percentage distribution receiving a grant or pension among the *de facto* household population 60 years or older by sex, South Africa 2003

Background characteristic	MEN					WOMEN				
	Yes	No	Missing	Total	Number	Yes	No	Missing	Total	Number
<b>Age</b>										
60-64	33.7	65.1	1.2	100	399	64.9	35.1	0.0	100	560
65-69	57.9	41.9	0.2	100	309	83.3	15.8	0.9	100	382
70-74	77.2	22.8	0.0	100	197	90.5	9.5	0.0	100	263
75-79	81.8	18.2	0.0	100	86	87.3	12.5	0.2	100	142
80-89	91.9	8.0	0.2	100	76	92.3	7.7	0.0	100	155
90+	*	*	*	100	5	(86.2)	(13.8)	0.0	100	21
<b>Residence</b>										
Urban	50	49.8	0.2	100	586	71.8	27.8	0.5	100	830
Non-urban	65.2	33.9	0.8	100	486	87.9	12.1	0.0	100	693
<b>Province</b>										
Western Cape	41.1	58.8	0.1	100	89	64.5	35.5	0.0	100	119
Eastern Cape	64.6	33.8	1.6	100	156	86.5	13.5	0.0	100	270
Northern Cape	69.1	30.9	0.0	100	24	85.9	14.1	0.0	100	28
Free State	60.9	37.2	1.9	100	62	82.8	17.2	0.0	100	86
KwaZulu-Natal	60.1	39.8	0.0	100	273	76.9	23.1	0.0	100	308
North West	66.4	32.9	0.7	100	91	89.1	10.9	0.0	100	146
Gauteng	40.8	59.2	0.0	100	206	60.6	38.2	1.2	100	262
Mpumalanga	60.6	39.4	0.0	100	64	88.7	11.3	0.0	100	95
Limpopo	66.2	32.8	0.9	100	107	90.6	9.1	0.3	100	209
<b>Education</b>										
No education	70.8	28.8	0.5	100	382	87.4	12.1	0.6	100	640
Grades 1-5	62.3	36.8	0.9	100	207	89.3	10.7	0.0	100	264
Grades 6-7	63.7	35.1	1.2	100	102	86.4	13.5	0.1	100	181
Grades 8-11	53.4	46.4	0.3	100	214	69	31	0.0	100	278
Grade 12	14.8	85.2	0.0	100	72	27.9	72.1	0.0	100	79
Higher	19.3	80.7	0.0	100	77	46.5	53.5	0.0	100	63
<b>Population group</b>										
African	64.3	35.1	0.6	100	822	86.3	13.4	0.3	100	1 222
African urban	62.4	37.2	0.3	100	358	83.9	15.5	0.6	100	551
African non-urban	65.7	33.4	0.9	100	464	88.3	11.7	0.0	100	671
Coloured	44.3	55.7	0.0	100	71	71.9	28.1	0.0	100	98
Indian	56.2	43.8	0.0	100	27	82.9	16.4	0.7	100	37
White	22.4	77.6	0.0	100	151	28.8	71.2	0.0	100	165
Total age 60+	56.9	42.6	0.5	100	1 072	79.1	20.7	0.2	100	1 523
Total age 65+	70.7	29.2	0.1	100	673	87.4	12.3	0.4	100	963

Population group unknown for two men and two women. Education unknown for 17 men and 31 women.

Note: Figures in parentheses are based on 25-49 unweighted cases, and asterisks are based on <25 unweighted cases.

## 14.3 Housing Characteristics and Household Durable Goods of Older Persons

### Housing Characteristics

Table 14.5 shows the proportions of older persons according to the characteristics of the households in which older persons usually live for both urban and non-urban areas, contrasted with the 1998 survey. Nearly all urban older persons live in households that have access to electricity (92 percent). Just over half of the non-urban-living older population (53 percent) have such access, which is considerably lower than the urban access, but which reflects a narrowing in the urban/non-urban gap in electricity access from 1998. In 1998, only 34 percent of the older persons in non-urban households had access (Table 14.5).

**Table 14.5 Housing characteristics of older persons**

Percentage distribution of the *de jure* persons 60 years or older, by selected housing characteristics, according to residence, South Africa 2003 and South Africa 1998

Housing characteristic	2003 SADHS			1998 SADHS		
	Urban	Non-urban	Total	Urban	Non-urban	Total
<b>Electricity</b>						
Yes	92.1	53.4	74.5	90.8	33.8	62.6
No	7.9	46.6	25.5	8.7	65.6	36.8
Missing	-	-	-	0.6	0.6	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Fuel used for cooking</b>						
Electricity	91.7	53.0	74.1	79.0	20.0	49.8
Gas	0.1	0.2	0.2	2.1	3.5	2.8
Paraffin/ Kerosene	1.6	12.2	6.4	12.3	34.3	23.2
Charcoal/Coal	0.7	0.8	0.8	2.8	3.6	3.6
Other	0.2	0.7	0.4	3.1	37.8	19.8
Missing	5.6	33.1	18.1	0.9	0.8	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Source of drinking water</b>						
Piped into dwelling	64.4	10.6	40.0	64.4	8.8	36.9
Piped into yard/ plot	28.7	13.8	21.9	27.4	14.5	21.0
Public tap	5.3	37.0	19.7	6.8	30.2	18.4
Well in dwelling/borehole	0.3	6.6	3.2	0.1	7.1	3.6
Dam/river/stream/spring	0.1	24.7	11.2	0.4	32.5	16.2
Other	0.3	7.0	3.3	0.4	6.3	3.3
Missing	1.0	0.3	0.7	0.6	0.6	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Time to water source</b>						
Longer than 15 minutes	2.4	53.4	25.6	2.2	45.9	23.8
<b>Sanitation facility</b>						
Flush toilet (sewage or septic not indicated)	84.5	5.3	48.6	84.1	6.8	45.9
Pit latrine or bucket	13.2	77.1	42.3	13.7	67.1	40.0
No facility, bush, field	0.8	16.8	8.1	1.1	25.3	13.1
Other	0.0	0.0	0.0	0.1	0.2	0.2
Missing	1.4	0.7	1.1	1.0	0.6	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Main floor material</b>						
Earth, sand, dung	7.4	33.0	19.0	5.0	37.3	21.0
Parquet, polished wood/wood planks	5.0	1.3	3.3	5.1	1.0	3.1
Vinyl, linoleum	7.5	3.9	5.9	27.5	11.8	19.7
Ceramic tiles	25.8	3.7	15.8	9.6	1.0	5.3
Cement	27.8	50.1	37.9	16.9	40.4	28.5
Carpet	25.4	7.5	17.3	34.7	7.9	21.4
Other	0.1	0.0	0.1	0.6	0.1	0.3
Missing	1.0	0.5	0.8	0.7	0.6	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Main wall material</b>						
Mud	1.8	26.3	1.8	2.2	37.0	19.4
Mud and cement	11.2	19.9	11.2	4.5	16.0	10.2
Corrugated iron/zinc	5.7	1.9	5.7	6.7	1.8	4.3
Prefab	0.2	0.5	0.2	0.2	0.1	0.1
Bare brick or cement block	15.3	18.6	15.3	10.7	11.5	11.1
Plaster/finished	61.5	30.1	61.5	72.0	31.1	51.8
Other	2.8	1.3	2.8	2.3	0.9	1.6
Missing	1.5	1.3	1.5	1.3	1.6	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Persons per room (2003); sleeping room (1998)</b>						
1-2	95.3	94.2	94.9	80.9	75.0	78.0
3-4	2.5	4.8	3.4	13.6	17.4	15.4
5-6	0.4	0.0	0.3	2.9	4.5	3.7
7+	0.0	0.1	0.0	1.4	1.7	1.6
Missing	1.8	1.0	1.5	1.3	1.4	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Mean	1.1	1.2	1.1	2.1	2.2	2.1
<b>Number</b>	1 416	1 179	2 594	2 258	2 209	4 468

Since 1998, the proportion of older persons in households using electricity for cooking has increased for both urban and non-urban older persons, but particularly so in the non-urban areas where the proportion has more than doubled by 2003. Table 14.5 shows a strong consistency between access to electricity and using electricity as the main source of energy for cooking. Generally there has been a decrease in the utilization of charcoal/coal and paraffin/kerosene for cooking in both urban and non-urban areas. Data related to fuel used for cooking are missing for 6 percent of urban and 33 percent of non-urban households, which is unfortunate as this may have influenced the figures regarding cooking fuel in Table 14.5.

Changes in access to piped water for drinking are much less marked than the changes in access to electricity. In both surveys, almost two-thirds of urban older persons have access to piped water and over a quarter have piped water in their yard (Table 14.5), showing limited change from 1998. The proportion of non-urban households with access to piped water into the dwelling or yard remains small (less than one-quarter), with limited change since 1998. Members of such households have to spend an amount of time to obtain water from sources outside the dwelling or yard. Over half of the non-urban households (53 percent) take more than 15 minutes to get to the water source, get water, and come back. This proportion was lower in 1998 (46 percent), meaning that, in 2003, there are more households than in 1998 that spend more than 15 minutes to get to the water source.

The majority urban older persons (85 percent) have access to flush toilets, but in stark contrast, only 5 percent living in non-urban areas have access to a flush facility while 77 percent depend on a pit latrine or bucket. Almost no change since 1998 is shown for urban older persons, but some improvement over time is reflected among non-urban older persons in that about 8 percent less of them have no sanitation facility, while 10 percent more have access to a pit or bucket facility (Table 14.5).

The most common flooring material in the urban areas is cement, followed by ceramic tiles and carpets. In the non-urban areas, it was mainly cement and earth/sand. Nationally, cement and ceramic tiles are found more frequently now than was the case in 1998, with ceramic tile flooring having tripled since 1998. It is noted that the proportion of older persons living in urban homes with an earth/sand flooring, has increased from 5 percent in 1998 to 7.4 percent in 2003 (Table 14.5).

Overall, there has been little change in the housing type of older persons between 1998 and 2003. However, there are differences between households in urban areas and non-urban areas. Among urban older persons, plaster (62 percent) and bare brick/cement blocks (15 percent) are the most common wall materials of their households. In contrast, the most common materials among non-urban older persons are plastered walls (30 percent) and mud walls (26 percent). Since 1998, there has been a marked decline in the frequency of plaster walls in the urban areas accompanied by an increase in the frequency of bare brick and walls of mud and cement.

The vast majority of older persons (95 percent), with almost no difference among urban and non-urban persons, live in households that houses less than three persons per room. Very small proportions of older persons live in households housing 3-4 persons per room and negligible proportions in households housing more persons per room. Related 1998 SADHS data can not be compared, as the 1998 questionnaire obtained information about the number of persons per room *used for sleeping*.

## Household Durable Goods

This section reports on the household ownership of selected durable goods that would play a role in enabling older persons to fully participate in and gain from societal life.

Table 14.6 shows that, as in 1998, considerable differences exist between urban and non-urban older persons in terms of most household durable goods included in the SADHS surveys. About 8 in 10 urban older persons live in households with a radio, television and refrigerator in working condition, compared to 69 percent of non-urban older persons living in a household with a radio, and less than 4 in 10 non-urban older persons living in a household with a television or refrigerator. Over three times less non-urban older persons (11 percent) than urban (38 percent) have access to a car or truck, whereas more non-urban compared to urban older persons have access to a bicycle and donkey or horse. Over 50 percent of urban older persons have access to each of a telephone and cell phone in their households, but the proportions for non-urban older persons are substantially smaller. About 24 percent of urban older persons do not have access to a phone, compared to 38 percent of non-urban older persons. Thirteen percent of non-urban, compared to 5 percent of urban older persons have access to none of the durable goods mentioned in Table 14.6.

Table 14.6 Household durable goods of older persons						
Percentage of <i>de jure</i> persons 60 years or older living in households possessing selected durable goods and with phone access, by residence, South Africa 2003 and South Africa 1998						
Goods and access	2003 SADHS			1998 SADHS		
	Urban	Non-urban	Total	Urban	Non-urban	Total
<b>Durable consumer goods</b>						
Radio	82.2	69.1	76.3	85.2	74.7	80.0
Television	79.1	38.0	60.4	79.3	31.7	55.7
Refrigerator	78.4	36.3	59.3	75.5	23.0	49.5
Bicycle	13.6	16.3	14.8	13.0	10.3	11.7
Motorcycle/scooter	3.4	1.2	2.4	1.7	1.0	1.4
Car/truck	38.1	11.0	25.8	37.1	12.0	24.7
Computer	15.3	1.7	9.1	6.4	0.5	3.5
Donkey/Horse	0.5	6.7	3.3	0.6	7.2	3.8
Sheep/Cattle	1.8	32.0	15.5	1.6	32.6	16.9
Telephone	50.6	6.2	30.4	57.1	6.9	32.3
Cell phone	55.4	35.7	46.5	-	-	-
None of above	5.2	12.9	8.7	6.0	14.9	10.4
<b>Phone access</b>						
Own phone	50.6	6.2	30.4	57.1	6.9	32.3
At a neighbour nearby	3.3	5.1	4.1	6.6	14.5	10.5
At a public telephone nearby	21.4	36.1	28.1	15.2	44.4	29.6
Somewhere else nearby	0.9	14.7	7.2	19.8	32.7	26.2
No access	23.8	37.9	30.2	1.4	1.5	1.4
Number of households	1 416	1 179	2 594	2 258	2 209	4 468

Compared with 1998, Table 14.6 shows that there are generally few changes in the proportions of older persons with access to household amenities. There was a slight increase in urban older persons having access to a refrigerator, motor-cycle, car/truck, computer, sheep/cattle and a nearby public telephone, but a stagnation or decrease in access to the remaining consumer goods. For non-urban older persons, an increase is shown in access to a television, refrigerator, bicycle and computer, but a stagnation or decrease with regard to access to the remaining amenities mentioned. There has been little change in the proportion of older persons with a phone in the

household but there has been a substantial increase in the proportion living in a household that considers that they do not have access to a phone nearby. Given the importance of access to a telephone in the older population, it is worrying that in 2003 a third of older persons live in households that do not have access to a phone. Further assessment is needed to assess whether this is a real deterioration or whether it may relate to a difference in the questionnaire.

### 14.4 Illness, Disability and Injuries among Older Persons

The lack of information on chronic disease in adults was recognized in the planning of the 1998 SADHS and a module was developed to provide national-level data to fill this knowledge gap. A clinical examination of respondents was not possible, but hypertension and lung disease were

identified as sentinel conditions which could be measured objectively by lay interviewers and used as indicators for chronic diseases. The adult health module therefore focused on information related to hypertension and lung disease, but also includes selected risk factors and/or behaviours for chronic disease, self-reported chronic conditions and oral health. The risk factor profile in the 2003 SADHS was extended to include information on physical activity and dietary intake, as well as violence.

#### **14.4.1 Self-reported Prevalence of Chronic Conditions**

Figure 14.2 reflects the self-reported prevalence of selected commonly-occurring chronic conditions in persons 60 years or older. Study participants were asked if a doctor, nurse or staff member at a clinic or hospital had ever informed them that they have had or have a chronic condition. Data from such self-reported conditions by participants should be treated with caution as they are frequently under-reported or incorrectly reported.

Similar to the 1998 survey, the 2003 results indicate that high blood pressure is by far the most commonly reported chronic condition among both older men and women, with a large gender differential between men (24 percent) and women (44 percent). Arthritis was included in the 2003 survey, presenting in both sexes as the second-most commonly reported chronic condition. Prevalence for most conditions is similar to that found in 1998, except for a considerably lower reporting of bronchitis in older men and ischaemic heart disease (IHD) in older women. IHD prevalence in men is usually expected to be higher than among women, and the higher reporting in both surveys among older women (13 and 8 percent) than men (8 and 6 percent) may be indicative of the inaccuracy of self-reported IHD. It is also possible that IHD is interpreted more so by female than male older respondents to mean 'all heart disease'.

The self-reported prevalence of diabetes and osteoporosis among women is about twice as high as that in men. While, from 1998 to 2003, the overall self-reported diabetes prevalence in the general adult population ( $\geq 15$  years) remained unchanged at about 2.5 percent for men and about 3.8 percent for women (Chapter 10, Tables 10.2 and 10.3), the self-reported diabetes prevalence in women 60 years or older shows a slight increase (Figure 14.2). It is expected that the self-reported prevalence of chronic conditions would increase with increasing age, and the 2003 older male and female prevalence of the reported chronic conditions (Figure 14.2) are generally indeed more than double the total adult male and female prevalences (Tables 10.2 and 10.3). An exception relates to high cholesterol, bronchitis and tuberculosis in men, and tuberculosis in women, for which the older persons' prevalence is still higher than that of the total adult population, but for which the difference between the older population and the total adult population is much smaller.

**Figure 14.2 Self-reported prevalence of chronic disease among older persons, SADHS 1998 and 2003**

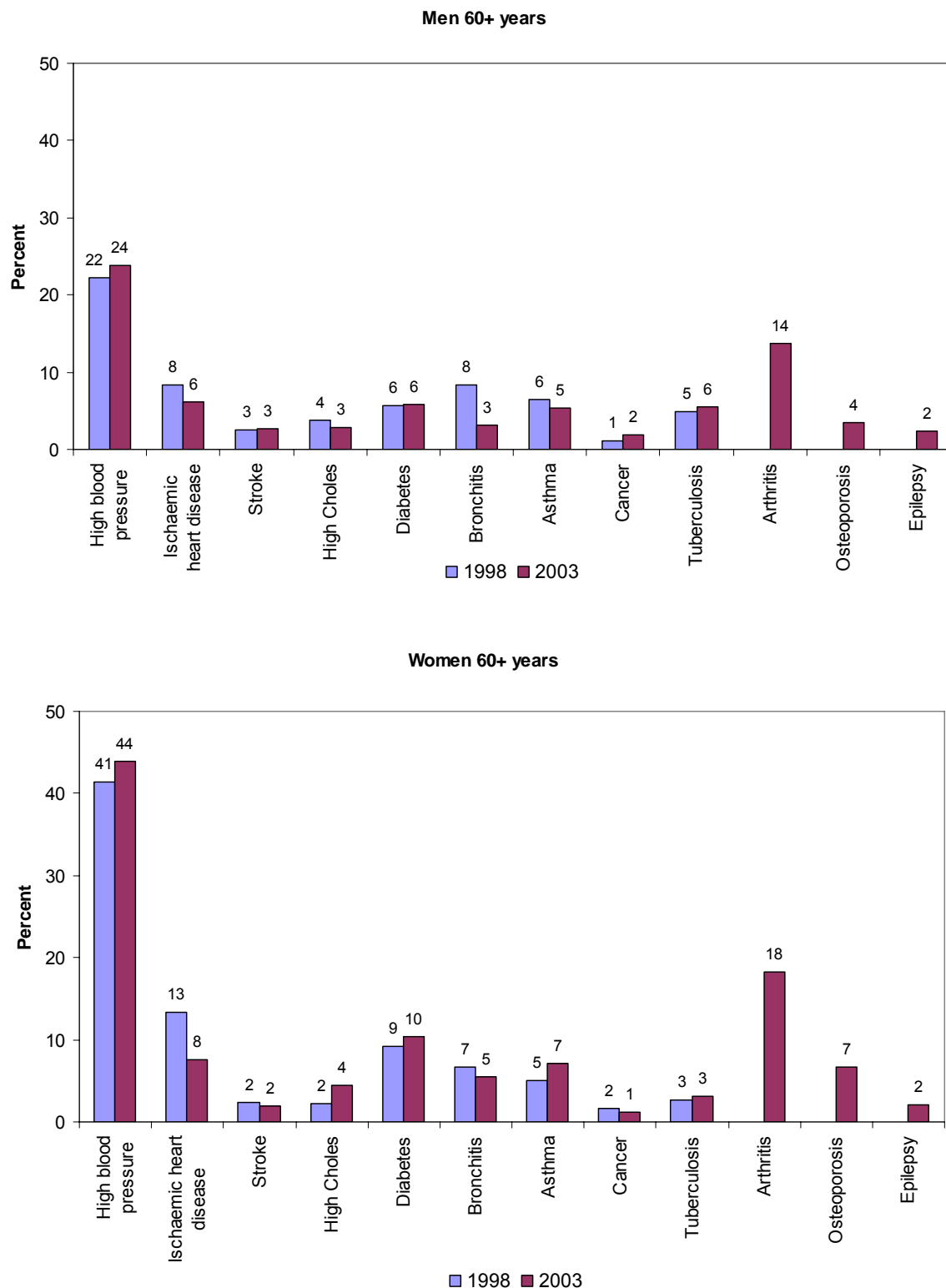


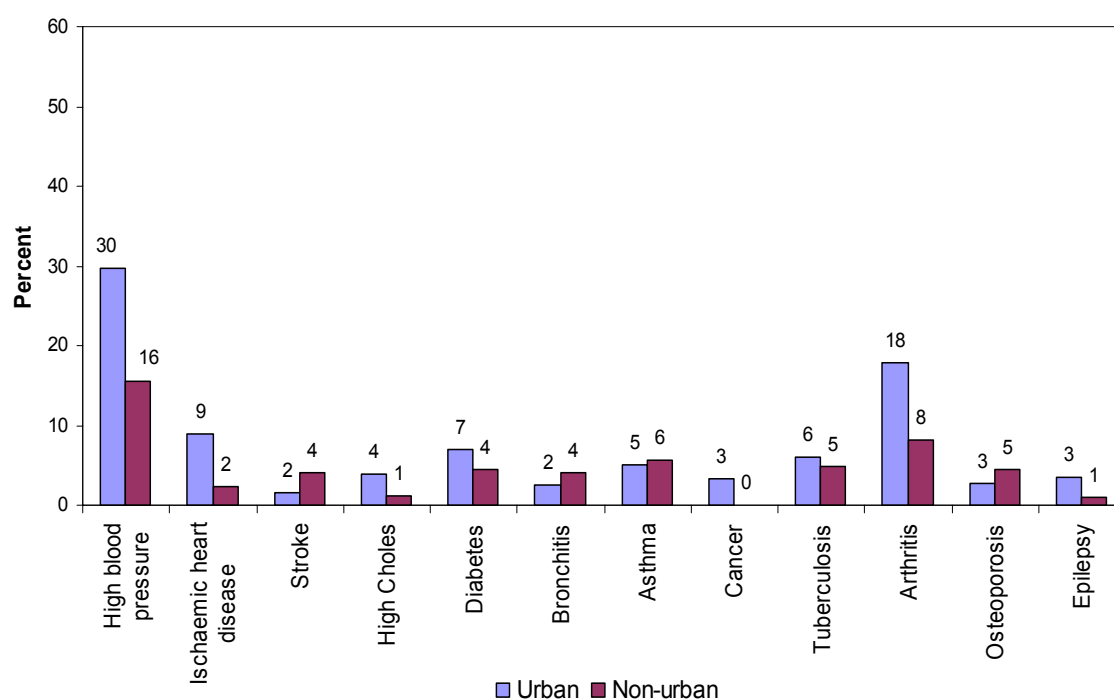
Figure 14.3 shows the self-reported prevalence of the same chronic conditions for men and women 60 years or older by urban/non-urban residence. Among older men, most conditions are less prevalent in non-urban areas, except for stroke, bronchitis, asthma and osteoporosis which show higher prevalences in non-urban areas. Among older women, too, most conditions are less prevalent



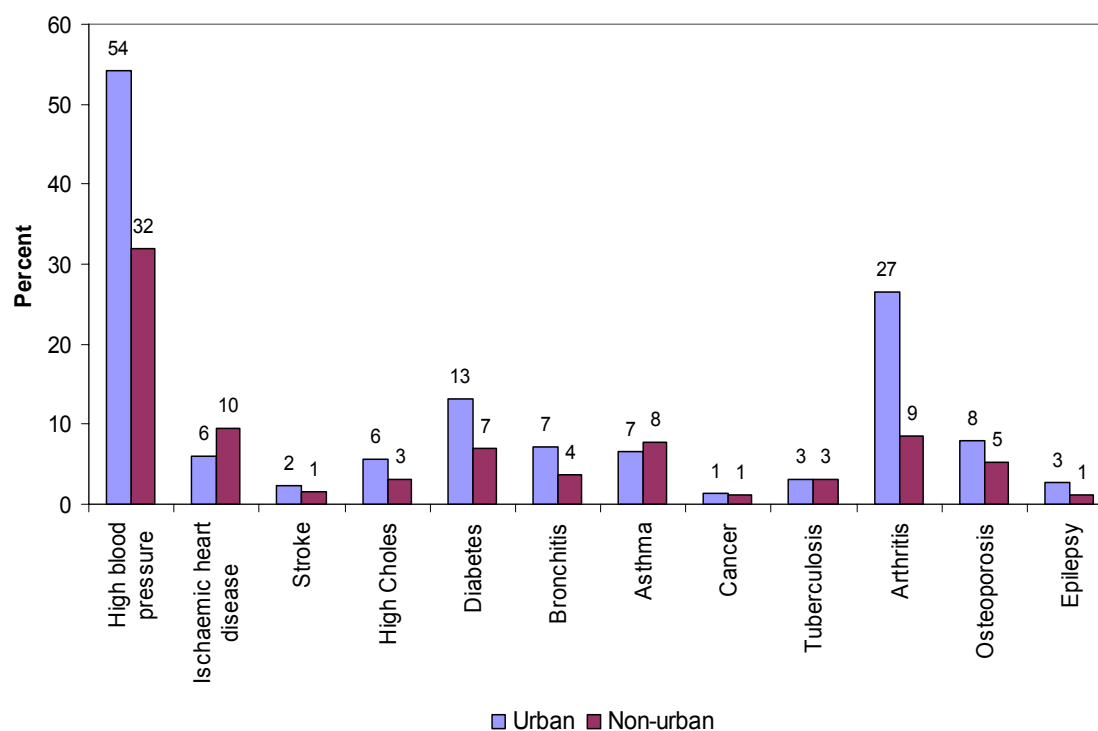
in non-urban areas. However, asthma and tuberculosis are slightly higher in non-urban areas. In both older men and women, the prevalence of arthritis is substantially higher in urban than non-urban areas. In older women, the almost two times higher urban than non-urban prevalence of high blood pressure, diabetes, bronchitis and epilepsy are noticed. Considering that IHD is generally more common in urban settings, it is particularly noticeable that IHD is higher among non-urban than urban older women. Again, this is suggestive of inaccuracy of self-reported IHD. The generally higher prevalence of chronic conditions in urban areas might be a result of better access to health care and more opportunity for being diagnosed with a condition, or from epidemiological differences.

**Figure 14.3 Self-reported prevalence of chronic disease among older persons by area of residence, SADHS 2003**

**Men 60+ years**



**Women 60+ years**



## 14.4.2 Symptoms of Chest Conditions

### *Airflow limitation*

Airflow limitation is a symptom complex made up of wheezing/tight chest with breathlessness in the past 12 months, with sleep interruption by wheezing/tight chest or by coughing. As the questionnaire did not probe reversibility, the definition can be regarded as suggestive of, but not equivalent to asthma. The prevalence of airflow limitation is 13 percent in older men, slightly higher than the 12 percent in older women and is similar to that in 1998 with a slight increase in men (12 percent in 1998), and a small decrease in women (14 percent in 1998). As in 1998, the prevalence of airflow limitation increases markedly with age (compare Table 12.8 in Chapter 12), and the 2003 prevalence in older men (13.4 percent) and women (12.4 percent) is higher than that reported in the total adult  $\geq 15$  year male (7.2 percent) and female (8.1 percent) population (compare Table 12.8 in Chapter 12).

Table 14.7 Lung disease and reported disability of older persons by date of survey

Percentage of men and women aged 60 years or older who report symptoms of airflow limitation, or chronic bronchitis or who have abnormal peak flow rates, and who report different types of disability, South Africa 2003, South Africa 1998 and South Africa 2001

Condition	2003 SADHS				1998 SADHS			
	MEN		WOMEN		MEN		WOMEN	
	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
<b>Lung disease symptoms</b>								
Airflow limitation	13.4	375	12.4	607	12.0	760	14.1	1 272
Chronic bronchitis	4.8	375	3.1	607	3.9	760	5.3	1 272
Abnormal peak flow rates	10.8	375	17.7	607	7.2	760	8.0	1 272
<b>Reported Disability</b>								
	2001 CENSUS*							
Sight	1.5	1 074	2.5	1 537	4.8	1 255 003	5.3	2 025 509
Hearing	1.0	1 074	0.9	1 537	2.2	1 255 003	2.2	2 025 509
Communication/speech	0.3	1 074	0.01	1 537	0.4	1 255 003	0.3	2 025 509
Physical	4.2	1 074	3.9	1 537	4.6	1 255 003	4.2	2 025 509
Intellectual	0.5	1 074	0.01	1 537	0.5	1 255 003	0.5	2 025 509
Emotional	0.4	1 074	0.2	1 537	1.1	1 255 003	1.1	2 025 509
Multiple	-	-	-	-	2.3	1 255 003	2.8	2 025 509
Any disability	7.9	1074	7.6	1 537	16.0	1 255 003	16.4	2 025 509

\* Source: Statistics South Africa: Population Census 2001.

### *Chronic bronchitis*

The “chronic bronchitis” symptom complex is defined by chronic cough with phlegm every day for at least three months a year, for at least two successive years. The prevalence of chronic bronchitis is 4.8 percent among older men and 3.1 percent among older women. The prevalence among men has increased by about 1 percent compared with the 1998 SADHS, but in women the prevalence has declined from 5.3 percent to 3.1 percent (Table 14.7).

### *Abnormal peak flow rates*

Peak expiratory flow rate (PEFR) is the maximum rate of flow of air expelled during a forced expiration. It is less sensitive and more variable than lung function measured by more sophisticated but less mobile equipment, and is strongly dependent on how hard the study participant tries. The advantage of using PEFR is that it can be measured with a simple portable meter suitable for field studies. It should therefore be regarded as a crude measure of airways function.

The PEFR is expressed as a percentage of a predicted or reference value derived from the healthy subjects in the 1998 survey (Department of Health, MRC & Measure DHS+, 2002). Values that are more than 2 standard deviations below the predicted mean for a given age, sex and height are

considered abnormal. The proportions of the 2003 survey population falling below this abnormal threshold value are reported in Table 14.7. Much higher results of the proportion of older persons with an abnormal peak flow are found in the 2003 survey, with males showing an increase from 7.2 percent in 1998 to 10.8 percent in 2003, and females from 8.0 percent to 17.7 percent. These very high increases would be cause for concern. However, similar increases are not observed in the prevalence of lung symptoms, suggesting that technical factors related to the data collection in 1998, and not biological factors related to the participants, are most likely responsible for the large differences between surveys as discussed in section 12.11 of Chapter 12.

Table 14.8 compares the urban and non-urban proportions of older men and women who report symptoms of lung disease. In both older men and women, the urban proportions of reported symptoms of airflow limitation, chronic bronchitis and abnormal peak flow rates are higher than the non-urban proportions, except for symptoms of chronic bronchitis in women. These results tend to confirm the observed residential differences in self-reported symptoms. While the sample size is small, the higher prevalence of chronic bronchitis in non-urban areas might be associated with higher exposures to indoor smoke, or less access to optimal treatment.

Table 14.8 Lung disease and reported disability of older persons by residence								
Percentage of men and women aged 60 years or older who report symptoms of airflow limitation, or chronic bronchitis or who have abnormal peak flow rates, and who report different types of disability by urban and non-urban residence, South Africa 2003								
Condition	Urban				Non-urban			
	MEN		WOMEN		MEN		WOMEN	
	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
<b>Lung disease symptoms</b>								
Airflow limitation	14.0	219	13.5	325	12.6	156	11.1	281
Chronic bronchitis	4.9	219	2.4	325	4.6	156	3.9	281
Abnormal peak flow rates	11.4	219	23.6	325	9.9	156	10.8	281
<b>Reported Disability</b>								
Sight	0.6	590	1.6	843	2.5	484	3.7	694
Hearing	0.7	590	1.2	843	1.4	484	0.7	694
Communication/speech	0.1	590	0.0	843	0.5	484	0.0	694
Physical	5.2	590	3.6	843	2.9	484	4.3	694
Intellectual	0.6	590	0.0	843	0.5	484	0.0	694
Emotional	0.1	590	0.2	843	0.8	484	0.1	694
Any disability	7.2	590	6.5	843	8.6	484	8.9	694

### 14.4.3 Disability

Respondents were asked whether household members have any serious disability that prevents his/her full participation in activities such as work, education and social life. The questionnaire allowed mentioning only one type of disability. About 8 percent of older men and women reported that they live with a disability. Table 14.7 shows that physical disabilities are the most frequently reported form of disability in both older men and women, followed by sight and hearing disabilities. The prevalence of physical and hearing disability is approximately equally common in men than women, whereas sight disability is slightly more common in women than men. Table 14.7 also shows self-reported disability as reported during the 2001 Census. Considerably higher proportions were reported during the Census for almost all types of disability, but the Census methodology allowed people to indicate more than one disability per person. Sight, physical and hearing disability, were also in the census the three types of disability that showed the highest values in both older men and women.

Table 14.8 shows the urban and non-urban prevalence of reported disability in older men and women for the 2003 survey. In both men and women, proportions of “Any disability” are higher in the non-urban compared to the urban areas. Almost one in ten non-urban older women has a disability. In both urban and non-urban settings, physical disability is the most frequently reported type of disability in both men and women. Sight disability is more common in non-urban than urban older women and men. Although reported less often, hearing, communication/speech and emotional disability are generally reported more frequently among non-urban than urban older men.

Table 14.9 Injuries among older persons										
Percent distribution of the <i>de facto</i> male and female household population 60 years or older, by whether injured in the 30 days preceding the survey, South Africa 2003										
Background characteristic	MEN					WOMEN				
	Yes	No	Missing	Total	Number	Yes	No	Missing	Total	Number
<b>Age</b>										
60-64	1.5	97.3	1.3	100	399	1.5	98.5	0.0	100	560
65-69	2.8	97.0	0.2	100	309	1.3	97.3	1.3	100	382
70-74	1.6	97.8	0.6	100	197	3.9	95.6	0.5	100	263
75-79	0.7	97.5	1.7	100	86	5.0	94.8	0.2	100	142
80-89	1.5	98.3	0.2	100	76	1.3	97.9	0.8	100	155
90+	*	*	*	100	5	0.0	(86.2)	(13.8)	100	21
<b>Residence</b>										
Urban	1.9	97.6	0.5	100	586	2.1	97.1	0.8	100	830
Non-urban	1.8	97.0	1.2	100	486	2.2	97.2	0.5	100	693
<b>Province</b>										
Western Cape	3.9	96.0	0.1	100	89	3.8	96.2	0.0	100	119
Eastern Cape	4.4	94.1	1.6	100	156	3.6	96.0	0.5	100	270
Northern Cape	3.0	97.0	0.0	100	24	1.5	98.1	0.4	100	28
Free State	1.0	99.0	0.0	100	62	1.4	98.6	0.0	100	86
KwaZulu-Natal	0.7	98.7	0.6	100	273	0.9	98.7	0.4	100	308
North West	4.7	94.6	0.7	100	91	1.9	98.1	0.0	100	146
Gauteng	0.0	98.8	1.2	100	206	2.2	95.4	2.4	100	262
Mpumalanga	0.8	99.2	0.0	100	64	0.0	100.0	0.0	100	95
Limpopo	1.9	97.2	0.9	100	107	2.9	96.4	0.8	100	209
<b>Education</b>										
No education	1.9	97.7	0.5	100	382	1.8	97.0	1.2	100	640
Grades 1-5	1.6	97.1	1.3	100	207	1.4	98.6	0.0	100	264
Grades 6-7	3.5	93.1	3.4	100	102	2.3	97.6	0.1	100	181
Grades 8-11	1.4	98.4	0.2	100	214	2.7	97.3	0.0	100	278
Grade 12	1.6	98.4	0.0	100	72	6.3	93.7	0.0	100	79
Higher	1.1	98.9	0.0	100	77	1.8	98.2	0.0	100	63
<b>Population group</b>										
African	1.9	97.2	1.0	100	822	2.1	97.1	0.8	100	1 222
African urban	2.2	97.2	0.6	100	358	1.8	97.1	1.2	100	551
African non-urban	1.7	97.1	1.2	100	464	2.3	97.2	0.5	100	671
Coloured	3.8	96.2	0.0	100	71	1.2	98.7	0.1	100	98
Indian	0.0	98.2	1.8	100	27	4.7	93.9	1.3	100	37
White	1.3	98.7	0.0	100	151	3.0	97.0	0.0	100	165
Total age 60+	1.9	97.3	0.8	100	1072	2.2	97.1	0.7	100	1 523
Total age 65+	2.1	97.4	0.5	100	673	2.5	96.4	1.1	100	963

Population group unknown for two men and two women. Education unknown for 17 men and 31 women.  
Note: Figures in parentheses are based on 25-49 unweighted cases, and asterisks are based on <25 unweighted cases.

#### 14.4.4 Injuries

As people age, they become more vulnerable to accidental injuries with the rates of falls and burns increasing. Approximately 2 percent of the older population experienced a serious injury in the preceding 30 days, with slightly more women than men reporting injuries (Table 14.9). In both older men and women, the urban and non-urban incidences are very similar. Among the provinces, the highest female incidences are reported in the Western Cape, Eastern Cape and Limpopo, and the highest male incidences in North West, Eastern Cape and Western Cape. Compared to the other population groups, Table 14.9 shows that high incidences were reported among Indian older females (4.7 percent) and older coloured men (3.8 percent).

#### **14.4.5 Violence Against Older Persons**

To measure the frequency of violent attacks in the adult population, and to assist in controlling and preventing violence and crime which have become national priorities in South Africa, questions on physical attacks were included in the SADHS questionnaire for the first time in 2003. One respondent per household was selected according to specified criteria, and fieldworkers were trained to ensure privacy during the interview, otherwise not to ask the violence questions.

Due to small numbers, the violence data for persons 60 years or older are not presented in the tables. Of the 393 persons 60 years or older selected to report on violence, 4.6 percent report being attacked physically over the past 12 months. Older women seem slightly more vulnerable as 5.2 percent of them compared to 4.2 percent of older men 60 report being attacked. Of the 18 older persons who were attacked, 14 report physical effects in the form of having aches and pains, 11 had bruises, and three had broken bones or other types of injuries. Of the 14 who report physical effects, four sought medical attention, two were admitted to hospital, and four were of the opinion that alcohol or drugs contributed to the attack.

More information about persons 65 years or older is provided in Chapter 10, showing that of the 114 men 65 years or older who were interviewed about violence, 3.8 percent report that they were attacked physically one or more times during the past 12 months. Most commonly, these attacks on men 65 years or older were in the form of pushing or shaking or throwing something at the victim (2.2 percent). The more severe attacks of punching with a fist (1.4 percent), kicking or dragging (1.4 percent) and attempts to strangle or burn the victim (1.4 percent), happened less frequently to these men (Table 10.5). Table 10.6 shows that nearly half of male victims 65 years or older were attacked at home (44 percent), or on a public road (41 percent).

Of the 162 women 65 years or older who were asked the violence questions, 3.5 percent report that they were attacked physically one or more times during the past 12 months. Table 10.5 shows that being threatened with a knife, gun or other weapon is reported most commonly (2 percent) in these women, followed by being pushed, shaken or thrown with an object (1.4 percent). Table 10.6 shows that the places where women 65 years or older were attacked, differ from men, with 71 percent indicating that they were attacked in their homes, 20 percent in a crowded venue, and 10 percent on a public road.

#### **14.5 Health Service Utilization in Older Persons**

This section describes the older population's utilisation of health services over the last 30 days when seeking medical care for themselves, as well as their satisfaction with such services. It also reports on access to a medical aid and use of chronic medication.

### 14.5.1 Health Service Utilization and Satisfaction

Table 14.10 shows that 31 percent of persons 60 years or older report seeking health care at facilities or providers in the public sector, compared to 19 percent seeking care in the private sector. Care at a chemist, traditional healer, faith healer or dentist was sought by noticeably smaller proportions. Despite the general anticipation that attendance at a health care facility would increase with age among older persons, no

clear such pattern is reflected from the age categories provided in Table 14.10. A higher proportion of older women than older men sought care at a public, private and faith healer service, while more older men than older women sought care from a chemist, traditional healer and dentist. Slightly higher proportions of urban than non-urban older persons attended health care services in the past 30 days, excepting the case of a traditional and a faith healer from whom higher proportions of non-urban than urban-living older persons sought care. A much higher proportion of older persons in urban areas sought care from a chemist (13 percent) than in non-urban areas (2.8 percent). In order to compare with the survey of 1998, it is necessary to consider persons 65 years or older. The proportion of older persons using public health and chemist services is similar to that of 1998, while a slight increase over time is seen in private sector services and a considerable increase in services sought from a traditional and faith healer.

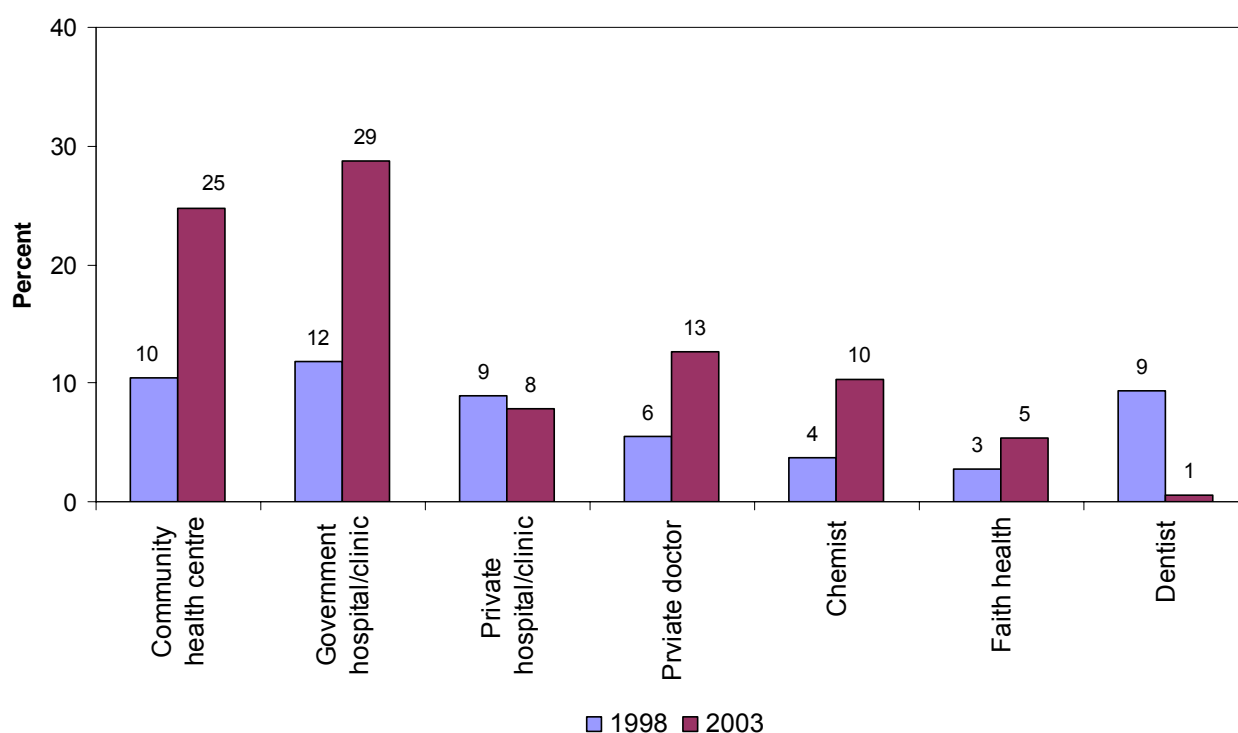
Table 14.11 shows the proportion of older care seekers who report being dissatisfied with selected health services in the public and private sector. Over a quarter of them express dissatisfaction with the service they received at either a community health centre or a government hospital or clinic, while about 11 percent report dissatisfaction with service provided by each of a private hospital/clinic and a chemist. Compared to the proportions of the total adult population 15 years or older, dissatisfaction with health services seems often more pertinent among older persons (compare Table 14.11 and the last row of Table 11.3 in Chapter 11). In both the 1998 and 2003 surveys, dissatisfaction with public health services among the population 65 years or older are more prominent than dissatisfaction with private sector services. Compared with 1998, substantially higher proportions of persons 65 years or older are dissatisfied in 2003 with health services generally, excepting services from a private hospital/clinic where the 2003 and 1998 proportions are similar, and dentist services for which there are significantly lower proportions in 2003 who are dissatisfied (Figure 14.4).

Table 14.10 Health services attended by older persons

Percentage of persons 60 years or older who sought care in last 30 days at facilities/providers in the public sector and the private sector, at a chemist, traditional healer, faith healer and dentist by selected background characteristics, South Africa 2003

Background characteristic	Public sector	Private sector	Chemist	Traditional healer	Faith healer	Dentist	Number
<b>Age</b>							
60-69	28.9	18.1	8.6	4.5	5.0	4.6	627
70-79	35.7	18.7	8.0	2.2	2.6	1.7	273
80+	30.8	21.2	9.0	4.7	4.5	0.8	82
60+	30.9	18.5	8.4	3.9	4.3	3.5	981
65+	31.0	19.5	8.6	4.4	4.1	3.4	617
<b>Sex</b>							
Male	27.2	17.3	9.7	4.2	2.6	4.0	374
Female	33.2	19.2	7.7	3.7	5.3	3.2	607
<b>Residence</b>							
Urban	33.1	20.4	13.0	2.6	3.1	4.6	544
Non-urban	28.2	16.2	2.8	5.6	5.7	2.2	437

**Figure 14.4 Percentage of care-seekers 65+ years who were dissatisfied with health care services, SADHS 1998 and 2003**



The non-urban numbers are small at times, but, generally, higher proportions of urban than non-urban older persons express dissatisfaction with health service delivery, except in the case of services provided by a private hospital or clinic (Table 14.11). About one-third of urban older persons are dissatisfied with the health services delivered by a community health centre or government hospital/clinic. In the non-urban areas, a fifth of older persons express dissatisfaction with services at government hospitals/clinics.

**Table 14.11 Dissatisfaction with health service among older persons**

Percentage of care-seekers 60 years or older who were dissatisfied by selected care services, South Africa 2003

Care service	Urban		Non-urban		Total	
	% Dissatisfied	Number	% Dissatisfied	Number	% Dissatisfied	Number
<b>Public sector</b>						
Community health centre	32.4	56	(6.1)	20	25.5	75
Government hospital/clinic	30.3	155	20.0	111	26.0	266
<b>Private sector</b>						
Private hospital/clinic	9.6	56	12.8	43	11.0	99
Private doctor	19.4	67	(9.2)	33	16.0	100
Chemist	12.8	71	*	12	11.7	83

Note: Parentheses indicate that a figure is based on 25-49 respondents. An asterisk indicates that a figure is based on fewer than 25 respondents and has been suppressed.

Older participants' reasons for dissatisfaction in public sector community health centres and government hospitals/clinics are similar to the concerns of the total adult population. The data are not presented here, but analysis shows that long waiting times is the most commonly reported reason for dissatisfaction in both community health centres and government hospitals/clinics. Staff attitude and perceived short consultations are also important reasons for dissatisfaction in both type of facilities, as are the unavailability of prescribed drugs in government hospitals/clinics.



Table 14.12 Access to medical aid among older persons

Percentage of persons 60 years or older who report that they have medical aid by selected background characteristics, South Africa 2003

Background characteristic	Percentage with medical aid	Number
<b>Age</b>		
60-69	14.5	627
70-79	11.2	273
80+	8.3	82
60+	13.1	981
65+	10.5	618
<b>Sex</b>		
Men	16.4	375
Women	11.0	607
<b>Residence</b>		
Urban	20.7	544
Non-urban	3.6	437
<b>Province</b>		
Western Cape	30.1	83
Eastern Cape	10.8	138
Northern Cape	12.1	22
Free State	5.5	67
KwaZulu-Natal	6.9	227
North West	3.8	91
Gauteng	31.2	178
Mpumalanga	7.7	72
Limpopo	1.8	103
<b>Education</b>		
No education	3.4	385
Grades 1-5	4.2	194
Grades 6-7	5.3	97
Grades 8-11	17.6	187
Grade 12	57.2	49
Higher	68.2	60
<b>Population Group</b>		
African	3.8	782
Afr. urban	5.1	364
Afr. non-urban	2.7	418
Coloured	28.1	74
White	74.8	99
Indian	13.9	27
<b>Total</b>	<b>13.1</b>	<b>981</b>

Education is unknown for eight persons, and population group for three persons.

## 14.5.2 Access to Medical Aid

Thirteen percent of persons 60 years or older report that they are covered by a medical aid or medical benefit scheme or any scheme that helps them pay for health-care or drug services (Table 14.12). Among persons 65 years or older, 11 percent report being covered by medical aid compared to 13 percent in 1998. Table 14.12 shows a decline in coverage with increasing age, and a huge disparity in access to medical aid according to urban/non-urban residence. Access to medical aid is five to six times greater among urban older persons compared to those in non-urban areas.

Differential access is evident among the provinces with lowest access reported in Limpopo (2 percent) and North West (4 percent), and highest in Gauteng (31 percent) and the Western Cape (30 percent). Access to medical aid shows to be positively associated with educational level, with a stronger association reflected among those with a post-primary school education. Stark differences show up among the population groups, with 75 percent of whites, 28 percent of coloureds, 14 percent of Indians, and 4 percent of Africans reporting access.

While 13 percent of persons 60 years or older report cover by a medical aid or scheme (Table 14.12), 19 percent report attending private sector services in the month preceding the survey (Table 14.10). Sixteen percent of older men and 11 percent of older women have access to a medical aid, compared to 29 percent of older men and 38 percent of older women taking prescribed medication daily or regularly (Table 14.13).

## 14.5.3 Use of Medication for Chronic Conditions

### *Medication for chronic conditions*

Table 14.13 presents the proportion of older men and women ( $\geq 60$  years), as well as the proportion men and women  $\geq 65$  years, who indicate that they regularly use any medicine that a doctor or nurse has prescribed. A higher proportion of women than men report that they take prescribed medication. The urban/non-urban data are for men and women 60 years or older. The proportion of urban older

women taking prescribed medicine regularly is about double that in non-urban older women (48 percent compared to 26 percent). A similar urban/non-urban difference is seen in the proportion of older women for whom a chronic medication could be recorded by the interviewer during the interview.

Persons 65 years or older are considered to compare the 2003 survey with that of 1998. The proportions are relatively similar between the surveys with a slight decrease among men (29 percent in 2003 compared to 32 percent in 1998), and almost no change among women (36 percent in 2003 compared to 37 percent in 1998) who take prescribed medication. In 2003, a noticeably lower proportion of older men and women had their medications listed by the interviewer, indicating data quality concerns. While 29 percent of men 60 years or older reported taking prescribed medication, only 21 percent had their drugs listed. In the case of women of the same age group 38 percent reported taking prescribed medication while 32 percent had them listed.

Table 14.13 Medication for chronic conditions for older persons							
Percentage of men and women 60 years or older who report taking prescribed medication, and who could be listed by interviewers, and of these, percentage distribution by number of medications listed, South Africa 2003							
	% who reported taking prescribed medication	% who have listed drugs	Number	Among those with medicine listed:			
				% who had 1 listed drug	% who had 2 or 3 listed drugs	% who had 4 or more listed drugs	Number with listed drugs
MEN							
Age							
60+	28.8	21.3	375	29.4	41.8	28.8	80
65+	29.3	22.3	240	32.7	44.9	22.3	53
Residence							
Urban	37.7	30.0	219	30.8	39.8	29.4	66
Non-urban	*	*	*	*	*	*	*
WOMEN							
Age							
60+	37.9	31.7	606	27.8	44.4	27.8	193
65+	36.1	31.0	377	24.2	42.9	32.9	117
Residence							
Urban	48.4	40.5	325	23.9	46.9	29.2	132
Non-urban	25.9	21.6	281	36.1	39.2	24.7	61
Asterisks are based on <25 unweighted cases.							

Among those older persons ( $\geq 60$  years) for whom medications were listed 71 percent of men and 72 percent of women report using more than one prescribed drug. Over 40 percent of both older men and women take two or three listed drugs, and about equal proportions (just under 30 percent) take either one, or four or more listed drugs (Table 14.13). There is an urban/non-urban difference with 76 percent of urban compared to 64 percent of non-urban women 60 years or older report using more than one prescribed drug. This difference may indicate one or more of different reasons, including less access to relevant health services and less availability of drugs in the non-urban areas, or better health conditions in non-urban women and hence a lesser need for more medication. In 2003, proportionally fewer women 65 years or older report using more than one drug (76 percent) compared to 1998 (82 percent). Among men aged 65 years or older, a considerably smaller proportion report using more than one drug (67 percent compared to 79 percent in 1998) (data not presented here). However, it should be noted that the number of respondents is relatively small.

### *Payment for prescribed medication*

Table 14.14 shows the party or person who paid for most of the medication prescribed by a doctor or nurse. The majority of older persons (50 percent of men and 60 percent of women) in this age group receive their chronic medication from the public sector. Comparing persons 65 years or older

with the 1998 SADHS suggests that there has been a sizeable increase in the proportion of older people who receive their medication from the public sector. Fifty-six percent in 2003 compared with 46 percent of men in 1998, and 60 percent in 2003 compared with 44 percent of women in 1998 receive their prescribed medication from the public sector. Compared to 27 percent in 1998, lower proportions of men aged 65 years or older report payment for medication by a medical aid in 2003 (18 percent). Among women, the proportion declined by half from 19 percent in 1998 to 9 percent in 2003. For the 2003 survey, the largest gender difference is found in the proportion reporting payment by their medical aid, with double the proportion of men 65 years or older (18 percent) to women (9 percent) having their medication paid by their medical aid.

Table 14.14 Payment for medication for chronic conditions in older persons													
Percentage of men and women 60 years or older taking regular prescription medication, according to source of payment, by selected age cut-offs and residence, South Africa 2003													
	MEN						WOMEN						
	Respon- dent	Family	Medical Aid	Public health sector	Mis- sing	Number	Respon- dent	Family	Medical Aid	Public health sector	Mis- sing	Other	Number
<b>Age</b>													
60+	27.8	2.0	18.2	49.9	2.1	108	18.8	2.7	9.6	60.3	8.0	0.6	230
65+	21.1	1.9	17.6	56.2	3.2	70	22.0	2.5	8.6	59.5	7.4	0.0	136
<b>Residence</b>													
Urban	20.9	2.6	23.9	50.3	2.3	82	18.0	3.3	12.7	57.8	7.4	0.9	157
Non-urban	*	*	*	*	*	25	20.6	1.4	2.9	65.9	9.3	0.0	73

Asterisks are based on <25 unweighted cases.

Among women 60 years or older, the largest urban/non-urban differential is found in medical aid payments. Table 14.14 shows that 13 percent of urban, compared to 3 percent of non-urban women have their prescribed medication being paid by a medical aid fund. Self-payment and public sector payment are relatively more prevalent in the non-urban than in the urban areas. In contrast, family and medical aid support are relatively more prevalent in the urban than in the non-urban areas. This suggests a greater need of non-urban women to rely upon themselves or the public sector, while urban women are in a better position to rely on their families and medical aid too.

### ***Prescribed ATC-coded medication for common chronic diseases***

Anatomical Therapeutic Chemical Classification (ATC) codes were used to classify the medications listed for selected chronic conditions. Table 14.15 shows the results of the ATC-coded prescribed medications used by respondents 60 years or older for asthma and chronic bronchitis, diabetes, hypertension, osteoporosis, and other chronic conditions (i.e. the medications for which there were sufficient numbers of respondents). Overall, a higher proportion of older women (29 percent) compared to older men (19 percent) indicate that they use ATC-coded drugs regularly for any chronic condition, with the largest proportions of both men and women taking medication for hypertension. Across these conditions, larger proportions of women than men report taking ATC-coded medication. Table 14.15 shows that older respondents presented with a total of 603 different ATC-coded drug items, constituting 36 percent of the total number of drug items identified in the total adult respondents 15 years or older. In contrast, respondents 60 years or older constitute 12 percent of the adult sample (the latter two proportions were calculated from totals in other chapters). In both older men and women, the most-commonly prescribed drugs are for hypertension, followed by diabetes, then asthma and chronic bronchitis, and then osteoporosis (Table 14.15).

### Table 14.15 Use of prescribed medication for four common chronic conditions among older persons

The number and percentage of men and women 60 years or older, using prescribed medication regularly and the number and percentage of all regularly used prescribed medications for asthma and chronic bronchitis, diabetes, hypertension, osteoporosis, and other chronic conditions combined, using Anatomical Therapeutic Chemical Classification (ATC) codes, South Africa 2003													
Chronic conditions	ATC Code	People taking chronic medication						Medication taken					
		Men		Women		Total		Men		Women		Total	
		Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Asthma and chronic bronchitis	R03	9	2.3	26	4.3	35	3.6	14	8.6	38	8.7	52	8.6
Diabetes	A10	12	3.2	40	6.6	52	5.3	17	10.4	59	13.4	76	12.6
Hypertension	C02/03/07/08/09	56	15.0	142	23.4	198	20.2	89	53.5	252	57.7	341	56.5
Osteoporosis	A12,M05B	4	1.1	11	1.8	15	1.5	4	2.6	11	2.6	16	2.6
Other conditions	chronicJ04A,C10A,B01AC/C01A/B/DA,M01A/B/c,M04,N03	31	8.2	65	10.8	96	9.8	42	24.9	77	17.6	118	19.6
Any condition		69	18.5	178	29.4	248	25.2	167	100.0	437	100.0	603	100.0

### ***Knowledge of chronic disease drugs taken by older patients***

Patients' knowledge of the chronic drugs they are taking is shown in Table 11.13 in Chapter 11 for the total adult population 15 years or older for asthma and chronic bronchitis drugs, diabetes drugs, hypertension drugs and arthritis drugs. A similar analysis for persons 60 years or older has not been undertaken as there are an insufficient number of respondents. However, Table 11.13 shows that high proportions of older respondents taking chronic medication for hypertension (94 percent) know for which conditions the drugs are taken. Of the older respondents taking diabetes drugs, 16 percent report no knowledge about the drugs, and of those taking arthritis drugs, about half report no knowledge about the drugs. Given that the largest proportions of all adult men and women who report taking prescribed drugs are those in the older age groups (Tables 11.7 and 11.8), and given that the drugs need to be taken daily, usually for long periods of time, the levels of knowledge in this older age groups is of concern.

## **14.6 Risk Factors for Chronic Diseases in Older Persons**

Selected aspects of the smoking and drinking behaviour of persons 60 years or older are summarised in Table 14.16. The data on tobacco use were collected using the questionnaire that is part of the WHO STEPS surveillance programme (Bonita *et al.* 2002). Participants were also asked about their exposure to environmental tobacco smoke and their exposure to other fumes and dust. The questionnaire included questions about alcohol use, as well as a four-item measure of alcohol dependence. In accordance with the training and techniques followed in the WHO STEPS surveillance programme, anthropometric measurements were taken during the SADHS. For the first time in a SADHS, comprehensive nationally-representative data on adult dietary intake and on physical activity in its different domains have been included in the 2003 survey, because of their importance in the global health strategy for the prevention and management of chronic diseases (WHO, 2004). Information on the methods related to these risk behaviours are described under the relevant sections in Chapter 13.

### **Tobacco Use**

Table 14.16 presents the prevalence of tobacco use among men and women 60 years or older who currently smoke daily and occasionally, showing that about a quarter of these men are current daily smokers, and that both daily and occasional smoking are about three times as common in men compared to women. Current daily use of smokeless tobacco, in contrast, is about three times as common in women compared to men. Occasional use of smokeless tobacco is negligible in men, while 2 percent of women report using this substance.

Comparing with the 1998 survey, a large decline in the prevalence of male daily and occasional smoking is seen, compared to a slight increase in female daily smoking and maintenance of previous levels of female occasional smoking (Table 14.16).

Table 14.16 Risk factors for disease in older persons, comparing 2003 and 1998 SADHS

Percentage of men and women aged 60 years or older who currently smoke daily and occasionally, use smokeless tobacco daily and occasionally, live with smokers, and work in dust and/or fumes, and who show signs of alcohol dependence; percentage distribution by body mass index categories, and by physical activity category; percentage who are measured as being hypertensive using the cut-off point of 140/90, and among those being measured as hypertensive, the percentage who are aware that they are hypertensive, who use medication, and who have controlled hypertension, South Africa 2003 and South Africa 1998

Risk factor	2003 SADHS				1998 SADHS			
	MEN		WOMEN		MEN		WOMEN	
	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
<b>Tobacco use</b>								
Currently smoking daily	24.3	375	8.4	607	36.8	760	7.5	1 272
Currently smoking occasionally	2.9	375	1.1	607	5.0	760	1.1	1 272
Currently smokeless tobacco daily	3.1	375	16.6	607	-	-	-	-
Currently smokeless tob. occasionally	0.1	375	2.0	607	-	-	-	-
Among smokers:								
Mean duration of smoking, in years	42.4	91	35.8	51	36.1	496	34.5	202
<b>Environmental conditions</b>								
% of all persons who live with smokers	18.9	375	21.9	607	22.7	760	30.7	1 272
% of all persons who work in dust/fumes	26.2	375	11.7	607	43.4	760	14.5	1 272
<b>Alcohol use</b>								
Signs of alcohol dependence <sup>1</sup>	21.0	375	7.0	607	25.4	760	11.0	1272
Hazardous and harmful weekend drinking in past seven days <sup>2</sup>	0.9	375	1.7	607	-	-	-	-
<b>Body Mass Index</b>								
Underweight	10.4	347	5.3	574	9.8	732	6.2	1 230
Normal weight	41.7	347	29.6	574	49.1	732	30.9	1 230
Overweight	32.7	347	34.5	574	28.9	732	25.3	1 230
Obese	15.2	347	30.5	574	12.2	732	37.6	1 230
Total	100.0	347	100.0	574	100.0	732	100.0	1 230
<b>Physical activity</b>								
Inactive (0 - <600 METS)	64.3	298	74.0	557	-	-	-	-
Minimally active (600 - <3000 METS)	25.2	298	16.9	557	-	-	-	-
Sufficiently active (≥ 3000 METS)	10.5	298	9.2	557	-	-	-	-
Total	100.0	298	100.0	557	-	-	-	-
<b>Hypertension*</b>								
Hypertensive (bp >140/90 or on meds)	27.5	375	34.6	607	50.3	760	58.3	1 272
Among people with hypertension:								
Aware of condition	36.1	103	47.4	210	35.7	383	56.8	741
On medication	54.4	103	67.7	210	29.8	383	42.3	741
Condition controlled	22.6	103	23.3	210	52.5	383	54.5	741

<sup>1</sup> Alcohol dependence has been identified using the four CAGE screening questions that indirectly inquire about alcohol use. Affirmative answers to two or more questions is classified as alcohol dependence. See Chapter 13 for further details.

<sup>2</sup> For men, "hazardous drinking" is defined as four to less than six standard drinks per day, and "harmful drinking" as more than six standard drinks per day. For women, "hazardous drinking" is defined as two to less than four standard drinks per day, and "harmful drinking" as more than four standard drinks per day.

- indicates that no comparative data are available.

\*The hypertension data should be read with caution. See text in Chapter 12.

Among those 60 years or older who ever smoked daily, the mean duration of smoking for men is 42 years and for women 36 years, reflecting extensive periods of exposure to substances that are highly harmful to health. Both the male and female values for 2003 are higher than those for 1998, which may indicate that the cohort 55-59 years of 1998 have initiated smoking earlier than had the cohort 60 years or older of 1998, or that those who quit smoking in the 60 years or older cohort of 2003 on average quit at a later age than did the 60 years or older cohort of 1998.

Table 14.17 presents the risk factor data, and Figure 14.5 the smoking data for older men and women by urban/non-urban residence. It shows that a higher proportion of non-urban than urban older men smoke daily and use smokeless tobacco daily. In contrast, a higher proportion of urban than non-urban women smoke daily. A particularly high proportion of non-urban older women, about a quarter, use smokeless tobacco daily. The mean duration of smoking is longer among urban men compared to non-urban men, but there are no differences among urban and non-urban women.

Table 14.17 Risk factors for disease in older persons by residence

Percentage of men and women aged 60 years or older who currently smoke daily and occasionally, use smokeless tobacco daily and occasionally, live with smokers, and work in dust and/or fumes; and who show signs of alcohol dependence; percentage distribution by body mass index categories, and by physical activity category; percentage who are measured as being hypertensive using the cut-off point of 140/90, and among those being measured as hypertensive, the percentage who are aware that they are hypertensive, who use medication, and who have controlled hypertension, by urban and non-urban residence, South Africa 2003

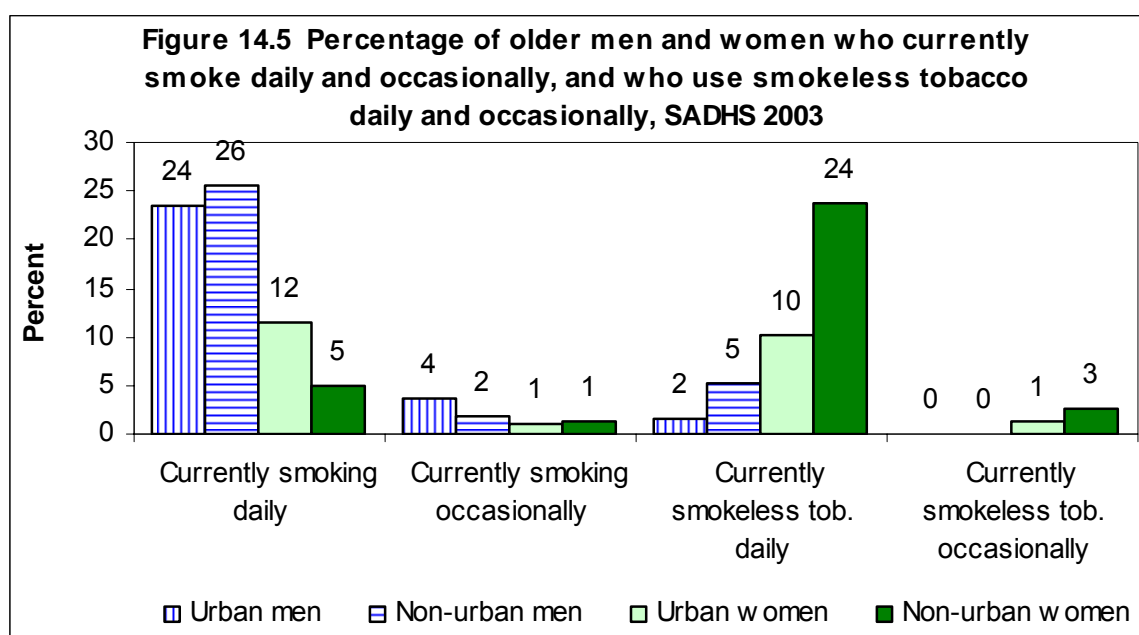
Risk factor	Urban				Non-urban			
	MEN		WOMEN		MEN		WOMEN	
	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
<b>Tobacco use</b>								
Currently smoking daily	23.5	219	11.5	325	25.5	156	4.9	281
Currently smoking occasionally	3.7	219	1.0	325	1.9	156	1.3	281
Currently smokeless tobacco daily	1.6	219	10.3	325	5.2	156	23.8	281
Currently smokeless tobacco occasionally	0.1	219	1.4	325	0.0	156	2.7	281
Among smokers:								
Mean duration of smoking, in years	43.6	51	35.7	37	40.6	40	36.0	14
<b>Environmental conditions</b>								
% of all men/women who live with smokers	23.1	219	23.8	325	12.9	156	19.8	281
% of all men/women who work in dust/fumes	27.0	219	18.0	325	25.0	156	4.5	281
<b>Alcohol use</b>								
Signs of alcohol dependence <sup>1</sup>	20.7	219	6.8	325	21.4	156	7.2	281
Hazardous and harmful weekend drinking in past seven days <sup>2</sup>	0.2	219	2.2	325	1.9	156	1.2	281
<b>Body Mass Index</b>								
Underweight	8.7	200	4.3	311	12.8	147	6.5	263
Normal weight	38.2	200	24.1	311	46.4	147	36.2	263
Overweight	34.1	200	34.4	311	30.8	147	34.7	263
Obese	19.0	200	37.1	311	10.0	147	22.6	263
Total	100.0	200	100.0	311	100.0	147	100.0	263
<b>Physical activity</b>								
Inactive (0 - <600 METS)	66.8	129	74.0	260	62.4	170	73.9	297
Minimally active (600 - <3000 METS)	20.4	129	14.7	260	28.9	170	18.8	297
Sufficiently active (≥ 3000 METS)	12.8	129	11.3	260	8.8	170	7.3	297
Total	100.0	129	100.0	260	100.0	170	100.0	297
<b>Hypertension*</b>								
Hypertension (bp>140/90, or on medicine)	34.0	219	42.2	325	18.4	156	25.9	281
Among people with hypertension:								
aware of condition	44.9	74	53.5	137	13.4	29	35.8	73
on medication	63.6	74	70.5	137	30.4	29	62.5	73
condition controlled	24.2	74	26.1	137	18.5	29	18.0	73

<sup>1</sup> Alcohol dependence has been identified using the four CAGE screening questions that indirectly inquire about alcohol use. Affirmative answers to two or more questions is classified as alcohol dependence. See Chapter 13 for further details.

<sup>2</sup> For men, "hazardous drinking" is defined as four to less than six standard drinks per day, and "harmful drinking" as more than six standard drinks per day. For women, "hazardous drinking" is defined as two to less than four standard drinks per day, and "harmful drinking" as more than four standard drinks per day.

- indicates that no comparative data are available.

\* The hypertension data should be read with caution. See text in Chapter 12.



### Exposure to environmental tobacco smoke and dust/fumes

Respondents were asked whether they live in a house where other persons smoke cigarettes regularly, in other words whether they are exposed to environmental tobacco smoke in the home setting regularly. Table 14.16 shows that about 19 percent of men and 22 percent of women 60 years or older are exposed in such a way, and that such exposure has declined since 1998 for both sexes.

Participants were also asked whether they have ever worked in a job where they were regularly exposed to smoke, dust, fumes or strong smells. About 12 percent of older women report having ever worked in such exposure, compared to more than double the proportion in men. Compared to the 1998 SADHS, declining exposures are reported (Table 14.16).

Proportionally more urban than non-urban older men and women live with smokers. In terms of dust/fumes, both urban men and urban women are worse off than their non-urban counterparts (Table 14.17).

### Alcohol dependence, and hazardous and harmful drinking

The questionnaire had several questions about alcohol use and a four-item measure of alcohol dependence, using the CAGE measurement with four screening questions that indirectly inquire about alcohol use (Erwing, 1984). Affirmative answers to two or more questions is classified as alcohol dependence and according hereto, 21 percent of alcohol-taking men and 7 percent of alcohol-taking women 60 years or older show signs of alcohol dependence (Table 14.16). These levels are somewhat lower than those recorded for the 1998 SADHS. Across urban and non-urban settings, no differences regarding alcohol dependence show up among older men and older women (Table 14.17).

Of the persons 60 years or older, 0.9 percent of men and 1.7 percent of women reported hazardous and harmful drinking over the past weekend (Table 14.16). In light of mobility issues, the presumed



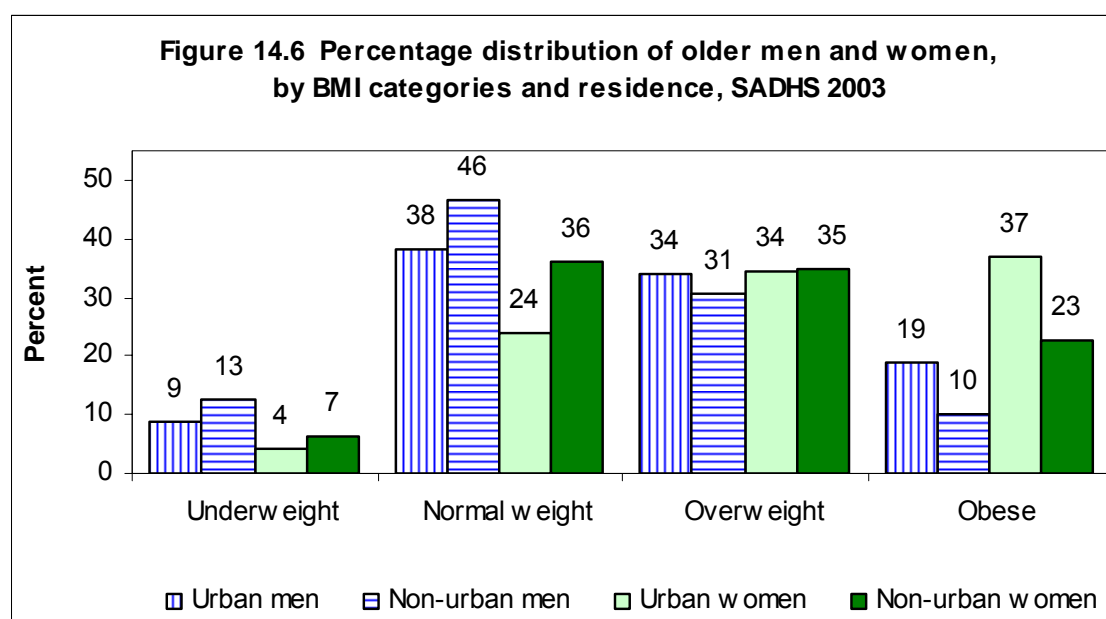
greater and more common consumption of medication in the older population, and the potential influence of alcohol use in combination with some medication, these rates are a matter of concern. The proportion of non-urban older men (1.9 percent) partaking in hazardous and harmful weekend drinking is about nine times higher as the proportion of urban older men (0.2 percent). For older women, the situation is the other way round, as more urban (2.2 percent) than non-urban (1.2 percent) women report this practice (Table 14.17).

## Body mass index

The body mass index (BMI) is a measure of nutritional status that combines height and weight data. It is calculated as a person's weight in kilograms divided by the square of his/her height in metres ( $\text{kg/m}^2$ ). Although acknowledged to provide a crude index of body fatness, BMI has been considered the most appropriate simple indicator by which weight-for-height can be related to health outcomes (James *et al.*, 2004). In agreement with the World Health Organization's recommendations, a person is defined as "underweight" if the BMI is less than  $18.5 \text{ kg/m}^2$ , "overweight" if the BMI values range from  $25.0$  to  $29.9 \text{ kg/m}^2$ , and "obese" if the BMI values are over  $30 \text{ kg/m}^2$ .

Table 14.6 shows the 2003 and 1998 proportions of the population 60 years or older that is underweight, normal weight, overweight and obese. Among older women, the 2003 survey found that about one-third are overweight, and about another third obese. Among older men, about one-third is overweight, and 15 percent obese. These figures imply that about half of older men and almost two-thirds of older women have BMIs that are associated with increased risk of various chronic conditions. The proportion overweight or obese, remained more or less at the same level from 1998, but an increase is shown for older men.

Whereas underweight for both older men and older women is more prevalent in the non-urban than urban settings, Figure 14.6 shows that obesity is considerably more prevalent in urban than non-urban older persons. Slightly more urban than non-urban men are overweight, while almost no difference between urban and non-urban living is shown for overweight women (Figure 14.5).



## **Micronutrient intake**

A total micronutrient score was based on dietary intake of 13 nutrients: vitamin A, vitamin C, folic acid, vitamin B1, B2, B3, B6, B12, vitamin E, calcium, iron, zinc, magnesium, as well as a score for fat intake. Cut-offs for three equal size groups of the population based on this score were calculated and are reported in Tables 13.14 and 13.15 of Chapter 13. Compared to the other age groups these show higher proportions of men and women 65 years or older in the poor diet category. The total dietary score also shows that among persons 65 years or older, a much higher proportion of men (35.6 percent) are in the poor diet category (Table 13.14) compared to women (26.3 percent) (Table 13.15).

## **Physical inactivity**

Physical activity was not measured in the 1998 survey, but the validated Global Physical Activity Questionnaire (GPAQ) was used to measure such activity in the 2003 survey. This questionnaire was introduced as part of the WHO STEP-wise approach to non-communicable disease surveillance and provides for an overall measure of physical activity on the basis of intensity and duration, as well as physical activity levels within specific domains, including occupation, transport, and leisure time (See Chapter 13 for more detail). For maintaining mobility and the ability to perform activities of daily living and for reducing the impact of chronic disease, physical activity is of particular importance in older age.

The results in Table 14.16 show that close to two-thirds of men, and almost three-quarters of women 60 years or older are inactive, and that about one in ten older men and women are sufficiently active. Although the results of the total adult population show that inactivity tends to increase as individuals grow older, and that all the age groups indicate a relatively high prevalence of inactivity compared to minimal and sufficient activity (see Chapter 13), the older persons' data points to a worrisome inactivity prevalence in the country, particularly so in light of the number of chronic conditions attributable at least in part to physical inactivity.

Table 14.17 shows urban/non-urban differences in physical activeness among older men and women. It demonstrates that physical inactivity in older men is somewhat higher in urban than non-urban areas, but that there is no residential difference among older women regarding inactivity. Higher proportions of non-urban men and women are minimally active, in contrast to higher proportions of urban men and women who are sufficiently active.

## **Hypertension**

Details about the blood pressure measurements and instruments, procedures in the field, and data quality are available in Chapter 12. Chapter 12 indicates considerable concern about the quality of the blood pressure data, as the recorded blood pressures, particularly the diastolic measurements, were much lower than those recorded in the 1998 SADHS. The consequence of this is that the apparent prevalence rate of hypertension in 2003 was reduced by almost half, which is highly unlikely to reflect the reality in the field. This unrealistic finding prompted a series of exploratory analyses to attempt an explanation for this phenomenon, including assessing whether the risk factor profile was significantly different from 1998, or whether the use of anti-hypertensive medication had changed since 1998. These analyses show no major changes since 1998, and further examination of the data indicates the likelihood that the measurements were not taken correctly in the field.

The results must therefore be considered with caution as it is likely that they do not reflect the true hypertension situation in the country. Furthermore, the proportion of participants with hypertension who are taking drugs and those with controlled blood pressure, are unrealistically increased by the lower blood pressure results.

The analysis of the 2003 SADHS data has made use of the new South African hypertension guidelines (Seedat *et al.*, 2006) and the World Health Organisation International Society of Hypertension Guidelines for the Management of Hypertension (WHO Guidelines Sub-committee, 1999) that suggest that a person be considered as hypertensive with a blood pressure  $\geq 140/90$  mmHg, or if he/she is taking anti-hypertensive medication. Table 14.16 shows the prevalence of hypertension in the population 60 years or older, and the awareness and treatment status achieved for hypertensive men and women in this age group. Over a quarter of older men and over a third of older women appears to be hypertensive according to the 2003 results, reflecting a highly unlikely decline from the figures for 1998. Of these older men and women, respectively, a mere 36 and 47 percent are aware of their condition, suggesting that, similar to the results in the total adult population, more older women than older men are aware of their condition.

The results from Table 14.16 furthermore indicate that 54 percent of hypertensive older men and 68 percent of hypertensive older women are on medication, and that about 23 percent of older persons have their condition controlled. Given the concerns about the blood pressure values, these figures should not be used as indicators of the quality of hypertension care.

Table 14.17 shows that considerably higher proportions of urban older men (34 percent) compared to non-urban older men (18 percent), and considerably higher proportions of urban older women (42 percent) compared to non-urban older women (26 percent) are hypertensive. While there are uncertainties in the data, the results in Table 14.17 would suggest that levels of awareness, treatment and control of hypertension are generally worse among the non-urban older men and women.

#### **14.7 Oral Health of Older Persons**

In the adult health module of both the 1998 and 2003 surveys, a few questions deal with oral health problems, utilisation of oral health services, oral health practices and oral health care. Given inconsistencies in the content of the oral health sub-module between 1998 and 2003, it is not always possible to directly compare variables across time, however an attempt is made in Table 14.18.

Table 14.18 Oral health of older persons

Percentage of men and women 60 years or older who experience selected problems with their teeth and gums; who ever visited a dentist or who visited a dentist in the last month; who brush their teeth, rinse their mouth or visit a dentist to look after their teeth or mouth; who reported a problem in their mouth according to how they responded to the problem, South Africa 2003 and South Africa 1998

	2003 SADHS		1998 SADHS	
	Men	Women	Men	Women
<b>Oral health problems<sup>1</sup></b>				
Any problem	20.9	24.6	42.2	56.2
Teeth	15.1	16.7	38.4	50.9
Gums	4.7	8.7	5.6	8.2
Other	2.0	1.9	2.0	3.4
Lost all teeth	36.0	36.4	-	-
Lost Any Teeth	-	-	88.3	90.9
<b>Oral health service utilisation</b>				
Visit dentist in last month	4.0	3.2	1.9	1.9
Ever visit dentist	-	-	14.7	14.1
<b>Oral health practice</b>				
Clean/brush teeth <sup>2</sup>	76.1	77.0	68.0	65.7
Visit the dentist/other <sup>2</sup>	6.2	4.1	14.7	14.1
Rinse mouth <sup>3</sup>	33.7	34.3	21.4	22.3
<b>Oral health care</b>				
Tablets	28.7	26.3	-	-
Dentist/oral hygienist/dental therapist	30.8	24.0	-	-
Doctor	20.0	24.2	-	-
Traditional healer	6.0	0.6	-	-
Nothing	10.5	24.8	-	-
Number	375	607	760	1 272

1. The period was the past 6 months in SADHS 2003, while in SADHS 1998 the period considered current.

2. Out of all respondents in SADHS 2003, and out of respondents who have lost no natural teeth in SADHS 1998.

3. Out of all respondents in SADHS 2003, and out of respondents who have lost all natural teeth in SADHS 1998.

- indicates that no comparative data are available.

In 2003, over 20 percent of persons 60 years or older indicate having a problem with their teeth *over the past six months*, compared to about half of persons 60 years or older who indicated having a problem *currently* in the 1998 survey. In 2003, about 15 percent experienced problems with their teeth over the past six months, compared to two to three times more in 1998 who indicated that they had a problem with their teeth at the time of the interview. For both years, considerably smaller proportions indicate problems with their gums compared to problems with their teeth. It is noticed that across these problems, in both surveys, larger proportions of women than men reported oral health problems.

The proportion of men and women 60 years or older who visited a dentist in the month preceding the survey, increased

from 1998 to 2003. To look after their teeth or mouth, over three-quarters of all men and women 60 years or older report cleaning or brushing their teeth in the 2003 survey, about a third rinse their mouth, and about one in twenty older persons report visiting the dentist.

Participants 60 years or older who indicated in 2003 that they have had oral health problems in the last six months, were asked what they did when they experienced such problems. Over one-quarter report that they took tablets, and between 20 and 30 percent visited an oral health practitioner or a doctor. Eleven percent of older men, and more than double this proportion among older women, report doing nothing. This latter finding may explain part of the finding that more women than men report oral health problems.

Finding improvement or deterioration between the two surveys is very difficult given the differences between the sub-modules in each survey.

However, the increased proportions of older men and women who report visiting a dentist in the last month is promising.

## 14.8 Discussion

The SADHS, although aimed to study the demographics and health of women, children and adults in general, offers a valuable opportunity to study selected socio-demographic and health concerns of older persons. The Minimum Data Set on Ageing in sub-Saharan Africa based in four African countries has provided a framework for comparative data collection relating to the health and well-being of older persons (Kowal, Rao & Mathers, 2004). In an initiative led by the Department of Health, a 24-indicator minimum data set was identified for South Africa (Department of Health, 2005). Fifteen of these indicators can be fully populated and one partly populated by data generated by the 2003 SADHS, one by the demographic modelling work of the Actuarial Society of South Africa and one by the National Burden of Disease Study of the MRC. Data for the indicators referring to depression, subjective evaluation of personal health, general life satisfaction, home-based care continue to be lacking, as well as data for assessing older persons activity of daily living, post-reproductive health, quality of life and measured presence of chronic disease other than blood pressure, asthma and chronic bronchitis. Data for some of these indicators may be included in the envisaged study on ageing to be conducted by the Department of Health in collaboration with the HSRC and MRC. The sample size of older persons in the 2003 SADHS, however, is a concern in some analyses, as it is not always possible to examine the older age groups carefully, neither other stratifications. In addition, the concerns about data quality that affect the overall survey apply to the older persons as well. Where possible, the results have been interpreted in conjunction with other data sources.

The Madrid Plan for Action on Ageing emphasizes the necessity to remove all barriers that prevent older persons from contributing fully to and benefiting equally from development and the importance of eliminating whatever excludes or discriminates against older persons from society. Several findings in this chapter suggest that South Africa has done well to improve selected aspects of older persons' living conditions and health, but they also suggest that the country still has a long way to go to remove the remaining barriers that prevent optimal health status, living conditions and health service delivery among older persons, particularly in the non-urban areas.

Large proportions of older men and women continue to have no school education (about 40 percent) and no improvement is shown since 1998. Unfortunately, the questionnaire did not provide for the assessment of literacy levels among men older than 59 years and women older than 49 years. There is therefore no indication whether there have been any improvements in the levels of literacy. The current level of educational attainment in older persons has implications in the South African society. Generally, educational attainment may impact on individual development and the optimal empowerment of older persons to fully participate in their family and community life. However, in light of the recognized caregiver and social nurturer role that older women often play in families, the level of no education among older women is of particular concern. Older persons' level of education may also present particular challenges to effective health promotion and disease management and materials developed for this purpose need to take the high levels of no formal education into account when targeting the older population.

The survey shows a clear urban/non-urban distinction in terms of household amenities for older persons that reflects underlying differences in living conditions between urban and non-urban areas. Access to electricity in urban areas is satisfactory, but although the urban/non-urban gap in such access has been reduced since 1998, nearly half of the non-urban older persons still have no access to electricity. Access to piped water for drinking are still limited for both urban and non-urban older persons, and limited change from 1998 is reflected in the findings. Very limited improvement in terms of sanitation facilities is shown, and of particular concern is the great majority of non-urban older persons who still have no access to a flush facility. Since 1998, improvement is reflected in the flooring materials of older persons' dwellings, but little change is suggested regarding the

walling materials. An increase in access from 1998 is shown for selected household durable goods in both urban and non-urban older persons, but there were more amenities with decreased or stagnated access than amenities with increased access. These findings pose a number of challenges to older persons whose ambulence, mobility and physical abilities are generally declining with increasing age, and may impact on their well-being and health.

While these socio-economic indicators are not optimal in the older population, a very large proportion of the older population has access to a social grant and this access has increased since 1998. However, it is important to note, too, that the high utilisation of social grants also reflects the magnitude of monetary poverty among the older population and is indicative of the enormous challenge to eradicate poverty in older age. Research has shown that higher proportions of older people as well as substantial numbers of persons related to these older grant recipients have benefited from the substantial volumes of cash carried into poor households (Ardington & Lund, 1995; Case & Deaton, 1998; Institute of Development and Policy Management & Help Age International, 2003). The SADHS data have shown that, although being a woman, being African, and living in non-urban areas are often associated with disadvantages in the South African older population (compare also Joubert and Bradshaw, 2004), access to a social grant is more favourable for precisely these subpopulations.

The Madrid Plan emphasizes the importance of communication for older persons to fully and actively participate in societal life. A recommendation under the objective 'equality of opportunity throughout life' is to ensure that the benefits of new technologies, especially information and communication technologies are available to all citizens (United Nations, 2002b). Not only can access to a phone be useful in participating in various domains of societal life and so contribute to the maintenance of personal well-being, but also be critical in sickness, emergency or loneliness. The decrease since 1998 in access to a phone among older persons needs further investigation. Having a radio or television facilitates access to information and some form of leisure or recreation. Given the large proportion of older persons without formal education, these mediums have an important purpose in disseminating visual and audio health and well-being information (Joubert & Bradshaw, 2004).

A multitude of international instruments, including the Madrid Plan, accentuate the protection and physical safety of older persons through the elimination of all forms of elder abuse and violence against them. Various sources have revealed pervasive levels of violence against older South Africans, including research reports (e.g. Keikelame & Ferreira, 2000; Bryan, Joubert & Lindgren, 2001); a governmental report (Department of Social Development, 2001); the South African National Burden of Disease Study (Bradshaw *et al.*, 2003); and analyses of the National Injury Mortality Surveillance System (NIMSS) (Joubert *et al.*, 2004). Compared to the Global Burden of Disease Study (Mathers *et al.*, 2002), extremely high levels of homicide for the year 2000 were found among South Africans including people who are 60 years or older. The male homicide rates for older South Africans were estimated to be five times the global average rate, and the female homicide rates were nearly four times the global average rate of older women. While suicides in older persons globally are a more prominent cause of death than homicide, homicides in South African older persons are considerably more prominent than suicide (Norman *et al.*, forthcoming). The 2003 SADHS data suggest that older women are as vulnerable as older men, or more so, to being a victim of a violent physical attack, while at younger ages, more men than women report having been physically attacked. The particular vulnerability of older persons is demonstrated by the data showing that older persons, more than any other age group, tend to be attacked in their homes, a finding that is supported by previous analyses of data from NIMSS (Joubert *et al.*, 2004). Ensuring the safety of older persons warrants insistent attention and a strong political will at *all* levels of governance, spread over different sectors, to translate legislation and policy into effective interventions.

In the five-year period between the surveys, there has been no discernable trend in the prevalence of self-reported chronic conditions among older persons. Hypertension, as in 1998, remains the major chronic condition in the older population. Arthritis increases with age, as do hypertension and the respiratory conditions assessed in the survey. This means that, for many conditions, the prevalence in older persons is considerably higher than in the total adult population, showing on the one hand the explicit need for health care services to address and manage chronic conditions in older persons, and on the other hand, the need to promote healthy ageing messages in the total population.

In terms of self-reported chronic disease prevalences, it is not straightforward to assess urban/non-urban differences as they may be related to access to health care. However, with the exception of chronic bronchitis in women, the proportions of reported symptoms of airflow limitation, chronic bronchitis and abnormal peak flow rates as well as hypertension are higher in the urban areas than the non-urban areas, suggesting that chronic diseases are more common in the urban setting. The prevalence of disabilities, in contrast, is generally more prominent in non-urban than urban areas. No urban/non-urban differences are seen with regard to injuries in older persons. Proportionally more urban than non-urban older persons attend public and private sector health services, and dissatisfaction with these services are generally much higher among urban than non-urban older persons. Considerably more urban than non-urban older women are taking prescribed chronic medication and have listed drugs.

Access to medical aid and taking prescribed medication for chronic conditions in the older population show little difference between the two surveys. The proportion of older persons using public health services is similar to that of 1998, while a slight increase is seen in private sector services and a considerable increase in services sought from a traditional and faith healer. A considerable decline over time is seen in medical aid payment for chronic medication, with an increase in the proportion paid for by the public sector. It is important to bear in mind that the number of older persons has been growing at a rapid and increasing rate over the past decade, and that similar proportions using public services in 1998 and 2003 indeed represent increased numbers of older persons between these surveys, and therefore an increased load on public services. Medical aid coverage among adults increases with age up to age 45, but for the age groups older than 45 years, coverage declines with increasing age. Thus, at a time when a person is likely to have increasing medical expenses, access to medical aid is declining, suggesting that the state will have to bear increasing costs. Huge urban/non-urban and population group disparities exist in older persons' access to medical aid.

Dissatisfaction with both public and selected private care services has increased since 1998. The increase is particularly marked for the public sector hospitals. Higher levels of dissatisfaction exist in urban compared to non-urban older persons. Older participants' reasons for dissatisfaction in public sector community health centres and government hospitals/clinics are similar to the concerns of the total adult population and relate to long waiting times, staff attitude and perceived short consultations and the unavailability of prescribed drugs. This warrants more in-depth assessment.

Although changes in cohabitation with other household members cannot be assessed as indicated earlier in the chapter, trends in the living arrangements of older South Africans should be monitored as such arrangements have a particular meaning for older persons who may, due to restricted mobility or declining physical and cognitive abilities, rely on family members to assist as informal carers helping with household and health care tasks. Previous research in South Africa has indeed shown some older persons' perceptions of how the urbanization of their off-spring have left them deprived of the traditional family support they had, including help with errands and psycho-social and financial support (Ferreira, Charlton & Mosaval, 1998; Joubert, Swart & Reddy, 1998).

This chapter refers to various commitments at the policy and legislative level that reflect considerable keenness to enhance health and well-being in older South Africans. These commitments are a good foundation, but the data indicate that more needs to be done to optimise the country's commitments to the Madrid Plan, and to ensure that the keenness at policy level is translated into budgetary allocations and effective implementation and interventions in communities and service organisations that will enhance the health, well-being and safety of the country's older persons.



## CHAPTER 15

### ORAL HEALTH AND ORAL CARE IN ADULTS

#### 15.1 Introduction

Oral health means more than good teeth. It is integral to general health and essential to well-being. It implies being free from chronic dental diseases. Dental diseases are a costly burden to health services and although not life-threatening, dental diseases have a detrimental effect on the quality of life in childhood through to old age, having an impact on self-esteem, eating ability, nutrition and general health (Sheiham, 2001). In modern society, a significant role of teeth is to enhance appearance; facial appearance is very important in determining an individual's integration into society, and teeth also play an essential role in speech and communication. Oral diseases are associated with considerable pain, anxiety and impaired social functioning. Dental decay may result in tooth loss, which reduces the ability to eat a nutritious diet, the enjoyment of food, the confidence to socialise and the quality of life (Kelly, 2000; Chen *et al.*, 1997).

Despite great achievements in the oral health of populations globally, problems still remain in many communities. Advances in knowledge and technology and preventive interventions in health could virtually eliminate the pain, suffering and loss of quality of life that accompany oral diseases. In South Africa, the availability of such advances is not universal and their full use by health professionals and their families is not widespread. The distribution and severity of oral disease varies in different parts of the country.

Numerous studies to determine the oral health of South African have been carried out in the past. Most of these studies examined school children and a few examined adults. Only four studies were conducted on a national scale. Williams (1984) reported on the oral health of 12 year old children representing the entire country. The national Department of Health conducted a national Oral Health Survey in 1988/89 to determine the oral health status of adults and children in the five metropolitan areas in South Africa (Department of Health, 1994). In 1998, data was collected on adults, 15 years and older, from the South African Demographic and Health Survey, relating to perceptions of oral health (Naidoo *et al.*, 2001). The most recent National Oral Health Survey was conducted on children 4-15 years old (van Wyk & van Wyk, 2004).

This chapter reports on the 2003 data collected on adults, 15 years and older, relating to perceptions of oral health. The few related questions in the adult health module deal with oral health problems, utilisation of oral health services, loss of natural teeth and oral health practices. The results are discussed in terms of age, gender, education, urban and non-urban residence, province and self-reported classification in terms of the previous population registration act.

#### 15.2 Perceptions of oral health problems

Table 15.1 shows the response to the question "Have you had pain or problems in your mouth and/or teeth in the last 6 months?" Sixteen percent of the sample indicate that they had problems, of which 10 percent were related to teeth and about 4 percent to the gums. The data show no gender differences between the reported problems with respondents' mouth, teeth or gums. However, reporting of symptoms increased with increasing age. Proportionally less younger adults report any problems with their teeth and gums (13 percent) than older adults (24 percent).

Table 15.1 Oral health practices and problems among adults

Percentage of all men and women age 15 years and older who experience complete tooth loss and problems with their mouth, teeth or gums; who report oral health practices; who report visiting a dentist/oral hygienist/oral therapist in the previous month, and who report membership of a medical aid according to background characteristic, South Africa 2003

Background characteristic	Lost all own teeth	Problems				Oral practices				Visit dental practitioner	Medical Aid	Number
		Any problems	Gums	Other	Teeth	Brush	Dentist	Other	Rinse			
<b>Age</b>												
15-24	21.0	12.9	2.8	2.1	7.9	21.0	72.7	0.2	23.2	1.1	11.0	2 377
25-34	22.4	15.7	3.3	2.4	10.0	22.4	63.5	0.3	31.2	1.8	13.9	1 714
35-44	23.0	16.5	3.4	2.1	11.0	23.0	64.8	0.5	30.1	3.0	18.2	1 476
45-54	25.9	18.1	3.2	2.7	12.3	25.9	63.9	0.1	29.8	2.8	16.5	1 152
55-64	33.6	19.8	6.0	3.1	10.6	33.6	58.7	1.6	29.1	2.7	16.2	779
65+	37.7	24.2	5.4	4.2	14.7	37.6	53.8	0.4	32.6	3.4	10.5	618
<b>Sex</b>												
Male	24.2	15.8	3.6	2.0	10.2	66.1	0.4	28.2	5.3	1.8	14.2	3 422
Female	25.3	16.8	3.6	2.8	10.4	64.7	0.4	28.4	6.5	2.5	14.1	4 693
<b>Residence</b>												
Urban	22.7	16.0	3.9	2.2	9.9	22.7	61.8	0.5	31.9	2.5	18.5	5 285
Non-urban	28.7	17.2	3.0	3.0	11.2	28.8	71.8	0.4	21.6	1.6	6.2	2 830
<b>Province</b>												
Western Cape	26.4	17.5	3.1	1.1	13.4	26.4	55.7	0.3	34.2	2.0	20.3	910
Eastern Cape	12.2	18.3	3.7	3.2	11.4	12.2	73.8	0.2	14.8	2.6	10.3	929
Northern Cape	15.1	19.5	2.1	1.8	15.6	15.1	67.9	0.1	24.6	2.1	15.8	152
Free State	8.1	16.8	2.6	2.3	11.9	8.1	64.6	0.2	29.1	2.4	11.0	537
KwaZulu-Natal	56.8	6.9	2.1	1.8	3.1	56.7	51.4	0.6	40.3	1.9	9.6	1 669
North West	12.1	19.9	3.1	3.3	13.5	12.1	77.3	0.2	20.6	1.2	9.4	621
Gauteng	12.2	15.2	4.6	2.1	8.6	12.2	58.9	0.7	36.7	3.6	22.0	1 988
Mpumalanga	38.0	30.6	3.2	2.8	24.6	38.0	85.1	0.2	11.6	0.6	12.5	509
Limpopo	17.0	23.0	6.4	5.3	11.4	17.0	89.2	0.1	8.1	0.7	8.4	800
<b>Education</b>												
No education	29.1	24.7	4.7	3.8	16.2	29.1	65.5	0.2	24.4	1.0	4.1	874
Grades 1-5	25.7	20.1	4.2	3.4	12.5	25.7	65.7	0.2	26.7	2.4	3.9	783
Grades 6-7	24.0	19.7	4.6	3.8	11.3	24.0	70.0	0.3	23.6	2.2	5.8	884
Grades 8-11	24.3	15.3	3.4	2.5	9.4	24.3	68.3	0.3	25.5	1.8	10.4	3 239
Grade 12	26.3	11.6	3.1	1.2	7.2	26.3	60.2	0.9	34.1	2.5	21.2	1 626
Higher	19.0	13.5	1.8	0.8	10.9	19.0	57.3	0.5	40.3	4.5	53.0	653
<b>Population group</b>												
African	24.8	16.6	3.9	2.7	10.0	24.8	68.9	0.3	25.0	1.8	9.2	6 695
Afr. urban	22.4	16.0	4.5	2.4	9.2	22.4	66.0	0.2	27.8	2.0	11.5	3 997
Afr. non-urban	28.3	17.5	3.0	3.2	11.3	28.3	73.1	0.4	20.9	1.7	5.8	2 698
Coloured	33.6	17.5	2.5	2.4	12.6	33.6	56.6	0.4	33.2	1.4	19.8	724
Indian	13.5	19.2	3.8	1.6	13.8	13.5	38.1	0.0	58.8	6.0	31.8	195
White	16.3	11.3	1.3	0.4	9.6	16.3	38.8	2.6	54.8	6.3	68.0	477
<b>Total</b>	<b>24.8</b>	<b>16.4</b>	<b>3.6</b>	<b>2.5</b>	<b>10.3</b>	<b>24.8</b>	<b>65.3</b>	<b>0.4</b>	<b>28.3</b>	<b>2.2</b>	<b>14.2</b>	<b>8 115</b>

Note: One respondent had education unknown, and two respondents had population group unknown

From Table 15.1, it can also be seen that there are no reported differences in oral health problems between the urban and non-urban areas. Those in the higher education groups report fewer problems than persons in the lower educational groups (14 percent compared with 25 percent), with most complaints related to their teeth. Less than 7 percent in KwaZulu-Natal express problems with their oral health. This is very low compared with the other provinces that range from 15 percent in Gauteng to 31 percent in Mpumalanga. There are differences in reported oral health problems between population groups, with the largest proportion of complaints by Indians (19 percent), and the smallest by whites (11 percent).

These results in terms of the perceptions of tooth problems are similar, though lower, than those from the previous SADHS (Naidoo *et al*, 2001), but differ in terms of age and education levels group in the reporting of gum problems. Previously, the lowest age group and highest education category complained of gum problems. Higher educational levels are usually related to the reporting of more symptoms, while low education is was generally associated with lower quality of life and this phenomenon may be due the greater propensity of those in higher education groups to report their symptoms than to experience such symptoms (Chen & Andersen, 1997). Females are more likely to report oral disease symptoms. However, this is not observed in this survey.

### **15.3 Utilisation of health services**

Table 15.1 additionally shows the response to the questions (i) “During the last month have you been to any of the following health services for medical care yourself: dentist/oral hygienist/oral therapist” and (ii) “Are you on medical aid?”

Just over 2 percent of the respondents report that they had visited an oral health care worker in the last month. Slightly more women (2.5 percent) than men (1.8 percent) report having made such a visit in the last month. Reporting of dental visits generally increases with increasing age. A higher proportion of urban than non-urban respondents report utilisation of services. This is a similar pattern to the proportion of adults with access to a medical aid. Nearly 20 percent of the respondents in urban areas report membership of a medical aid compared to 6 percent in the non-urban areas.

Generally, higher proportions of persons with higher education compared to those with lower education visit dental services, generally. A higher proportion of persons with post matric education, compared to those with Grade 12 or lower, report visiting a dental care provider in the last month (5 percent). This coincides with the group that has the highest access to medical aid. More than half of those with the highest educational level have medical aid. The highest number of dental visits in the past month were in Gauteng and the lowest in Mpumalanga and Limpopo. More whites and Indians report utilizing dental services within the past month than Africans and coloureds. Sixty-eight percent of the whites have access to medical aid, compared to 32 percent of Indians. The other groups report much lower use of dental services, and also have much lower access to medical aid.

Mostly people in the 35-44 year and 65+ age groups, from the urban areas, in Gauteng and the Eastern Cape, with the highest education qualification, white and Indian had visited the dentist in the past month. Several studies have demonstrated that females are more likely than males to have made an oral health visit in the past year than males (Gift, 1984), but this survey shows a similar likelihood among men and women. The present survey results are similar to the ICS II study in terms of age, where adults in the 35-44 age group used services more frequently. The literature indicates that utilisation of health services is positively correlated with an individual’s level of education (Gift, 1984). People from the higher education group in the SADHS 2003 visited the dentist more in the last month, but this correlation is not all that clear in the other educational classifications. Gaps in utilisation were generally found to be greater between individuals with

poorer education and those with moderate levels of education, than between the moderate and high levels of education (Gift, 1986).

People who reported a problem in their mouth in the past six months were asked a further question: “What did you do when you had problems in your mouth?”. Table 15.2 shows the response to this question. The most common response is to go to a dentist (29 percent) followed by taking a tablet (24 percent). Nearly a quarter of respondents with a problem did nothing, and nearly a fifth went to a doctor.

Table 15.2 Care for oral health problem							
Percentage of men and women aged 15 years and older who reported a problem in their mouth according to how they responded to the problem by background characteristic, South Africa 2003							
Background characteristic	Took a tablet	Dentist	Doctor	Traditional healer	Other	Nothing	Number with problems in last 6 months
<b>Age</b>							
15-24	20.6	32.1	13.3	1.1	5.7	30.3	307
25-34	24.6	20.9	20.2	1.6	4.2	32.3	269
35-44	23.1	32.0	23.9	3.9	6.6	13.2	243
45-54	22.4	33.5	21.7	5.9	7.6	13.2	209
55-64	34.4	24.6	19.7	3.5	7.6	14.4	154
65+	23.6	28.5	21.2	1.9	5.2	26.5	150
<b>Sex</b>							
Male	23.1	29.7	16.9	4.0	5.6	24.7	542
Female	24.8	28.2	21.4	2.0	6.3	21.2	789
<b>Residence</b>							
Urban	22.9	34.6	16.3	1.9	6.3	20.6	845
Non-urban	26.1	18.6	25.3	4.5	5.5	26.1	486
<b>Province</b>							
Western Cape	24.9	39.0	6.9	0.9	1.9	27.5	160
Eastern Cape	25.6	19.4	25.8	4.9	9.4	18.7	170
Northern Cape	33.8	34.6	12.5	0.6	5.4	15.4	30
Free State	24.0	43.1	13.0	1.1	6.7	19.3	90
KwaZulu-Natal	42.0	26.2	23.0	3.9	7.3	15.8	115
North West	18.0	24.1	30.3	2.3	6.5	18.9	123
Gauteng	19.7	37.3	15.6	1.0	6.9	20.7	302
Mpumalanga	20.9	20.2	22.5	5.7	6.8	25.7	156
Limpopo	23.3	18.7	23.8	4.0	3.0	32.2	184
<b>Education</b>							
No education	24.7	21.9	23.2	5.0	7.0	23.2	216
Grades 1-5	28.1	25.1	17.1	3.9	6.8	23.7	157
Grades 6-7	22.4	16.8	30.3	6.4	8.5	18.7	174
Grades 8-11	23.9	29.7	15.8	1.3	6.1	26.9	496
Grade 12	26.0	36.7	19.3	1.0	4.2	17.5	188
Higher	15.3	52.7	15.9	1.2	1.7	15.3	88
Unknown	32.2	39.1	19.0	0.0	0.0	9.8	11
<b>Population group</b>							
African	23.9	25.2	22.0	3.2	6.1	23.6	1 112
Afr. Urban	22.3	29.8	19.4	2.1	6.5	22.3	641
Afr. non-urban	26.1	18.9	25.6	4.6	5.6	25.4	471
Coloured	33.5	34.1	7.7	1.7	4.4	21.8	126
Indian	21.2	53.8	6.1	0.6	9.4	15.1	37
White	7.9	71.1	6.6	0.0	5.3	9.1	54
<b>Total</b>	<b>24.1</b>	<b>28.8</b>	<b>19.6</b>	<b>2.8</b>	<b>6.0</b>	<b>22.6</b>	<b>1 331</b>
Note: 1 respondent had population group missing							

## 15.4 Satisfaction with the services

Satisfaction with the quality of care was measured by one question concerning the overall quality of the visit. Of the 177 adults who reported visiting a dentist in the previous month, a high proportion indicated that they were satisfied (86 percent). Levels of satisfaction among adults in all groups varied from 78 percent in the 15-24 year age group to 98 percent in 34-44 year age group (data not shown). Females (82 percent) and people living in urban areas (84 percent) were slightly less satisfied than males (94 percent) and people living in non-urban areas (93 percent). Based on the question "Why were you not satisfied with the care you received?" more than a quarter reported that the staff were rude or unkind to them. Although the numbers of respondents is small (only 24), the reasons as to why people were dissatisfied with the dentist are shown in Table 15.3. It can be seen that the long wait, the expense and the short consultation time were concerns.

Table 15.3 Reasons for dissatisfaction	
Percentage of adult users who were dissatisfied with dental service for specified reasons, South Africa 2003	
Reason for dissatisfaction	Percent
Long wait	21
Short consultation	16
Staff rude/unkind	26
Too expensive	21
Other	16
Number dissatisfied	24

It has been recognised that health services in general are difficult for patients to evaluate (Delene, 1992). This may be due to the fact that few patients who receive medical and dental services have the knowledge to assess quality of the care they receive and therefore rely on other cues and processes to express their experiences. Satisfaction increases with increasing age, is higher in males, in the non-urban population, and in the Western and Eastern Cape.

Dissatisfaction is related to the attitude and behaviour of staff, cost and the long waiting time. At a time of heightened consumer rights and awareness of health related issues, these complaints appear to be particularly significant. The reasons why patients were not satisfied is very similar to a study by Calnan *et al.* (1999) who cited poor quality of treatment, service and attitude of staff and excessive charges as the most common complaints of dental patients.

The fact that staff attitude and behaviour is highest on the complaints list is a cause for concern and has been found in a previous study in the Limpopo Province (Mashego & Peltzer, 2005). This may be due, in part, to the shortage of health care workers, and the unequal distribution of staff between the urban and rural areas and the public and private sectors (Health Systems Trust, 2005). Besides technical expertise, the success of dental care depends on the behaviour of the oral health care worker and the patient and the way they interact with each other. Since communication is involved in the process of care, in many ways it is a 'key' concept of this interaction. As patient satisfaction and quality care are closely related with the oral health care worker's positive attitudes and communicative skills, they need to focus on patients as 'individuals' and have 'real' communication with them (Mashego & Peltzer, 2005; Yamalik, 2005). Cost of dental services may be a barrier to accessibility.

Long waiting times are a serious problem for patients using public sector health facilities (Mahomed & Bachmann, 1998). Bachmann and Barron (1997) looked at long waiting times in a South African urban health centre and found that simple research can be used to identify the reasons for long waits and inform and measure changes. This may be required to avoid long waits that obstruct care, impose time costs on patients, deter appropriate utilisation and cause patient dissatisfaction.

## 15.5 Loss of natural teeth

Table 15.1 shows the response to the questions: “Have you lost all of your own teeth?” A quarter of the respondents report that they had lost all their natural teeth. There are no gender differences, but edentulousness increased with increasing age. Loss of all natural teeth increased from 21 percent in the younger age group to 38 percent in the 65+ age group. Slightly more respondents in urban areas had lost all their teeth than respondents in the non-urban areas. With increased levels of education edentulousness declines from 29 percent in the lowest educational category to 19 percent in the higher education category. Provinces reporting highest edentulousness are KwaZulu-Natal—though this province’s figure seems implausible—Mpumalanga and the Western Cape, with the Free State reporting the lowest. About a quarter of the African respondents had lost their own teeth, compared to 34 percent of the coloured group and 16 percent of whites.

## 15.6 Oral Health Practices

Table 15.2 shows the response to the questions (i) “What did you do when you had problems in your mouth” and (ii) “What do you usually do to look after your teeth/mouth”

Twenty nine percent report having visited a dentist when they had problems with their mouth, 24 percent took a tablet, 23 percent did nothing, 20 percent visited a doctor and 3 percent a traditional healer. A higher proportion of urban people (35 percent) report visiting a dentist than rural (19 percent), but a higher proportion of rural people (25 percent) visited a doctor than the urban group (16 percent). Twenty five percent and 28 percent of the respondents report brushing and rinsing respectively, and 65 percent report visiting a dentist/dental therapist or oral hygienist at least once a year to look after their teeth. There were no trends in terms of age, gender, residence, province, education and race.

In a previous study by Rudolph *et al.* (1994), the medical practitioner was the first person that was consulted when the person presented with a mouth problem, however, in the present survey the pattern of health seeking behaviour appears to have shifted with over a third of the urban population reporting having visited a dentist, but the rural group still sought care from a medical doctor. Medical practitioners and other primary care providers play a pivotal role in preventing oral disease, especially among minority and underserved populations who have limited access to dental services and poorer oral health status (Drum *et al.*, 1998). Given their role in promoting and protecting overall health and their role in serving minority and underserved families, general practitioners occupy a unique position to assure equity, access, and improvement in oral health for all South Africans.

There are a number of individual, professional and community preventive measures that are effective for preventing most oral diseases (Cohen & Gift, 1995). Oral health care professionals recommend brushing teeth one or more times a day to control plaque growth (Frandsen, 1986). Oral health care professionals also recommend the regular use of oral health services to prevent or treat oral diseases (Frazier *et al.*, 1977; Horowitz, 1983). The two types of oral health behaviour have very different characteristics. Toothbrushing and rinsing are usually practiced by the individual at home. They are daily habits developed from early childhood and are probably related to social and cultural aspects of society (Gift, 1986). In contrast, the use of oral health services requires the individual to seek professional help outside the home. Here the resources and organisation of the oral health care system are important additional factors affecting behaviour (Gift, 1984). Access to oral health services, as well as social, cultural and economic conditions is an important determinant for service utilisation (Gift, 1984). For preventive visits, additional factors, such as preventive orientation of the oral health care system and of society to preventive care may also play significant roles (Gift 1984). However, optimal intervention in relation to oral diseases may not be universally

available or affordable due to escalating costs and limited resources and this together with insufficient emphasis on primary prevention, poses considerable challenges (Petersen, 2004).

## 15.7 Discussion

Nearly one in six adults experienced oral health problems, and higher proportions of these problems were related to teeth compared to gums. This might be due to the fact that toothache is recognised as an abnormal symptom, and pain from the gums may not be regarded as such. Teeth problems are most commonly reported in the higher age groups, non-urban areas, Mpumalanga, Northern Cape, Western Cape and the North West, people with no education and those classified as Indian or coloured. Gum problems are most commonly reported in the 55-64 age group, urban areas, Limpopo and Gauteng, people in lowest education categories and those classified as African urban. The relatively high perceived oral health problems implies that oral health should be given a greater priority; the prevention and control of oral diseases deserves greater attention as the adverse impact of poor oral health (pain, suffering, impairment of function, quality of life) on the individuals is underestimated.

Despite the fact that nearly a quarter of the “no education” group report oral health problems, only one percent had actually visited the dentist. The reasons for the low utilisation of services may be due to factors of accessibility, affordability and the type of services provided. Some of these were highlighted by Gugushe (1999) who found that there were problems in (i) the structure and management of oral health services in most of the provinces, (ii) the dentist driven dental public health services, (iii) the palliative and demand driven nature of the services, (iv) the inequities in oral health care in the provinces, and importantly (v) the fact that the oral health care services are essentially urban based. This situation does not seem to have changed much since then, except for the fact that community dental service has become compulsory for newly-graduated dentists. However, perceived access to health care per se in South Africa does appear to have improved between 1994 and 1998, partially determined along racial lines (Lalloo *et al.*, 2004).

Edentulousness is highest in the older age groups, non-urban areas, KwaZulu-Natal, Mpumalanga and the Western Cape, generally among respondents with lower educational qualifications, and mostly among Coloureds and non-urban Africans. These levels of edentulousness are unacceptably high. The high percentages of tooth loss is of concern as dental caries and periodontal disease are not only preventable and avoidable conditions, but also because of the increased risk to blood borne infections such as HIV/AIDS and Hepatitis, in a region where these conditions are rife. A shift from the endemic curative philosophy to a more promotive integrated oral health care approach, both among the public and health care professionals is urgently required.

Clinical and public health research has shown that a number of individual, professional and community preventive measures are effective in preventing most oral diseases (Cohen & Gift, 1995). However, optimal intervention in relation to oral disease is not universally available or affordable because of escalating costs and limited resources. This, together with insufficient emphasis on primary prevention or oral diseases, poses a considerable challenge.

Most evidence relates to dental caries prevention and control of periodontal diseases. Gingivitis can be prevented by good personal oral hygiene practices, including brushing and flossing. Community water fluoridation is effective in preventing dental caries in both children and adults, regardless of their social or economic status. The introduction of affordable fluoridated toothpaste has been shown to be a valuable strategy, ensuring that people are exposed appropriately to fluorides. With appropriate diet and nutrition, primary prevention of many oral and dental diseases can be achieved. Lifestyle behaviours that affects general health such as tobacco use, excessive alcohol consumption and poor dietary choices affect oral and craniofacial health as well. These individual behaviours are

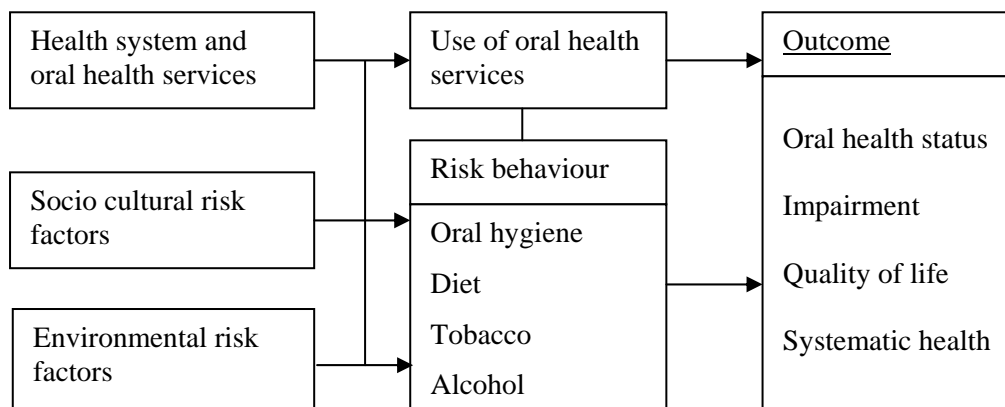
associated with an increased risk of craniofacial birth defects, oral and pharyngeal cancers, periodontal disease, dental caries and other conditions.

Opportunities exist to expand oral disease prevention and health promotion knowledge and practices among the public through community programmes and in health settings. Health care providers can play a role in promoting a healthy lifestyle by incorporating tobacco cessation programmes and nutritional counselling into their practices. The major challenges for the future will be to translate knowledge and experiences of disease prevention into action programmes. Social, economic and cultural factors together with the changing population demographics all impact on the delivery of oral health services. Reducing disparities requires far-reaching, wide-ranging approaches that target populations at risk from specific oral diseases, and involves improving access to existing care.

## 15.8 Policy implications

The key socio-economic factors involved in the promotion of oral health are outlined in Figure 15.1, together with some modifiable risk behaviours (Peterson, 2004). High relative risk of oral disease relates to socio-cultural determinants such as poor living conditions, low education levels and the lack of traditions, beliefs and cultures in support of oral health. Communities without exposure to fluorides have a higher risk of dental caries. Poor access to safe water or sanitary facilities are environmental risk factors to oral health as well as general health. Prevention and control of oral diseases also depends on the availability and accessibility of oral health facilities, but reduction in risks to disease is only possible if services are oriented towards primary health care and prevention. In addition to the socio-cultural and environmental factors, the intermediate, modifiable risk behaviours like oral hygiene practices, sugar consumption (amount, frequency of intake and types) as well as tobacco use and excessive alcohol consumption have a role to play.

**Figure 15.1. The risk factor approach to the promotion of oral health**



Source: Petersen, 2004



Government and health policy makers need to make use of this framework to reduce the burden of oral diseases, especially in the poor and marginalized populations. In particular, they need to:

- Promote healthy lifestyles and reduce the common risk factors (such as sugar, alcohol and tobacco) that arise from environmental, economic, social and behavioural causes.
- Develop oral health systems that equitably improve oral health outcomes, respond to people's legitimate demands, and are financially fair.
- Promulgate universal infection control guidelines as a matter of urgency.
- Increase utilisation of low, frequent doses of fluoride such as fluoridated toothpaste and water fluoridation.
- Develop oral health policies, based on the integration of oral health into general health national and community programmes.

## **15.9 Future Research**

Building and strengthening research capacity is one of the most effective, efficient and sustainable strategies for enabling advances in knowledge. Oral health research should be targeted at:

- Development of socio-dental indicators for measuring and demonstrating the comprehensive impact of oral disease on the individual.
- Identification of health determinants and improving capacity to design and implement appropriate interventions to promote oral health.
- Development of effective modern oral health care systems and self care products such as low cost toothpastes and improving nutrition.
- HIV and oral health: Training to understand, diagnose and manage oral impact of HIV/AIDS.
- Health services research of utilization, satisfaction and barriers to service uptake.

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## **APPENDIX A**

### **SAMPLE DESIGN AND IMPLEMENTATION**

#### **A1 Introduction**

The 2003 SADHS covered the population living in private households in the country. It was designed as a representative probability sample principally to produce reliable estimates of demographic rates (particularly fertility and childhood mortality rates), of maternal and child health indicators, of contraceptive knowledge and use and of sexual behaviour for the country as a whole, for urban and non-urban areas separately, for the nine provinces and for the four South African population groups. The design for the SADHS called for approximately 10,000 completed individual interviews with women between the ages of 15 and 49 to provide sufficiently narrow confidence intervals around key indicators.

In addition to the main survey of households and women 15-49 years, care-givers of children under the age of 6 years whose mothers were not interviewed were interviewed for information about the health of the child. In addition, a questionnaire was administered to men 15-59 years in half of the sampled households and an adult health questionnaire was administered to all the adults aged 15 and over in the alternate households.

#### **A2 Sampling Frame**

The sampling frame for the SADHS was the list of approximately 86,000 enumeration areas (EAs) used by Statistics South Africa for the Census conducted on 9-10 October 2001. The EAs ranged from about 100 to 250 households, and were stratified by province and by urban and non-urban based on the four geo-types of urban formal, urban informal, rural formal and tribal area. The urban formal together with urban informal comprise the urban category and the rural formal and tribal area comprise the non-urban category. As the Indian population constitutes a very small fraction of the South African population, specific arrangements were made in the sample design to obtain a sufficiently large number of respondents from this population group. For the purpose of the sample design, an EA was identified as Indian if the proportion of persons who classified themselves as Indian during Census 2001 enumeration in that EA was 80 percent or more, otherwise it was classified as Non-Indian. EAs were stratified into Indian and non-Indian EAs and the Indian group was considered as a stratum on its own.

#### **A3 Characteristics of the SADHS Sample**

The sample for the SADHS was selected in two stages. Due to confidentiality of the census data, the sampling was carried out by experts in Statistics South Africa according to specifications developed by members of the SADHS sampling team. Within each stratum, a two-stage sample was selected. The primary sampling units (PSUs) correspond to the EAs and were selected with probability proportional to size (PPS), the size being the number of households residing in the EA, or, where this was not available, the number of census visiting points in the EA. These numbers were taken from the '09 books' used in the census enumeration. A sample of 1 000 households was targeted for the Indian stratum and for each of the 9 provinces. Within the provinces, the sample was stratified into geo-type and a proportional sample was drawn in each. Within the Indian stratum, EAs were sorted by descending proportion of persons classified as Indian and a sample of households was drawn with PPS systematic sampling. As some provinces and non-urban areas have a very small proportion of the Indian population, this stratum was not stratified further by province or urban/non-urban.

Results of other demographic and health surveys have shown that a minimum sample of 1 000 women is required in order to obtain estimates of fertility and childhood mortality rates at an acceptable level of sampling error. It was therefore decided that a sample of 9 000 women 15-49 with complete interviews allocated equally to the nine provinces would be adequate to provide estimates for each province separately and a further 1 000 women 15-49 years with complete interviews would be adequate for the Indian stratum.

The design effects from the 1998 SADHS for urban and non-urban sub-samples were examined to assess how many households would have to be enumerated per EA without compromising the precision of the results. In 1998, the sample take in an urban EA was 10 while the take in a non-urban EA was 20 and the design effects were consequently slightly higher in the non-urban stratum compared with urban. Due to the fact that the design effects for most key health and demographic indicators, except for TFR, were close to one, a sample take of 16 households per drawn EA in all strata was deemed to be appropriate for this survey.

This led to 630 PSUs being selected for the SADHS (368 in urban areas and 262 in non-urban areas). Stats SA drew the EAs for the sample and provided global positioning system (GPS) latitudes and longitudes for each visiting point based on a systematic sample of 16 visiting points in each of the selected EAs. The survey team then interviewed the household in the selected visiting point. If there were two households in the selected visiting point, both households were interviewed. If there were three or more households, then the team was instructed to randomly select one household for interview, noting the total number of households in the visiting point so as to allow for adjustment of the sample weights. In each selected household, a household questionnaire was administered; all women between the ages of 15 and 49 were identified and interviewed with a woman's questionnaire. In half of the selected households, all men between the ages of 15 and 59 years were identified and interviewed with a men's questionnaire and in the alternate households, all adults over 15 years of age were identified and interviewed with an adult health questionnaire. Anthropometry of all children under the age of 6 years was meant to be assessed by the field team as well as the anthropometry, blood pressure and peak flow of the adults selected for the adult questionnaires.

## A4 Sample Allocation

Tables A.1 and A.2 show the estimated distribution of the households of South Africa, broken down by province and urban /non-urban, as of October 2001, based on the 2001 census.

Table A.1 Number of households in South Africa, October 2001

Province	Urban	Non-urban	Total
Western Cape	1 059 398	113 906	1 173 303
Eastern Cape	650 095	862 570	1 512 664
Northern Cape	157 881	48 960	206 842
Free State	577 680	155 620	733 301
KwaZulu-Natal	1 106 393	979 858	2 086 250
North-West	392 225	536 778	929 004
Gauteng	2 558 681	92 563	2 651 244
Mpumalanga	332 286	400 845	733 131
Northern	154 471	1 025 494	1 179 965
<b>South Africa</b>	<b>6 989 109</b>	<b>4 216 596</b>	<b>11 205 705</b>

Table A.2 Percent distribution of households in South Africa, October 2001

Province	Urban	Non-urban	Total
Western Cape	9.5%	1.0%	10.5%
Eastern Cape	5.8%	7.7%	13.5%
Northern Cape	1.4%	0.4%	1.8%
Free State	5.2%	1.4%	6.5%
KwaZulu-Natal	9.9%	8.7%	18.6%
North West	3.5%	4.8%	8.3%
Gauteng	22.8%	0.8%	23.7%
Mpumalanga	3.0%	3.6%	6.5%
Limpopo	1.4%	9.2%	10.5%
<b>South Africa</b>	<b>62.4%</b>	<b>37.6%</b>	<b>100.0%</b>

The number of households to be selected for each stratum was calculated as follows:

$$\text{Number of HHs} = \frac{\text{Target number of women 15 - 49}}{\text{Number of women 15 - 49 per HH} \times \text{Overall response rate}}$$

According to the 2001 Census, the estimated number of women 15-49 per households is 1.2. The overall response rate was assumed to be 80 percent, i.e., of the households selected for the survey only 90 percent would be successfully interviewed, and of the women identified in the households with completed interviews, only 90 percent would have a complete woman questionnaire. Using these two parameters in the above equation, we would expect to select approximately 10 500 households in order to yield the target sample of women. The number of sample points (or clusters) to be selected for each stratum is calculated by dividing the number of households in the stratum by the average "take" in the cluster. In SADHS, each cluster corresponded to a census EA. Analytical studies of surveys of the same nature suggest that the optimum number of women to be interviewed is around 20-25 in each urban cluster and 30-35 in each non-urban cluster. However it was decided that these numbers would be lower for the SADHS, given the practice of small cluster "take" in surveys conducted in South Africa and that the field cost is generally reasonable. If we selected 16 households in each cluster, the distribution of sample points or EAs would be as indicated in Table A.3.

Table A.3 Number of EAs selected by province

Province	Urban	Non-urban	Total
Western Cape	59	7	66
Eastern Cape	18	45	63
Northern Cape	45	18	63
Free State	44	19	63
KwaZulu-Natal	79	37	116
North-West	22	41	63
Gauteng	68	2	70
Mpumalanga	26	37	63
Limpopo	7	56	63
<b>South Africa</b>	<b>368</b>	<b>262</b>	<b>630</b>

## A5 Stratification and Systematic Selection of EAs

Within each EA type, the EAs were ordered according to geographic or administrative units as adopted by Stats SA for the census. EAs that contain only institutions such as prisons and mine hostels were excluded from the sampling frame. The number of EAs was then selected independently within each explicit stratum and with probability proportional to size. The measure of size used for selection was the number of households enumerated in each EA by the census.

The selection procedure that SSA used in each explicit stratum was as follows:

$$I = \frac{\sum_i M_i}{a}$$

1. calculating the selection interval for the EAs:  
where  $\sum M_i$  is the size of the stratum (total number of households or population in the stratum according to the census) and  $a$  is the number of EAs to be selected in the stratum;
2. calculating the cumulated size of each EA;
3. calculating the series of sampling numbers  $R, R+I, R+2I, \dots, R+(a-1)I$ , where  $R$  is a random number between 1 and  $I$ ;
4. comparing each sampling number with the cumulated sizes.

The first EA to be selected was the first EA on the list whose cumulated size was equal or greater than the first sampling number. The second EA to be selected was the next EA on the list (after the first selected one) whose cumulated size was equal or greater than the second sampling number, and so on.

## A6 Sampling Probabilities

The sampling probabilities were calculated separately for each sampling stage, and independently for each stratum. The following notations will be used:

- $P_1$ : first-stage sampling probability (EAs)  
 $P_2$ : second-stage sampling probability (households)

Let  $a_h$  be the number of EAs selected in stratum  $h$ ,  $M_{hi}$  the size (number of households according to the sampling frame) of the  $i^{\text{th}}$  EA in stratum  $h$ , and  $\sum M_{hi}$  the total size of the stratum (number of households according to the sampling frame). The probability of inclusion of the  $i^{\text{th}}$  EA in the sample is calculated as follows:

$$P_{1hi} = \frac{a_h \times M_{hi}}{\sum_i M_{hi}}$$

In the second stage, we will select a number  $b_{hi}$  households from the number  $M_{hi}$  of households in the  $i^{\text{th}}$  EA. We then have:

$$P_{1hi} \cdot P_{2hi} = \frac{a_h \cdot M_{hi}}{\sum_i M_{hi}} \times \frac{b_{hi}}{M_{hi}}$$

In order for the sample to be self-weighting within the stratum, the overall probability  $f_h = P_{1hi} \cdot P_{2hi}$  must be the same for each household within the stratum, where  $f_h$  is the sampling fraction calculated separately for stratum  $h$ :

$$f_h = \frac{n_h}{N_h}$$



where  $n_h$  is the number of households selected in stratum  $h$ , and  $N_h$  is the number of households that exist in stratum  $h$ .

## **A7 Sample Implementation**

Results of the sample implementation are given in Table A.4 for the women's interviews, Table A.5 for the men's interviews and Table A.6 for the adult health interviews. A total of 630 EAs were selected for the 2003 SADHS (368 in urban areas and 262 in non-urban areas) which included 10 080 households (630x16). However, due to the addition of some extra households living in the selected visiting points, the total came to 10 214. Fieldwork in nine EAs was not implemented.

Overall 10 percent of selected households were not valid households; for 2 percent of households, the entire household was absent for an extended period of time, 5 percent were vacant or invalid addresses, and the dwelling was destroyed in 2 percent of cases. In both Eastern Cape and Limpopo, 19 percent of the selected households were found to be non-existent in the field. The proportion of invalid households was very high compared with that found in the 1998 SADHS. In the 1998 survey, out of the 12 860 households selected, 12 638 were identified as occupied households. A total of 1.7 percent were not valid with 1.1 percent vacant or destroyed and 0.6 percent absent.

Of the valid households in the 2003 SADHS, 85 percent were successfully interviewed. The main reasons for not successfully interviewing the households were refusals (11 percent) and respondents not being home (3 percent).

From Table A.4, it can be seen that in the households visited, there were 7 966 eligible women aged 15-49 years among whom 88 percent were successfully interviewed. There were 6 percent who refused to be interviewed and a further 4 percent were not at home. The proportion of eligible women who refused was highest in the Western Cape (15 percent). The overall response rate for the women's questionnaire is thus 75 percent, far lower than the 92 percent in the 1998 SADHS.

**Table A.4 Results of household and women interviews**

Percent distribution of households and eligible women by results of the household and individual interviews, and household, eligible women and overall response rates, according to urban-rural residence and region, South Africa 2003

Result	Province									Residence		Total
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu -Natal	North West	Gauteng	Mpuma- langa	Limpopo	Urban	Non- urban	
<b>Selected households</b>												
Completed (C)	67.4	66.5	83.1	85.8	75.2	85.6	66.0	79.2	76.7	74.7	77.7	75.9
No competent respondent at home (HP)	5.0	3.4	2.0	1.3	5.2	0.2	1.9	2.5	1.3	3.6	1.5	2.8
Postponed	0.8	0.0	0.2	0.1	0.1	0.1	0.4	0.0	0.0	0.3	0.1	0.2
Refused (R)	16.6	10.8	8.4	6.6	11.7	7.0	22.2	7.2	3.3	13.7	6.4	10.7
Dwelling not found	0.1	0.0	0.0	0.1	1.1	0.2	0.9	0.0	0.0	0.5	0.1	0.3
Household absent (HA)	0.9	3.7	3.2	1.0	0.9	2.7	3.2	1.9	4.7	2.0	2.8	2.3
Dwelling vacant	8.1	12.1	2.4	3.7	2.3	2.3	3.9	4.6	11.8	3.7	7.8	5.4
Dwelling destroyed (DD)	0.5	3.2	0.6	1.1	2.3	1.9	1.4	4.3	2.2	1.0	3.3	2.0
Other (O)	0.6	0.2	0.1	0.4	1.3	0.1	0.1	0.3	0.0	0.4	0.5	0.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1 084	1 018	1 022	1 022	1 893	1 019	1 128	1 015	1 013	6 003	4 211	10 214
<b>Household response rate (HRR)<sup>a</sup></b>	75.0	82.4	88.7	91.4	80.7	92.0	72.3	89.1	94.4	80.5	90.6	84.5
<b>Eligible women</b>												
Completed (EWC)	79.0	86.0	92.3	92.2	84.8	90.7	86.0	94.3	92.9	85.7	92.4	88.4
Not at home (EWNH)	4.6	4.3	1.4	2.3	7.6	1.7	4.8	1.0	2.3	4.9	1.8	3.6
Postponed (EWP)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refused (EWR)	14.6	6.1	4.3	3.1	5.8	4.4	6.7	1.9	3.3	7.1	3.4	5.6
Partly completed	0.7	0.2	0.6	0.6	0.3	0.4	1.2	0.7	0.2	0.7	0.3	0.5
Incapacitated (EWI)	0.7	2.7	1.0	1.2	1.0	2.8	0.4	1.6	1.0	1.0	1.7	1.3
Other (EWO)	0.4	0.7	0.4	0.6	0.5	0.1	1.1	0.5	0.4	0.6	0.4	0.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	905	587	842	863	1 438	826	840	823	842	4 776	3 190	7 966
<b>Eligible women response rate (EWRR)<sup>b</sup></b>	79.0	86.0	92.3	92.2	84.8	90.7	86.0	94.3	92.9	85.7	92.4	88.4
<b>Overall response rate (ORR)<sup>c</sup></b>	59.2	70.9	81.9	84.3	68.4	83.4	62.1	84.0	87.7	69.0	83.7	74.7

<sup>a</sup> Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{C}{C + HP + P + R + DNF}$$

<sup>b</sup> Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{EWC}{EWC + EWNH + EWP + EWR + EWPC}$$

<sup>c</sup> The overall response rate (ORR) is calculated as:

$$ORR = HRR * EWRR$$

Table A.5 presents the results for the men survey. Of the 5 155 households selected for the men survey, 77 percent were completed. Invalid households accounted for part of the poor response together with the 10 percent that refused. The response rate for households was 85.4 percent once the appropriate exclusions were made. At the individual level, 79 percent of eligible men were interviewed. There were 10 percent who refused and a further 6.7 percent were not at home. The overall response rate for the men survey was 68 percent. It was lower in the urban areas (60 percent) than the non-urban areas (81 percent) with lowest overall response rates in the Western Cape (42 percent) and Gauteng (58 percent).

Table A.5 Results of household and men interventions												
Percent distribution of households and eligible men by results of the household and individual interviews, and household, eligible men and overall response rates, according to urban-rural residence and region South Africa 2003												
Result	Province									Residence		
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Limpopo	Urban	Non-urban	Total
<b>Selected households</b>												
Completed (C)	68.4	68.0	83.2	87.8	76.2	86.6	66.7	79.7	77.5	75.7	78.5	76.9
No competent respondent at home (HP)	5.3	3.1	2.9	0.8	4.8	0.0	2.0	1.9	1.0	3.7	1.1	2.6
Postponed (P)	0.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Refused (R)	15.6	10.5	7.4	5.5	11.2	6.0	22.1	7.2	2.6	13.1	5.7	10.1
Dwelling not found (DNF)	0.2	0.0	0.0	0.2	1.1	0.2	0.5	0.0	0.0	0.4	0.1	0.3
Household absent (HA)	1.1	2.7	3.7	1.0	0.8	2.5	3.2	1.2	4.3	2.1	2.3	2.2
Dwelling vacant/address not a dwelling (DV)	7.9	11.7	2.0	3.2	2.2	2.5	4.1	5.1	12.5	3.5	8.1	5.4
Dwelling destroy (DD)	0.4	3.7	0.6	1.4	2.5	2.1	1.2	4.7	2.2	1.1	3.6	2.1
Other (O)	0.6	0.2	0.0	0.2	1.2	0.0	0.2	0.2	0.0	0.3	0.5	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	544	512	511	507	946	514	562	513	506	3 004	2 111	5 115
<b>Household response rate (HRR)<sup>a</sup></b>	75.9	83.3	88.7	93.1	81.7	93.3	73.1	89.7	95.6	81.3	91.8	85.4
<b>Eligible men</b>												
Completed (EMC)	55.6	73.3	89.7	85.1	76.9	92.4	79.4	84.6	80.4	74.4	88.1	79.3
Not at home (EMNH)	8.2	8.4	2.4	4.5	12.2	1.4	6.4	2.7	8.0	8.8	3.0	6.7
Postponed (EMP)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1
Refused (EMR)	33.6	10.3	5.0	6.1	9.3	2.8	10.3	6.8	5.9	13.2	4.9	10.2
Partly completed (EMPC)	0.2	2.3	0.7	0.9	0.3	0.0	1.8	1.7	0.3	0.9	0.8	0.8
Incapacitated (EMI)	1.4	3.4	1.7	2.6	1.1	2.2	0.5	3.2	3.5	1.7	2.3	1.9
Other (EMO)	0.7	2.3	0.5	0.7	0.2	1.1	1.6	0.7	1.7	0.9	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	426	262	417	424	913	357	436	409	286	2 518	1 412	3 930
<b>Eligible men response rate (EMRR)<sup>b</sup></b>	55.6	73.3	89.7	85.1	76.9	92.4	79.4	84.6	80.4	74.4	88.1	79.3
<b>Overall response rate (ORR)<sup>c</sup></b>	42.2	61.0	79.6	79.3	62.9	86.2	58.0	75.9	76.9	60.5	80.9	67.8
<sup>a</sup> Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:												
$\frac{C + HP + P + R + DNF}{C}$												
<sup>b</sup> Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:												
$\frac{EMC}{EMC + EMNH + EMP + EMR + EMPC}$												
<sup>c</sup> The overall response rate (ORR) is calculated as:												
$ORR = HRR * EMRR$												

Table A.6 presents the results for the Adult Health survey. Of the 5 099 households selected for the adult survey, 75 percent were completed. This is also lower than the 95 percent completed in the 1998 SADHS. Again, invalid households accounted for part of the poor response together with the 11.3 percent who refused. The response rate for households was 84 percent once the appropriate exclusions were made. At the individual level, 84 percent of eligible adults were included in the survey, although not all of them had all the measurements taken. There were 7 percent who refused and a further 5 percent of the respondents were not at home. The overall response rate for the adult survey was 71 percent, lower than the 90 percent in the 1998 SADHS. The overall response rate was substantially lower in the Western Cape (49 percent) where a large proportion of adults refused (24 percent). The response rate was higher in the non-urban area (81 percent) than the urban area (64 percent).

**Table A.6 Results of the household and individual interviews by residence and province for adult health survey**

Percent distribution of households and eligible adults in the sample by results of the household and individual interviews, and households, eligible adults and overall response rates, according to province and residence, South Africa 2003

Result	Province									Residence		
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Limpopo	Urban	Non-urban	Total
Selected households												
Completed (C)	66.5	65.0	83.0	83.9	74.2	84.6	65.4	78.7	75.9	73.7	76.8	75.0
No competent respondent at home (HP)	4.6	3.8	1.0	1.7	5.6	0.4	1.8	3.0	1.6	3.6	1.8	2.9
Postponed	1.1	0.0	0.2	0.2	0.1	0.2	0.9	0.0	0.0	0.4	0.1	0.3
Refused (R)	17.6	11.1	9.4	7.6	12.1	7.9	22.3	7.2	3.9	14.2	7.0	11.3
Dwelling not found (DNF)	0.0	0.0	0.0	0.0	1.1	0.2	1.2	0.0	0.0	0.6	0.0	0.4
Household absent (HA)	0.7	4.7	2.7	1.0	1.0	3.0	3.2	2.6	5.1	2.0	3.2	2.5
Dwelling vacant	8.3	12.5	2.9	4.3	2.4	2.0	3.7	4.2	11.2	4.0	7.4	5.4
Dwelling destroyed (DD)	0.6	2.8	0.6	0.8	2.1	1.6	1.6	4.0	2.2	1.0	3.0	1.8
Other (O)	0.6	0.2	0.2	0.6	1.4	0.2	0.0	0.4	0.0	0.5	0.5	0.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	540	506	511	515	947	505	566	502	507	2 999	2 100	5 099
Household response rate (HRR) <sup>a</sup>												
	74.0	81.4	88.7	89.8	79.7	90.7	71.4	88.6	93.2	79.7	89.5	83.5
Eligible adults												
Completed (EAC)	66.3	85.9	89.3	90.9	81.0	89.7	80.6	91.9	88.0	80.5	90.3	84.4
Not at home (EANH)	6.6	4.5	3.2	3.8	9.8	1.3	6.3	1.5	4.2	7.1	2.2	5.2
Postponed (EAP)	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Refused (EAR)	24.3	4.8	4.8	2.7	7.1	4.0	9.0	4.1	4.7	9.3	4.3	7.3
Partly completed (EAPC)	0.8	0.3	1.1	0.4	0.3	0.7	1.3	0.3	0.7	0.6	0.6	0.6
Incapacitated (EAI)	0.8	4.0	1.2	1.6	1.0	4.0	1.6	2.1	1.7	1.6	2.2	1.8
Other	1.2	0.5	0.3	0.5	0.7	0.2	1.0	0.1	0.7	0.7	0.4	0.6
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	977	750	1 023	1 032	2 024	942	995	951	920	5 765	3 849	9 614
Eligible adults response rate (EARR) <sup>b</sup>												
	66.3	85.9	89.3	90.9	81.0	89.7	80.6	91.9	88.0	80.5	90.3	84.4
Overall response rate (ORR) <sup>c</sup>												
	49.1	69.9	79.3	81.6	64.6	81.3	57.6	81.4	82.1	64.1	80.7	70.5

<sup>a</sup> Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{C}{C + HP + P + R + DNF}$$

<sup>b</sup> Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{EWC}{EAC + EANH + EAP + EAR + EAPC}$$

<sup>c</sup> The overall response rate (ORR) is calculated as:

$$ORR = HRR * EARR$$

## **A8 Fieldwork**

The questionnaires were pre-tested in a “behind-the-glass” setting and revisions were made as necessary. The questionnaires were then translated into all eleven official languages in South Africa. The protocol was reviewed and approved by the MRC ethics committee.

It is generally accepted protocol for respondents to be interviewed by interviewers of the same gender, age range and ethnic group, especially when sensitive questions are part of the survey. Consequently, both male and female field staff trainees were recruited from various provinces and population groups. In September 15-30 2003, the group responsible for the field work (Africa Strategic Research Corporation) arranged for training the fieldworkers with support from ORC Macro, HSRC, MRC and DOH. The field teams were given an overview of the content of the questionnaires and the objectives and design of the survey, as well as brief training on editing questionnaires. Training of the 125 candidates for field staff positions consisted of plenary sessions with breakout sessions into smaller groups for practice on anthropometric measurements. There was also intensive training in anthropometric measurements, taking blood pressure and measuring lung capacity. One day towards the end of the training course was set aside for field practice interviewing.

Unfortunately, AFRC was not able to recruit any white interviewers in time for the first training. Moreover, in the first training, it was apparent that there were too many male interviewers in some provinces and not enough women. For these two reasons, AFRC organized a second training for an additional 49 trainees during the week of October 6-11. Most of the same trainers covered the same topics in the second training. Despite the smaller size of the class, it was challenging to try to cover all the material in six days.

In each province there was a provincial manager who was an overall supervisor of the fieldwork operations. However, the team structure was variable during the fieldwork. During the set-up phase of the survey, support was provided by DOH, HSRC, MRC and ORC Macro. The HSRC conducted quality control visits during the fieldwork as well as periodic visits by the DOH. Fieldwork commenced in October 2003 and was completed in August 2004.

## **A9 Data Processing**

Preliminary processing of the questionnaires began in November, 2003 so as to provide some feedback to field teams; however, due to delays in arranging for tenders, funding and contracts with HSRC, formal data processing did not commence until February 2004. Completed questionnaires were returned periodically from the field to ASRC, which in turn submitted them to HSRC. The processing operation consisted of office editing, coding of open-ended questions, initial data entry and subsequent re-entry of all questionnaires (100 percent verification) to ensure correct data capture, and finally editing inconsistencies found by the computer program. The SADHS data entry and editing programs were written using CPro by staff from ORC Macro. Data editing and cleaning were completed in October 2004.

## APPENDIX B

### ESTIMATES OF SAMPLING ERRORS

#### B1 Sampling Error

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although efforts were made during the implementation of the 2003 South Africa Demographic and Health Survey (SADHS) to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2003 SADHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the SADHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 2003 SADHS is the ISSA Sampling Error Module. This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate,  $r = y/x$ , where  $y$  represents the total sample value for variable  $y$ , and  $x$  represents the total number of cases in the group or subgroup under consideration. The variance of  $r$  is computed using the formula given below, with the standard error being the square root of the variance:

$$SE^2(r) = var(r) = \frac{1-f}{x^2} \sum_{h=1}^H \left[ \frac{m_h}{m_h - 1} \left( \sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - rx_{hi}, \text{ and } z_h = y_h - rx_h$$

where  $h$  represents the stratum which varies from 1 to  $H$ ,  
 $m_h$  is the total number of clusters selected in the  $h^{\text{th}}$  stratum,  
 $y_{hi}$  is the sum of the weighted values of variable  $y$  in the  $i^{\text{th}}$  cluster in the  $h^{\text{th}}$  stratum,  
 $x_{hi}$  is the sum of the weighted number of cases in the  $i^{\text{th}}$  cluster in the  $h^{\text{th}}$  stratum, and  
 $f$  is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* cluster in the calculation of the estimates. Pseudo-independent

replications are thus created. In the SADHS, there were 621 non-empty clusters. Hence, 621 replications were created. The variance of a rate  $r$  is calculated as follows:

$$SE^2(r) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^k (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where  $r$  is the estimate computed from the full sample of 621 clusters,  
 $r_{(i)}$  is the estimate computed from the reduced sample of 620 clusters ( $i^{\text{th}}$  cluster excluded),  
 $k$  is the total number of clusters.

In addition to the standard error, ISSA computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSA also computes the relative error and confidence limits for the estimates. In the case of indicators from the adult health module, SAS has been used to calculate these parameters.

Sampling errors for the 2003 SADHS are calculated for a few selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole and for urban and rural areas and for each province. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.13 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits ( $R \pm 2SE$ ), for each variable. The DEFT is considered undefined when the standard error considering simple random sample is zero (when the estimate is close to 0 or 1).

The confidence interval (e.g., as calculated for *had an HIV test and received results in the 12 months preceding the survey*) can be interpreted as follows: the overall average from the national sample is 8.5 percent for women and its standard error is 0.005. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e.,  $0.085 \pm 2 \times 0.005$ . There is a high probability (95 percent) that the *true* proportion of women age 15-49 in South Africa who had an HIV test and received the results in the 12 months prior to the survey is between 7.5 and 9.5 percent.

The relative standard errors (SE/R) for women at the national level range between 0.5 percent and 12.5 percent; the highest relative standard errors are for estimates of very low values (e.g., *Had two or more sexual partners in last 12 months*). In general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. Sampling errors are higher for subpopulations, e.g., urban and rural, than they are for the national population as a whole.

For the total sample, the value of the design effect (DEFT) for women at the national level, averaged over all variables is 1.36, which means that, due to multi-stage clustering of the sample, the average standard error is increased by a factor of 1.36 over that in an equivalent simple random sample.

Table B.1 List of selected variables for sampling errors, South Africa 2003

Variable	Type	Base population
WOMEN QUESTIONNAIRE		
Urban residence	Proportion	All women 15-49
No education	Proportion	All women 15-49
Reached Grade 8 or higher	Proportion	All women 15-49
Never married (in union)	Proportion	All women 15-49
Currently married/living together (in union)	Proportion	All women 15-49
Married before age 20	Proportion	All women 15-49
Had sex before age 18	Proportion	All women 15-49
Children ever born	Mean	All women 15-49
Children ever born to women over 40	Mean	All women 40-49
Children surviving	Mean	All women 15-49
Ever used any contraceptive method	Proportion	Sexually active women 15-49
Currently using any contraceptive method	Proportion	Sexually active women 15-49
Currently using a modern contraceptive method	Proportion	Sexually active women 15-49
Currently using female sterilization	Proportion	Sexually active women 15-49
Currently using pill	Proportion	Sexually active women 15-49
Currently using 2 monthly injectables	Proportion	Sexually active women 15-49
Currently using 3 monthly injectables	Proportion	Sexually active women 15-49
Using a public sector source	Proportion	Current users of modern method
Want no more children	Proportion	Currently married women 15-49
Want to delay at least 2 years	Proportion	Currently married women 15-49
Ideal number of children	Mean	All women 15-49
Mothers received tetanus injection	Proportion	Births in last 5 years
Mothers received medical care at birth	Proportion	Births in last 5 years
Had diarrhoea in the last 2 weeks	Proportion	Children under 5
Having health card	Proportion	Children 12-23 months
Fully immunised	Proportion	Children 12-23 months
Had two or more sexual partners in last 12 months	Proportion	Women 15-49 who had sex in the last 12 months
Had higher risk sex (with a non-marital, non-cohabiting partner) in the last 12 months	Proportion	Women 15-49 who had sex in the last 12 months
Condom use at last higher risk sex-all	Proportion	Women 15-49 having higher risk sex in last 12 months
Condom use at last higher risk sex-youth	Proportion	All women/ having higher risk sex in last 12 months
Abstinence among youth (never had sex)	Proportion	Never-married women
Sexual activity in last 12 months among never-married youth	Proportion	Never-married women
Had HIV test and received results in last 12 months	Proportion	All women 15-49
Accepting attitudes towards people with HIV (would care for a relative with AIDS, would buy vegetables from an HIV-positive vendor, believes a teacher with HIV should continue teaching and would not want to keep secret if a family member got infected)	Proportion	All women 15-49 who have heard of HIV/AIDS
Total fertility rate (3 years)	Rate	Woman-years of exposure
Neonatal mortality rate (10 years)	Rate	Children exposed to death
Postneonatal mortality rate (10 years)	Rate	Children exposed to death
Infant mortality rate (10 years)	Rate	Children exposed to death
Child mortality rate (10 years)	Rate	Children exposed to death
Under five mortality rate (10 years)	Rate	Children exposed to death
MEN QUESTIONNAIRE		
Urban residence	Proportion	Men 15-59
No education	Proportion	Men 15-59
Reached Grade 8 or higher	Proportion	Men 15-59
Never married (in union)	Proportion	Men 15-59
Currently married/living together (in union)	Proportion	Men 15-59
Had sex before age 18	Proportion	Men 15-59
Had two or more sexual partners in last 12 months	Proportion	Men 15-49 who had sex in the last 12 months
Had higher risk sex (with a non-marital, non-cohabiting partner) in the last 12 months	Proportion	Men 15-49 who had sex in the last 12 months
Condom use at last higher risk sex-all	Proportion	Men 15-49 having higher risk sex in last 12 months
Condom use at last higher risk sex-youth	Proportion	Men 15-24 having higher risk sex in last 12 months
Abstinence among youth (never had sex)	Proportion	Men 15-24
Sexual activity in last 12 months among never-married youth	Proportion	Men 15-24
Ever had HIV test and received results	Proportion	All men 15-49
Circumcision	Proportion	All men 15-49



Variable	Type	Base population
ADULT QUESTIONNAIRE		
Systolic Blood Pressure (men)	Mean	Adult men over 15 years
Systolic Blood Pressure (women)	Mean	Adult women over 15 years
Diastolic Blood Pressure (men)	Mean	Adult men over 15 years
Diastolic Blood Pressure (women)	Mean	Adult women over 15 years
Pulse (men)	Mean	Adult men over 15 years
Pulse (women)	Mean	Adult women over 15 years
Hypertension (men)	Proportion	Adult men over 15 years
Hypertension (women)	Proportion	Adult women over 15 years
Airflow Limitation (men)	Proportion	Adult men over 15 years
Airflow Limitation (women)	Proportion	Adult women over 15 years
Chronic Bronchitis (men)	Proportion	Adult men over 15 years
Chronic Bronchitis (women)	Proportion	Adult women over 15 years
Abnormal Peak Flow (men)	Proportion	Adult men over 15 years
Abnormal Peak Flow (women)	Proportion	Adult women over 15 years
Currently smoking (occasionally/daily) (men)	Proportion	Adult men over 15 years
Currently smoking (occasionally/daily) (women)	Proportion	Adult women over 15 years
Abstainers - alcohol intake in last 12 months (men)	Proportion	Adult men over 15 years
Abstainers - alcohol intake in last 12 months (women)	Proportion	Adult women over 15 years
Responsible - alcohol intake in last 12 months (men)	Proportion	Adult men over 15 years
Responsible - alcohol intake in last 12 months (women)	Proportion	Adult women over 15 years
Hazardous - alcohol intake in last 12 months (men)	Proportion	Adult men over 15 years
Hazardous - alcohol intake in last 12 months (women)	Proportion	Adult women over 15 years
Harmful - alcohol intake in last 12 months (men)	Proportion	Adult men over 15 years
Harmful - alcohol intake in last 12 months (women)	Proportion	Adult women over 15 years
Adequate nutrient (men)	Proportion	Adult men over 15 years
Adequate nutrient (women)	Proportion	Adult women over 15 years
Weight (men)	Mean	Adult men over 15 years
Weight (women)	Mean	Adult women over 15 years
Height (men)	Mean	Adult men over 15 years
Height (women)	Mean	Adult women over 15 years
Waist/hip ratio (men)	Mean	Adult men over 15 years
Waist/hip ratio (women)	Mean	Adult women over 15 years
Hip circumference (men)	Mean	Adult men over 15 years
Hip circumference (women)	Mean	Adult women over 15 years
Body Mass Index (men)	Mean	Adult men over 15 years
Body Mass Index (women)	Mean	Adult women over 15 years
Overweight (men)	Proportion	Adult men over 15 years
Overweight (women)	Proportion	Adult women over 15 years
Obesity (men)	Proportion	Adult men over 15 years
Obesity (women)	Proportion	Adult women over 15 years
Nutrient intake (men)	Proportion	Adult men over 15 years
Nutrient intake (women)	Proportion	Adult women over 15 years
Physically inactive (men)	Proportion	Adult men over 15 years
Physically inactive (women)	Proportion	Adult women over 15 years
Total MET-minutes/wk (men)	Mean	Adult men over 15 years
Total MET-minutes/wk (women)	Mean	Adult women over 15 years

Table B2 Sampling errors: Total sample, South Africa 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.664	0.010	7 041	7 041	1.705	0.014	0.645	0.684
No education	0.043	0.004	7 041	7 041	1.465	0.083	0.036	0.050
Reached Grade 8 or higher	0.792	0.007	7 041	7 041	1.506	0.009	0.778	0.807
Never married (in union)	0.543	0.008	7 041	7 041	1.321	0.014	0.527	0.558
Currently married (in union)	0.377	0.008	7 041	7 041	1.321	0.020	0.362	0.393
Had first sex before age 18	0.418	0.009	5 591	5 646	1.387	0.022	0.400	0.436
Married before age 20	0.200	0.008	5 591	5 646	1.483	0.040	0.184	0.216
Children ever born	1.610	0.026	7 041	7 041	1.264	0.016	1.558	1.663
Children surviving	1.522	0.025	7 041	7 041	1.281	0.016	1.472	1.572
Children ever born to women 40-49	3.276	0.071	1 472	1 480	1.360	0.022	3.134	3.418
Knowing any contraceptive method	0.964	0.004	3 183	3 256	1.354	0.005	0.955	0.973
Knowing any modern contraceptive method	0.964	0.004	3 183	3 256	1.354	0.005	0.955	0.973
Ever used any contraceptive method	0.853	0.008	3 183	3 256	1.235	0.009	0.837	0.868
Currently using any contraceptive method	0.647	0.010	3 183	3 256	1.167	0.015	0.627	0.666
Currently using a modern method	0.647	0.010	3 183	3 256	1.167	0.015	0.627	0.666
Currently using pill	0.122	0.008	3 183	3 256	1.304	0.062	0.107	0.137
Currently using 2 monthly injectables	0.139	0.008	3 183	3 256	1.377	0.061	0.123	0.156
Currently using 3 monthly injectables	0.191	0.009	3 183	3 256	1.244	0.045	0.173	0.208
Currently using female sterilization	0.101	0.008	3 183	3 256	1.407	0.074	0.086	0.116
Obtained method from public sector source	0.826	0.012	3 456	3 527	1.887	0.015	0.802	0.850
Want no more children	0.607	0.014	2 770	2 658	1.546	0.024	0.579	0.636
Want to delay birth at least 2 years	0.084	0.006	2 770	2 658	1.116	0.070	0.072	0.095
Ideal number of children	2.484	0.022	6 924	6 857	1.381	0.009	2.440	2.527
Mothers received tetanus injection for last birth	0.450	0.017	1 953	1 859	1.443	0.037	0.417	0.483
Mothers received medical care at delivery	0.912	0.010	2 221	2 120	1.377	0.011	0.892	0.932
Child had diarrhea in the last 2 weeks	0.079	0.007	2 121	2 016	1.190	0.092	0.065	0.094
Treated with ORS packets	0.376	0.047	204	159	1.218	0.125	0.282	0.471
Consulted medical personnel	0.557	0.043	204	159	1.085	0.078	0.470	0.644
Child having health card, seen	0.711	0.030	449	408	1.289	0.042	0.651	0.770
Child received BCG vaccination	0.812	0.027	449	408	1.334	0.033	0.758	0.865
Child received DPT vaccination (3 doses)	0.658	0.032	449	408	1.313	0.048	0.595	0.721
Child received polio vaccination (3 doses)	0.643	0.032	449	408	1.313	0.050	0.579	0.707
Child received measles vaccination	0.620	0.032	449	408	1.320	0.052	0.555	0.685
Child fully immunized	0.522	0.034	449	408	1.364	0.066	0.453	0.590
Had two or more sexual partners in last 12 months	0.036	0.004	4 815	4 891	1.301	0.096	0.029	0.044
Had higher risk sex in the last 12 months	0.576	0.011	4 827	4 904	1.478	0.018	0.555	0.597
Condom use at last higher risk sex-all	0.462	0.013	2 539	2 823	1.270	0.027	0.436	0.487
Condom use at last higher risk sex-youth	0.517	0.020	1 195	1 260	1.417	0.040	0.476	0.558
Abstinence among youth (never had sex)	0.416	0.014	2 341	2 319	1.340	0.033	0.388	0.443
Sexual activity in last 12 months	0.487	0.014	2 341	2 319	1.352	0.029	0.459	0.515
Had HIV test & received results in last 12 months	0.085	0.005	7 041	7 041	1.542	0.060	0.075	0.095
Accepting attitudes towards people with HIV	0.383	0.009	6 585	6 580	1.527	0.024	0.365	0.402
Total fertility rate (last 3 years)	2.087	0.091	na	21 185	1.562	0.044	1.905	2.269
Neonatal mortality (last 5 years)	14.972	3.705	2 246	2 140	1.425	0.247	7.562	22.382
Post-neonatal mortality (last 5 years)	28.067	6.054	2 251	2 144	1.374	0.216	15.960	40.174
Infant mortality (last 5 years)	43.039	6.807	2 251	2 144	1.350	0.158	29.424	56.653
Child mortality (last 5 years)	15.948	3.148	2 257	2 155	1.196	0.197	9.651	22.245
Under-five mortality (last 5 years)	58.300	7.547	2 262	2 159	1.337	0.129	43.206	73.395
MEN QUESTIONNAIRE								
Urban residence	0.690	0.011	3 118	3 118	1.360	0.016	0.667	0.712
No education	0.045	0.005	3 118	3 118	1.349	0.111	0.035	0.055
Reached Grade 8 or higher	0.780	0.011	3 118	3 118	1.426	0.014	0.759	0.801
Never married (in union)	0.557	0.013	3 118	3 118	1.486	0.024	0.531	0.584
Currently married (in union)	0.390	0.013	3 118	3 118	1.472	0.033	0.364	0.415
Had sex before 18	0.453	0.014	2 469	2 515	1.356	0.030	0.426	0.480
Had two or more sexual partners in last 12 months	0.199	0.013	2 069	2 125	1.458	0.064	0.173	0.225
Had higher risk sex in the last 12 months	0.654	0.015	2 076	2 133	1.415	0.023	0.624	0.683
Condom use at last higher risk sex-all	0.689	0.016	1 326	1 395	1.294	0.024	0.656	0.722
Condom use at last higher risk sex-youth	0.715	0.026	611	609	1.407	0.036	0.664	0.767
Abstinence among youth (never had sex)	0.381	0.019	1 097	1 053	1.271	0.049	0.344	0.418
Sexual activity in last 12 months	0.537	0.018	1 097	1 053	1.222	0.034	0.500	0.574
Ever had HIV test and received results	0.201	0.011	2 760	2 780	1.446	0.055	0.179	0.223
Circumcision	0.447	0.015	3115	3113	1.769	0.034	0.417	0.478

Variable	Number of cases					Confidence intervals		
	Value	Standard	Unweighted	Weighted	Design	Relative	Value-	Value+
	(R)	error (SE)	(N)	(WN)	effect (DEFT)	error (SE/R)	(R-2SE)	2SE (R+2E)
ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	123.379	0.460	3 258	3 334	1.160	0.004	122.476	124.282
Systolic Blood Pressure (women)	121.332	0.399	4 646	4 536	1.079	0.003	120.549	122.116
Diastolic Blood Pressure (men)	73.170	0.361	3 267	3 347	1.227	0.005	72.462	73.879
Diastolic Blood Pressure (women)	74.876	0.235	4 667	4 568	0.992	0.003	74.415	75.337
Pulse (men)	72.089	0.329	3 265	3 345	1.215	0.005	71.443	72.736
Pulse (women)	76.915	0.259	4 665	4 563	1.187	0.003	76.406	77.425
Hypertensive (men)	0.087	0.009	3 328	3 422	1.364	0.101	0.070	0.104
Hypertensive (women)	0.135	0.006	4 787	4 693	0.983	0.045	0.123	0.147
Airflow Limitation (men)	0.072	0.006	3 328	3 422	1.028	0.078	0.061	0.083
Airflow Limitation (women)	0.081	0.005	4 787	4 693	1.015	0.060	0.071	0.090
Chronic Bronchitis (men)	0.023	0.003	3 328	3 422	1.017	0.144	0.017	0.030
Chronic Bronchitis (women)	0.020	0.002	4 787	4 693	1.077	0.124	0.015	0.024
Abnormal Peak Flow (men)	0.079	0.006	3 328	3 422	1.041	0.081	0.067	0.092
Abnormal Peak Flow (women)	0.109	0.007	4 787	4 693	1.198	0.066	0.095	0.123
Currently smoking (occasionally of daily) (men)	0.351	0.012	3 328	3 422	1.184	0.035	0.327	0.375
Currently smoking (occasionally of daily) (women)	0.102	0.007	4 787	4 693	1.277	0.069	0.088	0.116
Abstainers - alcohol intake in last 12 months (men)	0.609	0.014	3 328	3 422	1.274	0.022	0.582	0.636
Abstainers - alcohol intake in last 12 months (women)	0.845	0.009	4 787	4 693	1.365	0.011	0.827	0.863
Responsible - alcohol intake in last 12 months (men)	0.310	0.013	3 328	3 422	1.259	0.041	0.285	0.335
Responsible - alcohol intake in last 12 months (women)	0.122	0.008	4 787	4 693	1.245	0.063	0.107	0.137
Hazardous - alcohol intake in last 12 months (men)	0.024	0.004	3 328	3 422	1.045	0.155	0.017	0.031
Hazardous - alcohol intake in last 12 months (women)	0.010	0.002	4 787	4 693	1.074	0.184	0.006	0.013
Harmful drinkers - alcohol intake in last 12 months (men)	0.024	0.003	3 328	3 422	1.008	0.139	0.018	0.031
Harmful drinkers - alcohol intake in last 12 months (women)	0.011	0.002	4 787	4 693	1.027	0.170	0.007	0.014
Adequate nutrient (men)	0.331	0.014	3 293	3 379	1.300	0.042	0.303	0.358
Adequate nutrient (women)	0.349	0.013	4 758	4 656	1.459	0.038	0.323	0.375
Weight (men)	65.774	0.419	3 200	3 256	1.296	0.006	64.950	66.597
Weight (women)	67.921	0.405	4 598	4 481	1.215	0.006	67.124	68.717
Height (men)	1.682	0.002	3 215	3 275	1.224	0.001	1.677	1.687
Height (women)	1.588	0.002	4 598	4 481	1.209	0.001	1.585	1.592
Waist/hip ratio (men)	0.929	0.023	3 196	3 248	1.259	0.025	0.884	0.973
Waist/hip ratio (women)	0.998	0.029	4 561	4 427	1.320	0.029	0.941	1.056
Hip circumference (men)	91.387	0.466	3 196	3 248	1.167	0.005	90.471	92.303
Hip circumference (women)	100.332	0.593	4 566	4 436	1.254	0.006	99.168	101.496
Body Mass Index (men)	23.321	0.153	3 215	3 275	1.323	0.007	23.021	23.621
Body Mass Index (women)	26.956	0.161	4 598	4 481	1.224	0.006	26.640	27.273
Overweight (men)	0.210	0.009	3 215	3 275	1.031	0.045	0.192	0.228
Overweight (women)	0.275	0.009	4 598	4 481	1.071	0.032	0.258	0.292
Obesity (men)	0.088	0.008	3 215	3 275	1.241	0.092	0.072	0.103
Obesity (women)	0.274	0.009	4 598	4 481	1.099	0.034	0.256	0.292
Nutrient intake (men)	22.932	0.397	3 293	3 379	1.419	0.017	22.152	23.712
Nutrient intake (women)	22.461	0.372	4 758	4 656	1.589	0.017	21.730	23.192
Physically inactive or minimally active (men)	0.765	0.010	2 840	2 809	1.011	0.013	0.746	0.785
Physically inactive or minimally active (women)	0.860	0.007	4 373	4 162	1.055	0.008	0.847	0.874
Total mets (men)	2 134.290	86.953	2 840	2 809	1.089	0.041	1 963.504	2 305.077
Total mets (women)	1 319.466	56.862	4 373	4 162	1.060	0.043	1 207.788	1 431.143

Table B2 Sampling errors: Urban sample, 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	1.000	0.000	4 095	4 678	na	0.000	1.000	1.000
No education	0.037	0.005	4 095	4 678	1.628	0.130	0.027	0.047
With secondary education or higher	0.828	0.009	4 095	4 678	1.483	0.011	0.810	0.845
Never married (in union)	0.514	0.011	4 095	4 678	1.349	0.020	0.493	0.535
Currently married (in union)	0.396	0.010	4 095	4 678	1.351	0.026	0.375	0.417
Had first sex before age 18	0.407	0.012	3 348	3 859	1.383	0.029	0.383	0.430
Married before age 20	0.190	0.010	3 348	3 859	1.546	0.055	0.169	0.211
Children ever born	1.583	0.035	4 095	4 678	1.355	0.022	1.514	1.653
Children surviving	1.500	0.033	4 095	4 678	1.381	0.022	1.433	1.567
Children ever born to women 40-49	3.041	0.089	928	1 054	1.461	0.029	2.864	3.219
Knowing any contraceptive method	0.963	0.006	1 962	2 299	1.366	0.006	0.951	0.974
Knowing any modern contraceptive method	0.963	0.006	1 962	2 299	1.366	0.006	0.951	0.974
Ever used any contraceptive method	0.862	0.010	1 962	2 299	1.236	0.011	0.843	0.881
Currently using any contraceptive method	0.658	0.012	1 962	2 299	1.153	0.019	0.634	0.683
Currently using a modern method	0.658	0.012	1 962	2 299	1.153	0.019	0.634	0.683
Currently using pill	0.130	0.010	1 962	2 299	1.306	0.076	0.110	0.150
Currently using 2 monthly injectables	0.130	0.011	1 962	2 299	1.454	0.085	0.108	0.153
Currently using 3 monthly injectables	0.180	0.011	1 962	2 299	1.228	0.059	0.158	0.201
Currently using female sterilization	0.120	0.010	1 962	2 299	1.397	0.085	0.100	0.141
Obtained method from public sector source	0.781	0.017	2 085	2 427	1.925	0.022	0.746	0.816
Want no more children	0.614	0.019	1 728	1 852	1.645	0.031	0.576	0.653
Want to delay birth at least 2 years	0.071	0.007	1 728	1 852	1.177	0.102	0.056	0.085
Ideal number of children	2.346	0.028	4 019	4 534	1.458	0.012	2.290	2.402
Mothers received tetanus injection for last birth	0.380	0.022	1 081	1 219	1.500	0.059	0.335	0.424
Mothers received medical care at delivery	0.944	0.009	1 226	1 383	1.211	0.009	0.927	0.962
Child had diarrhea in the last 2 weeks	0.075	0.010	1 177	1 322	1.234	0.129	0.056	0.095
Treated with ORS packets	0.411	0.065	119	99	1.221	0.159	0.280	0.541
Consulted medical personnel	0.603	0.057	119	99	1.073	0.095	0.488	0.717
Child having health card, seen	0.665	0.043	240	258	1.330	0.065	0.578	0.751
Child received BCG vaccination	0.781	0.039	240	258	1.355	0.050	0.703	0.858
Child received DPT vaccination (3 doses)	0.625	0.045	240	258	1.382	0.073	0.534	0.716
Child received polio vaccination (3 doses)	0.597	0.046	240	258	1.377	0.077	0.505	0.689
Child received measles vaccination	0.588	0.046	240	258	1.378	0.079	0.496	0.681
Child fully immunized	0.477	0.048	240	258	1.435	0.102	0.380	0.573
Had two or more sexual partners in last 12 months	0.034	0.004	2 815	3 299	1.257	0.126	0.026	0.043
Had higher risk sex in the last 12 months	0.571	0.014	2 821	3 305	1.516	0.025	0.542	0.599
Condom use at last higher risk sex-all	0.494	0.016	1 392	1 886	1.213	0.033	0.462	0.527
Condom use at last higher risk sex-youth	0.583	0.028	622	810	1.420	0.048	0.527	0.639
Abstinence among youth (never had sex)	0.402	0.020	1 249	1 428	1.427	0.049	0.362	0.442
Sexual activity in last 12 months	0.502	0.020	1 249	1 428	1.444	0.041	0.461	0.543
Had HIV test & received results in last 12 months	0.100	0.007	4 095	4 678	1.528	0.071	0.086	0.115
Accepting attitudes towards people with HIV	0.417	0.012	3 937	4 450	1.536	0.029	0.393	0.441
Total fertility rate (last 3 years)	2.067	0.116	na	13 244	1.569	0.056	1.835	2.299
Neonatal mortality (last 10 years)	20.470	4.413	2 613	2 993	1.427	0.216	11.644	29.296
Post-neonatal mortality (last 10 years)	20.891	5.261	2 615	2 996	1.349	0.252	10.369	31.413
Infant mortality (last 10 years)	41.361	6.784	2 615	2 996	1.389	0.164	27.793	54.930
Child mortality (last 10 years)	10.433	2.377	2 615	2 995	1.183	0.228	5.678	15.187
Under-five mortality (last 10 years)	51.363	7.395	2 617	2 998	1.430	0.144	36.572	66.153
MEN QUESTIONNAIRE								
Urban residence	1.000	0.000	1 874	2 151	na	0.000	1.000	1.000
No education	0.040	0.007	1 874	2 151	1.443	0.164	0.027	0.053
Secondary education or higher	0.816	0.013	1 874	2 151	1.497	0.016	0.789	0.842
Never married (in union)	0.532	0.018	1 874	2 151	1.574	0.034	0.495	0.568
Currently married (in union)	0.418	0.018	1 874	2 151	1.542	0.042	0.383	0.453
Had sex before 18	0.485	0.018	1 555	1 803	1.403	0.037	0.450	0.521
Had two or more sexual partners in last 12 months	0.199	0.016	1 304	1 533	1.467	0.081	0.167	0.232
Had higher risk sex in the last 12 months	0.632	0.019	1 307	1 537	1.439	0.030	0.593	0.670
Condom use at last higher risk sex-all	0.716	0.020	793	971	1.245	0.028	0.676	0.756
Condom use at last higher risk sex-youth	0.749	0.033	346	412	1.417	0.044	0.683	0.815
Abstinence among youth (never had sex)	0.332	0.025	594	669	1.285	0.075	0.282	0.381
Sexual activity in last 12 months	0.583	0.025	594	669	1.215	0.042	0.534	0.632
Ever had HIV test and received results	0.241	0.015	1 653	1 919	1.419	0.062	0.212	0.271
Circumcision	0.429	0.021	1 873	2 148	1.861	0.048	0.389	0.469

	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value (R)	Standard error (SE)
ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	124.740	0.631	1 906	2 230	1.178	0.005	123.500	125.980
Systolic Blood Pressure (women)	121.323	0.548	2 610	2 886	1.083	0.005	120.246	122.400
Diastolic Blood Pressure (men)	74.062	0.497	1 912	2 240	1.249	0.007	73.085	75.038
Diastolic Blood Pressure (women)	75.436	0.321	2 624	2 912	0.980	0.004	74.804	76.068
Pulse (men)	72.691	0.447	1 910	2 238	1.229	0.006	71.813	73.570
Pulse (women)	77.131	0.344	2 621	2 906	1.150	0.004	76.455	77.806
Hypertensive (men)	0.105	0.013	1 947	2 289	1.402	0.120	0.080	0.130
Hypertensive (women)	0.154	0.009	2 694	2 995	0.965	0.056	0.137	0.170
Airflow Limitation (men)	0.078	0.008	1 947	2 289	1.024	0.098	0.063	0.093
Airflow Limitation (women)	0.087	0.007	2 694	2 995	0.989	0.076	0.074	0.100
Chronic Bronchitis (men)	0.025	0.004	1 947	2 289	0.991	0.178	0.016	0.034
Chronic Bronchitis (women)	0.016	0.003	2 694	2 995	1.055	0.184	0.010	0.022
Abnormal Peak Flow (men)	0.094	0.009	1 947	2 289	1.060	0.097	0.076	0.112
Abnormal Peak Flow (women)	0.138	0.011	2 694	2 995	1.205	0.077	0.117	0.159
Currently smoking (occasionally of daily) (men)	0.387	0.017	1 947	2 289	1.219	0.044	0.353	0.420
Currently smoking (occasionally of daily) (women)	0.127	0.011	2 694	2 995	1.339	0.084	0.106	0.148
Abstainers - alcohol intake in last 12 months (men)	0.565	0.019	1 947	2 289	1.348	0.034	0.527	0.603
Abstainers - alcohol intake in last 12 months (women)	0.805	0.014	2 694	2 995	1.448	0.018	0.777	0.833
Responsible - alcohol intake in last 12 months (men)	0.352	0.018	1 947	2 289	1.334	0.052	0.316	0.388
Responsible - alcohol intake in last 12 months (women)	0.159	0.012	2 694	2 995	1.303	0.074	0.136	0.183
Hazardous - alcohol intake in last 12 months (men)	0.029	0.005	1 947	2 289	1.054	0.179	0.019	0.040
Hazardous - alcohol intake in last 12 months (women)	0.012	0.003	2 694	2 995	1.080	0.217	0.007	0.018
Harmful - alcohol intake in last 12 months (men)	0.027	0.005	1 947	2 289	1.003	0.177	0.017	0.036
Harmful - alcohol intake in last 12 months (women)	0.011	0.002	2 694	2 995	1.012	0.224	0.006	0.015
Adequate nutrient (men)	0.357	0.019	1 917	2 252	1.317	0.053	0.319	0.394
Adequate nutrient (women)	0.400	0.018	2 670	2 963	1.461	0.046	0.364	0.436
Weight (men)	67.143	0.585	1 868	2 171	1.320	0.009	65.992	68.294
Weight (women)	63.033	0.426	1 332	1 085	1.140	0.007	62.194	63.871
Height (men)	1.689	0.003	1 881	2 189	1.274	0.002	1.682	1.695
Height (women)	1.586	0.002	2 597	2 864	1.196	0.001	1.581	1.591
Waist/hip ratio (men)	0.943	0.032	1 866	2 166	1.276	0.034	0.880	1.006
Waist/hip ratio (women)	1.048	0.043	2 573	2 825	1.314	0.041	0.964	1.133
Hip circumference (men)	92.593	0.643	1 866	2 166	1.179	0.007	91.327	93.858
Hip circumference (women)	101.537	0.862	2 576	2 832	1.258	0.008	99.842	103.232
Body Mass Index (men)	23.653	0.215	1 881	2 189	1.335	0.009	23.231	24.075
Body Mass Index (women)	27.577	0.222	2 597	2 864	1.195	0.008	27.141	28.014
Overweight (men)	0.203	0.012	1 881	2 189	1.001	0.059	0.180	0.227
Overweight (women)	0.271	0.012	2 597	2 864	1.041	0.043	0.248	0.294
Obesity (men)	0.106	0.011	1 881	2 189	1.256	0.109	0.083	0.128
Obesity (women)	0.310	0.012	2 597	2 864	1.050	0.040	0.286	0.334
Nutrient intake (men)	21.708	0.520	1 917	2 252	1.446	0.024	20.685	22.731
Nutrient intake (women)	20.415	0.492	2 670	2 963	1.628	0.024	19.447	21.383
Physically inactive (men)	0.722	0.015	1 210	995	1.093	0.021	0.692	0.752
Physically inactive (women)	0.830	0.010	1 929	1 558	1.122	0.012	0.810	0.851
Total mets (men)	2 407.483	135.664	1 210	995	1.141	0.056	2 140.234	2 674.733
Total mets (women)	1 526.061	90.259	1929	1 558	1.193	0.059	1 348.272	1 703.850

Table B4 Sampling errors: Rural 2003

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.000	0.000	2 946	2 363	na	na	0.000	0.000
No education	0.055	0.005	2 946	2 363	1.086	0.083	0.046	0.064
With secondary education or higher	0.721	0.013	2 946	2 363	1.542	0.018	0.696	0.747
Never married (in union)	0.599	0.011	2 946	2 363	1.204	0.018	0.577	0.621
Currently married (in union)	0.341	0.010	2 946	2 363	1.152	0.030	0.321	0.361
Had first sex before age 18	0.442	0.014	2 243	1 787	1.318	0.031	0.415	0.470
Married before age 20	0.221	0.011	2 243	1 787	1.237	0.049	0.200	0.243
Children ever born	1.663	0.038	2 946	2 363	1.054	0.023	1.588	1.739
Children surviving	1.565	0.034	2 946	2 363	1.029	0.022	1.497	1.634
Children ever born to women 40-49	3.857	0.113	544	426	1.171	0.029	3.632	4.082
Knowing any contraceptive method	0.967	0.006	1 221	957	1.136	0.006	0.955	0.979
Knowing any modern contraceptive method	0.967	0.006	1 221	957	1.136	0.006	0.955	0.979
Ever used any contraceptive method	0.831	0.013	1 221	957	1.208	0.016	0.805	0.857
Currently using any contraceptive method	0.618	0.016	1 221	957	1.157	0.026	0.586	0.651
Currently using a modern method	0.618	0.016	1 221	957	1.157	0.026	0.586	0.651
Currently using pill	0.103	0.010	1 221	957	1.174	0.099	0.083	0.124
Currently using 2 monthly injectables	0.161	0.012	1 221	957	1.101	0.072	0.138	0.184
Currently using 3 monthly injectables	0.217	0.015	1 221	957	1.261	0.069	0.187	0.247
Currently using female sterilization	0.055	0.008	1 221	957	1.265	0.151	0.038	0.071
Obtained method from public sector source	0.925	0.009	1 371	1 100	1.231	0.009	0.908	0.943
Want no more children	0.591	0.016	1 042	806	1.074	0.028	0.558	0.624
Want to delay birth at least 2 years	0.113	0.010	1 042	806	0.994	0.087	0.093	0.132
Ideal number of children	2.752	0.032	2 905	2 324	1.233	0.012	2.688	2.816
Mothers received tetanus injection for last birth	0.584	0.017	872	640	0.968	0.029	0.550	0.617
Mothers received medical care at delivery	0.852	0.022	995	736	1.545	0.026	0.807	0.896
Child had diarrhea in the last 2 weeks	0.087	0.010	944	694	1.019	0.114	0.067	0.106
Treated with ORS packets	0.320	0.061	85	60	1.126	0.191	0.198	0.442
Consulted medical personnel	0.482	0.062	85	60	1.061	0.129	0.357	0.606
Child having health card, seen	0.791	0.031	209	149	1.051	0.040	0.728	0.853
Child received BCG vaccination	0.865	0.028	209	149	1.112	0.032	0.810	0.921
Child received DPT vaccination (3 doses)	0.716	0.035	209	149	1.026	0.048	0.647	0.785
Child received polio vaccination (3 doses)	0.723	0.033	209	149	0.995	0.046	0.657	0.790
Child received measles vaccination	0.675	0.038	209	149	1.081	0.056	0.600	0.751
Child fully immunized	0.600	0.041	209	149	1.117	0.068	0.518	0.681
Had two or more sexual partners in last 12 months	0.041	0.006	2 000	1 592	1.369	0.148	0.029	0.053
Had higher risk sex in the last 12 months	0.587	0.014	2 006	1 598	1.255	0.024	0.559	0.614
Condom use at last higher risk sex-all	0.396	0.019	1 147	937	1.292	0.047	0.359	0.433
Condom use at last higher risk sex-youth	0.397	0.024	573	450	1.182	0.061	0.349	0.445
Abstinence among youth (never had sex)	0.438	0.016	1 092	891	1.061	0.036	0.406	0.470
Sexual activity in last 12 months	0.463	0.015	1 092	891	1.025	0.033	0.432	0.494
Had HIV test & received results in last 12 months	0.054	0.006	2 946	2 363	1.333	0.103	0.043	0.065
Accepting attitudes towards people with HIV	0.313	0.012	2 648	2 130	1.307	0.038	0.289	0.337
Total fertility rate (last 3 years)	2.154	0.148	na	6 557	1.517	0.069	1.859	2.449
Neonatal mortality (last 10 years)	18.448	3.472	2 143	1 657	1.071	0.188	11.503	25.393
Post-neonatal mortality (last 10 years)	26.406	5.705	2 143	1 657	1.433	0.216	14.996	37.817
Infant mortality (last 10 years)	44.854	6.483	2 143	1 657	1.245	0.145	31.889	57.820
Child mortality (last 10 years)	12.291	2.382	2 149	1 661	0.943	0.194	7.526	17.055
Under-five mortality (last 10 years)	56.594	7.292	2 149	1 661	1.256	0.129	42.011	71.177
MEN QUESTIONNAIRE								
Urban residence	0.000	0.000	1244	967	na	na	0.000	0.000
No education	0.058	0.007	1244	967	1.108	0.127	0.043	0.073
Secondary education or higher	0.702	0.016	1244	967	1.229	0.023	0.670	0.734
Never married (in union)	0.615	0.016	1244	967	1.129	0.025	0.583	0.646
Currently married (in union)	0.327	0.015	1244	967	1.150	0.047	0.296	0.357
Had sex before 18	0.373	0.016	914	713	0.996	0.043	0.341	0.404
Had two or more sexual partners in last 12 months	0.198	0.018	765	592	1.281	0.093	0.161	0.235
Had higher risk sex in the last 12 months	0.711	0.019	769	596	1.167	0.027	0.672	0.749
Condom use at last higher risk sex-all	0.628	0.028	533	423	1.312	0.044	0.573	0.683
Condom use at last higher risk sex-youth	0.645	0.038	265	198	1.285	0.059	0.569	0.720
Abstinence among youth (never had sex)	0.467	0.025	503	384	1.136	0.054	0.417	0.518
Sexual activity in last 12 months	0.457	0.025	503	384	1.142	0.056	0.406	0.508
Ever had HIV test and received results	0.112	0.013	1107	861	1.353	0.115	0.086	0.138
Circumcision	0.488	0.020	1242	965	1.409	0.041	0.449	0.527

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value	Standard error (SE)
	(R)						(R)	
ADULTS QUESTIONNAIRE								
Systolic Blood Pressure (men)	120.631	0.576	1 352	1 104	1.165	0.005	119.497	121.765
Systolic Blood Pressure (women)	121.348	0.534	2 036	1 649	1.067	0.004	120.297	122.399
Diastolic Blood Pressure (men)	71.367	0.447	1 355	1 107	1.214	0.006	70.486	72.247
Diastolic Blood Pressure (women)	73.892	0.325	2 043	1 656	1.071	0.004	73.251	74.532
Pulse (men)	70.872	0.423	1 355	1 107	1.189	0.006	70.039	71.705
Pulse (women)	76.537	0.384	2 044	1 657	1.300	0.005	75.781	77.294
Hypertensive (men)	0.051	0.008	1 381	1 133	1.163	0.151	0.036	0.067
Hypertensive (women)	0.103	0.008	2 093	1 697	1.057	0.074	0.088	0.118
Airflow Limitation (men)	0.061	0.008	1 381	1 133	1.068	0.123	0.046	0.076
Airflow Limitation (women)	0.070	0.007	2 093	1 697	1.111	0.095	0.057	0.083
Chronic Bronchitis (men)	0.019	0.005	1 381	1 133	1.149	0.237	0.010	0.029
Chronic Bronchitis (women)	0.026	0.004	2 093	1 697	1.116	0.162	0.018	0.034
Abnormal Peak Flow (men)	0.049	0.006	1 381	1 133	0.986	0.128	0.037	0.062
Abnormal Peak Flow (women)	0.058	0.006	2 093	1 697	1.014	0.095	0.047	0.069
Currently smoking (occasionally of daily) (men)	0.279	0.015	1 381	1 133	1.170	0.056	0.248	0.309
Currently smoking (occasionally of daily) (women)	0.058	0.007	2 093	1 697	1.146	0.121	0.044	0.072
Abstainers - alcohol intake in last 12 months (men)	0.698	0.016	1 381	1 133	1.183	0.023	0.667	0.729
Abstainers - alcohol intake in last 12 months (women)	0.917	0.007	2 093	1 697	1.154	0.008	0.902	0.932
Responsible - alcohol intake in last 12 months (men)	0.224	0.014	1 381	1 133	1.164	0.063	0.197	0.252
Responsible - alcohol intake in last 12 months (women)	0.057	0.006	2 093	1 697	1.173	0.111	0.045	0.069
Hazardous - alcohol intake in last 12 months (men)	0.012	0.003	1 381	1 133	0.970	0.256	0.006	0.018
Hazardous - alcohol intake in last 12 months (women)	0.005	0.002	2 093	1 697	1.040	0.294	0.002	0.008
Harmful - alcohol intake in last 12 months (men)	0.020	0.004	1 381	1 133	1.053	0.187	0.012	0.027
Harmful - alcohol intake in last 12 months (women)	0.011	0.003	2 093	1 697	1.062	0.257	0.005	0.016
Adequate nutrient (men)	0.278	0.016	1 376	1 127	1.122	0.056	0.247	0.309
Adequate nutrient (women)	0.260	0.014	2 088	1 693	1.244	0.053	0.232	0.287
Weight (men)	69.227	0.557	2 597	2 864	1.198	0.008	68.132	70.323
Weight (women)	65.605	0.485	2 001	1 616	1.186	0.007	64.651	66.560
Height (men)	1.668	0.003	1 334	1 086	1.033	0.002	1.663	1.674
Height (women)	1.593	0.003	2 001	1 616	1.242	0.002	1.587	1.598
Waist/hip ratio (men)	0.900	0.024	1 330	1 082	1.151	0.026	0.854	0.947
Waist/hip ratio (women)	0.911	0.027	1 988	1 602	1.271	0.030	0.857	0.964
Hip circumference (men)	88.974	0.534	1 330	1 082	1.114	0.006	87.922	90.027
Hip circumference (women)	98.206	0.617	1 990	1 604	1.270	0.006	96.991	99.421
Body Mass Index (men)	22.651	0.147	1 334	1 086	1.181	0.007	22.361	22.941
Body Mass Index (women)	25.856	0.185	2 001	1 616	1.214	0.007	25.492	26.220
Overweight (men)	0.224	0.015	1 334	1 086	1.141	0.066	0.195	0.253
Overweight (women)	0.282	0.013	2 001	1 616	1.162	0.046	0.256	0.307
Obesity (men)	0.051	0.007	1 334	1 086	1.127	0.145	0.037	0.066
Obesity (women)	0.210	0.012	2 001	1 616	1.189	0.056	0.187	0.233
Nutrient intake (men)	25.376	0.484	1 376	1 127	1.182	0.019	24.424	26.329
Nutrient intake (women)	26.043	0.430	2 088	1 693	1.308	0.017	25.196	26.890
Physically inactive (men)	0.789	0.013	1 630	1 814	0.976	0.016	0.765	0.814
Physically inactive (women)	0.878	0.009	2 444	2 604	1.022	0.010	0.861	0.896
Total mets (men)	1 984.429	111.532	1 630	1 814	1.064	0.056	1 765.034	2 203.825
Total mets (women)	1 195.881	72.872	2 444	2 604	1.001	0.061	1 052.553	1 339.209

Table B5 Sampling errors: Western Cape 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.897	0.017	715	892	1.521	0.019	0.862	0.932
No education	0.017	0.006	715	892	1.144	0.325	0.006	0.028
With secondary education or higher	0.836	0.015	715	892	1.075	0.018	0.806	0.866
Never married (in union)	0.466	0.021	715	892	1.099	0.044	0.425	0.507
Currently married (in union)	0.453	0.018	715	892	0.957	0.039	0.418	0.489
Had first sex before age 18	0.377	0.030	586	729	1.502	0.080	0.317	0.437
Married before age 20	0.154	0.020	586	729	1.323	0.128	0.114	0.193
Children ever born	1.703	0.065	715	892	1.026	0.038	1.572	1.833
Children surviving	1.625	0.058	715	892	0.961	0.036	1.510	1.741
Children ever born to women 40-49	3.042	0.158	161	196	1.164	0.052	2.725	3.358
Knowing any contraceptive method	0.974	0.007	335	413	0.793	0.007	0.960	0.988
Knowing any modern contraceptive method	0.974	0.007	335	413	0.793	0.007	0.960	0.988
Ever used any contraceptive method	0.842	0.018	335	413	0.910	0.022	0.806	0.879
Currently using any contraceptive method	0.634	0.028	335	413	1.055	0.044	0.578	0.689
Currently using a modern method	0.634	0.028	335	413	1.055	0.044	0.578	0.689
Currently using pill	0.135	0.023	335	413	1.251	0.174	0.088	0.181
Currently using 2 monthly injectables	0.098	0.019	335	413	1.199	0.200	0.059	0.137
Currently using 3 monthly injectables	0.144	0.019	335	413	0.965	0.129	0.107	0.181
Currently using female sterilization	0.216	0.022	335	413	0.997	0.104	0.171	0.261
Obtained method from public sector source	0.836	0.028	359	446	1.424	0.033	0.781	0.892
Want no more children	0.634	0.027	330	404	1.010	0.042	0.580	0.688
Want to delay birth at least 2 years	0.067	0.014	330	404	1.024	0.211	0.038	0.095
Ideal number of children	2.193	0.052	700	872	1.155	0.024	2.088	2.298
Mothers received tetanus injection for last birth	0.118	0.023	215	275	1.062	0.196	0.072	0.164
Mothers received medical care at delivery	0.910	0.039	253	323	1.341	0.043	0.831	0.988
Child had diarrhea in the last 2 weeks	0.132	0.027	240	306	1.212	0.205	0.078	0.186
Treated with ORS packets	0.378	0.113	31	40	1.304	0.300	0.151	0.604
Consulted medical personnel	0.675	0.072	31	40	0.859	0.106	0.532	0.819
Child having health card, seen	0.522	0.081	46	60	1.087	0.155	0.360	0.683
Child received BCG vaccination	0.784	0.058	46	60	0.961	0.074	0.668	0.899
Child received DPT vaccination (3 doses)	0.613	0.075	46	60	1.045	0.122	0.463	0.763
Child received polio vaccination (3 doses)	0.492	0.085	46	60	1.141	0.172	0.323	0.662
Child received measles vaccination	0.571	0.084	46	60	1.136	0.147	0.403	0.740
Child fully immunized	0.430	0.091	46	60	1.244	0.211	0.248	0.612
Had two or more sexual partners in last 12 months	0.028	0.007	480	598	0.893	0.240	0.015	0.042
Had higher risk sex in the last 12 months	0.471	0.034	481	600	1.485	0.072	0.404	0.539
Condom use at last higher risk sex-all	0.383	0.041	221	283	1.238	0.106	0.302	0.464
Condom use at last higher risk sex-youth	0.473	0.061	115	149	1.315	0.130	0.350	0.596
Abstinence among youth (never had sex)	0.406	0.042	228	289	1.274	0.102	0.323	0.489
Sexual activity in last 12 months	0.465	0.046	228	289	1.376	0.098	0.374	0.556
Had HIV test & received results in last 12 months	0.167	0.015	715	892	1.044	0.087	0.138	0.196
Accepting attitudes towards people with HIV	0.334	0.022	675	841	1.234	0.067	0.290	0.379
Total fertility rate (last 3 years)	2.611	0.244	na	2 535	1.058	0.093	2.123	3.098
Neonatal mortality (last 10 years)	5.299	3.192	514	648	1.067	0.602	0.000	11.683
Post-neonatal mortality (last 10 years)	39.805	14.494	514	648	1.190	0.364	10.817	68.794
Infant mortality (last 10 years)	45.104	14.583	514	648	1.162	0.323	15.939	74.269
Child mortality (last 10 years)	13.740	4.799	515	649	0.932	0.349	4.141	23.339
Under-five mortality (last 10 years)	58.224	15.960	515	649	1.197	0.274	26.304	90.145
MEN QUESTIONNAIRE								
Urban residence	0.929	0.012	237	379	0.712	0.013	0.905	0.953
No education	0.021	0.010	237	379	1.049	0.462	0.002	0.041
Secondary education or higher	0.787	0.034	237	379	1.262	0.043	0.719	0.854
Never married (in union)	0.403	0.024	237	379	0.758	0.060	0.354	0.451
Currently married (in union)	0.546	0.026	237	379	0.811	0.048	0.493	0.599
Had sex before 18	0.543	0.041	205	330	1.178	0.076	0.461	0.625
Had two or more sexual partners in last 12 months	0.177	0.043	173	278	1.470	0.241	0.092	0.263
Had higher risk sex in the last 12 months	0.516	0.035	173	278	0.930	0.069	0.445	0.587
Condom use at last higher risk sex-all	0.631	0.049	85	144	0.938	0.078	0.532	0.730
Condom use at last higher risk sex-youth	0.765	0.081	35	59	1.114	0.106	0.602	0.927
Abstinence among youth (never had sex)	0.356	0.057	57	90	0.889	0.160	0.242	0.470
Sexual activity in last 12 months	0.577	0.072	57	90	1.090	0.125	0.433	0.721
Ever had HIV test and received results	0.404	0.035	216	344	1.043	0.086	0.334	0.474
Circumcision	0.675	0.041	230	228	1.345	0.060	0.593	0.756



Variable	Number of cases						Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Variable	Value (R)
ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	124.954	1.403	236	332	1.186	0.011	122.142	127.765
Systolic Blood Pressure (women)	120.584	1.328	394	564	1.219	0.011	117.925	123.242
Diastolic Blood Pressure (men)	74.773	1.188	237	333	1.290	0.016	72.393	77.152
Diastolic Blood Pressure (women)	75.771	0.633	395	565	0.978	0.008	74.504	77.038
Pulse (men)	71.075	0.874	237	333	1.080	0.012	69.324	72.827
Pulse (women)	76.398	0.734	395	565	1.230	0.010	74.927	77.868
Hypertensive (men)	0.118	0.021	243	337	0.955	0.177	0.076	0.160
Hypertensive (women)	0.144	0.020	405	573	1.002	0.136	0.105	0.184
Airflow Limitation (men)	0.128	0.024	243	337	1.038	0.186	0.080	0.176
Airflow Limitation (women)	0.179	0.021	405	573	1.257	0.118	0.137	0.221
Chronic Bronchitis (men)	0.142	0.023	243	337	1.538	0.162	0.096	0.188
Chronic Bronchitis (women)	0.125	0.018	405	573	2.234	0.146	0.088	0.162
Abnormal Peak Flow (men)	0.053	0.015	243	337	0.706	0.282	0.023	0.083
Abnormal Peak Flow (women)	0.029	0.010	405	573	0.578	0.363	0.008	0.049
Currently smoking (occasionally of daily) (men)	0.498	0.046	243	337	1.378	0.092	0.406	0.589
Currently smoking (occasionally of daily) (women)	0.287	0.033	405	573	1.411	0.114	0.221	0.352
Abstainers - alcohol intake in last 12 months (men)	0.449	0.044	243	337	1.325	0.097	0.362	0.537
Abstainers - alcohol intake in last 12 months (women)	0.712	0.025	405	573	1.112	0.036	0.661	0.763
Responsible - alcohol intake in last 12 months (men)	0.482	0.043	243	337	1.296	0.089	0.396	0.567
Responsible - alcohol intake in last 12 months (women)	0.229	0.024	405	573	1.135	0.105	0.181	0.277
Hazardous - alcohol intake in last 12 months (men)	0.028	0.010	243	337	0.969	0.362	0.008	0.049
Hazardous - alcohol intake in last 12 months (women)	0.019	0.009	405	573	1.321	0.464	0.001	0.037
Harmful - alcohol intake in last 12 months (men)	0.020	0.009	243	337	0.977	0.434	0.003	0.038
Harmful - alcohol intake in last 12 months (women)	0.016	0.007	405	573	1.066	0.439	0.002	0.029
Adequate nutrient (men)	0.197	0.030	235	328	1.129	0.154	0.136	0.258
Adequate nutrient (women)	0.300	0.031	398	564	1.323	0.104	0.238	0.362
Weight (men)	67.994	1.242	236	330	1.181	0.018	65.508	70.481
Weight (women)	67.398	1.123	391	559	1.144	0.017	65.151	69.646
Height (men)	1.678	0.007	237	331	1.226	0.004	1.664	1.691
Height (women)	1.573	0.004	391	559	1.096	0.003	1.565	1.582
Waist/hip ratio (men)	0.955	0.091	232	326	1.661	0.095	0.774	1.137
Waist/hip ratio (women)	1.105	0.110	382	548	1.499	0.100	0.885	1.325
Hip circumference (men)	92.245	1.310	232	326	1.347	0.014	89.622	94.869
Hip circumference (women)	100.900	2.172	383	549	1.294	0.022	96.553	105.246
Body Mass Index (men)	24.095	0.383	237	331	1.115	0.016	23.328	24.861
Body Mass Index (women)	27.254	0.416	391	559	1.084	0.015	26.421	28.087
Overweight (men)	0.236	0.029	237	331	1.027	0.123	0.178	0.294
Overweight (women)	0.259	0.025	391	559	1.101	0.096	0.209	0.309
Obesity (men)	0.145	0.023	237	331	0.991	0.157	0.099	0.190
Obesity (women)	0.303	0.025	391	559	1.071	0.084	0.252	0.354
Nutrient intake (men)	26.827	0.847	235	328	1.270	0.032	25.131	28.523
Nutrient intake (women)	23.381	0.791	398	564	1.395	0.034	21.798	24.963
Physically inactive (men)	0.787	0.036	182	256	1.163	0.046	0.715	0.859
Physically inactive (women)	0.923	0.017	339	483	1.146	0.018	0.890	0.957
Total mets (men)	2 299.822	310.371	182	256	1.077	0.135	1 678.074	2 921.570
Total mets (women)	950.033	136.955	339	483	1.058	0.144	675.887	1 224.179

Table B6 Sampling errors: Eastern Cape 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.502	0.033	505	804	1.489	0.066	0.436	0.568
No education	0.031	0.009	505	804	1.162	0.291	0.013	0.048
With secondary education or higher	0.749	0.030	505	804	1.557	0.040	0.689	0.810
Never married (in union)	0.588	0.027	505	804	1.241	0.046	0.533	0.642
Currently married (in union)	0.294	0.028	505	804	1.365	0.094	0.238	0.349
Had first sex before age 18	0.493	0.027	382	616	1.056	0.055	0.439	0.547
Married before age 20	0.196	0.023	382	616	1.124	0.117	0.150	0.242
Children ever born	1.748	0.075	505	804	0.851	0.043	1.597	1.899
Children surviving	1.601	0.071	505	804	0.879	0.044	1.459	1.742
Children ever born to women 40-49	3.909	0.160	113	182	0.768	0.041	3.589	4.229
Knowing any contraceptive method	0.972	0.011	186	305	0.890	0.011	0.951	0.994
Knowing any modern contraceptive method	0.972	0.011	186	305	0.890	0.011	0.951	0.994
Ever used any contraceptive method	0.891	0.025	186	305	1.082	0.028	0.841	0.940
Currently using any contraceptive method	0.624	0.043	186	305	1.197	0.068	0.539	0.709
Currently using a modern method	0.624	0.043	186	305	1.197	0.068	0.539	0.709
Currently using pill	0.085	0.024	186	305	1.149	0.278	0.038	0.132
Currently using 2 monthly injectables	0.208	0.043	186	305	1.427	0.205	0.123	0.293
Currently using 3 monthly injectables	0.183	0.027	186	305	0.960	0.149	0.129	0.238
Currently using female sterilization	0.069	0.022	186	305	1.205	0.326	0.024	0.114
Obtained method from public sector source	0.881	0.036	236	393	1.680	0.040	0.810	0.952
Want no more children	0.648	0.041	151	236	1.054	0.063	0.566	0.730
Want to delay birth at least 2 years	0.072	0.020	151	236	0.940	0.275	0.032	0.112
Ideal number of children	2.426	0.090	487	776	1.412	0.037	2.246	2.606
Mothers received tetanus injection for last birth	0.634	0.045	148	225	1.108	0.071	0.544	0.724
Mothers received medical care at delivery	0.835	0.043	178	266	1.356	0.051	0.750	0.921
Child had diarrhea in the last 2 weeks	0.088	0.021	165	246	0.936	0.241	0.046	0.130
Treated with ORS packets	0.610	0.142	15	22	1.071	0.232	0.327	0.894
Consulted medical personnel	0.775	0.123	15	22	1.089	0.159	0.529	1.000
Child having health card, seen	0.744	0.093	31	47	1.160	0.125	0.558	0.931
Child received BCG vaccination	0.796	0.089	31	47	1.193	0.111	0.619	0.973
Child received DPT vaccination (3 doses)	0.641	0.087	31	47	0.983	0.136	0.467	0.815
Child received polio vaccination (3 doses)	0.617	0.121	31	47	1.352	0.197	0.374	0.859
Child received measles vaccination	0.693	0.088	31	47	1.031	0.127	0.517	0.868
Child fully immunized	0.565	0.123	31	47	1.349	0.218	0.318	0.811
Had two or more sexual partners in last 12 months	0.066	0.012	329	521	0.908	0.189	0.041	0.090
Had higher risk sex in the last 12 months	0.617	0.028	329	521	1.032	0.045	0.562	0.673
Condom use at last higher risk sex-all	0.405	0.048	197	321	1.369	0.119	0.309	0.501
Condom use at last higher risk sex-youth	0.404	0.054	104	166	1.125	0.135	0.295	0.513
Abstinence among youth (never had sex)	0.320	0.022	186	290	0.653	0.070	0.276	0.365
Sexual activity in last 12 months	0.552	0.035	186	290	0.954	0.063	0.483	0.622
Had HIV test & received results in last 12 months	0.103	0.025	505	804	1.815	0.239	0.054	0.152
Accepting attitudes towards people with HIV	0.492	0.028	470	754	1.192	0.056	0.437	0.547
Total fertility rate (last 3 years)	2.292	0.249	na	2251	1.096	0.109	1.793	2.790
Neonatal mortality (last 10 years)	12.163	5.946	393	594	1.060	0.489	0.272	24.055
Post-neonatal mortality (last 10 years)	55.054	21.139	393	594	1.301	0.384	12.776	97.331
Infant mortality (last 10 years)	67.217	21.745	393	594	1.234	0.323	23.728	110.706
Child mortality (last 10 years)	12.025	5.173	395	596	0.896	0.430	1.679	22.371
Under-five mortality (last 10 years)	78.434	21.669	395	596	1.155	0.276	35.095	121.772
MEN QUESTIONNAIRE								
Urban residence	0.550	0.034	192	313	0.933	0.061	0.483	0.617
No education	0.039	0.012	192	313	0.852	0.305	0.015	0.063
Secondary education or higher	0.741	0.036	192	313	1.147	0.049	0.668	0.814
Never married (in union)	0.700	0.046	192	313	1.385	0.066	0.608	0.791
Currently married (in union)	0.250	0.038	192	313	1.216	0.152	0.174	0.327
Had sex before 18	0.446	0.064	144	240	1.540	0.144	0.318	0.574
Had two or more sexual partners in last 12 months	0.249	0.049	115	196	1.201	0.195	0.152	0.347
Had higher risk sex in the last 12 months	0.811	0.033	116	198	0.917	0.041	0.744	0.878
Condom use at last higher risk sex-all	0.721	0.049	91	161	1.030	0.068	0.624	0.819
Condom use at last higher risk sex-youth	0.675	0.065	43	76	0.893	0.096	0.545	0.804
Abstinence among youth (never had sex)	0.396	0.084	81	132	1.536	0.212	0.228	0.564
Sexual activity in last 12 months	0.567	0.082	81	132	1.472	0.144	0.404	0.730
Ever had HIV test and received results	0.196	0.055	165	268	1.775	0.281	0.086	0.306
Circumcision	0.438	0.056	237	379	1.750	0.128	0.325	0.550

Variable	Number of cases						Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Variable	Value (R)
ADULTS QUESTIONNAIRE								
Systolic Blood Pressure (men)	126.163	1.369	246	359	1.042	0.011	123.419	128.907
Systolic Blood Pressure (women)	123.793	0.957	382	544	0.887	0.008	121.877	125.709
Diastolic Blood Pressure (men)	73.037	0.975	248	362	1.182	0.013	71.082	74.992
Diastolic Blood Pressure (women)	75.434	0.605	383	548	0.879	0.008	74.224	76.644
Pulse (men)	72.093	0.753	247	360	0.908	0.010	70.584	73.601
Pulse (women)	75.935	0.694	384	549	1.083	0.009	74.547	77.324
Hypertensive (men)	0.174	0.026	251	367	1.482	0.147	0.123	0.226
Hypertensive (women)	0.177	0.019	393	562	1.000	0.105	0.140	0.214
Airflow Limitation (men)	0.068	0.021	251	367	1.084	0.308	0.026	0.109
Airflow Limitation (women)	0.139	0.018	393	562	1.050	0.128	0.104	0.175
Chronic Bronchitis (men)	0.098	0.021	251	367	1.373	0.214	0.056	0.139
Chronic Bronchitis (women)	0.112	0.014	393	562	1.410	0.123	0.085	0.140
Abnormal Peak Flow (men)	0.055	0.017	251	367	0.629	0.300	0.022	0.088
Abnormal Peak Flow (women)	0.040	0.011	393	562	0.508	0.261	0.019	0.061
Currently smoking (occasionally of daily) (men)	0.439	0.039	251	367	1.159	0.088	0.361	0.516
Currently smoking (occasionally of daily) (women)	0.089	0.021	393	562	1.296	0.235	0.047	0.131
Abstainers - alcohol intake in last 12 months (men)	0.575	0.045	251	367	1.346	0.078	0.486	0.665
Abstainers - alcohol intake in last 12 months (women)	0.895	0.017	393	562	1.009	0.019	0.860	0.930
Responsible - alcohol intake in last 12 months (men)	0.351	0.041	251	367	1.267	0.116	0.269	0.432
Responsible - alcohol intake in last 12 months (women)	0.071	0.014	393	562	0.960	0.200	0.042	0.099
Hazardous - alcohol intake in last 12 months (men)	0.012	0.008	251	367	0.944	0.664	0.000	0.027
Hazardous - alcohol intake in last 12 months (women)	0.008	0.005	393	562	0.976	0.596	0.000	0.017
Harmful - alcohol intake in last 12 months (men)	0.036	0.011	251	367	0.850	0.320	0.013	0.059
Harmful - alcohol intake in last 12 months (women)	0.006	0.004	393	562	1.002	0.745	0.000	0.014
Adequate nutrient (men)	0.201	0.040	247	360	1.473	0.200	0.120	0.281
Adequate nutrient (women)	0.172	0.025	392	560	1.178	0.143	0.123	0.222
Weight (men)	64.554	1.433	244	355	1.333	0.022	61.682	67.426
Weight (women)	69.818	1.026	370	527	0.977	0.015	67.765	71.871
Height (men)	1.670	0.009	244	355	1.457	0.005	1.652	1.687
Height (women)	1.581	0.005	370	527	1.243	0.003	1.571	1.591
Waist/hip ratio (men)	0.854	0.007	243	352	1.053	0.008	0.841	0.867
Waist/hip ratio (women)	0.905	0.045	368	525	0.910	0.049	0.815	0.994
Hip circumference (men)	91.345	1.102	243	352	1.333	0.012	89.138	93.553
Hip circumference (women)	102.030	1.188	368	525	1.096	0.012	99.653	104.406
Body Mass Index (men)	23.204	0.672	244	355	1.670	0.029	21.858	24.551
Body Mass Index (women)	27.932	0.439	370	527	1.078	0.016	27.053	28.811
Overweight (men)	0.165	0.027	244	355	1.100	0.164	0.111	0.219
Overweight (women)	0.282	0.021	370	527	0.869	0.075	0.239	0.324
Obesity (men)	0.088	0.033	244	355	1.553	0.370	0.023	0.154
Obesity (women)	0.319	0.030	370	527	1.145	0.094	0.259	0.379
Nutrient intake (men)	28.281	1.349	247	360	1.514	0.048	25.578	30.985
Nutrient intake (women)	29.152	0.866	392	560	1.337	0.030	27.418	30.885
Physically inactive (men)	0.586	0.032	217	320	0.919	0.055	0.521	0.651
Physically inactive (women)	0.844	0.027	331	55	1.296	0.031	0.791	0.897
Total mets (men)	3 645.271	318.908	217	320	1.025	0.087	3 006.166	4 284.376
Total mets (women)	1 561.754	266.919	331	55	1.494	0.171	1 027.651	2 095.857

Table B7 Sampling errors: Northern Cape 2003

Variable	Number of cases					Confidence intervals		
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Value- SE	Value+ 2SE
							(R-2SE)	(R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.788	0.021	777	125	1.436	0.027	0.746	0.830
No education	0.085	0.013	777	125	1.308	0.154	0.058	0.111
With secondary education or higher	0.708	0.022	777	125	1.344	0.031	0.664	0.752
Never married (in union)	0.475	0.020	777	125	1.095	0.041	0.436	0.515
Currently married (in union)	0.408	0.021	777	125	1.196	0.052	0.366	0.450
Had first sex before age 18	0.322	0.025	610	98	1.306	0.077	0.273	0.372
Married before age 20	0.166	0.016	610	98	1.074	0.098	0.133	0.198
Children ever born	1.692	0.066	777	125	1.097	0.039	1.559	1.824
Children surviving	1.594	0.063	777	125	1.108	0.039	1.469	1.719
Children ever born to women 40-49	3.228	0.159	192	31	1.232	0.049	2.911	3.545
Knowing any contraceptive method	0.976	0.006	312	49	0.663	0.006	0.965	0.988
Knowing any modern contraceptive method	0.976	0.006	312	49	0.663	0.006	0.965	0.988
Ever used any contraceptive method	0.868	0.016	312	49	0.833	0.018	0.836	0.900
Currently using any contraceptive method	0.601	0.024	312	49	0.861	0.040	0.553	0.649
Currently using a modern method	0.601	0.024	312	49	0.861	0.040	0.553	0.649
Currently using pill	0.091	0.020	312	49	1.198	0.214	0.052	0.130
Currently using 2 monthly injectables	0.050	0.015	312	49	1.214	0.299	0.020	0.080
Currently using 3 monthly injectables	0.238	0.025	312	49	1.025	0.104	0.189	0.288
Currently using female sterilization	0.150	0.021	312	49	1.054	0.142	0.107	0.192
Obtained method from public sector source	0.867	0.025	363	58	1.412	0.029	0.816	0.917
Want no more children	0.694	0.032	320	51	1.259	0.047	0.629	0.759
Want to delay birth at least 2 years	0.098	0.019	320	51	1.152	0.195	0.060	0.137
Ideal number of children	2.456	0.057	774	124	1.125	0.023	2.343	2.569
Mothers received tetanus injection for last birth	0.615	0.033	257	41	1.088	0.054	0.549	0.681
Mothers received medical care at delivery	0.942	0.012	288	46	0.920	0.013	0.918	0.967
Child had diarrhea in the last 2 weeks	0.156	0.023	280	45	1.001	0.148	0.110	0.202
Treated with ORS packets	0.404	0.093	44	7	1.174	0.229	0.219	0.589
Consulted medical personnel	0.548	0.104	44	7	1.247	0.190	0.339	0.756
Child having health card, seen	0.847	0.045	58	9	0.929	0.053	0.758	0.936
Child received BCG vaccination	0.934	0.033	58	9	1.010	0.036	0.867	1.000
Child received DPT vaccination (3 doses)	0.868	0.047	58	9	1.042	0.054	0.773	0.962
Child received polio vaccination (3 doses)	0.855	0.040	58	9	0.842	0.046	0.776	0.934
Child received measles vaccination	0.806	0.059	58	9	1.117	0.073	0.688	0.924
Child fully immunized	0.740	0.057	58	9	0.976	0.077	0.626	0.854
Had two or more sexual partners in last 12 months	0.005	0.003	498	80	1.044	0.686	0.000	0.011
Had higher risk sex in the last 12 months	0.468	0.027	498	80	1.197	0.057	0.414	0.521
Condom use at last higher risk sex-all	0.354	0.028	230	37	0.885	0.079	0.298	0.410
Condom use at last higher risk sex-youth	0.433	0.050	118	19	1.096	0.116	0.333	0.534
Abstinence among youth (never had sex)	0.428	0.041	237	38	1.269	0.095	0.347	0.510
Sexual activity in last 12 months	0.433	0.038	237	38	1.172	0.087	0.358	0.509
Had HIV test & received results in last 12 months	0.116	0.016	777	125	1.425	0.141	0.083	0.149
Accepting attitudes towards people with HIV	0.420	0.025	705	115	1.331	0.059	0.370	0.469
Total fertility rate (last 3 years)	2.768	0.172	na	354	0.894	0.062	2.425	3.112
Neonatal mortality (last 10 years)	18.429	5.313	543	87	0.933	0.288	7.803	29.055
Post-neonatal mortality (last 10 years)	10.494	4.327	543	87	1.003	0.412	1.840	19.148
Infant mortality (last 10 years)	28.923	5.885	543	87	0.840	0.203	17.152	40.694
Child mortality (last 10 years)	10.458	4.020	545	87	0.948	0.384	2.417	18.499
Under-five mortality (last 10 years)	39.078	7.918	545	87	0.970	0.203	23.242	54.914
MEN QUESTIONNAIRE								
Urban residence	0.791	0.023	374	59	1.073	0.029	0.746	0.836
No education	0.077	0.014	374	59	0.998	0.179	0.050	0.105
Secondary education or higher	0.718	0.026	374	59	1.106	0.036	0.667	0.770
Never married (in union)	0.500	0.026	374	59	1.006	0.052	0.448	0.552
Currently married (in union)	0.416	0.025	374	59	0.991	0.061	0.366	0.467
Had sex before 18	0.575	0.027	293	46	0.939	0.047	0.520	0.629
Had two or more sexual partners in last 12 months	0.174	0.027	236	38	1.097	0.156	0.120	0.229
Had higher risk sex in the last 12 months	0.614	0.025	236	38	0.795	0.041	0.563	0.664
Condom use at last higher risk sex-all	0.582	0.036	143	23	0.860	0.061	0.511	0.654
Condom use at last higher risk sex-youth	0.697	0.061	58	9	0.996	0.087	0.576	0.818
Abstinence among youth (never had sex)	0.456	0.044	123	19	0.973	0.096	0.368	0.544
Sexual activity in last 12 months	0.451	0.047	123	19	1.050	0.105	0.356	0.545
Ever had HIV test and received results	0.258	0.030	330	52	1.228	0.115	0.198	0.317
Circumcision	0.341	0.031	330	216	1.183	0.091	0.279	0.403

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Variable	Value (R)
ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	128.267	1.018	349	58	0.953	0.008	126.227	130.307
Systolic Blood Pressure (women)	126.237	1.074	536	89	1.113	0.009	124.089	128.384
Diastolic Blood Pressure (men)	74.761	0.932	349	58	1.231	0.012	72.895	76.627
Diastolic Blood Pressure (women)	77.933	0.589	536	89	1.005	0.008	76.756	79.109
Pulse (men)	73.969	0.926	348	58	1.238	0.013	72.114	75.824
Pulse (women)	81.344	0.718	536	89	1.227	0.009	79.908	82.780
Hypertensive (men)	0.147	0.018	362	60	0.981	0.124	0.110	0.183
Hypertensive (women)	0.220	0.020	552	92	1.149	0.092	0.179	0.260
Airflow Limitation (men)	0.138	0.016	362	60	1.004	0.115	0.106	0.169
Airflow Limitation (women)	0.211	0.016	552	92	1.167	0.074	0.180	0.242
Chronic Bronchitis (men)	0.096	0.016	362	60	1.701	0.170	0.064	0.129
Chronic Bronchitis (women)	0.108	0.014	552	92	2.305	0.128	0.080	0.135
Abnormal Peak Flow (men)	0.033	0.009	362	60	0.457	0.258	0.016	0.051
Abnormal Peak Flow (women)	0.019	0.006	552	92	0.341	0.317	0.007	0.031
Currently smoking (occasionally of daily) (men)	0.514	0.026	362	60	0.984	0.051	0.461	0.566
Currently smoking (occasionally of daily) (women)	0.350	0.028	552	92	1.369	0.080	0.294	0.406
Abstainers - alcohol intake in last 12 months (men)	0.482	0.028	362	60	1.061	0.059	0.426	0.539
Abstainers - alcohol intake in last 12 months (women)	0.707	0.023	552	92	1.158	0.032	0.661	0.752
Responsible - alcohol intake in last 12 months (men)	0.403	0.030	362	60	1.161	0.076	0.342	0.464
Responsible - alcohol intake in last 12 months (women)	0.223	0.019	552	92	1.041	0.084	0.186	0.261
Hazardous - alcohol intake in last 12 months (men)	0.039	0.012	362	60	1.167	0.309	0.015	0.063
Hazardous - alcohol intake in last 12 months (women)	0.026	0.006	552	92	0.961	0.248	0.013	0.039
Harmful - alcohol intake in last 12 months (men)	0.046	0.012	362	60	1.062	0.255	0.022	0.069
Harmful - alcohol intake in last 12 months (women)	0.029	0.009	552	92	1.280	0.319	0.011	0.048
Adequate nutrient (men)	0.109	0.028	359	59	1.626	0.256	0.053	0.165
Adequate nutrient (women)	0.113	0.026	547	91	1.819	0.227	0.062	0.164
Weight (men)	60.393	0.989	344	57	1.254	0.016	58.411	62.374
Weight (women)	62.808	0.839	538	89	1.070	0.013	61.129	64.486
Height (men)	1.663	0.005	348	58	1.163	0.003	1.652	1.674
Height (women)	1.560	0.004	538	89	1.299	0.003	1.551	1.568
Waist/hip ratio (men)	0.877	0.029	347	57	1.122	0.033	0.818	0.935
Waist/hip ratio (women)	0.832	0.027	537	89	0.979	0.032	0.779	0.885
Hip circumference (men)	89.725	0.786	347	57	1.131	0.009	88.149	91.301
Hip circumference (women)	99.786	0.864	537	89	1.147	0.009	98.059	101.513
Body Mass Index (men)	21.789	0.294	348	58	1.139	0.013	21.200	22.378
Body Mass Index (women)	25.821	0.282	538	89	0.888	0.011	25.256	26.385
Overweight (men)	0.138	0.022	348	58	1.189	0.164	0.093	0.183
Overweight (women)	0.216	0.014	538	89	0.772	0.064	0.189	0.244
Obesity (men)	0.054	0.014	348	58	1.117	0.258	0.026	0.082
Obesity (women)	0.242	0.018	538	89	0.947	0.074	0.206	0.278
Nutrient intake (men)	30.975	0.885	359	59	1.626	0.029	29.204	32.745
Nutrient intake (women)	30.513	0.838	547	91	1.953	0.027	28.837	32.188
Physically inactive (men)	0.764	0.023	365	523	0.990	0.030	0.718	0.810
Physically inactive (women)	0.950	0.009	526	87	0.921	0.009	0.933	0.968
Total mets (men)	2 196.422	201.029	365	523	1.008	0.092	1 794.1642	598.681
Total mets (women)	555.788	56.617	526	87	1.001	0.102	442.498	669.077

Table B8 Sampling errors: Free State 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.815	0.020	796	443	1.444	0.024	0.776	0.855
No education	0.044	0.009	796	443	1.299	0.215	0.025	0.063
With secondary education or higher	0.709	0.027	796	443	1.696	0.039	0.654	0.763
Never married (in union)	0.521	0.023	796	443	1.304	0.044	0.475	0.567
Currently married (in union)	0.377	0.026	796	443	1.491	0.068	0.326	0.428
Had first sex before age 18	0.428	0.024	624	348	1.199	0.055	0.381	0.476
Married before age 20	0.221	0.025	624	348	1.484	0.112	0.171	0.270
Children ever born	1.524	0.078	796	443	1.306	0.051	1.368	1.679
Children surviving	1.416	0.071	796	443	1.292	0.050	1.273	1.558
Children ever born to women 40-49	3.342	0.201	165	92	1.317	0.060	2.940	3.744
Knowing any contraceptive method	0.934	0.024	307	167	1.688	0.026	0.886	0.982
Knowing any modern contraceptive method	0.934	0.024	307	167	1.688	0.026	0.886	0.982
Ever used any contraceptive method	0.777	0.030	307	167	1.244	0.038	0.718	0.836
Currently using any contraceptive method	0.597	0.026	307	167	0.932	0.044	0.545	0.649
Currently using a modern method	0.597	0.026	307	167	0.932	0.044	0.545	0.649
Currently using pill	0.131	0.024	307	167	1.246	0.184	0.083	0.179
Currently using 2 monthly injectables	0.071	0.015	307	167	0.995	0.205	0.042	0.101
Currently using 3 monthly injectables	0.240	0.025	307	167	1.022	0.104	0.190	0.290
Currently using female sterilization	0.081	0.017	307	167	1.069	0.205	0.048	0.115
Obtained method from public sector source	0.900	0.020	374	204	1.273	0.022	0.860	0.939
Want no more children	0.674	0.031	304	167	1.153	0.046	0.612	0.736
Want to delay birth at least 2 years	0.106	0.016	304	167	0.921	0.154	0.073	0.138
Ideal number of children	2.176	0.055	786	437	1.242	0.025	2.067	2.285
Mothers received tetanus injection for last birth	0.669	0.030	212	117	0.924	0.045	0.608	0.729
Mothers received medical care at delivery	0.916	0.018	235	130	0.935	0.019	0.880	0.952
Child had diarrhea in the last 2 weeks	0.167	0.030	218	121	1.191	0.181	0.106	0.227
Treated with ORS packets	0.550	0.100	37	20	1.211	0.182	0.349	0.750
Consulted medical personnel	0.501	0.098	37	20	1.178	0.196	0.305	0.697
Child having health card, seen	0.703	0.075	48	29	1.176	0.107	0.553	0.853
Child received BCG vaccination	0.837	0.047	48	29	0.922	0.057	0.742	0.932
Child received DPT vaccination (3 doses)	0.683	0.080	48	29	1.226	0.117	0.524	0.842
Child received polio vaccination (3 doses)	0.690	0.078	48	29	1.210	0.113	0.534	0.846
Child received measles vaccination	0.663	0.058	48	29	0.877	0.087	0.547	0.779
Child fully immunized	0.509	0.054	48	29	0.767	0.105	0.402	0.616
Had two or more sexual partners in last 12 months	0.026	0.007	506	279	1.010	0.273	0.012	0.041
Had higher risk sex in the last 12 months	0.501	0.031	509	280	1.381	0.061	0.440	0.562
Condom use at last higher risk sex-all	0.434	0.032	255	140	1.025	0.073	0.370	0.498
Condom use at last higher risk sex-youth	0.523	0.049	129	72	1.099	0.093	0.426	0.620
Abstinence among youth (never had sex)	0.376	0.034	281	157	1.184	0.091	0.307	0.444
Sexual activity in last 12 months	0.409	0.029	281	157	0.996	0.072	0.351	0.468
Had HIV test & received results in last 12 months	0.070	0.011	796	443	1.255	0.162	0.047	0.093
Accepting attitudes towards people with HIV	0.419	0.019	758	424	1.045	0.045	0.381	0.456
Total fertility rate (last 3 years)	2.044	0.164	na	1250	1.150	0.080	1.717	2.372
Neonatal mortality (last 10 years)	32.838	9.201	504	278	1.120	0.280	14.436	51.240
Post-neonatal mortality (last 10 years)	15.081	8.740	504	278	1.321	0.580	0.000	32.562
Infant mortality (last 10 years)	47.919	14.113	504	278	1.315	0.295	19.693	76.145
Child mortality (last 10 years)	20.864	6.119	505	279	0.948	0.293	8.625	33.103
Under-five mortality (last 10 years)	67.783	15.262	505	279	1.257	0.225	37.260	98.307
MEN QUESTIONNAIRE								
Urban residence	0.813	0.020	361	199	0.969	0.024	0.774	0.853
No education	0.075	0.019	361	199	1.356	0.250	0.038	0.113
Secondary education or higher	0.649	0.032	361	199	1.278	0.050	0.585	0.713
Never married (in union)	0.536	0.029	361	199	1.088	0.053	0.479	0.593
Currently married (in union)	0.390	0.027	361	199	1.040	0.069	0.337	0.444
Had sex before 18	0.454	0.036	291	161	1.223	0.079	0.382	0.525
Had two or more sexual partners in last 12 months	0.173	0.031	236	131	1.271	0.181	0.110	0.236
Had higher risk sex in the last 12 months	0.613	0.035	236	131	1.092	0.057	0.543	0.682
Condom use at last higher risk sex-all	0.631	0.046	144	80	1.141	0.073	0.539	0.723
Condom use at last higher risk sex-youth	0.687	0.057	71	38	1.036	0.083	0.573	0.802
Abstinence among youth (never had sex)	0.369	0.052	133	74	1.231	0.140	0.266	0.472
Sexual activity in last 12 months	0.530	0.047	133	74	1.074	0.088	0.437	0.623
Ever had HIV test and received results	0.142	0.023	314	174	1.179	0.164	0.095	0.188
Circumcision	0.709	0.056	191	312	1.691	0.079	0.597	0.822

Variable	Number of cases					Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Variable			Value (R)	
ADULT QUESTIONNAIRE									
Systolic Blood Pressure (men)	124.719	0.994	391	222	0.008	0.986	122.728	126.709	
Systolic Blood Pressure (women)	123.791	1.003	528	302	0.008	1.041	121.786	125.796	
Diastolic Blood Pressure (men)	72.355	0.639	391	222	0.009	1.039	71.075	73.634	
Diastolic Blood Pressure (women)	76.038	0.658	529	303	0.009	1.073	74.722	77.354	
Pulse (men)	73.430	0.832	391	222	0.011	1.197	71.765	75.096	
Pulse (women)	79.096	0.707	529	303	0.009	1.119	77.683	80.509	
Hypertensive (men)	0.085	0.011	393	224	0.130	0.811	0.063	0.107	
Hypertensive (women)	0.100	0.016	545	313	0.156	0.904	0.069	0.132	
Airflow Limitation (men)	0.080	0.014	393	224	0.173	0.849	0.052	0.108	
Airflow Limitation (women)	0.185	0.021	545	313	0.112	1.740	0.144	0.227	
Chronic Bronchitis (men)	0.111	0.018	393	224	0.163	2.320	0.075	0.147	
Chronic Bronchitis (women)	0.077	0.012	545	313	0.157	1.675	0.053	0.101	
Abnormal Peak Flow (men)	0.025	0.008	393	224	0.331	0.557	0.008	0.041	
Abnormal Peak Flow (women)	0.025	0.006	545	313	0.255	0.491	0.012	0.037	
Currently smoking (occasionally of daily) (men)	0.406	0.028	393	224	0.068	1.064	0.350	0.461	
Currently smoking (occasionally of daily) (women)	0.117	0.017	545	313	0.145	1.148	0.083	0.150	
Abstainers - alcohol intake in last 12 months (men)	0.541	0.029	393	224	0.053	1.088	0.483	0.598	
Abstainers - alcohol intake in last 12 months (women)	0.790	0.022	545	313	0.028	1.211	0.745	0.835	
Responsible - alcohol intake in last 12 months (men)	0.342	0.026	393	224	0.075	1.025	0.291	0.393	
Responsible - alcohol intake in last 12 months (women)	0.134	0.018	545	313	0.135	1.212	0.098	0.170	
Hazardous - alcohol intake in last 12 months (men)	0.028	0.009	393	224	0.331	1.104	0.010	0.047	
Hazardous - alcohol intake in last 12 months (women)	0.034	0.009	545	313	0.273	1.049	0.015	0.052	
Harmful - alcohol intake in last 12 months (men)	0.055	0.015	393	224	0.272	1.132	0.025	0.085	
Harmful - alcohol intake in last 12 months (women)	0.028	0.008	545	313	0.287	0.987	0.012	0.043	
Adequate nutrient (men)	0.205	0.028	386	219	0.137	1.325	0.149	0.261	
Adequate nutrient (women)	0.208	0.024	544	313	0.116	1.375	0.159	0.256	
Weight (men)	62.497	1.131	381	217	0.018	1.455	60.234	64.760	
Weight (women)	64.806	0.834	518	298	0.013	1.083	63.139	66.473	
Height (men)	1.664	0.005	381	217	0.003	1.107	1.654	1.674	
Height (women)	1.568	0.003	518	298	0.002	0.952	1.562	1.575	
Waist/hip ratio (men)	0.872	0.024	381	217	0.027	0.943	0.824	0.919	
Waist/hip ratio (women)	1.041	0.060	516	297	0.057	1.081	0.922	1.160	
Hip circumference (men)	91.461	0.964	381	217	0.011	1.421	89.530	93.391	
Hip circumference (women)	98.499	1.194	516	297	0.012	1.107	96.112	100.886	
Body Mass Index (men)	22.592	0.340	381	217	0.015	1.272	21.911	23.274	
Body Mass Index (women)	26.382	0.314	518	298	0.012	1.003	25.754	27.010	
Overweight (men)	0.134	0.020	381	217	0.151	1.146	0.094	0.175	
Overweight (women)	0.233	0.019	518	298	0.083	0.980	0.195	0.272	
Obesity (men)	0.086	0.020	381	217	0.231	1.294	0.046	0.126	
Obesity (women)	0.262	0.021	518	298	0.079	1.015	0.221	0.304	
Nutrient intake (men)	27.201	1.050	386	219	0.039	1.613	25.098	29.303	
Nutrient intake (women)	26.969	0.830	544	313	0.031	1.491	25.309	28.629	
Physically inactive (men)	0.837	0.019	354	202	0.022	0.889	0.799	0.874	
Physically inactive (women)	0.920	0.014	520	300	0.015	1.086	0.892	0.948	
Total mets (men)	1 658.078	157.392	354	202	0.095	0.9331	342.905	1 973.251	
Total mets (women)	834.592	73.735	520	300	0.088	0.990	687.150	982.034	

Table B9 Sampling errors: KwaZulu-Natal 2003

Variable	Number of cases					Confidence intervals		
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (VN)	Design effect (DEFT)	Relative error (SE/R)	Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.539	0.033	1 219	1 177	2.302	0.061	0.473	0.605
No education	0.020	0.004	1 219	1 177	1.085	0.219	0.011	0.028
With secondary education or higher	0.850	0.017	1 219	1 177	1.622	0.020	0.816	0.883
Never married (in union)	0.637	0.025	1 219	1 177	1.818	0.039	0.587	0.687
Currently married (in union)	0.329	0.024	1 219	1 177	1.747	0.071	0.282	0.376
Had first sex before age 18	0.313	0.020	995	942	1.384	0.065	0.273	0.354
Married before age 20	0.152	0.014	995	942	1.269	0.095	0.123	0.181
Children ever born	1.071	0.042	1 219	1 177	1.165	0.039	0.987	1.154
Children surviving	1.051	0.041	1 219	1 177	1.152	0.039	0.969	1.133
Children ever born to women 40-49	2.329	0.117	270	226	1.427	0.050	2.095	2.563
Knowing any contraceptive method	0.987	0.007	640	583	1.453	0.007	0.974	1.000
Knowing any modern contraceptive method	0.987	0.007	640	583	1.453	0.007	0.974	1.000
Ever used any contraceptive method	0.883	0.016	640	583	1.279	0.018	0.851	0.916
Currently using any contraceptive method	0.768	0.021	640	583	1.244	0.027	0.726	0.809
Currently using a modern method	0.768	0.021	640	583	1.244	0.027	0.726	0.809
Currently using pill	0.140	0.017	640	583	1.261	0.124	0.105	0.174
Currently using 2 monthly injectables	0.134	0.022	640	583	1.645	0.166	0.089	0.178
Currently using 3 monthly injectables	0.293	0.024	640	583	1.335	0.082	0.245	0.341
Currently using female sterilization	0.076	0.014	640	583	1.357	0.187	0.048	0.105
Obtained method from public sector source	0.853	0.016	676	664	1.208	0.019	0.820	0.886
Want no more children	0.545	0.036	528	387	1.659	0.066	0.473	0.617
Want to delay birth at least 2 years	0.052	0.013	528	387	1.387	0.258	0.025	0.079
Ideal number of children	2.355	0.044	1 210	1 168	1.336	0.019	2.268	2.442
Mothers received tetanus injection for last birth	0.554	0.050	145	107	1.054	0.090	0.454	0.653
Mothers received medical care at delivery	0.911	0.032	164	117	1.238	0.035	0.847	0.976
Child had diarrhea in the last 2 weeks	0.009	0.004	160	114	0.477	0.465	0.001	0.017
Treated with ORS packets	0.270	0.176	6	1	0.404	0.653	0.000	0.623
Consulted medical personnel	0.163	0.152	6	1	0.416	0.927	0.000	0.466
Child having health card, seen	0.558	0.100	43	25	1.033	0.180	0.358	0.759
Child received BCG vaccination	0.785	0.100	43	25	1.243	0.127	0.585	0.985
Child received DPT vaccination (3 doses)	0.558	0.100	43	25	1.033	0.180	0.358	0.759
Child received polio vaccination (3 doses)	0.558	0.100	43	25	1.033	0.180	0.358	0.759
Child received measles vaccination	0.596	0.081	43	25	0.840	0.135	0.435	0.758
Child fully immunized	0.470	0.069	43	25	0.711	0.148	0.331	0.609
Had two or more sexual partners in last 12 months	0.013	0.004	824	790	0.949	0.284	0.006	0.021
Had higher risk sex in the last 12 months	0.614	0.029	828	797	1.709	0.047	0.556	0.672
Condom use at last higher risk sex-all	0.577	0.033	357	489	1.277	0.058	0.510	0.643
Condom use at last higher risk sex-youth	0.654	0.045	108	146	0.987	0.069	0.563	0.745
Abstinence among youth (never had sex)	0.622	0.032	374	404	1.293	0.052	0.557	0.687
Sexual activity in last 12 months	0.361	0.034	374	404	1.349	0.093	0.294	0.428
Had HIV test & received results in last 12 months	0.043	0.010	1 219	1 177	1.655	0.223	0.024	0.063
Accepting attitudes towards people with HIV	0.286	0.026	1 137	1 069	1.949	0.091	0.233	0.338
Total fertility rate (last 3 years)	0.623	0.107	na	3 304	1.523	0.171	0.410	0.836
Neonatal mortality (last 10 years)	23.089	8.782	515	437	1.084	0.380	5.526	40.652
Post-neonatal mortality (last 10 years)	6.842	4.639	516	439	1.330	0.678	0.000	16.121
Infant mortality (last 10 years)	29.931	11.964	516	439	1.430	0.400	6.004	53.858
Child mortality (last 10 years)	3.318	2.191	515	437	1.001	0.660	0.000	7.699
Under-five mortality (last 10 years)	33.150	12.031	516	439	1.376	0.363	9.087	57.212
MEN QUESTIONNAIRE								
Urban residence	0.535	0.043	702	701	2.305	0.081	0.448	0.622
No education	0.021	0.006	702	701	1.122	0.293	0.008	0.033
Secondary education or higher	0.886	0.016	702	701	1.361	0.018	0.853	0.919
Never married (in union)	0.630	0.023	702	701	1.269	0.037	0.584	0.677
Currently married (in union)	0.326	0.022	702	701	1.222	0.066	0.283	0.369
Had sex before 18	0.354	0.021	575	566	1.062	0.060	0.312	0.397
Had two or more sexual partners in last 12 months	0.165	0.034	445	447	1.951	0.208	0.096	0.234
Had higher risk sex in the last 12 months	0.682	0.033	446	448	1.488	0.048	0.616	0.748
Condom use at last higher risk sex-all	0.773	0.031	270	306	1.212	0.040	0.711	0.835
Condom use at last higher risk sex-youth	0.729	0.065	99	102	1.456	0.090	0.598	0.860
Abstinence among youth (never had sex)	0.518	0.040	218	232	1.179	0.077	0.438	0.598
Sexual activity in last 12 months	0.427	0.039	218	232	1.171	0.092	0.348	0.505
Ever had HIV test and received results	0.175	0.023	594	612	1.461	0.130	0.129	0.220
Circumcision	0.268	0.026	361	199	1.124	0.099	0.215	0.321



Variable	Number of cases					Design effect (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Variable		Value (R)	
	ADULT QUESTIONNAIRE							
Systolic Blood Pressure (men)	119.193	0.828	712	751	0.007	1.281	117.551	120.834
Systolic Blood Pressure (women)	118.598	0.949	877	851	0.008	1.149	116.718	120.478
Diastolic Blood Pressure (men)	72.840	0.635	716	757	0.009	1.121	71.581	74.099
Diastolic Blood Pressure (women)	74.358	0.513	886	864	0.007	0.951	73.342	75.374
Pulse (men)	71.536	0.754	716	757	0.011	1.333	70.042	73.030
Pulse (women)	74.819	0.539	885	862	0.007	1.106	73.751	75.887
Hypertensive (men)	0.032	0.008	731	781	0.254	0.772	0.016	0.048
Hypertensive (women)	0.038	0.013	909	888	0.336	1.200	0.013	0.064
Airflow Limitation (men)	0.066	0.011	731	781	0.172	2.649	0.044	0.089
Airflow Limitation (women)	0.085	0.011	909	888	0.130	1.762	0.063	0.108
Chronic Bronchitis (men)	0.014	0.004	731	781	0.309	10.953	0.006	0.023
Chronic Bronchitis (women)	0.035	0.008	909	888	0.226	26.721	0.019	0.051
Abnormal Peak Flow (men)	0.001	0.000	731	781	0.598	0.056	0.000	0.001
Abnormal Peak Flow (women)	0.000	0.000	909	888	1.008	0.056	0.000	0.001
Currently smoking (occasionally of daily) (men)	0.210	0.022	731	781	0.106	1.256	0.166	0.255
Currently smoking (occasionally of daily) (women)	0.042	0.010	909	888	0.240	1.180	0.022	0.061
Abstainers - alcohol intake in last 12 months (men)	0.859	0.018	731	781	0.021	1.216	0.823	0.895
Abstainers - alcohol intake in last 12 months (women)	0.964	0.008	909	888	0.008	1.196	0.949	0.979
Responsible - alcohol intake in last 12 months (men)	0.078	0.013	731	781	0.168	1.206	0.052	0.104
Responsible - alcohol intake in last 12 months (women)	0.030	0.007	909	888	0.223	1.205	0.017	0.044
Hazardous - alcohol intake in last 12 months (men)	0.016	0.005	731	781	0.338	0.962	0.005	0.027
Hazardous - alcohol intake in last 12 months (women)	0.000	-	909	888	.	.	.	.
Harmful - alcohol intake in last 12 months (men)	0.002	0.001	731	781	0.484	1.017	0.000	0.003
Harmful - alcohol intake in last 12 months (women)	0.003	0.002	909	888	0.699	0.988	0.000	0.007
Adequate nutrient (men)	0.546	0.029	728	777	0.053	1.323	0.489	0.604
Adequate nutrient (women)	0.642	0.025	907	887	0.039	1.329	0.592	0.692
Weight (men)	68.011	0.594	698	729	0.009	1.113	66.834	69.188
Weight (women)	70.598	0.973	869	831	0.014	1.386	68.669	72.526
Height (men)	1.671	0.006	701	734	0.004	1.209	1.659	1.682
Height (women)	1.622	0.005	869	831	0.003	1.337	1.611	1.632
Waist/hip ratio (men)	1.003	0.061	695	723	0.061	1.221	0.882	1.124
Waist/hip ratio (women)	1.305	0.105	863	822	0.080	1.316	1.098	1.513
Hip circumference (men)	90.007	1.089	695	723	0.012	1.231	87.849	92.165
Hip circumference (women)	93.631	1.708	863	822	0.018	1.249	90.247	97.014
Body Mass Index (men)	24.522	0.265	701	734	0.011	1.213	23.997	25.047
Body Mass Index (women)	26.935	0.411	869	831	0.015	1.485	26.121	27.749
Overweight (men)	0.319	0.020	701	734	0.063	0.952	0.280	0.359
Overweight (women)	0.330	0.022	869	831	0.068	1.139	0.286	0.375
Obesity (men)	0.090	0.015	701	734	0.172	1.188	0.059	0.121
Obesity (women)	0.245	0.022	869	831	0.089	1.180	0.202	0.288
Nutrient intake (men)	15.469	0.704	728	777	0.046	1.441	14.075	16.864
Nutrient intake (women)	13.227	0.580	907	887	0.044	1.440	12.077	14.377
Physically inactive (men)	0.855	0.014	629	678	0.017	0.868	0.827	0.883
Physically inactive (women)	0.940	0.010	852	810	0.011	1.060	0.920	0.960
Total mets (men)	1 193.476	103.280	629	678	0.087	0.926	988.779	1 398.174
Total mets (women)	615.535	98.180	852	810	0.160	1.053	420.985	810.084

Table B10 Sampling errors: North West 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.432	0.020	749	523	1.116	0.047	0.392	0.472
No education	0.069	0.009	749	523	1.021	0.137	0.050	0.088
With secondary education or higher	0.691	0.020	749	523	1.157	0.028	0.652	0.730
Never married (in union)	0.659	0.022	749	523	1.263	0.033	0.616	0.703
Currently married (in union)	0.279	0.022	749	523	1.348	0.079	0.235	0.323
Had first sex before age 18	0.490	0.026	613	429	1.273	0.053	0.438	0.541
Married before age 20	0.151	0.018	613	429	1.256	0.120	0.115	0.181
Children ever born	1.596	0.056	749	523	0.922	0.035	1.484	1.708
Children surviving	1.491	0.054	749	523	0.942	0.036	1.383	1.599
Children ever born to women 40-49	3.489	0.160	131	91	1.051	0.046	3.169	3.808
Knowing any contraceptive method	0.978	0.009	322	227	1.069	0.009	0.961	0.996
Knowing any modern contraceptive method	0.978	0.009	322	227	1.069	0.009	0.961	0.996
Ever used any contraceptive method	0.895	0.023	322	227	1.343	0.026	0.849	0.941
Currently using any contraceptive method	0.605	0.026	322	227	0.949	0.043	0.553	0.657
Currently using a modern method	0.605	0.026	322	227	0.949	0.043	0.553	0.657
Currently using pill	0.134	0.016	322	227	0.844	0.120	0.102	0.166
Currently using 2 monthly injectables	0.126	0.018	322	227	0.968	0.142	0.090	0.162
Currently using 3 monthly injectables	0.186	0.021	322	227	0.986	0.115	0.143	0.228
Currently using female sterilization	0.069	0.015	322	227	1.082	0.221	0.039	0.100
Obtained method from public sector source	0.879	0.020	363	254	1.188	0.023	0.838	0.920
Want no more children	0.686	0.035	208	146	1.081	0.051	0.616	0.755
Want to delay birth at least 2 years	0.106	0.018	208	146	0.857	0.173	0.069	0.143
Ideal number of children	2.529	0.044	745	521	1.056	0.017	2.442	2.616
Mothers received tetanus injection for last birth	0.540	0.026	247	173	0.818	0.048	0.488	0.592
Mothers received medical care at delivery	0.933	0.017	275	192	1.000	0.018	0.899	0.966
Child had diarrhea in the last 2 weeks	0.072	0.014	262	183	0.867	0.193	0.044	0.100
Treated with ORS packets	0.419	0.106	19	13	0.934	0.253	0.207	0.631
Consulted medical personnel	0.408	0.097	19	13	0.856	0.237	0.214	0.601
Child having health card, seen	0.637	0.060	57	40	0.932	0.093	0.518	0.757
Child received BCG vaccination	0.741	0.059	57	40	1.008	0.079	0.624	0.858
Child received DPT vaccination (3 doses)	0.629	0.060	57	40	0.931	0.095	0.510	0.749
Child received polio vaccination (3 doses)	0.651	0.063	57	40	0.989	0.096	0.525	0.776
Child received measles vaccination	0.672	0.049	57	40	0.785	0.073	0.574	0.770
Child fully immunized	0.560	0.056	57	40	0.851	0.100	0.448	0.673
Had two or more sexual partners in last 12 months	0.045	0.010	515	360	1.054	0.214	0.026	0.064
Had higher risk sex in the last 12 months	0.658	0.027	516	361	1.293	0.041	0.604	0.712
Condom use at last higher risk sex-all	0.434	0.027	341	237	1.009	0.062	0.380	0.488
Condom use at last higher risk sex-youth	0.550	0.048	153	105	1.180	0.087	0.455	0.645
Abstinence among youth (never had sex)	0.315	0.025	274	190	0.900	0.080	0.264	0.366
Sexual activity in last 12 months	0.555	0.028	274	190	0.939	0.051	0.498	0.611
Had HIV test & received results in last 12 months	0.073	0.008	749	523	0.866	0.112	0.057	0.090
Accepting attitudes towards people with HIV	0.549	0.017	676	475	0.885	0.031	0.515	0.583
Total fertility rate (last 3 years)	2.524	0.171	na	1495	0.994	0.068	2.182	2.866
Neonatal mortality (last 10 years)	26.525	9.654	529	368	1.218	0.364	7.217	45.832
Post-neonatal mortality (last 10 years)	35.022	8.328	530	369	1.004	0.238	18.366	51.679
Infant mortality (last 10 years)	61.547	14.348	530	369	1.237	0.233	32.850	90.244
Child mortality (last 10 years)	15.564	5.214	530	368	0.934	0.335	5.136	25.992
Under-five mortality (last 10 years)	76.153	15.869	531	369	1.232	0.208	44.415	107.891
MEN QUESTIONNAIRE								
Urban residence	0.445	0.027	330	216	0.976	0.060	0.392	0.499
No education	0.092	0.017	330	216	1.069	0.185	0.058	0.126
Secondary education or higher	0.679	0.029	330	216	1.107	0.042	0.622	0.736
Never married (in union)	0.670	0.025	330	216	0.963	0.037	0.621	0.720
Currently married (in union)	0.257	0.028	330	216	1.143	0.107	0.202	0.312
Had sex before 18	0.495	0.033	256	169	1.060	0.067	0.428	0.561
Had two or more sexual partners in last 12 months	0.283	0.038	224	149	1.250	0.133	0.207	0.358
Had higher risk sex in the last 12 months	0.772	0.032	226	150	1.157	0.042	0.707	0.837
Condom use at last higher risk sex-all	0.774	0.034	173	116	1.077	0.044	0.705	0.843
Condom use at last higher risk sex-youth	0.838	0.032	90	61	0.827	0.039	0.774	0.903
Abstinence among youth (never had sex)	0.289	0.044	147	97	1.168	0.152	0.201	0.376
Sexual activity in last 12 months	0.632	0.046	147	97	1.165	0.074	0.539	0.725
Ever had HIV test and received results	0.162	0.023	298	196	1.091	0.144	0.115	0.208
Circumcision	0.328	0.031	346	208	1.229	0.094	0.266	0.389

Variable	Number of cases					Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Variable			Value (R)	
	ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	121.710	1.017	333	247	0.008	1.034	119.675	123.746	
Systolic Blood Pressure (women)	122.220	1.166	496	362	0.010	1.091	119.887	124.553	
Diastolic Blood Pressure (men)	72.085	0.913	333	247	0.013	1.240	70.258	73.911	
Diastolic Blood Pressure (women)	74.882	0.603	498	364	0.008	1.015	73.676	76.088	
Pulse (men)	70.786	0.859	333	247	0.012	1.191	69.067	72.504	
Pulse (women)	78.062	0.661	498	364	0.008	1.231	76.741	79.384	
Hypertensive (men)	0.053	0.011	335	248	0.208	0.714	0.031	0.075	
Hypertensive (women)	0.074	0.013	510	373	0.181	0.827	0.047	0.101	
Airflow Limitation (men)	0.080	0.016	335	248	0.197	1.088	0.048	0.111	
Airflow Limitation (women)	0.152	0.014	510	373	0.096	1.185	0.123	0.181	
Chronic Bronchitis (men)	0.074	0.013	335	248	0.178	1.958	0.048	0.100	
Chronic Bronchitis (women)	0.078	0.012	510	373	0.154	1.430	0.054	0.102	
Abnormal Peak Flow (men)	0.016	0.007	335	248	0.453	0.619	0.002	0.031	
Abnormal Peak Flow (women)	0.036	0.008	510	373	0.218	0.665	0.020	0.051	
Currently smoking (occasionally of daily) (men)	0.376	0.032	335	248	0.086	1.209	0.311	0.441	
Currently smoking (occasionally of daily) (women)	0.073	0.015	510	373	0.206	1.253	0.043	0.102	
Abstainers - alcohol intake in last 12 months (men)	0.475	0.029	335	248	0.062	1.060	0.416	0.533	
Abstainers - alcohol intake in last 12 months (women)	0.818	0.022	510	373	0.027	1.246	0.774	0.862	
Responsible - alcohol intake in last 12 months (men)	0.418	0.031	335	248	0.075	1.152	0.355	0.481	
Responsible - alcohol intake in last 12 months (women)	0.142	0.019	510	373	0.134	1.195	0.104	0.180	
Hazardous - alcohol intake in last 12 months (men)	0.019	0.009	335	248	0.482	1.180	0.001	0.036	
Hazardous - alcohol intake in last 12 months (women)	0.015	0.005	510	373	0.368	0.964	0.004	0.025	
Harmful - alcohol intake in last 12 months (men)	0.063	0.015	335	248	0.242	1.160	0.032	0.094	
Harmful - alcohol intake in last 12 months (women)	0.020	0.006	510	373	0.299	0.944	0.008	0.032	
Adequate nutrient (men)	0.140	0.029	334	248	0.207	1.493	0.082	0.197	
Adequate nutrient (women)	0.127	0.019	509	372	0.147	1.224	0.089	0.164	
Weight (men)	62.553	0.799	328	243	0.013	1.110	60.955	64.152	
Weight (women)	65.937	0.932	494	361	0.014	1.108	64.072	67.802	
Height (men)	1.684	0.005	328	243	0.003	1.169	1.673	1.694	
Height (women)	1.581	0.004	494	361	0.003	1.264	1.573	1.589	
Waist/hip ratio (men)	0.861	0.005	327	242	0.006	1.157	0.850	0.872	
Waist/hip ratio (women)	0.829	0.023	492	360	0.028	0.980	0.782	0.875	
Hip circumference (men)	88.796	0.578	327	242	0.007	0.963	87.639	89.953	
Hip circumference (women)	103.447	0.969	492	360	0.009	1.179	101.510	105.385	
Body Mass Index (men)	22.081	0.264	328	243	0.012	1.051	21.552	22.610	
Body Mass Index (women)	26.363	0.349	494	361	0.013	1.089	25.665	27.061	
Overweight (men)	0.175	0.023	328	243	0.132	1.080	0.129	0.222	
Overweight (women)	0.251	0.023	494	361	0.091	1.144	0.205	0.296	
Obesity (men)	0.048	0.012	328	243	0.256	1.004	0.023	0.072	
Obesity (women)	0.244	0.017	494	361	0.070	0.868	0.210	0.277	
Nutrient intake (men)	28.257	0.833	334	248	0.029	1.529	26.591	29.923	
Nutrient intake (women)	28.702	0.522	509	372	0.018	1.220	27.658	29.746	
Physically inactive (men)	0.752	0.027	298	221	0.036	1.056	0.698	0.806	
Physically inactive (women)	0.942	0.012	457	334	0.012	1.051	0.919	0.966	
Total mets (men)	2 551.413	320.162	298	221	0.125	1.133	1 910.993	3 191.832	
Total mets (women)	630.481	70.251	457	334	0.111	1.031	489.957	771.005	

Table B11 Sampling errors: Gauteng 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.993	0.004	722	1854	1.358	0.004	0.984	1.000
No education	0.055	0.010	722	1854	1.231	0.190	0.034	0.076
With secondary education or higher	0.839	0.015	722	1854	1.118	0.018	0.809	0.870
Never married (in union)	0.481	0.014	722	1854	0.742	0.029	0.453	0.509
Currently married (in union)	0.425	0.015	722	1854	0.809	0.035	0.395	0.455
Had first sex before age 18	0.432	0.020	615	1577	0.978	0.045	0.392	0.471
Married before age 20	0.210	0.020	615	1577	1.219	0.095	0.170	0.250
Children ever born	1.708	0.063	722	1854	1.009	0.037	1.581	1.834
Children surviving	1.629	0.063	722	1854	1.063	0.039	1.502	1.755
Children ever born to women 40-49	3.115	0.170	177	452	1.155	0.055	2.775	3.456
Knowing any contraceptive method	0.941	0.012	382	973	0.951	0.012	0.918	0.964
Knowing any modern contraceptive method	0.941	0.012	382	973	0.951	0.012	0.918	0.964
Ever used any contraceptive method	0.833	0.018	382	973	0.933	0.021	0.798	0.869
Currently using any contraceptive method	0.631	0.020	382	973	0.794	0.031	0.592	0.671
Currently using a modern method	0.631	0.020	382	973	0.794	0.031	0.592	0.671
Currently using pill	0.129	0.018	382	973	1.028	0.137	0.094	0.164
Currently using 2 monthly injectables	0.131	0.017	382	973	1.005	0.132	0.097	0.166
Currently using 3 monthly injectables	0.167	0.017	382	973	0.873	0.100	0.133	0.200
Currently using female sterilization	0.105	0.018	382	973	1.161	0.174	0.068	0.141
Obtained method from public sector source	0.713	0.038	360	938	1.612	0.054	0.636	0.790
Want no more children	0.597	0.037	321	788	1.352	0.062	0.523	0.671
Want to delay birth at least 2 years	0.058	0.012	321	788	0.932	0.209	0.034	0.083
Ideal number of children	2.397	0.046	683	1753	0.998	0.019	2.305	2.489
Mothers received tetanus injection for last birth	0.288	0.038	203	515	1.197	0.133	0.211	0.365
Mothers received medical care at delivery	0.952	0.015	231	588	0.970	0.016	0.921	0.983
Child had diarrhea in the last 2 weeks	0.039	0.014	222	563	1.075	0.359	0.011	0.067
Treated with ORS packets	0.264	0.158	9	22	1.044	0.596	0.000	0.579
Consulted medical personnel	0.352	0.166	9	22	1.017	0.472	0.020	0.685
Child having health card, seen	0.727	0.083	40	101	1.082	0.114	0.562	0.893
Child received BCG vaccination	0.730	0.082	40	101	1.076	0.113	0.566	0.894
Child received DPT vaccination (3 doses)	0.534	0.096	40	101	1.170	0.180	0.341	0.727
Child received polio vaccination (3 doses)	0.563	0.086	40	101	1.049	0.153	0.391	0.735
Child received measles vaccination	0.484	0.098	40	101	1.196	0.203	0.288	0.680
Child fully immunized	0.426	0.098	40	101	1.209	0.229	0.231	0.622
Had two or more sexual partners in last 12 months	0.030	0.009	532	1378	1.142	0.280	0.013	0.047
Had higher risk sex in the last 12 months	0.586	0.024	532	1378	1.112	0.041	0.539	0.634
Condom use at last higher risk sex-all	0.513	0.023	292	808	0.783	0.045	0.467	0.559
Condom use at last higher risk sex-youth	0.620	0.051	120	330	1.152	0.083	0.517	0.722
Abstinence among youth (never had sex)	0.400	0.041	190	499	1.149	0.102	0.318	0.482
Sexual activity in last 12 months	0.523	0.042	190	499	1.152	0.080	0.439	0.606
Had HIV test & received results in last 12 months	0.085	0.012	722	1854	1.117	0.136	0.062	0.108
Accepting attitudes towards people with HIV	0.409	0.021	680	1742	1.128	0.052	0.367	0.452
Total fertility rate (last 3 years)	2.259	0.243	na	5261	1.326	0.107	1.773	2.745
Neonatal mortality (last 10 years)	24.187	9.403	490	1259	1.153	0.389	5.382	42.992
Post-neonatal mortality (last 10 years)	9.312	5.485	490	1259	1.026	0.589	0.000	20.282
Infant mortality (last 10 years)	33.499	10.549	490	1259	1.088	0.315	12.402	54.596
Child mortality (last 10 years)	9.355	4.559	490	1259	1.010	0.487	0.237	18.473
Under-five mortality (last 10 years)	42.541	12.834	490	1259	1.218	0.302	16.873	68.208
MEN QUESTIONNAIRE								
Urban residence	0.994	0.000	346	815	0.097	0.000	0.993	0.995
No education	0.056	0.015	346	815	1.178	0.261	0.027	0.085
Secondary education or higher	0.805	0.025	346	815	1.174	0.031	0.755	0.855
Never married (in union)	0.499	0.037	346	815	1.379	0.074	0.424	0.573
Currently married (in union)	0.462	0.037	346	815	1.390	0.081	0.387	0.536
Had sex before 18	0.480	0.029	296	692	0.986	0.060	0.423	0.537
Had two or more sexual partners in last 12 months	0.179	0.021	258	603	0.892	0.119	0.137	0.222
Had higher risk sex in the last 12 months	0.605	0.034	258	603	1.104	0.056	0.538	0.673
Condom use at last higher risk sex-all	0.679	0.038	150	365	0.993	0.056	0.603	0.755
Condom use at last higher risk sex-youth	0.738	0.068	61	152	1.202	0.093	0.601	0.874
Abstinence among youth (never had sex)	0.293	0.039	95	233	0.834	0.134	0.215	0.371
Sexual activity in last 12 months	0.589	0.036	95	233	0.714	0.062	0.516	0.661
Ever had HIV test and received results	0.172	0.019	310	730	0.864	0.108	0.135	0.209
Circumcision	0.252	0.031	374	59	1.419	0.124	0.190	0.315

Variable	Number of cases					Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Variable			Value (R)	
	ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	126.285	1.237	359	884	0.010	1.175	123.813	128.758	
Systolic Blood Pressure (women)	122.001	0.953	409	1 017	0.008	0.964	120.095	123.907	
Diastolic Blood Pressure (men)	75.595	1.018	360	887	0.013	1.320	73.560	77.630	
Diastolic Blood Pressure (women)	75.891	0.669	413	1 028	0.009	1.006	74.554	77.228	
Pulse (men)	73.236	0.821	360	887	0.011	1.235	71.594	74.879	
Pulse (women)	77.771	0.711	412	1 025	0.009	1.173	76.350	79.191	
Hypertensive (men)	0.097	0.017	370	914	0.174	0.932	0.063	0.131	
Hypertensive (women)	0.170	0.023	432	1 074	0.132	1.217	0.125	0.215	
Airflow Limitation (men)	0.122	0.028	370	914	0.227	1.949	0.067	0.178	
Airflow Limitation (women)	0.157	0.016	432	1 074	0.105	1.312	0.124	0.190	
Chronic Bronchitis (men)	0.075	0.013	370	914	0.180	1.686	0.048	0.102	
Chronic Bronchitis (women)	0.065	0.011	432	1 074	0.173	2.444	0.043	0.088	
Abnormal Peak Flow (men)	0.021	0.007	370	914	0.342	0.448	0.007	0.036	
Abnormal Peak Flow (women)	0.008	0.004	432	1 074	0.555	0.234	0.000	0.017	
Currently smoking (occasionally of daily) (men)	0.385	0.029	370	914	0.074	1.079	0.328	0.442	
Currently smoking (occasionally of daily) (women)	0.094	0.017	432	1 074	0.180	1.149	0.060	0.128	
Abstainers - alcohol intake in last 12 months (men)	0.516	0.034	370	914	0.065	1.229	0.449	0.583	
Abstainers - alcohol intake in last 12 months (women)	0.790	0.032	432	1 074	0.041	1.558	0.726	0.854	
Responsible - alcohol intake in last 12 months (men)	0.398	0.032	370	914	0.080	1.187	0.334	0.461	
Responsible - alcohol intake in last 12 months (women)	0.186	0.027	432	1 074	0.143	1.356	0.133	0.239	
Hazardous - alcohol intake in last 12 months (men)	0.036	0.011	370	914	0.307	1.080	0.014	0.059	
Hazardous - alcohol intake in last 12 months (women)	0.008	0.004	432	1 074	0.550	0.956	0.000	0.017	
Harmful - alcohol intake in last 12 months (men)	0.028	0.009	370	914	0.329	1.001	0.010	0.047	
Harmful - alcohol intake in last 12 months (women)	0.008	0.004	432	1 074	0.539	0.973	0.000	0.017	
Adequate nutrient (men)	0.479	0.032	363	900	0.067	1.162	0.415	0.542	
Adequate nutrient (women)	0.562	0.030	423	1 053	0.053	1.183	0.502	0.621	
Weight (men)	67.630	1.212	347	854	0.018	1.398	65.207	70.053	
Weight (women)	69.419	1.052	412	1 25	0.015	1.149	67.315	71.522	
Height (men)	1.701	0.006	352	865	0.004	1.249	1.689	1.714	
Height (women)	1.591	0.004	412	1 025	0.003	1.096	1.583	1.599	
Waist/hip ratio (men)	0.943	0.057	350	859	0.061	1.228	0.828	1.058	
Waist/hip ratio (women)	0.937	0.060	405	1 006	0.064	1.196	0.818	1.056	
Hip circumference (men)	94.796	1.262	350	859	0.013	1.110	92.272	97.320	
Hip circumference (women)	104.252	1.485	407	1 012	0.014	1.232	101.282	107.221	
Body Mass Index (men)	23.485	0.392	352	865	0.017	1.305	22.702	24.269	
Body Mass Index (women)	27.513	0.435	412	1 025	0.016	1.163	26.644	28.382	
Overweight (men)	0.202	0.022	352	865	0.107	0.959	0.158	0.245	
Overweight (women)	0.282	0.026	412	1 025	0.091	1.105	0.230	0.333	
Obesity (men)	0.097	0.021	352	865	0.216	1.249	0.055	0.139	
Obesity (women)	0.301	0.025	412	1 025	0.084	1.066	0.250	0.351	
Nutrient intake (men)	18.046	0.784	363	900	0.043	1.222	16.479	19.612	
Nutrient intake (women)	15.349	0.713	423	1 053	0.046	1.316	13.924	16.773	
Physically inactive (men)	0.821	0.024	270	650	0.029	0.967	0.773	0.869	
Physically inactive (women)	0.858	0.018	359	870	0.020	0.894	0.823	0.893	
Total mets (men)	1 698.757	206.292	270	650	0.121	1.056	1 285.967	2 111.547	
Total mets (women)	1 301.545	136.205	359	870	0.105	0.879	1 029.094	1 573.996	

Table B12 Sampling errors: Mpumalanga 2003

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.469	0.025	776	451	1.387	0.053	0.419	0.519
No education	0.058	0.011	776	451	1.330	0.193	0.036	0.080
With secondary education or higher	0.749	0.024	776	451	1.558	0.032	0.700	0.797
Never married (in union)	0.517	0.027	776	451	1.497	0.052	0.463	0.571
Currently married (in union)	0.395	0.025	776	451	1.445	0.064	0.345	0.446
Had first sex before age 18	0.520	0.029	613	358	1.450	0.056	0.461	0.579
Married before age 20	0.256	0.024	613	358	1.362	0.094	0.208	0.304
Children ever born	1.842	0.091	776	451	1.347	0.049	1.660	2.024
Children surviving	1.724	0.084	776	451	1.323	0.048	1.557	1.891
Children ever born to women 40-49	3.756	0.163	138	81	0.918	0.043	3.430	4.082
Knowing any contraceptive method	0.983	0.007	390	229	1.099	0.007	0.968	0.997
Knowing any modern contraceptive method	0.983	0.007	390	229	1.099	0.007	0.968	0.997
Ever used any contraceptive method	0.839	0.023	390	229	1.230	0.027	0.793	0.885
Currently using any contraceptive method	0.623	0.027	390	229	1.083	0.043	0.570	0.677
Currently using a modern method	0.623	0.027	390	229	1.083	0.043	0.570	0.677
Currently using pill	0.116	0.017	390	229	1.066	0.149	0.081	0.151
Currently using 2 monthly injectables	0.156	0.018	390	229	0.962	0.113	0.121	0.192
Currently using 3 monthly injectables	0.160	0.016	390	229	0.887	0.103	0.127	0.193
Currently using female sterilization	0.088	0.018	390	229	1.266	0.207	0.052	0.124
Obtained method from public sector source	0.853	0.025	385	226	1.409	0.030	0.802	0.904
Want no more children	0.585	0.029	303	178	1.014	0.049	0.527	0.642
Want to delay birth at least 2 years	0.105	0.017	303	178	0.972	0.163	0.071	0.139
Ideal number of children	2.958	0.072	773	449	1.438	0.024	2.814	3.102
Mothers received tetanus injection for last birth	0.631	0.032	253	144	1.058	0.051	0.566	0.696
Mothers received medical care at delivery	0.925	0.015	296	169	0.957	0.017	0.895	0.956
Child had diarrhea in the last 2 weeks	0.068	0.018	287	164	1.165	0.257	0.033	0.103
Treated with ORS packets	0.210	0.089	19	11	0.960	0.424	0.032	0.389
Consulted medical personnel	0.430	0.107	19	11	0.948	0.249	0.216	0.644
Child having health card, seen	0.777	0.056	58	33	1.002	0.072	0.665	0.888
Child received BCG vaccination	0.951	0.028	58	33	0.963	0.029	0.896	1.000
Child received DPT vaccination (3 doses)	0.925	0.037	58	33	1.047	0.040	0.852	0.999
Child received polio vaccination (3 doses)	0.818	0.051	58	33	0.992	0.062	0.716	0.920
Child received measles vaccination	0.784	0.056	58	33	1.027	0.072	0.672	0.897
Child fully immunized	0.620	0.062	58	33	0.963	0.100	0.496	0.744
Had two or more sexual partners in last 12 months	0.021	0.006	577	336	0.943	0.269	0.010	0.032
Had higher risk sex in the last 12 months	0.560	0.026	577	336	1.275	0.047	0.507	0.613
Condom use at last higher risk sex-all	0.402	0.038	325	188	1.383	0.094	0.326	0.477
Condom use at last higher risk sex-youth	0.422	0.050	159	89	1.284	0.120	0.321	0.523
Abstinence among youth (never had sex)	0.374	0.038	255	144	1.249	0.101	0.298	0.450
Sexual activity in last 12 months	0.536	0.038	255	144	1.217	0.071	0.460	0.612
Had HIV test & received results in last 12 months	0.071	0.009	776	451	0.962	0.125	0.054	0.089
Accepting attitudes towards people with HIV	0.355	0.024	752	437	1.380	0.068	0.307	0.403
Total fertility rate (last 3 years)	2.266	0.177	na	1248	1.065	0.078	1.912	2.620
Neonatal mortality (last 10 years)	21.432	6.707	633	366	1.021	0.313	8.018	34.845
Post-neonatal mortality (last 10 years)	19.058	5.732	633	366	1.012	0.301	7.594	30.523
Infant mortality (last 10 years)	40.490	9.649	633	366	1.109	0.238	21.192	59.788
Child mortality (last 10 years)	12.511	4.798	634	366	0.918	0.384	2.914	22.107
Under-five mortality (last 10 years)	52.494	9.583	634	366	0.987	0.183	33.329	71.659
MEN QUESTIONNAIRE								
Urban residence	0.520	0.033	346	208	1.237	0.064	0.454	0.587
No education	0.057	0.013	346	208	1.065	0.233	0.031	0.084
Secondary education or higher	0.700	0.028	346	208	1.139	0.040	0.643	0.756
Never married (in union)	0.635	0.023	346	208	0.904	0.037	0.589	0.682
Currently married (in union)	0.296	0.023	346	208	0.950	0.079	0.249	0.343
Had sex before 18	0.495	0.034	253	153	1.074	0.068	0.427	0.562
Had two or more sexual partners in last 12 months	0.241	0.032	238	143	1.164	0.134	0.176	0.305
Had higher risk sex in the last 12 months	0.682	0.032	239	144	1.066	0.047	0.617	0.746
Condom use at last higher risk sex-all	0.709	0.036	163	98	1.012	0.051	0.637	0.781
Condom use at last higher risk sex-youth	0.755	0.053	89	52	1.164	0.071	0.648	0.862
Abstinence among youth (never had sex)	0.363	0.038	156	92	0.982	0.104	0.287	0.439
Sexual activity in last 12 months	0.569	0.034	156	92	0.844	0.059	0.502	0.636
Ever had HIV test and received results	0.205	0.019	323	194	0.858	0.094	0.166	0.243
Circumcision	0.363	0.029	701	700	1.683	0.081	0.305	0.422

Variable	Number of cases					Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)	Variable			Value (R)	
	ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	122.495	1.133	355	207	0.009	1.236	120.227	124.762	
Systolic Blood Pressure (women)	122.507	0.994	508	296	0.008	1.020	120.520	124.494	
Diastolic Blood Pressure (men)	69.485	0.745	356	207	0.011	1.114	67.994	70.976	
Diastolic Blood Pressure (women)	74.627	0.540	509	296	0.007	0.960	73.547	75.706	
Pulse (men)	72.513	0.859	356	207	0.012	1.298	70.795	74.231	
Pulse (women)	77.299	0.695	509	296	0.009	1.286	75.908	78.689	
Hypertensive (men)	0.019	0.007	359	209	0.365	0.625	0.005	0.033	
Hypertensive (women)	0.043	0.009	515	300	0.204	0.642	0.025	0.060	
Airflow Limitation (men)	0.045	0.013	359	209	0.277	0.878	0.020	0.070	
Airflow Limitation (women)	0.102	0.015	515	300	0.146	1.063	0.072	0.132	
Chronic Bronchitis (men)	0.077	0.017	359	209	0.228	2.834	0.042	0.112	
Chronic Bronchitis (women)	0.109	0.016	515	300	0.149	3.508	0.077	0.142	
Abnormal Peak Flow (men)	0.012	0.006	359	209	0.499	0.860	0.000	0.025	
Abnormal Peak Flow (women)	0.010	0.005	515	300	0.524	0.607	0.000	0.021	
Currently smoking (occasionally of daily) (men)	0.334	0.026	359	209	0.079	1.045	0.282	0.387	
Currently smoking (occasionally of daily) (women)	0.040	0.008	515	300	0.195	0.883	0.025	0.056	
Abstainers - alcohol intake in last 12 months (men)	0.590	0.031	359	209	0.052	1.172	0.529	0.652	
Abstainers - alcohol intake in last 12 months (women)	0.917	0.011	515	300	0.013	0.918	0.894	0.940	
Responsible - alcohol intake in last 12 months (men)	0.347	0.031	359	209	0.089	1.218	0.285	0.409	
Responsible - alcohol intake in last 12 months (women)	0.064	0.011	515	300	0.169	0.980	0.042	0.085	
Hazardous - alcohol intake in last 12 months (men)	0.023	0.008	359	209	0.325	0.922	0.008	0.038	
Hazardous - alcohol intake in last 12 months (women)	0.008	0.005	515	300	0.606	1.210	0.000	0.019	
Harmful - alcohol intake in last 12 months (men)	0.014	0.006	359	209	0.436	0.972	0.002	0.026	
Harmful - alcohol intake in last 12 months (women)	0.007	0.004	515	300	0.552	0.958	0.000	0.014	
Adequate nutrient (men)	0.073	0.026	359	209	0.360	1.889	0.021	0.126	
Adequate nutrient (women)	0.065	0.021	513	299	0.322	1.873	0.023	0.107	
Weight (men)	63.523	0.893	352	205	0.014	1.249	61.738	65.309	
Weight (women)	67.154	0.931	504	294	0.014	1.243	65.292	69.016	
Height (men)	1.687	0.004	354	206	0.002	1.040	1.679	1.695	
Height (women)	1.587	0.003	504	294	0.002	1.097	1.581	1.594	
Waist/hip ratio (men)	0.908	0.040	352	205	0.044	0.947	0.828	0.988	
Waist/hip ratio (women)	0.820	0.021	503	293	0.025	0.966	0.779	0.862	
Hip circumference (men)	88.664	0.720	352	205	0.008	0.977	87.222	90.106	
Hip circumference (women)	102.014	0.894	503	293	0.009	1.137	100.225	103.802	
Body Mass Index (men)	22.303	0.277	354	206	0.012	1.231	21.750	22.857	
Body Mass Index (women)	26.653	0.361	504	294	0.014	1.254	25.931	27.376	
Overweight (men)	0.163	0.023	354	206	0.143	1.182	0.116	0.209	
Overweight (women)	0.259	0.023	504	294	0.088	1.164	0.214	0.305	
Obesity (men)	0.060	0.012	354	206	0.209	0.978	0.035	0.085	
Obesity (women)	0.280	0.020	504	294	0.072	0.997	0.239	0.320	
Nutrient intake (men)	32.429	0.887	359	209	0.027	1.761	30.655	34.204	
Nutrient intake (women)	32.079	0.793	513	299	0.025	1.897	30.493	33.665	
Physically inactive (men)	0.662	0.031	312	182	0.046	1.135	0.601	0.723	
Physically inactive (women)	0.796	0.019	464	271	0.024	1.043	0.757	0.835	
Total mets (men)	3 081.575	260.922	312	182	0.085	1.069	2 559.829	3 603.321	
Total mets (women)	1 741.380	168.777	464	271	0.097	1.207	1 403.776	2 078.983	

Table B13 Sampling errors: Limpopo 2003

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Unweighted (N)	Weighted (WN)			Value- SE (R-2SE)	Value+ 2SE (R+2E)
WOMEN QUESTIONNAIRE								
Urban residence	0.131	0.029	782	772	2.431	0.224	0.072	0.189
No education	0.057	0.009	782	772	1.139	0.165	0.038	0.076
With secondary education or higher	0.740	0.023	782	772	1.448	0.031	0.695	0.786
Never married (in union)	0.548	0.016	782	772	0.910	0.030	0.516	0.581
Currently married (in union)	0.388	0.016	782	772	0.934	0.042	0.356	0.421
Had first sex before age 18	0.418	0.026	553	549	1.225	0.062	0.366	0.469
Married before age 20	0.312	0.022	553	549	1.100	0.070	0.269	0.355
Children ever born	1.861	0.080	782	772	1.052	0.043	1.700	2.022
Children surviving	1.736	0.070	782	772	1.000	0.041	1.595	1.876
Children ever born to women 40-49	4.476	0.255	125	129	1.165	0.057	3.965	4.987
Knowing any contraceptive method	0.963	0.011	309	309	1.058	0.012	0.940	0.986
Knowing any modern contraceptive method	0.963	0.011	309	309	1.058	0.012	0.940	0.986
Ever used any contraceptive method	0.853	0.020	309	309	1.002	0.024	0.812	0.893
Currently using any contraceptive method	0.586	0.034	309	309	1.197	0.057	0.519	0.653
Currently using a modern method	0.586	0.034	309	309	1.197	0.057	0.519	0.653
Currently using pill	0.086	0.015	309	309	0.964	0.179	0.055	0.117
Currently using 2 monthly injectables	0.212	0.022	309	309	0.958	0.105	0.167	0.256
Currently using 3 monthly injectables	0.135	0.030	309	309	1.536	0.221	0.075	0.195
Currently using female sterilization	0.051	0.018	309	309	1.411	0.348	0.015	0.086
Obtained method from public sector source	0.899	0.018	340	345	1.127	0.020	0.863	0.936
Want no more children	0.570	0.033	305	300	1.170	0.058	0.503	0.636
Want to delay birth at least 2 years	0.184	0.023	305	300	1.013	0.122	0.139	0.229
Ideal number of children	3.145	0.071	766	757	1.283	0.023	3.002	3.288
Mothers received tetanus injection for last birth	0.633	0.025	273	261	0.848	0.040	0.583	0.683
Mothers received medical care at delivery	0.876	0.016	301	288	0.802	0.018	0.844	0.908
Child had diarrhea in the last 2 weeks	0.084	0.014	287	274	0.823	0.169	0.055	0.112
Treated with ORS packets	0.161	0.081	24	23	1.046	0.499	0.000	0.322
Consulted medical personnel	0.556	0.111	24	23	1.025	0.199	0.334	0.778
Child having health card, seen	0.889	0.043	68	65	1.119	0.049	0.802	0.976
Child received BCG vaccination	0.929	0.036	68	65	1.136	0.039	0.857	1.000
Child received DPT vaccination (3 doses)	0.787	0.057	68	65	1.062	0.072	0.674	0.900
Child received polio vaccination (3 doses)	0.815	0.051	68	65	1.010	0.063	0.712	0.918
Child received measles vaccination	0.673	0.068	68	65	1.130	0.101	0.538	0.809
Child fully immunized	0.645	0.072	68	65	1.177	0.111	0.501	0.788
Had two or more sexual partners in last 12 months	0.080	0.014	554	549	1.252	0.180	0.051	0.109
Had higher risk sex in the last 12 months	0.578	0.023	557	552	1.099	0.040	0.532	0.624
Condom use at last higher risk sex-all	0.363	0.036	321	319	1.356	0.100	0.290	0.436
Condom use at last higher risk sex-youth	0.393	0.048	189	184	1.351	0.123	0.297	0.489
Abstinence among youth (never had sex)	0.371	0.037	316	308	1.357	0.100	0.297	0.445
Sexual activity in last 12 months	0.536	0.030	316	308	1.059	0.056	0.476	0.595
Had HIV test & received results in last 12 months	0.052	0.009	782	772	1.178	0.179	0.034	0.071
Accepting attitudes towards people with HIV	0.289	0.022	732	722	1.323	0.077	0.245	0.334
Total fertility rate (last 3 years)	2.718	0.226	na	2102	1.148	0.083	2.265	3.170
Neonatal mortality (last 10 years)	20.034	5.841	635	613	0.976	0.292	8.352	31.716
Post-neonatal mortality (last 10 years)	14.096	4.530	635	613	0.987	0.321	5.036	23.156
Infant mortality (last 10 years)	34.130	7.273	635	613	0.988	0.213	19.584	48.677
Child mortality (last 10 years)	9.906	4.120	635	613	1.046	0.416	1.667	18.146
Under-five mortality (last 10 years)	43.698	7.583	635	613	0.921	0.174	28.533	58.864
MEN QUESTIONNAIRE								
Urban residence	0.127	0.018	230	228	0.819	0.142	0.091	0.163
No education	0.044	0.017	230	228	1.258	0.386	0.010	0.079
Secondary education or higher	0.710	0.037	230	228	1.231	0.052	0.636	0.784
Never married (in union)	0.460	0.038	230	228	1.164	0.083	0.383	0.537
Currently married (in union)	0.464	0.040	230	228	1.199	0.085	0.385	0.543
Had sex before 18	0.394	0.038	156	157	0.962	0.096	0.318	0.469
Had two or more sexual partners in last 12 months	0.263	0.041	144	141	1.102	0.154	0.182	0.344
Had higher risk sex in the last 12 months	0.716	0.042	146	143	1.130	0.059	0.632	0.801
Condom use at last higher risk sex-all	0.461	0.066	107	103	1.373	0.144	0.328	0.594
Condom use at last higher risk sex-youth	0.502	0.080	65	60	1.284	0.160	0.342	0.663
Abstinence among youth (never had sex)	0.372	0.045	87	84	0.858	0.120	0.283	0.462
Sexual activity in last 12 months	0.490	0.054	87	84	0.994	0.109	0.383	0.597
Ever had HIV test and received results	0.125	0.035	210	208	1.552	0.284	0.054	0.196
Circumcision	0.477	0.036	345	812	1.327	0.075	0.405	0.548



Variable	Number of cases					Confidence intervals		
	Value	Standard	Unweighted	Weighted	Design	Relative	Variable	Value
	(R)	error (SE)	(N)	(WN)	effect (DEFT)	error (SE/R)		
ADULT QUESTIONNAIRE								
Systolic Blood Pressure (men)	119.990	0.949	277	274	0.008	0.990	118.091	121.890
Systolic Blood Pressure (women)	119.131	1.233	516	509	0.010	1.288	116.666	121.597
Diastolic Blood Pressure (men)	68.562	0.899	277	274	0.013	1.237	66.762	70.362
Diastolic Blood Pressure (women)	71.041	0.766	518	511	0.011	1.337	69.509	72.574
Pulse (men)	70.508	0.917	277	274	0.013	1.146	68.671	72.344
Pulse (women)	77.255	0.784	517	510	0.010	1.393	75.687	78.823
Hypertensive (men)	0.030	0.010	284	282	0.344	0.824	0.009	0.051
Hypertensive (women)	0.039	0.010	526	519	0.254	0.759	0.019	0.059
Airflow Limitation (men)	0.040	0.012	284	282	0.309	0.795	0.015	0.064
Airflow Limitation (women)	0.088	0.013	526	519	0.147	1.041	0.062	0.115
Chronic Bronchitis (men)	0.066	0.015	284	282	0.234	1.576	0.035	0.097
Chronic Bronchitis (women)	0.092	0.014	526	519	0.157	1.780	0.063	0.120
Abnormal Peak Flow (men)	0.025	0.012	284	282	0.466	1.087	0.002	0.049
Abnormal Peak Flow (women)	0.036	0.008	526	519	0.233	0.860	0.019	0.052
Currently smoking (occasionally of daily) (men)	0.249	0.032	284	282	0.128	1.195	0.186	0.313
Currently smoking (occasionally of daily) (women)	0.038	0.011	526	519	0.299	1.186	0.015	0.060
Abstainers - alcohol intake in last 12 months (men)	0.664	0.029	284	282	0.044	1.015	0.606	0.722
Abstainers - alcohol intake in last 12 months (women)	0.887	0.020	526	519	0.023	1.354	0.847	0.928
Responsible - alcohol intake in last 12 months (men)	0.238	0.024	284	282	0.100	0.924	0.191	0.286
Responsible - alcohol intake in last 12 months (women)	0.082	0.016	526	519	0.190	1.199	0.051	0.114
Hazardous - alcohol intake in last 12 months (men)	0.013	0.007	284	282	0.549	0.942	0.000	0.028
Hazardous - alcohol intake in last 12 months (women)	0.002	0.002	526	519	0.994	0.994	0.000	0.005
Harmful - alcohol intake in last 12 months (men)	0.010	0.007	284	282	0.670	0.952	0.000	0.023
Harmful - alcohol intake in last 12 months (women)	0.010	0.006	526	519	0.613	1.217	0.000	0.022
Adequate nutrient (men)	0.085	0.018	282	280	0.210	1.081	0.049	0.121
Adequate nutrient (women)	0.107	0.015	525	518	0.142	1.121	0.077	0.138
Weight (men)	61.076	0.780	270	268	0.013	1.030	59.515	62.637
Weight (women)	63.601	1.133	502	496	0.018	1.349	61.336	65.866
Height (men)	1.684	0.005	270	268	0.003	1.052	1.674	1.693
Height (women)	1.574	0.004	502	496	0.003	1.259	1.566	1.583
Waist/hip ratio (men)	0.882	0.036	269	267	0.041	0.982	0.809	0.954
Waist/hip ratio (women)	0.827	0.014	495	488	0.017	0.999	0.798	0.855
Hip circumference (men)	87.894	0.712	269	267	0.008	1.005	86.469	89.319
Hip circumference (women)	98.942	0.944	497	490	0.010	1.375	97.053	100.830
Body Mass Index (men)	21.520	0.239	270	268	0.011	0.962	21.041	21.998
Body Mass Index (women)	25.629	0.427	502	496	0.017	1.367	24.775	26.483
Overweight (men)	0.110	0.020	270	268	0.181	1.024	0.070	0.149
Overweight (women)	0.242	0.017	502	496	0.071	0.872	0.207	0.276
Obesity (men)	0.046	0.013	270	268	0.274	0.946	0.021	0.071
Obesity (women)	0.218	0.021	502	496	0.095	1.076	0.177	0.259
Nutrient intake (men)	31.054	0.676	282	280	0.022	1.235	29.700	32.407
Nutrient intake (women)	30.344	0.616	525	518	0.020	1.440	29.112	31.576
Physically inactive (men)	0.595	0.039	247	245	0.065	1.217	0.517	0.673
Physically inactive (women)	0.699	0.026	491	484	0.037	1.215	0.648	0.751
Total mets (men)	3 189.133	300.943	247	245	0.094	1.259	2 586.2723	791.995
Total mets (women)	2 627.448	212.838	491	484	0.081	1.273	2 201.8533	053.044

## **APPENDIX C**

### **DATA QUALITY**

#### **C1 Introduction**

The extent of sampling error for selected indicators measured in SADHS is provided in Appendix B. However, this does not reflect the extent of other errors or bias that may have occurred in the survey. Several tables are presented in this Appendix, which can be used to assess non-sampling errors in the SADHS. Such errors arise from inaccurate recording by the interviewers or inaccurate reporting by the respondents and include digit preference, rounding or heaping on certain ages or dates, omission of events occurring further in the past or deliberate distortion of information by some interviewers in an attempt to lighten their workloads. In addition, selective non-response also creates non-sampling error in the measurement.

#### **C2 Age of Household Respondents**

The distribution of the de facto household population by single year of age is presented in Table C.1. Only 2 cases had missing information, which accounted for less than 0.1 percent. The data show little evidence of “age heaping” or digit preference to ages ending in zeros and fives as is commonly observed in countries where the population do not know their age. However, there are strong irregularities in the age distribution with a strong displacement of women aged 15-49 years being shifted to outside the range 15-49 years, presumably in order to avoid the need to interview them using the detailed women questionnaire. Similarly, there is displacement of men aged 15-59 years being shifted to outside the range 15-59 years.

The displacement is particularly noticeable at the younger age. For women, the number who were 14 years old (506) was somewhat bigger than the number who were 13 years (404) and 15 years old (238) respectively. One would expect a much smoother range in the numbers at each exact age. Similarly, for men, the number of 14 year olds was 515 compared with 438 who were 13 years old and 329 who were 15 years old.

There appears to be a general under-representation of children 6 years and younger as discussed in Chapter 3. There appears to be an over-representation in the age range 7-14 years. This has serious consequence on the estimates of fertility in the years preceding the survey and is particularly marked in KwaZulu-Natal. It is possible that the requirement to measure young children created an incentive to leave such children off the household roster.

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), South Africa 2003

Age	Female		Male	
	Number	Percent	Number	Percent
0	221	1.6	265	1.7
1	199	1.5	233	1.5
2	238	1.7	207	1.3
3	251	1.8	226	1.4
4	248	1.8	237	1.5
5	251	1.8	215	1.4
6	255	1.9	258	1.6
7	394	2.9	335	2.1
8	348	2.6	369	2.3
9	347	2.5	379	2.4
10	365	2.7	335	2.1
11	318	2.3	344	2.2
12	358	2.6	390	2.5
13	404	3.0	438	2.8
14	506	3.7	515	3.3
15	238	1.7	329	2.1
16	327	2.4	316	2.0
17	309	2.3	312	2.0
18	327	2.4	354	2.2
19	290	2.1	281	1.8
20	296	2.2	311	2.0
21	266	2.0	348	2.2
22	248	1.8	249	1.6
23	274	2.0	250	1.6
24	205	1.5	262	1.7
25	257	1.9	194	1.2
26	169	1.2	235	1.5
27	203	1.5	234	1.5
28	216	1.6	251	1.6
29	173	1.3	229	1.5
30	238	1.7	259	1.6
31	150	1.1	233	1.5
32	194	1.4	189	1.2
33	142	1.0	209	1.3
34	174	1.3	171	1.1
35	200	1.5	251	1.6
36	190	1.4	219	1.4
37	146	1.1	197	1.3
38	188	1.4	218	1.4
39	144	1.1	262	1.7
40	192	1.4	217	1.4
41	156	1.1	189	1.2
42	144	1.1	182	1.2
43	155	1.1	173	1.1
44	127	0.9	156	1.0
45	168	1.2	204	1.3
46	116	0.9	159	1.0
47	104	0.8	157	1.0
48	115	0.8	146	0.9
49	139	1.0	119	0.8
50	96	0.7	223	1.4
51	92	0.7	172	1.1
52	108	0.8	170	1.1
53	77	0.6	154	1.0
54	102	0.8	130	0.8
55	98	0.7	155	1.0
56	71	0.5	98	0.6
57	78	0.6	111	0.7
58	85	0.6	111	0.7
59	66	0.5	103	0.7
60	129	0.9	145	0.9
61	60	0.4	99	0.6
62	70	0.5	121	0.8
63	76	0.6	112	0.7
64	62	0.5	78	0.5
65	106	0.8	133	0.8
66	49	0.4	53	0.3
67	41	0.3	70	0.4
68	52	0.4	60	0.4
69	60	0.4	63	0.4
70+	360	2.6	573	3.6
Don't know/missing	1	0.0	2	0.0
Total	13 624	100.0	15 746	100.0

### C3 Response Rate for Women and Men

The age distribution of eligible women from the *de facto* household population is compared with the age distribution of the sampled women interviewed in Table C.2 and that for men in Table C.3. For women, the response rate was fairly constant over all age groups and ranged from 85.1 percent in the oldest age group to 88.9 percent in the preceding age group (40-44 years). For men, the response rate was more erratic across age groups. However, there was no clear age pattern in the response rate.

Table C.2 Age distribution of eligible and interviewed women				
De facto household population of women age 10-54, interviewed women age 15-49, and percentage of eligible women who were interviewed (weighted), by five-year age groups, South Africa 2003				
Age group	Household population of women age 10-54	Interviewed women age 15-49		
		Number	Percent	Percent of women
10-14	2 039	-	-	-
15-19	1 604	1 395	19.8	87.0
20-24	1 416	1 242	17.6	87.7
25-29	1 143	1 015	14.4	88.8
30-34	1 056	918	13.0	87.0
35-39	1 143	991	14.1	86.7
40-44	913	812	11.5	88.9
45-49	784	668	9.5	85.1
50-54	848	-	-	-
15-49	8 060	7 041	100.0	87.4
Note: The <i>de facto</i> population includes all residents and nonresidents who stayed in the household the night before the interview. Weights for both household population of women and interviewed women are household weights. Age is based on the household schedule. na = Not applicable.				

Table C3 Age distribution of eligible and interviewed men				
De facto household population of men aged 10-64, interviewed men aged 15-59 and percent of eligible men who were interviewed (weighted), South Africa 2003-2004				
Age group	Household population of men age 10-64	Interviewed men age 15-59		
		Number	Percent	Percent of men
10-14	1 057	-	-	-
15-19	756	603	19.3	79.7
20-24	666	527	16.9	79.1
25-29	506	416	13.3	82.1
30-34	464	348	11.2	75.0
35-39	461	340	10.9	73.7
40-44	410	323	10.4	78.9
45-49	304	224	7.2	73.7
50-54	249	184	5.9	73.8
55-59	198	155	5.0	78.0
60-64	232	-	-	-
15-59	4 014	3 118	100.0	77.7
Note: The <i>de facto</i> population includes all residents and nonresidents who stayed in the household the night before the interview. Weights for both household population of women and interviewed women are household weights. Age is based on the household schedule. na = Not applicable.				

## C4 Response Rate for Adults

The age distribution of eligible adult men and women from the *de facto* household population is compared with the age distribution of the sampled adults interviewed in Table C.4. The age distributions are roughly the same. However, the response rate for men was consistently lower (80.4 percent) than that for women (87.0 percent).

Table C.4 Age distribution of eligible and interviewed adults										
Percentage distribution by age of the <i>de facto</i> household population of adults aged 15 and above and of the interviewed adults aged 15 and above, and percentage of eligible adults who were interviewed (weighted), South Africa 2003										
Age	Adult men 15+					Adult women 15+				
	Household		Men interviewed			Household		Women interviewed		
	Number	Percentage	Number	Percentage	Percentage interviewed	Number	Percentage	Number	Percentage	Percentage interviewed
15-24	1 350	31.7	1121	32.8	83.0	1 439	26.7	1256	26.8	87.3
25-34	928	21.8	735	21.5	79.2	1 125	20.9	979	20.9	87.0
35-44	753	17.7	593	17.3	78.7	997	18.5	883	18.8	88.6
45-54	556	13.1	438	12.8	78.7	843	15.6	714	15.2	84.7
55-64	367	8.6	297	8.7	80.8	535	9.9	483	10.3	90.1
65+	301	7.1	240	7.0	79.7	456	8.5	378	8.1	82.9
15+	4 256	100.0	3 422	100.0	80.4	5 395	100.0	4 693	100.0	87.0

## C5 Response of Children

The numbers of children included in the survey through their mother's interview or as an additional child through an interview with the carer are shown in Table C5. Simple data checks based on basic demographic trends in South Africa indicate that there are problems with the child sample. The provincial ranking of the number of children under-five is not borne out in the number of children captured in each province with KwaZulu-Natal and Eastern Cape having the highest numbers but the lowest numbers interviewed in the survey. It is not clear what the implications are of the uneven response rate for children. However, these data should be interpreted carefully. Furthermore, it should be noted that the anthropometry was collected only for children whose mother was interviewed.

Table C.5 Number of children under-5						
Number of children under-5 years who live in household or whose mother lives in household according to source of data by province and type of data (unweighted), South Africa 2003						
Background Characteristic	Child in household			All children in household	Child not in household	All children interviewed (mother or carer)
	Mother interview	Carer interview	No data		Mother interview	
Province						
Western Cape	215	18	56	289	25	233
Eastern Cape	146	40	20	206	19	186
Northern Cape	260	44	22	326	20	304
Free State	204	43	33	280	14	247
KwaZulu-Natal	153	11	52	216	7	164
North West	238	63	24	325	24	301
Gauteng	195	16	17	228	27	211
Mpumalanga	262	50	18	330	25	312
Limpopo	271	58	28	357	16	329
Total	1 944	343	270	2 557	177	2 417
Data type						
Immunisation and illness	1 912	343	270	2 557	162	2 417
Anthropometry	1 615	0	942	2 557	-	-
Valid anthropometry	1 361	0	1 196	2 557	-	-

From Table C.6, it can be seen that some of the data for selected demographic and child health indicators have high proportions missing. In particular, the age at death of 21 percent of the deaths in the last 15 years are missing and about a third of children have anthropometry missing.

Table C.6 Completeness of reporting			
Percentage of observations missing information for selected demographic and health questions (weighted), South Africa 2003			
Subject	Reference group	Percentage with missing information	Number of cases
Birth date	Last 15 years		
Month only		1.3	7 221
Month and year		0.8	7 221
Age at death	Death to births in last 15 years	21.4	341
Age/date at first union <sup>1</sup>	Ever-married women	21.5	3 220
Respondent's education	All women 15-49	0.0	7 041
Child's size at birth	Births in last 59 months who were weighed	27.0	2 018
Diarrhoea in last 2 weeks	Living children under 59 months	6.4	2 016
Anthropometry	Living children under 59 months		
Height		33.2	2 016
Weight		29.5	2 016
Height for weight		33.7	2 016
<sup>1</sup> Both year and age missing.			

## C6 Birth History Details

The number of births, the proportion with complete birth details, the sex ratio at birth and the calendar year ratio are shown for each year before the survey in Table C.7. Examining the trends in all of these indicators gives insight into the quality of the data and identification of possible types of error. The number of births by 5-year period before the survey reveals that the most recent period 2000-2004 suffers a substantial deficit of reported births compared to earlier periods. The sex ratios at birth for both living and dead children show patterns in the 5-year period that are difficult to explain. The sex ratio at birth reported in this survey for the period 2000-2004 bears little resemblance to the general consensus of 101-103 that has been used by most demographers for South African demographic estimates. There seems to be displacement of births from year 1998 to 1997, presumably a deliberate attempt on the part of the interviewer to avoid having to fill the lengthy section on pregnancy and delivery and child health for birth that occurred since 1998.

Table C.7 Births by calendar years

Number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by calendar year, according to living (L), dead (D), and total (T) children (weighted), South Africa 2003-2004

Calendar year	Number of births			Percentage with complete birth date <sup>1</sup>			Sex ratio at birth <sup>2</sup>			Calendar year ratio <sup>3</sup>		
	L	D	T	L	D	T	L	D	T	L	D	T
2004	51	1	52	100.0	100.0	100.0	94.8	-	100.2	-	-	-
2003	411	22	433	100.0	71.7	98.5	97.7	89.0	97.2	-	-	-
2002	430	26	456	99.7	85.1	98.9	81.1	45.9	78.6	107.9	132.9	109.1
2001	386	17	403	99.3	97.0	99.2	103.3	227.6	106.7	91.9	68.2	90.5
2000	411	24	435	100.0	83.9	99.1	103.4	171.3	106.3	107.5	159.8	109.5
1999	378	13	391	99.7	88.9	99.3	118.2	68.1	116.0	98.7	50.7	95.7
1998	355	28	383	98.9	98.9	98.9	91.8	199.1	96.9	80.3	135.1	82.7
1997	507	28	534	98.5	84.5	97.8	116.9	141.0	118.1	116.3	80.5	113.7
1996	516	41	557	97.1	67.7	94.9	106.6	159.1	109.8	103.2	192.0	106.9
1995	493	15	508	99.0	79.0	98.4	79.8	99.3	80.3	95.9	43.2	92.5
2000-2004	1 689	91	1 780	99.8	84.0	99.0	95.6	107.9	96.2	-	-	-
1995-1999	2 249	125	2 374	98.5	81.9	97.7	101.5	139.8	103.2	-	-	-
1990-1994	2 498	111	2 609	97.8	86.1	97.3	94.7	194.0	97.6	-	-	-
1985-1989	2 008	79	2 088	97.7	86.3	97.2	99.7	178.1	101.9	-	-	-
< 1985	2 273	215	2 488	94.3	79.9	93.0	104.0	135.6	106.3	-	-	-
All	10 717	621	11 338	97.5	82.8	96.7	99.1	145.2	101.2	-	-	-

- = Not applicable.

<sup>1</sup> Both year and month of birth given.

<sup>2</sup>  $(B_m/B_f) \times 100$ , where  $B_m$  and  $B_f$  are the numbers of male and female births, respectively.

<sup>3</sup>  $[2B_x / (B_{x-1} + B_{x+1})] \times 100$ , where  $B_x$  is the number of births in calendar year x.

Table C.8 compares the average parities of women who responded to the birth history questionnaire in the 1998 SADHS with those of women who responded in the 2003 SADHS. The average parity in the 1998 SADHS was 1.95 compared with only 0.78 in 2003. The 1998 data show the typical trend displayed by women's parities increasing with age. The oldest cohort of women had on average 4.2 births by the time they reached the end of the reproductive cycle. In contrast the average parities from the 2003 survey show far too few births being reported for each age cohort of women, indicating serious omissions of births reported in the birth histories across all ages of women.

<u>Table C.8 Average parities in the 1998 and 2003</u>		
Comparison of the average parity by age group for women age 15-49 years, South Africa 1998 and 2003		
Age group	1998 SADHS Average parities	2003 SADHS Average parities
15-19	0.15	0.10
20-24	0.80	0.56
25-29	1.62	1.19
30-34	2.50	1.99
35-39	3.32	2.64
40-44	3.57	3.12
45-49	4.20	3.46.
15-49	1.95	1.61

Tables C.9 and C.10 provide information about the age at death of children provided in the birth histories. The proportion of neonates who die within the first 6 days of life is shown in Table C.9. The trend by five- year periods preceding the survey date shows a broadly consistent trend over time with about 88 percent of neonatal deaths occurring in the first week (early neonatal). Table C.10 shows the proportion of infant deaths that occur in the first month (neonatal) based on the reported age at death. Again it shows that the overall number of deaths reported in the most recent period before the survey is lower than the other periods. The data do not show a consistent trend in the reported number of reported infant deaths, but show a decreasing percentage of neonatal deaths during the last 15 years.



Table C.9 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods of birth preceding the survey (weighted), South Africa 2003

Age at death (days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	9	12	7	13	43
1	4	13	11	2	29
2	2	3	2	4	12
3	1	0	4	1	6
4	4	1	2	0	7
5	3	5	0	1	9
6	0	1	1	0	2
7	1	2	0	3	6
8	1	0	1	0	2
9	0	1	2	0	3
10	0	2	1	0	2
11	2	0	0	0	2
12	0	0	0	1	1
14	1	2	3	0	5
17	0	1	0	0	1
18	0	0	1	0	1
19	0	0	1	0	1
21	0	5	0	0	5
30	0	0	1	0	1
31+	0	1	0	0	1
Missing	0	1	1	1	2
Total 0-30	29	46	37	26	138
Percent early neonatal <sup>1</sup>	81.5	74.9	74.0	83.5	77.6

<sup>1</sup>Percent early neonatal: 0-6 days/0-30 days

Table C.10 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, for five-year periods of birth preceding the survey, South Africa 2003

Age at death (months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1 <sup>a</sup>	29	48	38	27	141
1	4	4	4	1	12
2	1	3	1	3	8
3	8	9	7	4	28
4	7	7	0	3	17
5	4	2	2	2	11
6	4	4	2	1	11
7	4	5	0	1	10
8	1	1	2	1	5
9	3	1	3	1	8
10	0	0	1	0	1
11	2	2	0	0	4
12	1	0	0	1	2
15	0	0	0	2	2
18	2	0	2	1	4
20	0	0	1	1	2
1 Year	8	4	3	5	19
Total 0-11 <sup>b</sup>	67	85	59	46	257
Percent neonatal <sup>c</sup>	43.1	56.4	64.0	58.7	55.1

<sup>a</sup> Includes deaths under one month reported in days

<sup>b</sup> Includes cases for which age at death (in exact months) is not known

<sup>c</sup> Deaths under one month divided by deaths under one year multiplied by 100

## C7 Adult Anthropometry and Blood Pressure

### *Heights and weights*

The data capture did not have predefined range of feasible heights and weights that would be accepted. A scatter plot of height and weight values for adults showed that many fell outside an acceptable measurement range. Further investigation revealed some cases clearly had the height and weight measurements swapped (29). Some cases had a misplaced decimal point (weights 467 and heights 112). These data could be corrected. However, applying the cut points of  $12 < \text{BMI} < 60$  (as in 1998 SADHS) and height  $> 1.3$  m there were 146 cases that needed to be excluded from the BMI calculation. This left 7 809 cases where the BMI could be calculated as compared with the preliminary report that excluded more cases and analysed only 6 974 cases (Table C.11).

Table C.11 Adult heights and weights			
The number (unweighted) of respondents with anthropometric measures taken, corrected and excluded by sex, South Africa 2003			
	Men	Women	Total
Heights			
Respondents measured	3 268	4 685	7 953
Corrected			
Swapped with weight	14	15	29
Decimal place corrected	40	72	112
Exclusions			
Impossible against cut point where $12 < \text{BMI} < 60$ and height $> 1.3$ m	57	87	144
Weights			
Respondents measured	3 266	4 687	7 953
Corrected			
Swapped with weight	14	15	29
Decimal place corrected	173	284	467
Exclusions			
Impossible against cut point where $12 < \text{BMI} < 60$ and height $> 1.3$ m	57	89	146
Acceptable for BMI analysis			
Number of cases	3 211	4 598	7 809
Number of cases in preliminary report	3 051	3 896	6 947

### *Waist and hip circumference*

Waist circumference was measured on 3 258 men and 4 655 women, while hip circumference was measured on 3 254 men and 4 657 women. Obvious measurements where the decimal place was incorrect were corrected (186). The same criteria for exclusion as in the 1998 SADHS were applied. These included  $12 < \text{BMI} < 60$  and height  $> 1.30$  m. The hip and waist circumferences were then checked by a sex specific regression analysis, using the BMI values to predict waist and hip. Values of waist or hip size that are more than 2SDs away from the predicted value for the given BMI, were excluded. In this way, 404 males and 348 females were further excluded (Table C.12).

Table C.12 Adult waist and hip circumference			
The number (unweighted) of respondents with anthropometric measures taken, corrected and excluded by sex, South Africa 2003			
	Men	Women	Total
Waist circumference			
Respondents measured	3 258	4 655	7 913
Corrected			
Decimal place corrected	28	76	104
Exclusions			
More than 2SD from predicted value based on BMI	175	188	363
Hip circumference			
Respondents measured	3 254	4 657	7 911
Corrected			
Decimal place corrected	25	57	82
Exclusions			
More than 2SD from predicted value based on BMI	358	291	649
Acceptable for BMI analysis			
Number of cases	2 854	4 307	7 161

### *Blood pressure*

The protocol required three blood pressure readings to be taken on each individual. From Table C.13 it can be seen that there were 178 cases that had no blood pressure readings and 3 258 men and 4 646 women with at least one systolic reading and 3 267 men and 4 667 females with at least one diastolic reading. Examination of the blood pressure readings revealed numerous obvious outliers. In 10 cases, the outlier blood pressure reading was corrected by verifying it against the other 2 blood pressure measurements taken on that individual. However, some values were not possible to interpret and had to be dropped from analysis (66). The WHO standard of taking the lowest diastolic and the corresponding systolic value was used to determine the blood pressure measurement for analysis. This enabled the use of records where only one pair of blood pressure readings was made. At least one systolic and diastolic blood pressure measurement was taken on 3 268 men and 4 668 women respectively. In addition, there were 605 respondents on blood pressure medication. Hypertension (blood pressure  $> 140/90$  and/or medication) was identified in 643 males and 1 215 females.

**Table C.13 Adult blood pressure**

The number (unweighted) of respondents with blood pressure readings and the number excluded from analysis, by sex, South Africa 2003

	Men	Women	Total
Assessment of blood pressure			
Blood pressure measured (with at least one reading)	3 268	4 668	7 936
Systolic pressure	3 258	4 646	7 904
Three readings in range	3 245	4 623	7 868
Two readings in range	12	26	38
One reading in range	9	18	27
No readings in range	2	2	4
No readings done	60	118	178
Diastolic pressure	3 267	4 667	7 934
Three readings in range	3 247	4 638	7 885
Two readings in range	12	12	24
One reading in range	8	17	25
No readings in range	1	1	2
No readings done	60	118	178
Corrected			
Outlier readings corrected against other readings	8	2	10
Exclusions			
Outliers – systolic	14	28	42
– diastolic	12	12	24
Assessment of hypertension			
Hypertensive (> 140/90 or on medication)	643	1 215	1 858
Hypertension medication	155	450	605
Systolic blood pressure >140	464	806	1 270
Diastolic blood pressure >90	288	609	897
Normotensive	2 628	3 467	6 095
Unknown	57	105	162

## APPENDIX D

### THE NUTRITION INDEX (N-INDEX)

#### D1 Introduction

A Nutrient Index (N-Index) that consists of a short 30 item food frequency questionnaire reflecting specified micronutrients and 7 questions concerning fat intake was developed by Senekal and Steyn (1997). The micronutrients represented: calcium, magnesium, zinc, iron, vitamin A, vitamin E, thiamine, riboflavin, niacin, vitamin B6, vitamin B12, folate and vitamin C. The food frequency data are converted into an overall score (N-Index) that represents the quality of nutritional intake in terms of the adequacy of these micronutrients and fat intake.

In the development of the N-Index the main food sources of the selected micronutrients and fat in the South African context were identified from the South African Food Composition Tables and various text books. A review of dietary studies undertaken in South Africa over the past 30 years (Nel and Steyn, 2002) helped to identify the foods commonly eaten by different ethnic groups in South Africa. A comprehensive quantified food frequency questionnaire which consisted of 86 food items that reflect the micronutrient and fat intake of South Africans was subsequently developed. Frequency categories ranging from none through a number of times consumed per month to times consumed per day were specified. A restricted recall period of one month was used in order to reduce memory constraints.

A short list of foods/groups from the 86 items was then identified to best predict the selected micronutrient and fat intake based on data collected from randomly selected sample of 2 100 adult subjects representing all provinces, urban and rural settings and all population groups. In a final step, the validity of the N-Index was assessed on a convenience sample of 165 adult subjects. More details concerning these last two steps follow in the next two sections.

The intake of salt/salty foods was included in the SADHS. Three questions that focus on the intake of salty food, salty snacks and salt added to food developed specifically for the purposes of the SADHS. These are not incorporated in the N-Index.

#### D2 Generating the N-Index from the Comprehensive 86 Item Food Frequency Questionnaire

*Sample and sampling procedure:* The sample was randomly drawn from the South African National Database, which is the largest consumer database in South Africa and comprised a sampling frame of more than 7 million economically active adults (ie consumers between the ages of 18 and 65) at the time of the study. The sampling frame included names and addresses of 52 percent white, 30 percent coloured, 11 percent Indian and 6 percent Black South Africans. A random sample of 2 100 was drawn to be proportionally representative of all ethnic groups in the database, and to include at least one small town and one city from each of the nine provinces in the final sample.

*Data collection:* The food frequency questionnaire was mailed to the randomly selected adults together with a prepaid return envelope. After the due date for return of questionnaires had passed, a reminder was mailed to the non-responders. A second reminder followed the first one. A final total of 554 respondents returned the questionnaire. An expert in dietary methodology scrutinized each questionnaire for completeness and quality. A questionnaire was excluded from analyses if the following was found: whole page(s) not completed, the same frequency of intake indicated for a number of consecutive items on the list, and unrealistically high frequencies indicated.

*Data analysis:* Statistical analyses were conducted using the SAS statistical software package version 6.11 (SAS Institute, 2004). The following steps were executed in the data analysis process:

*Step 1:* The Foodfinder Nutrient Analysis Programme (South African Medical Research Council, 2002) was used to compute energy and nutrient intake from the frequency questionnaire. The mean energy intake was compared to the reference standards (Institute of Medicine 1998) to determine whether the generated data fell within a realistic range.

*Step2:* To identify those food items, which were the most important sources of each nutrient in question, stepwise regression analyses were performed for the total group as well as separately for the four ethnic groups. The regression model was designed to firstly identify the one food code with the strongest correlation with a particular nutrient (= best one-item model). In the process a  $R^2$  value is generated which is indicative of the correlation coefficient. The model carries on by adding and replacing food items in a stepwise fashion to supply the best two-item model, then three-item model and so forth. When the  $R^2$  reached 0.7, which is indicative of a correlation coefficient of 0.84, the food codes (=food items) in the model were taken as the best sources of a particular nutrient. The regression analyses were completed for the total group as well as each ethnic group separately. Prominent differences in the rankings of food items between the four ethnic groups were taken into consideration in the final selection of food items/questions to be included in the N-Index.

*Step 3:* A table was drawn up to indicate the most important nutrients provided by each food item that was selected as an important source of one or more of the nutrients based on the regression analyses. This was followed by the final selection of the food items/questions to be included in the N-Index.

The final N-Index consisted of a brief 30 item food frequency questionnaire (30-item FFQ) reflecting the intake of specified micronutrients are used in the SADHS Adult Health questionnaire. The recall period of the 30-item FFQ is limited to one week and frequency categories range from times consumed per week to times consumed per day. Respondents do not have to indicate a portion size. For quantification purposes and nutrition risk assessment standardized portion sizes, as shown in Table D.1, were used. These were derived both from our survey and mean portion sizes reported for South Africans by other researchers (Nel and Steyn, 2002). The old and new food codes from the South African Food Composition Tables are shown in Table D.1. The food intakes were converted into grams per week using the assumed frequencies for the categories as listed in Table D.2. The food intake was then converted into the micronutrient intake using the South African Food Composition Tables values.

**Table D.1 Portion size and food code for M-Index**

Assumed average portion size and old and new codes of M-Index items according to the South African Food Composition Table

Food item	Portions size (g)	Food code (old)	Food code (new)
Red meat (any type)	75	1 524	2 929
Chicken (any type)	75	1 646	3 027
Tinned fish	75	2 539	3 087
Organ meat eg liver, tripe	75	1 551	2 956
Eggs (any type)	50	1 012	2 877
Milk/yoghurt/maas	125	0 069	2 772
Milk tea/coffee	25	0 069	2 772
Cheese (except cottage cheese)	30	0 010	2 722
Legumes eg baked beans, lentils	135	3 513	3 183
Peanuts/nuts	35	6 007	3 458
Brown/ww bread/rolls	40	4 002	3 211
Breakfast cereal (not cooked)	30	4 046	3 252
Oat-porridge	125	4 032	3 239
Soft margarine (tub)	5	6 521	3 496
Broccoli, cauliflower, Brussles sprouts	75	8 114	3 805
Spinach/morogo	90	8 071	3 761
Carrots	75	8 067	3 757
Tomato (raw/cooked)	100	8 059	3 750
Green peas	85	8 026	3 719
Green beans	80	8 002	3 696
Mixed vegetables	75	8 035	3 727
Pumpkin/butternut	105	8 069	3 759
Sweet potato	145	8 214	3 903
Potato (any preparation)	80	8 301	3 979
Citrus	150	7 031	3 560
Pure orange/guava juice (not others)	200	7 112	3 637
Bananas	75	7 009	3 540
Mangoes	350	7 026	3 556
Apples/pears	150	7 001	3 532
Avocado	72	7 132	3 656

**Table D.2 Frequency for M-Index**

Assumed frequency per week for each frequency category in M-Index questionnaire

Frequency category	Frequency per week for M-Index
Never	0
1-3 times per week	2/7
4-6 times per week	5/7
1 times per day	1
2 times per day	2
3+ times per day	3

### D3 Validity of the N-Index

With respect to validity, the underlying question that needed to be answered was whether the N-Index would provide a true reflection of the usual intake of the specified nutrients by an individual. The process that was followed in the development of the instrument was structured in such a way that the face and content validity of the instrument were ensured i.e. whether it actually reflected the usual intake of the nutrients in question. A further aspect, which could influence the reliability and validity, is whether the concept of “frequency of intake” is well understood and whether the frequency indicated in the questionnaire is a true reflection of actual frequency of intake.

To evaluate this aspect the following procedure was executed:

*Sample and sampling procedure:* A convenience sample of 66 black and 84 white adults of both genders were recruited by word of mouth.

*Procedures and methods:* According to Brants *et al.* (1997) research indicates that dietary records are the best comparison/calibration method for a food frequency questionnaire since sources of error associated with both methods are largely independent. In order to determine usual frequency of intake of the food items included in the questionnaire, the respondents were requested to keep a 7-day estimated food record. Each participant received a booklet, which included the necessary recording guidelines. The latter were explained to each participant by a fieldworker (registered dietitian trained for this purpose). The respondents completed the 30-item FFQ two weeks after completion of the seven-day record during a personal session with the fieldworker.

*Data processing and analysis:* Statistical analyses were conducted using the SAS statistical software package version 6.11 (SAS Institute, 1989). The records were analyzed to generate an indication of frequency of intake of specific food items. A food record coding form, which was based on the items included in 30-item FFQ was designed for this purpose e.g. number of times red meat was eaten during the recording week was counted, irrespective of the preparation methods, to generate an indication of frequency of red meat intake. Spearman correlation coefficients were computed to determine the relationship between the frequency of intake indicated in the 30-item FFQ for a particular food item and the frequency of intake derived from the seven-day records.

*Results:* Significant correlations between the frequency indicated on the 30-item FFQ and the frequency of intake computed from the estimated records were found for 22 out of the 30 items (with the r-value ranging from 0.24 to 0.62). The best correlations were found for red meat, milk, cheese, bread, breakfast cereal, margarine, some vegetables (broccoli, spinach, carrots, green beans and pumpkin/butternut), citrus fruit, bananas, apples/pears, and avocados. The poorest correlations were found for other vegetables (peas, tomatoes, mixed vegetables, sweet potatoes and potatoes), tinned fish, legumes and orange/guava juice. When considering these results it should be born in mind that the 30-item FFQ reflects the intake of the “past week”. As the seven-day food record was completed two weeks before the 30-item FFQ, food items that are consumed only two times or less frequently per month could have been recorded using the one method, but not the other, which could explain low and non-significant correlations.

#### **D4 Calculation of the N-Index score**

The calculated nutrient intakes are compared with the Recommended Daily Allowance (RDA) reference values for selected age and sex groups as shown in Table D.3. For each micronutrient, a zero score is allocated for those that are 100% or more of the RDA cut-off, a score of 1 is allocated for those that are between 66%-100% of the RDA cut-off, a score of 2 is allocated for those that are between 33%-66% and a score of 3 is for those that are below 33%. The scores are added together with double scores for Vitamin A and iron giving a range from 0 to 45. A 0 represents good nutrient intake while a score of 45 is poor.



Table D.3 Recommended daily allowance (RDA)

Recommended daily allowance (RDA) for selected nutrients by age and sex

Nutrient	MALES				FEMALES			
	14-18 years	19-30 years	31-50 years	51+ years	14-18 years	19-30 years	31-50 years	51+ years
Calcium (mg)	1 300	1 000	1 000	1 200	1 300	1 000	1 000	1 200
Magnesium (mg)	410	400	420	420	360	310	320	320
Zinc (mg)	11	11	11	11	9	8	8	8
Iron (mg)	11	8	8	8	15	18	18	8
Vitamin A (µg RE)	900	900	900	900	700	700	700	700
Vitamin C (mg)	75	90	90	90	65	75	75	75
Vitamin E (mg)	15	15	15	15	15	15	15	15
Thiamin (mg)	1.2	1.2	1.2	1.2	1.0	1.1	1.1	1.1
Riboflavin (mg)	1.3	1.3	1.3	1.3	1.0	1.1	1.1	1.1
Niacin (mg)	16	16	16	16	14	14	14	14
Vitamin B6 (mg)	1.3	1.3	1.3	1.7	1.2	1.3	1.3	1.5
Vitamin B12 (µg)	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Folic acid (µg)	400	400	400	400	400	400	400	400

mg – milligram

µg RE– microgram retinol equivalent

µg - microgram

The seven additional questions that focus on the intake of chicken skin, fatty meat, type of spread, type of milk, fried foods, crisps and processed meats are included for the N-Index as an assessment of the risk associated with fat intake. The responses are scored according to the categories shown in Table D.4. Thus the overall N-Index ranges from 0 to 51 with a low score representing good nutritional intake and a high score representing poor nutritional intake.

Table D.4 Fat score

Points allocated to the questions for the fat score for each response category

Food	Response	Points
<u>Which</u> of the following do you USUALLY eat?		
Chicken/Poultry	With skin	1
	Without skin	0
	None	0
Red Meat	Fatty meat	1
	Lean meat	0
	None	0
Spread (Butter/Margarine)	Butter	1
	Hard margarine (brick)	1
	Soft margarine (tub)	0
Milk/Milk Products in powder form	None	0
	Full cream	1
	2% or low fat	0.5
	Skim/fat free	0
	Blends	0
<u>How often</u> do you USUALLY eat the following?	None	0
	<u>Fried foods</u> , e.g. chips, fish, potatoes, doughnuts, eggs	
	Occasionally/Never	0
	Weekly (at least once a week)	0.25
	Daily	0.5
Chips, e.g. packet of 'SIMBA' chips or other salty snacks	Occasionally/Never	0
	Weekly (at least once a week)	0.25
	Daily	0.5
Processed meat, e.g. polony, viennas, meat pies, sausage rolls	Occasionally/Never	0
	Weekly (at least once a week)	0.5
	Daily	1

## APPENDIX E

### PERSONS INVOLVED IN THE 2003 SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY

#### Members of the Management Committee

Prof Debbie Bradshaw	Medical Research Council, Cape Town
Ms Rika du Plessis (Co-ordinator)	National Department of Health
†Mr Bruce Hibbert	National Department of Social Development
Dr Lindiwe Makubalo (Chair)	National Department of Health
Mr Johan van Zyl	Human Sciences Research Council, Pretoria

#### Members of the Project Technical Team

Prof Debbie Bradshaw	Medical Research Council, Cape Town
Ms Annie Cross	Macro International, Calverton, Maryland, US
†Mr Bruce Hibbert	National Department of Social Development
Ms Jané Joubert	Medical Research Council, Cape Town
Prof Demetre Labadarios	University of Stellenbosch
Ms Ria Laubscher	Medical Research Council, Cape Town
Dr Jonathan Levin	Medical Research Council, Pretoria
Dr Lindiwe Makubalo	National Department of Health
Ms Corney Molomo	National Department of Health (Formerly)
Mr Phuti Sekwati	National Department of Health (Formerly)
Prof Krisela Steyn	Medical Research Council, Cape Town
Mr Johan van Zyl	Human Sciences Research Council, Pretoria

#### Members of the Sampling Technical Team

Dr Jairo Arrow	Statistics South Africa
Mr Pieter Bossert	Statistics South Africa
Prof Debbie Bradshaw	Medical Research Council, Cape Town
Ms Alexan Carrilho	Statistics South Africa
Ms Rika du Plessis	National Department of Health
†Mr Bruce Hibbert	Department of Social Development
Dr Jonathan Levin	Medical Research Council, Pretoria
Ms Nthabiseng Makhatha	Statistics South Africa
Ms Corney Molomo	National Department of Health (Formerly)
Ms Marlize Pistorius	Statistics South Africa
Mr Phuti Sekwati	National Department of Health (Formerly)
Prof David Stoker	Statistics South Africa
Mr Johan van Zyl	Human Sciences Research Council, Pretoria

#### Technical Consultant

Dr. Don Inambao

#### Report-writing Coordination Team

Prof Debbie Bradshaw	Medical Research Council, Cape Town
Ms Elize de Kock	Medical Research Council, Cape Town
Ms Jané Joubert (Co-ordinator)	Medical Research Council, Cape Town
Ms Ria Laubscher	Medical Research Council, Cape Town
Ms Phakama Makeba	Medical Research Council, Cape Town
Mr Muzi Maponya	Medical Research Council, Cape Town

Ms Desirèe Pieterse  
Mr Jovial Wessie

Medical Research Council, Cape Town  
Medical Research Council, Cape Town

### **Contributors to Report (Chapters)**

Dr Mags Beksinska (4, 5, 9)  
Mr David Bourne (6)  
Prof Debbie Bradshaw (All)  
Dr Mickey Chopra (7, 8)  
Ms Annie Cross (All)  
Prof Rob Dorrington (10)  
Ms Rika du Plessis (All)  
Ms Gretchen du Plessis (4)  
Prof Rodney Ehrlich (9, 12)  
Mr Siyabonga Jikwana (11)  
Ms Jané Joubert (2, 14 )  
Dr Danuta Kielkowski (10)  
Prof Vicki Lambert (9, 13)  
Ms Zonke Mabude (4, 5, 9)  
Dr Lindiwe Makubalo (All)  
Ms Phakama Makeba (2)  
Dr Sandra Marais (10)  
Mr Richard Matzopoulos (9, 10)  
Dr Tom Moultrie (3)  
Dr Mmabatho Mqhayi (4, 5, 9)  
Dr Sudeshni Naidoo (15)  
Ms Nadine Nannan (6)  
Mr Nhlanhla Ntuli (11)  
Prof Charles Parry (9, 13)  
Dr Nasheeta Peer (10, 12 13)  
Ms Desirée Pieterse (1, 9)  
Prof Thandi Puoane (13)  
Mr Niel Roux (2)  
Dr Maylene Shung King (8)  
Dr Thabo Sibeko (11)  
Dr Jenni Smit (4, 5, 9)  
Dr Nelia Steyn (9, 13)  
Prof Krisela Steyn (10, 11, 12, 13)  
Ms Ezera Tshabangu (9, 13)  
Mr Jovial Wessie (2)

Reproductive Health Research Unit  
University of Cape Town  
Medical Research Council, Cape Town  
Medical Research Council, Cape Town  
Macro International, Calverton, Maryland, US  
University of Cape Town  
National Department of Health  
UNISA  
University of Cape Town  
National Department of Health  
Medical Research Council, Cape Town  
National Department of Health  
University of Cape Town  
Reproductive Health Research Unit  
National Department of Health  
Medical Research Council, Cape Town  
Medical Research Council, Cape Town  
Medical Research Council, Cape Town  
University of Cape Town  
Reproductive Health Research Unit  
University of Western Cape  
Medical Research Council, Cape Town  
National Department of Health  
Medical Research Council, Cape Town  
Medical Research Council, Cape Town  
Medical Research Council, Cape Town  
University of Western Cape  
National Department of Social Development  
University of Cape Town  
National Department of Health  
Reproductive Health Research Unit  
Medical Research Council, Cape Town  
Medical Research Council, Cape Town  
University of Cape Town  
Medical Research Council, Cape Town

### **Data Processing**

Mr Martin Wulfe  
Mr Johan van Zyl

Macro International Calverton Maryland US  
Human Sciences Research Council, Pretoria

### **Fieldwork Agency**

Prof D Chimere-Dan

Africa Strategic Research Corporation

## **Fieldwork Teams**

### **Eastern Cape**

Bidla Nikiwe  
Boti Buyiswa  
Boti Zet Zanele  
**Daweti Milie**  
Mbowane Thandabantu  
Mjekula Nomava  
Mtekula Siphiwe  
Ndamase Vuyiswa  
Ndokwe Vuyokazi  
Notshaya Anele  
Ntenti Siphiso  
Nxasana Andile  
Nxasana Siphokazi  
Toni Mvuyisi  
Twatwa Veliswa

### **Free State**

Chaela Annah  
Johnson Vuyisile Enoch  
Kopane Semakaleng Patricia  
Madito Pearl Faith Tumelo  
Maleeme Joshua Thabo  
Maleeme Selina  
Maluloko Kelebongile  
Mampe Keleaperi Emily  
**Mashilo Kate**  
Moche Kelebonile  
Mokhitli Khoabane Abram  
Montaung Jean  
Morobi Serinah  
Ndungane Zwelethemba  
Pearl Maleeme Dimakatso  
Plaatjies Nomsa Vivacious  
Plaatjies Willem  
**Seekoe Eunice Pinky**  
Sephapo Sylvia

### **Gauteng**

Hato Lumky  
Kgaphola Mantoampe Pheladi  
Khosha Edward  
Krawe Nolundi  
Lebokela Clifford  
Lebokela Malopa  
Loti Daniel  
Mabaso Terrance  
Maffodi Phuti  
Makama Moumakoe Judah

Makola Samuel  
Manaledi Lesego  
Manona Nompucuko  
**Mashiane Sindi**  
Matsane Cornelia  
Matsena Asmath  
Mchomobe Lesego  
Mgubeni Nompumele  
Mngadi Nkosinathi  
Mongatane Mpho  
Mongo Martha  
Morongwa Mona Kgweedi  
Morwaswi Selina  
Moyo Sakhile  
Mshwelezi Kenny Themba  
Nkosi Billy  
Nlatebeni Zola  
Phola Kagiso  
Pillay Tony John  
Sebeshe Mamotsidike Molgadi Magdeline

### **KwaZulu-Natal**

Duncan Mandlenkosi Sibongiseni  
Khuzwayo Pumlanzi Edgar  
Memela Nozipho Esmerald  
Nene Princess Nompumelelo  
Ngwane Bekithemba Siyanda Collin  
Ngwane Maria Nombuso  
**Ntlabathi Pumla**  
Phumla Prudence  
Sphumelele Thokozani

### **Limpopo**

Mafikeng John  
Makgabo Setshedi Johannah  
Makosha Given  
Meletse Lebogaang  
**Meletse M. E**  
Meletse Olitta  
Mmaselaelo Sebola Doris  
Rammutla Alfred  
Romoroka Phuti Eric  
Seila Selolo Martha  
Tshepho Glenrick Malose

### **Mpumalanga**

Chawane Bongani  
Chiloane Gift  
Dlamini Fortunate  
Malatji Morkwape Gladys  
Mashaba Nelly

**Mashile Wilfred**

Monyane Jimmy  
 Msizi Ernest  
 Mthebula Aphina Phuti  
 Ndziyane Ishmael Lawrence  
 Ngomane Simon Roy  
 Vuma Sipho

**Northern Cape**

Bock Nikeyn  
 Fisher Faith  
 James Louisa  
 Modise Goi Tseone Emmanuel  
 Mohudi Othusitse Sheldon  
 Mokwana Frank Brendon  
 Molaeng Babuile  
**Nkoane Julia**  
 Solomans Colin Ashford  
 Terrence Julie  
 Tshazibane Tebogo

**North West**

Khanyi Nhlanhla Patrick  
 Mogotsi Neo Edna  
 Mogukabe Lebogang Anna  
 Mokgadi Lorraine Ennacham  
 Motene Marcia Matshepo  
 Mphahlele Basetsana Christina  
 Nompumelelo Glenrose Faith  
 Sikwe Doreen Dimakutso  
 Trevlyn Ntuma Kerwane

**Tshukudu Lesedi****Western Cape**

**Arens Griselda**  
 Barnard Caroline  
 Basson Christina  
 Basson Lindi  
 Cupido Desiree  
 Daniels A  
 Darries Janice  
 De Gois Rosemary  
 Dlaba Nomakhwezi  
 Fortuin Martin  
 Hector David  
 Jende Timothy  
 Jeptha Celeste  
 Kaiser Alison

**Kielblock Elize**

Mbulelo Atwell  
 Mbulelo Ka Tunce  
 Philander George  
 Poloushy Layne  
 Schulltz Gareth  
 Sgagayi Vuyiseka  
 Solomons Brenda  
 Van der Bergh Leon  
 Vigus Stephen  
 William Ernest  
 Williams Vincent  
 Wooduff Anthea

**Indian Areas**

Archary Jayne  
**Archary Kesaval**  
 Francis Pamela  
 John Ashley  
 John Gary  
**Mcgregor Zarina**  
 Naidoo Naomi  
 Naidoo Ravendran  
 Naithoo Ishwar  
 Rajoo Sheron  
 Renu Chandragasen  
 Vanumogan Banoo

**White Areas**

Bianchi Bianca  
 Burley Daryl  
 De Bruin Rob  
 De Saddeleer Tyrone  
 Du Preez Marius  
 Engels Mariska  
 Hogg Michelle  
 Kent Mark  
 Kuhn Linda  
 Kuhn Rick  
**Langman Tyrone**  
 Lowth Tarryn  
 Malherbe Mel  
 Meaden Tracy  
 Mommsen Jane  
 Peters Tyrone  
 Rippon Claire  
 Smith Gareth

## Fieldwork Training

Prof Debbie Bradshaw	Medical Research Council, Cape Town
Dr D. Chimere-Dan	Africa Strategic Research Corporation
Ms Annie Cross	Macro International, Calverton, Maryland, US
Ms Rika du Plessis	National Department of Health
Ms Debbie Johathan	Medical Research Council, Cape Town
Dr Danuta Kielkowski	National Department of Health
Dr Jonathan Levin	Medical Research Council, Pretoria
Dr Sandra Marais	Medical Research Council, Cape Town
Dr Dan Monyeke	Medical Research Council, Cape Town
Dr Elizabeth Omoluabi-Siebert	Union for African Population Studies (Formerly)
Ms Ezera Tshabangu	Medical Research Council, Cape Town
Mr Johan van Zyl	Human Sciences Research Council, Pretoria

SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY  
HOUSEHOLD QUESTIONNAIRE

IDENTIFICATION				
PROVINCE¹ _____				<div><div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div>
DISTRICT _____				
EA NUMBER.....				
EA TYPE (URBAN FORMAL=1; URBAN INFORMAL=2; RURAL FORMAL=3; TRIBAL AREA=4).....				
SADHS CLUSTER NUMBER.....				
STAND NUMBER.....				
NUMBER OF HOUSEHOLDS IN STAND.....				
HOUSEHOLD NUMBER.....				
NAME OF HOUSEHOLD HEAD _____				
IS THE HOUSEHOLD SELECTED FOR ADULT HEALTH QUESTIONNAIRE? (YES=1, NO=2) .....				
IS THE HOUSEHOLD SELECTED FOR MAN QUESTIONNAIRE? (YES=1, NO=2) .....				
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY MONTH YEAR INT. CODE RESULT
INTERVIEWER'S NAME				
RESULT*				
NEXT VISIT: DATE TIME				TOTAL NO. OF VISITS
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD TOTAL ELIGIBLE WOMEN TOTAL ELIGIBLE MEN TOTAL ADDITIONAL CHILDREN TOTAL ELIGIBLE ADULTS LINE NO. OF RESP. TO HOUSEHOLD QUESTION.
LANGUAGE OF QUESTIONNAIRE: ENGLISH				
SUPERVISOR		FIELD EDITOR		OFFICE EDITOR
NAME _____		NAME _____		
DATE _____		DATE _____		

# HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE	AGE	ELIGIBILITY	POPULATION GROUP	PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 13 YEARS OLD**						EDUCATION			GRANTS			INJURIES IN THE LAST MONTH		DISABILITY													
		What is the relationship of the person to the head of the household?	Is (NAME) usually living here?	Did (NAME) stay here last night?	How old is (NAME)?	CIRCLE LINE NO. OF ALL CHILDREN UNDER AGE 6	CIRCLE LINE NO. OF ALL MEN AGE 15-59	CIRCLE LINE NO. OF ALL WOMEN AGE 15-49	CIRCLE LINE NO. OF ALL MEN AGE 15-59	CIRCLE LINE NO. OF ALL WOMEN AGE 15-49	IF ALIVE	ELIGIBILITY	Is (NAME)'s natural father alive?	IF ALIVE	Does (NAME)'s natural father live in this household?	Has (NAME) attended school?	IF ATTENDED SCHOOL	Does (NAME) apply for any type of grants?	IF RECEIVES GRANT	What type of injury did (NAME) have?	What type of injury did (NAME) have?	What type of injury did (NAME) have?													
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)										
			M F	YES NO	YES NO	IN YEARS						YES NO DK	YES NO DK		YES NO DK	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO										
01			1 2 1	2 1 2	1 2		01	01	01	01		1 2 8	1 2 8	01	1 2 8		1 GO 2 TO 21	1 2 8	1 GO 2 TO 24	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26											
02			1 2 1	2 1 2	1 2		02	02	02	02		1 2 8	1 2 8	02	1 2 8		1 GO 2 TO 21	1 2 8	1 GO 2 TO 24	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26											
03			1 2 1	2 1 2	1 2		03	03	03	03		1 2 8	1 2 8	03	1 2 8		1 GO 2 TO 21	1 2 8	1 GO 2 TO 24	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26											
04			1 2 1	2 1 2	1 2		04	04	04	04		1 2 8	1 2 8	04	1 2 8		1 GO 2 TO 21	1 2 8	1 GO 2 TO 24	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26											
05			1 2 1	2 1 2	1 2		05	05	05	05		1 2 8	1 2 8	05	1 2 8		1 GO 2 TO 21	1 2 8	1 GO 2 TO 24	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26											
06			1 2 1	2 1 2	1 2		06	06	06	06		1 2 8	1 2 8	06	1 2 8		1 GO 2 TO 21	1 2 8	1 GO 2 TO 24	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26	1 2 GO 2 TO 26											
* CODES FOR Q.3						CODES FOR Q.26: TYPES OF DISABILITY						** Q.13 THROUGH 17: THESE QUESTIONS REFER TO THE BIOLOGICAL PARENTS OF THE CHILD. IN Q.14 AND Q.17 RECORD '00' IF PARENT NOT LISTED IN HOUSEHOLD SCHEDULE.						*** CODES FOR Q.19 EDUCATION LEVEL:						**** CODES FOR Q.23 WHERE COLLECTS GRANT MONEY:						***** CODES FOR Q.25 TYPE OF INJURY:					
01 = HEAD OF HOUSEHOLD						0 = NONE						00 = LESS THAN ONE YEAR						01 = OLD AGE						01 = ASSAULT AT HOME											
02 = WIFE OR HUSBAND OR PARTNER						1 = SIGHT						01 = SUB GRADE 1						02 = DISABILITY						02 = ASSAULT AWAY FROM HOME											
03 = SON-IN-LAW OR DAUGHTER-IN-LAW						2 = HEARING						02 = SUB GRADE 2						03 = CARE						03 = SELF-INFLICTED VIOLENCE											
04 = GRANDCHILD						3 = SPEECH						03 = STANDARD 1/GRADE 3						04 = DEPENDENCY						04 = BANK											
05 = PARENT						4 = PHYSICAL						04 = STANDARD 2/GRADE 4						05 = FOSTER CHILD						05 = TRAFFIC ACCIDENT											
06 = BROTHER OR SISTER						5 = INTELLECTUAL						05 = STANDARD 3/GRADE 5						06 = CHILD SUPPORT						06 = ACCIDENT AT WORK											
07 = NEPHEW/NIECE						6 = EMOTIONAL						06 = STANDARD 4/GRADE 6						07 = SPORTS INJURY						07 = SPORTS INJURY											
08 = OTHER RELATIVE						7 = OTHER						07 = STANDARD 5/GRADE 7						08 = OFFICE WORK						08 = ACCIDENTAL FALL											
09 = ADOPTED/FOSTER/STEPCHILD												08 = STANDARD 6/GRADE 8						09 = POST OFFICE						09 = ACCIDENTAL POISONING (NOT AT WORK)											
10 = OTHER RELATIVE												09 = STANDARD 7/GRADE 9						10 = DON'T KNOW						10 = OTHER											
11 = ADOPTED/FOSTER/STEPCHILD												10 = STANDARD 8/GRADE 10																							
12 = ADOPTED/FOSTER/STEPCHILD												11 = STANDARD 9/GRADE 11																							
13 = ADOPTED/FOSTER/STEPCHILD												12 = STANDARD 10/GRADE 12																							
14 = ADOPTED/FOSTER/STEPCHILD												13 = INCOMPLETE																							
15 = ADOPTED/FOSTER/STEPCHILD												14 = DIPLOMA/OTHER POST-SECONDARY																							
16 = ADOPTED/FOSTER/STEPCHILD												15 = FURTHER DEGREE																							
17 = ADOPTED/FOSTER/STEPCHILD												16 = DON'T KNOW																							





TICK HERE IF CONTINUATION SHEET USED

☐

Just to make sure that I have a complete listing:

- 1) Are there any other persons such as small children or infants that we have not listed?

YES

☐

ENTER EACH IN TABLE

NO

☐

- 2) In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here?

YES

☐

ENTER EACH IN TABLE

NO

☐

- 3) Are there any guests or temporary visitors staying here, or anyone else who slept here last night, who have not been listed?

YES

☐

ENTER EACH IN TABLE

NO

☐



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
32	Does your household have any of the following items in working condition?  A radio? A television? A computer? A refrigerator? A landline telephone? A cell phone?	<div style="text-align: right;">YES    NO</div> RADIO ..... 1    2 TELEVISION..... 1    2 COMPUTER ..... 1    2 REFRIGERATOR ..... 1    2 LANDLINE TELEPHONE ..... 1    2 CELL PHONE ..... 1    2	
33	CHECK 32:  HOUSEHOLD HAS NO LANDLINE TELEPHONE AND NO CELL PHONE <input type="checkbox"/> HOUSEHOLD HAS EITHER LANDLINE TELEPHONE OR CELL PHONE <input type="checkbox"/> →35		
34	Where do members of your household use a telephone when they need one?	AT A NEIGHBOR NEARBY ..... 1 AT A PUBLIC TELEPHONE NEARBY ..... 2 AT ANOTHER LOCATION NEARBY ..... 3 SOMEWHERE ELSE NOT NEARBY ..... 4 NOWHERE ..... 5  OTHER ..... 6 (SPECIFY)	
35	What type of fuel does your household mainly use for cooking, heating and lighting:  Electricity? Gas? Paraffin? Coal? Candles? Firewood, straw?  Animal dung?  Other?	<div style="text-align: right;">COOKING   HEATING   LIGHTING</div> ELECTRICITY ..... 1    1    1 GAS ..... 2    2    2 PARAFFIN..... 3    3    3 COAL ..... 4    4    4 CANDLES..... 5 FIREWOOD/ STRAW..... 6    6    6 ANIMAL DUNG..... 7    7    7  OTHER ..... 96    96    96 COOKING   HEATING   LIGHTING (SPECIFY)	
36	How many rooms does your household have, including kitchen or cooking area? Exclude bathrooms, sheds, garages, stables, or any other rooms unless people live in them.	ROOMS..... <input type="text"/> <input type="text"/>	
37	CHECK 36:  HOUSEHOLD HAS ONLY ONE ROOM <input type="checkbox"/> HOUSEHOLD HAS TWO OR MORE ROOMS <input type="checkbox"/> →39		
38	Do you share this room with other households?	YES..... 1 NO ..... 2	
39	MAIN MATERIAL OF THE FLOOR.  RECORD OBSERVATION.	NATURAL FLOOR EARTH/SAND/DUNG ..... 11 RUDIMENTARY FLOOR BARE WOOD PLANKS ..... 21 FINISHED FLOOR PARQUET OR POLISHED WOOD .... 31 VINYL OR ASPHALT STRIPS ..... 32 CERAMIC TILES ..... 33 CEMENT ..... 34 CARPET ..... 35  OTHER ..... 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																		
40	<p>MAIN MATERIAL OF THE WALLS.</p> <p>RECORD OBSERVATION.</p>	PLASTIC/CARDBOARD..... 11 MUD..... 12 MUD AND CEMENT..... 13 CORRUGATED IRON/ZINC..... 21 PREFAB..... 22 BARE BRICK OR CEMENT BLOCKS.... 23 PLASTER/FINISHED..... 31  OTHER _____ 96 (SPECIFY)																			
41	<p>Does any member of your household own:</p> <p>A bicycle?</p> <p>A motorcycle or motor scooter?</p> <p>A car or truck?</p> <p>A donkey or a horse?</p> <p>Sheep/goat or cattle?</p>	<table border="0"> <tr> <td></td> <td>YES</td> <td>NO</td> </tr> <tr> <td>BICYCLE .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>MOTORCYCLE/SCOOTER.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>CAR/TRUCK.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>DONKEY/HORSE.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>SHEEP/CATTLE/GOATS .....</td> <td>1</td> <td>2</td> </tr> </table>		YES	NO	BICYCLE .....	1	2	MOTORCYCLE/SCOOTER.....	1	2	CAR/TRUCK.....	1	2	DONKEY/HORSE.....	1	2	SHEEP/CATTLE/GOATS .....	1	2	
	YES	NO																			
BICYCLE .....	1	2																			
MOTORCYCLE/SCOOTER.....	1	2																			
CAR/TRUCK.....	1	2																			
DONKEY/HORSE.....	1	2																			
SHEEP/CATTLE/GOATS .....	1	2																			
42	<p>How is the refuse or rubbish in this household <u>mainly</u> disposed of?</p>	REMOVED BY LOCAL AUTHORITIES AT LEAST ONCE A WEEK ..... 11 REMOVED BY LOCAL AUTHORITIES LESS THAN ONCE A WEEK ..... 12 COMMUNAL REFUSE DUMP..... 13 OWN REFUSE DUMP..... 14 BURN REFUSE/RUBBISH..... 15 NO RUBBISH DISPOSAL ..... 16  OTHER _____ 96 (SPECIFY)																			
43	<p>Do you know where you can get forms to apply for a government grant?</p>	YES..... 1 NO ..... 2	→ 45																		
44	<p>Do you know where you can get forms to apply for a government grant?</p>	POST OFFICE..... A BANK..... B MAGISTRATES COURT ..... C DEPARTMENT OF WELFARE/ SOCIAL DEVELOPMENT OFFICES.... D PAY POINT..... E  OTHER _____ X (SPECIFY) DON'T KNOW..... Z																			
45	<p>Has anyone in your household been diagnosed with malaria in the last 12 months?</p>	YES..... 1 NO ..... 2 DON'T KNOW/UNSURE ..... 8	↓ 52																		
46	<p>Who was the last person who was diagnosed with malaria in the last 12 months?</p> <p>RECORD NAME AND LINE NUMBER FROM THE HOUSHEOLD SCHEDULE.</p> <p>IF PERSON DOES NOT CURRENTLY LIVE IN THE HOUSEHOLD, RECORD '00'.</p>	NAME _____  LINE NUMBER..... <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																			
47	<p>Did (NAME from Q.46) receive advice or treatment for malaria?</p>	YES..... 1 NO ..... 2 DON'T KNOW/UNSURE ..... 8	↓ 52																		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
48	<p>Where did (NAME) go for advice or treatment?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p> <p>Any other place?</p> <p>RECORD ALL PLACES MENTIONED.</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL ..... A</p> <p>DAY HOSPITAL/CLINIC/</p> <p>COMMUNITY HEALTH CENTRE .... B</p> <p>FAMILY PLANNING CLINIC ..... C</p> <p>MOBILE CLINIC ..... D</p> <p>COMMUNITY HEALTH WORKER..... E</p> <p>OTHER PUBLIC ..... F</p> <p>(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>PRIVATE HOSPITAL/CLINIC ..... G</p> <p>PHARMACY ..... H</p> <p>PRIVATE DOCTOR ..... I</p> <p>OTHER PRIVATE</p> <p>MEDICAL ..... J</p> <p>(SPECIFY)</p> <p><b>OTHER SOURCE</b></p> <p>WORKPLACE ..... K</p> <p>COMMUNITY-BASED DISTRIBUTOR..... L</p> <p>SHOP/HOTEL/SCHOOL/CINEMA ..... M</p> <p>FRIENDS/RELATIVES ..... N</p> <p>OTHER ..... X</p> <p>(SPECIFY)</p> <p>DON'T KNOW/UNSURE ..... Z</p>	
49	<p>What drugs did (NAME) take for malaria?</p> <p>RECORD ALL MENTIONED. IF TYPE OF DRUG IS NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.</p>	<p>COARTEM..... A</p> <p>ARSUMAX..... B</p> <p>FANSIDAR..... C</p> <p>ORAL QUININE..... D</p> <p>UNKNOWN DRUG/ ..... E</p> <p>OTHER ..... X</p> <p>(SPECIFY)</p>	
50	<p>How long after fever/first symptoms did (NAME) seek advice or treatment?</p>	<p>SAME DAY ..... 0</p> <p>NEXT DAY..... 1</p> <p>TWO DAYS AFTER THE FEVER ..... 2</p> <p>THREE OR MORE DAYS</p> <p>AFTER THE FEVER..... 3</p> <p>DON'T KNOW/UNSURE ..... 8</p>	
51	<p>For how many days did (NAME) take the drugs?</p> <p>IF 7 OR MORE DAYS, RECORD '7'.</p>	<p>DAYS..... <input type="text"/></p> <p>DON'T KNOW/UNSURE ..... 8</p>	
52	<p>Does anyone in your household do anything to prevent getting bitten by mosquitoes?</p>	<p>YES..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW/UNSURE ..... 8</p>	<p>↳ 54</p>
53	<p>What do members of your household do to prevent getting bitten by mosquitoes?</p> <p>RECORD ALL MENTIONED.</p>	<p>SLEEP UNDER MOSQUITO NET..... A</p> <p>USE COILS..... B</p> <p>USE MOSQUITO REPELLENT</p> <p>LOTIONS/SPRAYS/CANDLES ..... C</p> <p>OTHER ..... X</p> <p>(SPECIFY)</p> <p>DON'T KNOW/UNSURE ..... Z</p>	
54	<p>Did anyone in your household take any drugs to prevent malaria in the last 12 months?</p>	<p>YES..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW/UNSURE ..... 8</p>	<p>↳ 57</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
55	<p>Who was the last person who took a drug to prevent malaria in the last 12 months?</p> <p>RECORD NAME AND LINE NUMBER FROM THE HOUSEHOLD SCHEDULE.</p> <p>IF PERSON DOES NOT CURRENTLY LIVE IN THE HOUSEHOLD, RECORD '00'.</p>	<p>NAME _____</p> <p>LINE NUMBER..... <input type="text"/> <input type="text"/></p>	
56	<p>What drugs did (NAME from Q.55) take to prevent malaria?</p> <p>RECORD ALL MENTIONED. IF TYPE OF DRUG IS NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.</p>	<p>DARAMAL ..... A</p> <p>MIRQUIN ..... B</p> <p>NIVAQUINE ..... C</p> <p>PLASMOQUIN ..... D</p> <p>PALUDRINE ..... E</p> <p>LARIAM ..... F</p> <p>MEFLIAM ..... G</p> <p>DOXIMAL ..... H</p> <p>DOXITAB ..... I</p> <p>RANDOCLIN ..... J</p> <p>VIBRAMYCIN ..... K</p> <p>DOXYCYL ..... L</p> <p>DUMOCIN ..... M</p> <p>ROLAB CHLOROQUINE ..... N</p> <p>PHOSPHATE TABS ..... O</p> <p>MALARONE ..... P</p> <p>PRIMAQUINE ..... Q</p> <p>MALOPRIM ..... R</p> <p>UNKNOWN DRUG ..... S</p> <p>DON'T KNOW/UNSURE ..... Z</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>	
57	<p>FRONT PAGE: CHECK PROVINCE:</p> <div style="display: flex; justify-content: space-between;"> <div> MPUMALANGA <input type="checkbox"/>  KWAZULUNATAL <input type="checkbox"/>  LIMPOPO <input type="checkbox"/>  NORTHWEST <input type="checkbox"/> </div> <div> GAUTENG <input type="checkbox"/>  FREE STATE <input type="checkbox"/>  WESTERN CAPE <input type="checkbox"/>  NORTHERN CAPE <input type="checkbox"/>  EASTERN CAPE <input type="checkbox"/> </div> </div>		→59
58	Does your household have any mosquito nets that can be used while sleeping?	YES..... 1 NO ..... 2	→ 59
58A	How many mosquito nets does your household have?	NUMBER OF NETS ..... <input type="text"/> <input type="text"/>	

58B	ASK RESPONDENT ABOUT EACH MOSQUITO NET. IF MORE THAN 3 NETS, USE AN ADDITIONAL QUESTIONNAIRE.	NET # 1	NET # 2	NET # 3
58C	How long ago did your household obtain the mosquito net?	MOS AGO .... <input type="text"/> MORE THAN 3 YEARS AGO.....95	MOS AGO .... <input type="text"/> MORE THAN 3 YEARS AGO.....95	MOS AGO .... <input type="text"/> MORE THAN 3 YEARS AGO.....95
58D	Since you got the mosquito net, was it ever soaked or dipped in a liquid to repel mosquitoes or bugs?	YES.....1 NO .....2 (SKIP TO 58F)← NOT SURE .....8	YES .....1 NO .....2 (SKIP TO 58F)← NOT SURE .....8	YES.....1 NO .....2 (SKIP TO 58F)← NOT SURE .....8
58E	How long ago was the net last soaked or dipped?  IF LESS THAN 1 MONTH, RECORD '00'.	MOS AGO .... <input type="text"/>  MORE THAN 3 YEARS AGO.....95 NOT SURE .....98	MOS AGO .... <input type="text"/>  MORE THAN 3 YEARS AGO.....95 NOT SURE .....98	MOS AGO .... <input type="text"/>  MORE THAN 3 YEARS AGO.....95 NOT SURE .....98
58F	Did anyone sleep under this mosquito net last night?	YES.....1 NO .....2 (SKIP TO 58H)← NOT SURE .....8	YES .....1 NO .....2 (SKIP TO 58H)← NOT SURE .....8	YES.....1 NO .....2 (SKIP TO 58H)← NOT SURE .....8
58G	Who slept under this mosquito net last night?  RECORD THE RESPECTIVE LINE NUMBER FROM THE HOUSEHOLD SCHEDULE.	NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>	NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>	NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>  NAME _____ LINE NO.... <input type="text"/>
58H		GO BACK TO 58B FOR NEXT NET; OR, IF NO MORE NETS, GO TO 59.	GO BACK TO 58B FOR NEXT NET; OR, IF NO MORE NETS, GO TO 59.	GO BACK TO 58B IN THE FIRST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE NETS, GO TO 59.
59	Was your household sprayed with any substance that repels/kills mosquitoes in the last 12 months?	YES.....1 NO .....2 DON'T KNOW/UNSURE .....8  →61		
60	The last time your household was sprayed with a substance that repels/kills mosquitoes, who did the spraying?	SOMEONE FROM A GOV'T TEAM ..... 01 SOMEONE FROM A PRIVATE COMPANY..... 02 HOUSEHOLD MEMBER ..... 03 SELF ..... 04 NEIGHBOR..... 05  OTHER ..... 96 (SPECIFY) DON'T KNOW/UNSURE ..... 98		



**WEIGHT AND HEIGHT MEASUREMENT  
FOR CHILDREN UNDER AGE 6**

CHECK COLUMNS (7) AND (8): RECORD THE LINE NUMBER, NAME AND AGE OF ALL CHILDREN UNDER AGE 6.

CHILDREN UNDER AGE 6				WEIGHT AND HEIGHT MEASUREMENT OF CHILDREN BORN IN 1998 OR LATER			
LINE NO.  FROM COL.(9)	NAME  FROM COL.(2)	AGE  FROM COL.(7)	What is (NAME)'s date of birth?*	WEIGHT (KILOGRAMS)	HEIGHT (CENTIMETERS)	MEASURED LYING DOWN OR STANDING UP	RESULT 1 MEASURED 2 NOT PRESENT 3 REFUSED 6 OTHER
(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)
			DAY      MONTH      YEAR			LYING    STAND.	
<div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div>		<div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> </div>	<div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div>
<div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div>		<div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> </div>	<div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> </div>
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TICK HERE IF CONTINUATION SHEET USED

- FOR CHILDREN NOT INCLUDED IN ANY BIRTH HISTORY, ASK DAY, MONTH AND YEAR. FOR ALL OTHER CHILDREN, COPY MONTH AND YEAR FROM 215 IN MOTHER'S BIRTH HISTORY AND ASK DAY.

# TABLE OF THE SELECTION OF ADULTS FOR THE VIOLENCE QUESTIONS IN THE ADULT HEALTH QUESTIONNAIRE

Take the last digit of the sequential questionnaire number. This is the number of the row you should go to. See the total number of eligible adults in Column 11 of the household schedule. This is the number of the column you should go to. Find the box where the row and the column meet. Circle the number that appears in the box. This is the number of the adult who will be asked the violence questions. Then, go to Column 11 in the household schedule and circle the corresponding line number of the eligible adult (e.g. if the number in the box is '2' and there are three adults in the household whose line numbers are '02', '03', and '07', the line number of the eligible adult for the violence questions is '03').

Last digit of the questionnaire number	Total number of eligible adults in the household									
	1	2	3	4	5	6	7	8	9	10+
0	1	2	2	4	3	6	5	4	3	1
1	1	1	3	1	4	1	6	5	1	2
2	1	2	1	2	5	2	7	6	2	3
3	1	1	2	3	1	3	1	7	3	4
4	1	2	3	4	2	4	2	8	4	5
5	1	1	1	1	3	5	3	1	5	6
6	1	2	2	2	4	6	4	2	6	7
7	1	1	3	3	5	1	5	3	7	8
8	1	2	1	4	1	2	6	4	8	9
9	1	1	2	1	2	3	7	5	9	10

**SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY 2003  
ADULT HEALTH QUESTIONNAIRE**

IDENTIFICATION				
PROVINCE* _____	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
DISTRICT _____	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
EA NUMBER.....	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
EA TYPE (URBAN FORMAL=1; URBAN INFORMAL=2; RURAL FORMAL=3; TRIBAL AREA=4).....	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
SADHS CLUSTER NUMBER .....	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
STAND NUMBER .....	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
HOUSEHOLD NUMBER.....	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
NAME OF HOUSEHOLD HEAD _____				
NAME AND LINE NUMBER OF ADULT _____	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	DAY MONTH YEAR INT.CODE RESULT
INTERVIEWER'S NAME	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>
RESULT**	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
NEXT VISIT:      DATE	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	TOTAL NO. OF VISITS
TIME	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 40px; height: 40px;"></div>	<div style="border: 1px solid black; width: 20px; height: 20px;"></div>
<b>** RESULT CODES:</b> <div style="display: flex; justify-content: space-between;"> <div>           1 COMPLETED            2 NOT AT HOME            3 POSTPONED         </div> <div>           4 REFUSED            5 PARTLY COMPLETED            6 INCAPACITATED         </div> <div>           7 OTHER _____            (SPECIFY)         </div> </div>				
LANGUAGE				
LANGUAGE OF QUESTIONNAIRE: <b>ENGLISH</b>			<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>	
LANGUAGE OF INTERVIEW *** _____			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	
HOME LANGUAGE OF RESPONDENT*** _____			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	
WAS A TRANSLATOR USED? (YES=1, NO=2) .....			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	
<b>*** LANGUAGE CODES:</b> 01 ENGLISH    04 isiZULU    07 SePEDI    10 XITSONGA 02 AFRIKAANS    05 SeSOTHO    08 SiSWATI    11 isiNDEBELA 03 isiXHOSA    06 SeTSWANA    09 TshiVENDA    12 OTHER _____ (SPECIFY)				
SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY	
NAME _____	NAME _____			
DATE _____	DATE _____			

\*PROVINCE: WESTERN CAPE=1; EASTERN CAPE=2; NORTHERN CAPE=3; FREE STATE=4; KWAZULU-NATAL=5; NORTHWEST=6; GAUTENG=7; MPUMALANGA=8; LIMPOPO=9

**SECTION 1: HEALTH SERVICE UTILIZATION**

NO.	QUESTIONS AND FILTERS				CODING CATEGORIES									
101	RECORD THE TIME.				HOUR..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MINUTES ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									
1	During the <b>last month</b> have you been to any of the following health services for medical care for yourself : PROBE.		2. Were you satisfied with the care you received at (PLACE)?		3. Why were you not satisfied with the care you received at (PLACE)? DO NOT READ ANSWERS TO RESPONDENT.									
1A	Community Health Centre?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 DIDN'T SEE DOCTOR..... 04 NO PRESCRIBED DRUGS AVAILABLE ..... 05 OTHER..... 96 (SPECIFY)								
1B	Government Hospital/Government Clinic?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 DIDN'T SEE DOCTOR..... 04 NO PRESCRIBED DRUGS AVAILABLE ..... 05 OTHER..... 96 (SPECIFY)								
1C	Private Hospital/Private Clinic?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 DIDN'T SEE DOCTOR..... 04 TOO EXPENSIVE ..... 05 OTHER..... 96 (SPECIFY)								
1D	Private Doctor?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 TOO EXPENSIVE ..... 04 OTHER..... 96 (SPECIFY)								
1E	Chemist/Pharmacist?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 DIDN'T SEE PHARMACIST..... 04 DRUGS TOO EXPENSIVE ..... 05 OTHER..... 96 (SPECIFY)								
1F	Faith Healer?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 OTHER..... 96 (SPECIFY)								
1G	Traditional Healer or Herbalist?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 TOO EXPENSIVE ..... 04 OTHER..... 96 (SPECIFY)								
1H	Health Services at the Workplace?	YES 1	NO 2 <input type="checkbox"/>	YES 1 <input type="checkbox"/>	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION..... 02 STAFF RUDE/UNKIND ..... 03 DIDN'T SEE DOCTOR..... 04 OTHER..... 96 (SPECIFY)								

NO.	QUESTIONS AND FILTERS				CODING CATEGORIES	
1I	Have you had visits by Home-Based Care Services/House visits/Community-Based Care?	YES 1	NO 2 ↘	YES 1 ↘	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION ..... 02 STAFF RUDE/UNKIND ..... 03 OTHER ..... 96 (SPECIFY)
1J	Dentist/Oral Hygienist/Oral Therapist?	YES 1	NO 2 ↘	YES 1 ↘	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION ..... 02 STAFF RUDE/UNKIND ..... 03 TOO EXPENSIVE ..... 04 OTHER ..... 96 (SPECIFY)
1K	Rehabilitation Therapists? (e.g. physiotherapists; occupational therapists; speech, hearing and language therapists; orthotists/prosthetists; or optometrist).	YES 1	NO 2 ↘	YES 1 ↘	NO 2	LONG WAIT ..... 01 SHORT CONSULTATION ..... 02 STAFF RUDE/UNKIND ..... 03 TOO EXPENSIVE ..... 04 OTHER ..... 96 (SPECIFY)
1L	Other?  (SPECIFY)	YES 1	NO 2 ↘			
4	Sometimes, one misses appointments with a health-service provider. What were the most common reasons that you missed an appointment with a health-service provider the last time this happened?  RECORD ALL MENTIONED.  DO NOT READ ANSWERS TO RESPONDENT.	LACK OF MONEY ..... A LACK OF TIME ..... B I FORGOT ..... C I FELT BETTER ..... D CANNOT TAKE TIME FROM WORK ..... E NO TRANSPORT AVAILABLE ..... F TOO ILL TO TRAVEL ..... G OTHER RESPONSIBILITIES ..... H DO NOT WANT TO GO BACK TO THE HEALTH-CARE PROVIDER ..... I HAVE NOT MISSED APPOINTMENTS ..... J OTHER ..... X (SPECIFY)				
5	Are you covered by a Medical Aid or Medical Benefit Scheme or any scheme that helps you pay for health-care/drug services?	YES ..... 1 NO ..... 2				
6	Have you had your blood pressure measured in the past 12 months?	YES ..... 1 NO ..... 2				
7	Do you know what your blood pressure is?	YES ..... 1 NO ..... 2				→9
8	Is it high, normal or low?	HIGH ..... 1 NORMAL ..... 2 LOW ..... 3 DON'T KNOW ..... 8				

## SECTION 2: FAMILY MEDICAL HISTORY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
9	Now I would like to ask you about your family. Do you have a <b>close blood relative</b> (father, mother, brother, sister or child) who has ever had any of the following conditions:		
9A	High Blood Pressure?	YES.....1 NO.....2 DON'T KNOW.....8	
9B	Heart attack or angina or chest pain when exerting himself/herself?	YES.....1 NO.....2 DON'T KNOW.....8	1 → 9D
9C	Was this relative younger or older than 50 years old when they first had a heart attack, angina or chest pain?	YOUNGER THAN 50 YEARS.....1 OLDER THAN 50 YEARS.....2 DON'T KNOW.....8	
9D	Stroke?	YES.....1 NO.....2 DON'T KNOW.....8	

SECTION 3 : QUALITY OF LIFE AND CLINICAL CONDITIONS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
10A	Did you <b>grow up</b> in a household where people smoked cigarettes, pipe or other tobacco products every day?	YES.....1 NO.....2 DON'T KNOW.....8	
10B	Would you say your health is poor, average, good, or very good/excellent ?	POOR .....1 AVERAGE .....2 GOOD .....3 VERY GOOD/EXCELLENT .....4	
10C	Do you personally think that you are underweight, normal weight or overweight?	UNDERWEIGHT.....1 NORMAL WEIGHT .....2 OVERWEIGHT.....3 DON'T KNOW.....8	
11	Has a <b>doctor</b> or <b>nurse</b> or <b>health worker</b> at a <b>clinic</b> or <b>hospital</b> told you that you have or have had any of the following conditions:		
11A	High Blood Pressure?	YES.....1 NO.....2 DON'T KNOW.....8	
11B	Heart attack or angina (chest pains)?	YES.....1 NO.....2 DON'T KNOW.....8	
11C	Stroke?	YES.....1 NO.....2 DON'T KNOW.....8	
11D	High blood cholesterol or fats in the blood?	YES.....1 NO.....2 DON'T KNOW.....8	
11E	Diabetes or Blood Sugar?	YES.....1 NO.....2 DON'T KNOW.....8	
11F	Emphysema/Bronchitis?	YES.....1 NO.....2 DON'T KNOW.....8	
11G	Asthma?	YES.....1 NO.....2 DON'T KNOW.....8	
11H	Sore joints, e.g. Arthritis, gout?	YES.....1 NO.....2 DON'T KNOW.....8	
11I	Osteoporosis?	YES.....1 NO.....2 DON'T KNOW.....8	
11J	Epilepsy / fits?	YES.....1 NO.....2 DON'T KNOW.....8	
11K	TB?	YES.....1 NO.....2 DON'T KNOW.....8	
11L	How many episodes of TB have you ever been treated for?	NUMBER OF TB EPISODES..... <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	11M
11M	Cancer?	YES.....1 NO.....2 DON'T KNOW.....8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP		
12	Now I would like to ask you <b>about chest conditions</b> .				
12A	Do you feel you have less breath when exerting (exercising or moving a lot) yourself when compared to other people your age?	YES.....1 NO.....2 DON'T KNOW.....8			
12B	During the <b>last 12 months</b> have you had wheezing (difficult breathing) or tightness of your chest?	YES.....1 NO.....2 DON'T KNOW.....8	1 ➤ 12D		
12C	Were you also short of breath?	YES.....1 NO.....2 DON'T KNOW.....8			
12D	Do you usually get wheezing (difficult breathing) when you have a cold?	YES.....1 NO.....2 DON'T KNOW.....8			
12E	Is your sleep ever interrupted by wheezing or a tight chest?	YES.....1 NO.....2 DON'T KNOW.....8			
12F	Is your sleep ever interrupted by your coughing?	YES.....1 NO.....2 DON'T KNOW.....8			
12G	Do you usually cough (on most days)?	YES.....1 NO.....2 DON'T KNOW.....8	1 ➤ 13A		
12H	When you cough, do you usually bring up phlegm from your chest?	YES.....1 NO.....2 DON'T KNOW.....8	1 ➤ 13A		
12I	Have you brought up phlegm every day for at least three months during the last year?	YES.....1 NO.....2 DON'T KNOW.....8	1 ➤ 13A		
12J	For how many years have you brought up phlegm in this way?	NUMBER OF YEARS..... <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </table>			



#### SECTION 4: DENTAL HEALTH

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
13A	Have you <b>lost</b> all of your own teeth?	YES .....1 NO.....2	
13B	Have you had pain or problems with your mouth and/or teeth in the <b>last 6 months</b> ?	YES .....1 NO.....2	→ 13E
13C	Please indicate which part of your mouth was affected.  RECORD ALL MENTIONED.	TEETH .....A GUMS .....B ULCERS /SORES IN THE MOUTH.....C DENTURES .....D  OTHER..... X (SPECIFY)	
13D	What did you do when you had problems in your mouth?  RECORD ALL MENTIONED.	TOOK A TABLET.....A WENT TO THE DENTIST/ORAL HYGIENIST/DENTAL THERAPIST.....B WENT TO THE DOCTOR.....C WENT TO THE TRADITIONAL HEALER.....D NOTHING .....E  OTHER.....X (SPECIFY)	
13E	What do you usually do to look after your teeth/mouth?  RECORD ALL MENTIONED.  DO NOT READ ANSWERS TO RESPONDENT.	RINSE MOUTH.....A CLEAN/BRUSH/FLOSS.....B EAT LESS SWEET FOOD/DRINK LESS SWEET DRINKS...C VISIT DENTIST/DENTAL THERAPIST/ORAL HYGIENIST/ ORAL THERAPIST AT LEAST ONCE A YEAR .....D NOTHING .....E  OTHER.....X (SPECIFY)	

#### SECTION 5: OCCUPATIONAL HEALTH

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP		
14	In the <b>past 12 months</b> , have you worked for payment?	YES .....1 NO.....2	→ 15		
14A	In the <b>past 12 months</b> , have you had any injury or health problem caused by your work?	YES .....1 NO.....2	→ 15		
14B	Did you stay away from work because of this injury or problem?	YES .....1 NO.....2	→ 14D		
14C	For how many days did you stay away?	NUMBER OF DAYS..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			
14D	What was the injury or health problem?  WRITE THE ANSWER.	_____ _____ _____ _____			

SECTION 6: VIOLENCE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																											
15	<p>CHECK COL 11 AND LAST PAGE OF HOUSEHOLD QUESTIONNAIRE TO SEE IF RESPONDENT IS ELIGIBLE FOR THIS SECTION.</p> <p>CHECK FOR PRESENCE OF OTHERS: <b>DO NOT CONTINUE UNTIL RESPONDENT IS ALONE.</b></p> <p>RESPONDENT ALONE <input type="checkbox"/> _____</p> <p>AND ELIGIBLE FOR Qs. 15A-15I <input type="checkbox"/> _____</p> <p>RESPONDENT NOT <input type="checkbox"/> _____</p> <p>ELIGIBLE FOR Qs. 15A-15I</p>		<p>→ 16</p> <p>→ 16</p>																											
15A	<p>Now I would like to ask you some questions about violence.</p> <p>In the <b>last 12 months</b>, has anyone, someone you know or a stranger, physically attacked you in any of the following ways:</p> <p>a) By pushing, shaking or throwing something at you?</p> <p>b) By slapping you or twisting your arm?</p> <p>c) By punching you with their fist or something that could hurt you?</p> <p>d) By kicking or dragging you?</p> <p>e) By trying to strangle or burn you?</p> <p>f) By threatening you with a knife, gun, or other type of weapon?</p> <p>g) By shooting or stabbing you?</p> <p>h) In any other way?</p>	<table> <thead> <tr> <th></th><th><u>YES</u></th><th><u>NO</u></th></tr> </thead> <tbody> <tr> <td>a) .....</td><td>1</td><td>2</td></tr> <tr> <td>b) .....</td><td>1</td><td>2</td></tr> <tr> <td>c) .....</td><td>1</td><td>2</td></tr> <tr> <td>d) .....</td><td>1</td><td>2</td></tr> <tr> <td>e) .....</td><td>1</td><td>2</td></tr> <tr> <td>f) .....</td><td>1</td><td>2</td></tr> <tr> <td>g) .....</td><td>1</td><td>2</td></tr> <tr> <td>h) .....</td><td>1</td><td>2</td></tr> </tbody> </table>		<u>YES</u>	<u>NO</u>	a) .....	1	2	b) .....	1	2	c) .....	1	2	d) .....	1	2	e) .....	1	2	f) .....	1	2	g) .....	1	2	h) .....	1	2	
	<u>YES</u>	<u>NO</u>																												
a) .....	1	2																												
b) .....	1	2																												
c) .....	1	2																												
d) .....	1	2																												
e) .....	1	2																												
f) .....	1	2																												
g) .....	1	2																												
h) .....	1	2																												
15B	<p>CHECK 15A:</p> <p>AT LEAST ONE "YES" CIRCLED <input type="checkbox"/> _____</p> <p>NOT ONE SINGLE "YES" CIRCLED <input type="checkbox"/> _____</p>		→ 16																											
15C	<p>In the <b>last 12 months</b>, how many times did this (TYPE OF ATTACK FROM 15A) happen to you?</p> <p>RECORD THE NUMBER OF ALL KINDS OF ATTACK EVENTS IN THE LAST 12 MONTHS.</p>	<p>NUMBER OF TIMES..... <input type="text"/> <input type="text"/></p>																												
15D	<p>Where were you attacked <b>the last time</b> it happened?</p> <p>DO NOT READ ANSWERS TO RESPONDENT.</p>	<p>PUBLIC ROAD .....01</p> <p>PLACE OF WORK.....02</p> <p>PLACE OF EDUCATION.....03</p> <p>CLUB/SHEBEEN/DISCO/BAR .....04</p> <p>CROWDED VENUE (E.G. SOCCER GAME, CONCERT, ETC.) .....05</p> <p>HOME .....06</p> <p>OTHER _____ 96</p> <p align="center">(SPECIFY)</p>																												
15E	<p>As a result of this attack did you have any of the following:</p> <p>a) Aches and pains?</p> <p>b) Bruises or cuts that bled?</p> <p>c) Broken bones or other types of injuries?</p> <p>d) Collapsed or went into a coma?</p>	<table> <thead> <tr> <th></th><th><u>YES</u></th><th><u>NO</u></th></tr> </thead> <tbody> <tr> <td>a) .....</td><td>1</td><td>2</td></tr> <tr> <td>b) .....</td><td>1</td><td>2</td></tr> <tr> <td>c) .....</td><td>1</td><td>2</td></tr> <tr> <td>d) .....</td><td>1</td><td>2</td></tr> </tbody> </table>		<u>YES</u>	<u>NO</u>	a) .....	1	2	b) .....	1	2	c) .....	1	2	d) .....	1	2													
	<u>YES</u>	<u>NO</u>																												
a) .....	1	2																												
b) .....	1	2																												
c) .....	1	2																												
d) .....	1	2																												
15F	<p>CHECK 15E:</p> <p>AT LEAST ONE "YES" CIRCLED <input type="checkbox"/> _____</p> <p>NOT ONE SINGLE "YES" CIRCLED <input type="checkbox"/> _____</p>		→ 16																											
15G	<p>On the <b>last occasion</b> you had (INJURY FROM 15E), did you seek medical attention?</p>	<p>YES .....</p> <p>NO .....1</p> <p>2</p>	→ 15I																											
15H	<p>Were you admitted to hospital for more than one day due to injuries from this attack?</p>	<p>YES .....</p> <p>NO .....1</p>																												

		2	
15I	In your view, did alcohol or drugs contribute to this attack?	YES .....1 NO .....2 DON'T KNOW/NOT SURE..... 8	

SECTION 7: MEDICATION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
16	Now I want to ask you about any medication you take.		
16A	Do you use any medicine regularly or daily that a doctor or nurse has prescribed?	YES ..... 1 NO.....2 DON'T KNOW .....8	→ 17
16B	How many different medicines do you use regularly (more than once a month)?	NUMBER OF MEDICINES..... <div><div></div><div></div></div>	
16C	Who pays for most of the medication, prescribed by a doctor or nurse, that you use?  READ THE ANSWER CATEGORIES TO RESPONDENT.	RESPONDENT .....01 FAMILY .....02 MEDICAL AID .....03 PROVIDED AT CLINIC OR PUBLIC HOSPITAL .....04 EMPLOYER .....05  OTHER _____ 96 <div>(SPECIFY)</div>	

CONTINUE WITH COMPLETING THE CHART ON THE NEXT PAGE. RECORD ALL THE DRUGS MENTIONED AND WHAT THEY ARE TAKEN FOR.

Name of drug	WHAT IS IT FOR? (UNPROMPTED)												OFFICE USE			
	High Blood Pressure	Heart attack or angina	Stroke	High cholesterol or other Blood fats	Diabetes, Blood sugar	Emphysema, Bronchitis	Asthma	Sore joints (arthritis)	Osteoporosis	TB	Epilepsy	Cancer	Don't know	Other	ATC Code	Correct = 1 Incorrect = 2 N/A = 3
	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			
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	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			
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	01	02	03	04	05	06	07	08	09	10	11	12	13			
	01	02	03	04	05	06	07	08	09	10	11	12	13			

SECTION 8: HABITS AND LIFESTYLE

8A: PHYSICAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
17	The next questions are about the time you spend doing different types of physical activities. This includes activities you do <b>at home, at work, travelling from place to place and during your spare time</b> . You are requested to answer the questions even if you don't consider yourself to be an active person.		
	<b>Occupation-Related Physical Activity (paid or unpaid work):</b> When answering the following questions, think back over the <b>past 12 months</b> and consider (think of) <b>a usual week</b> .		
18	Does your work involve <u>mostly</u> sitting or standing still, <b>OR</b> walking for very short periods (less than 10 minutes)?	MOSTLY SITTING .....1 MOSTLY STANDING STILL .....2 MOSTLY WALKING FOR VERY SHORT PERIODS.....3 MOSTLY DOING MODERATE/VIGOROUS ACTIVITY .....4 NONE OF THE ABOVE .....5	<div>→ 21</div> <div>→ 22A</div>
19A	Does your work involve <u>vigorous</u> activities, ( <u>like</u> heavy lifting, digging, or heavy construction) for <b>at least 10 minutes</b> at a time?	YES .....1 NO .....2	→ 20A
19B	In <b>a usual week</b> , how many days do you do <u>vigorous</u> activities as part of your work?	DAYS ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
19C	On <b>a usual day</b> on which you do <u>vigorous</u> activities, how much time do you spend doing such work?	HOURS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... 2 <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	
20A	Does your work involve <u>moderate-intensity</u> activities ( <u>like</u> brisk walking or carrying light loads) for <b>at least 10 minutes</b> at a time?	YES .....1 NO .....2	→ 21
20B	In <b>a usual week</b> , how many days do you do <u>moderate-intensity</u> activities as part of your work?	DAYS ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
20C	On <b>a usual day</b> on which you do <u>moderate-intensity</u> activities, how much time do you spend doing such work?	HOURS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... 2 <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	
21	How long is your usual workday?	HOURS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... 2 <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	<b>Travel-Related Physical Activity:</b> Other than activities that you've already mentioned, I would like to ask you about the way you travel to and from places (to work, to shopping, to market, to church, etc.).		
22A	Do you walk or use a bicycle (pedal cycle) for <b>at least 10 minutes</b> at a time to get to and from places?	YES .....1 NO .....2	→ 23
22B	In a <b>usual week</b> , how many days do you walk or cycle for at least 10 minutes to get to and from places?	DAYS ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
22C	On a <b>usual day</b> , how much time do you spend walking or cycling for travel?	HOURS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... 2 <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	
	<b>Non-Work Related and Leisure Time Physical Activity:</b> The next questions ask about activities you do in your leisure or spare time, for recreation or fitness. Do not include the physical activities you do at work or for travel already mentioned.		
23	In your leisure or spare time do you do any vigorous or moderate-intensity physical activity lasting <b>more than 10 minutes</b> at a time?	YES .....1 NO .....2	→ 26
24A	In your leisure or spare time, do you do any <u>vigorous</u> activities ( <u>like</u> running or strenuous sports, weightlifting) for <b>at least 10 minutes</b> at a time?	YES .....1 NO .....2	→ 25A
24B	In a <b>usual week</b> , how many days do you do <u>vigorous</u> activities as part of your leisure or spare time?	DAYS ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
24C	How much time do you spend doing this on a <b>usual day</b> ?	HOURS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... 2 <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	
25A	In your leisure or spare time, do you do any <u>moderate-intensity</u> activities ( <u>like</u> brisk walking, cycling or swimming) for <b>at least 10 minutes</b> at a time?	YES .....1 NO .....2	→ 26
25B	In a <b>usual week</b> , how many days do you do <u>moderate-intensity</u> activities as part of your leisure or spare time?	DAYS ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
25C	How much time do you spend doing this on a <b>usual day</b> ?	HOURS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... 2 <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	
	<b>Sitting / Resting Activity:</b> Now I would like to ask you about the time spent sitting or resting, not including sleeping, <b>in the past 7 days</b> . This may include time sitting at a desk, visiting friends, reading, or sitting down to watch television <b>during working hours and leisure or spare time</b> .		
26	Over the <b>past 7 days</b> , how much time did you spend sitting or reclining (lying) on a <b>usual day (excluding sleeping)</b> ?	HOURS ..... 1 <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> MINUTES ..... 2 <table border="1" style="display: inline-table; width: 60px; height: 20px; vertical-align: middle;"></table>	

8B: DIETARY INTAKE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	<b>Now, I would like to ask you some questions about the foods that you eat. There are no right or wrong answers so please feel free to give us your information as it is.</b>		
27	Which of the following do you <b>USUALLY</b> eat?  MARK ONE PER COLUMN.		
27A	Chicken/Poultry	WITH SKIN ..... 1 WITHOUT SKIN ..... 2 NONE ..... 3	
27B	Red Meat	FATTY MEAT ..... 1 LEAN MEAT ..... 2 NONE ..... 3	
27C	Spread: (Butter/ Margarine)	BUTTER ..... 1 HARD MARGARINE (BRICK) ..... 2 SOFT MARGARINE (TUB) ..... 3 NONE ..... 4	
27D	Milk/Milk Products in powder form	FULL CREAM ..... 1 2% OR LOW FAT ..... 2 SKIM/FAT FREE ..... 3 BLENDS ..... 4 NONE ..... 5	
28	How often do you <b>USUALLY</b> eat the following?		
28A	Fried foods, e.g. chips, fish, potatoes, doughnuts, eggs	OCCASIONALLY/NEVER ..... 1 WEEKLY (AT LEAST ONCE A WEEK) ..... 2 DAILY ..... 3	
28B	Chips, e.g. packet of 'Simba' chips or other salty snacks	OCCASIONALLY/NEVER ..... 1 WEEKLY (AT LEAST ONCE A WEEK) ..... 2 DAILY ..... 3	
28C	Processed meat, e.g. polony, viennas, meat pies, sausage rolls	OCCASIONALLY/NEVER ..... 1 WEEKLY (AT LEAST ONCE A WEEK) ..... 2 DAILY ..... 3	
29	Do you usually eat your food <u>very salty</u> , <u>lightly salted</u> or <u>not salted</u> ?	VERY SALTY ..... 1 LIGHTLY SALTED ..... 2 NOT SALTED ..... 3 DON'T KNOW ..... 8	
30	Do you usually add salt or Aromat/Fondor to your serving of food?  IF YES, ASK: Before or after tasting the food?	NO, I NEVER ADD SALT/AROMAT ..... 1 YES, BUT I TASTE FIRST AND THEN ADD ..... 2 YES, EVEN BEFORE HAVING TASTED FOOD ..... 3 DON'T KNOW ..... 8	
31	Do you eat <u>salty snacks</u> more often than three times per week (Such as chips, niknaks, salted peanuts, salty biscuits, biltong, dried sausage, dried fish)?	YES ..... 1 NO ..... 2	

	<b>We are interested in how often people eat certain kinds of foods. Now think about your food intake...</b>							
32	<p>During the <b>PAST 7 days (1 week)</b>, did you eat any of the following?</p> <p>IF YES, ASK HOW OFTEN.</p> <p>IF NO, CIRCLE 'NEVER'.</p> <p><b>DO NOT READ ANSWER CATEGORIES TO RESPONDENT.</b></p>							
	Food item	NEVER	NOT DAILY		EVERY DAY			CODE
			1-3 TIMES PER WEEK	4-6 TIMES PER WEEK	1 TIME A DAY	2 TIMES A DAY	3+ TIMES A DAY	
A1	Red meat (any type)	0	1	2	3	4	5	
B1	Chicken (any type)	0	1	2	3	4	5	
C1	Tinned fish	0	1	2	3	4	5	
D1	Organ meat, e.g. liver, tripe	0	1	2	3	4	5	
E1	Eggs (any type)	0	1	2	3	4	5	
F1	Milk / yoghurt / maas to drink on cereals	0	1	2	3	4	5	
G1	Milk in tea / coffee	0	1	2	3	4	5	
H1	Cheese (except cottage cheese)	0	1	2	3	4	5	
I1	Legumes, e.g. baked beans, lentils	0	1	2	3	4	5	
J1	Peanuts and nuts	0	1	2	3	4	5	
K1	Brown / whole wheat bread or rolls	0	1	2	3	4	5	
L1	Breakfast cereal (instant, not cooked)	0	1	2	3	4	5	
M1	Oat-porridge	0	1	2	3	4	5	
N1	Soft margarine (tub)	0	1	2	3	4	5	
O1	Broccoli, cauliflower, Brussels sprouts	0	1	2	3	4	5	
P1	Spinach and/or morogo	0	1	2	3	4	5	
Q1	Carrots	0	1	2	3	4	5	
R1	Tomato (raw / cooked)	0	1	2	3	4	5	
S1	Green peas	0	1	2	3	4	5	
T1	Green beans	0	1	2	3	4	5	
U1	Mixed vegetables	0	1	2	3	4	5	
V1	Pumpkin / butternut	0	1	2	3	4	5	
W1	Sweet potato	0	1	2	3	4	5	
X1	Potato (any preparation)	0	1	2	3	4	5	
Y1	Citrus fruit, e.g. orange, grape fruit	0	1	2	3	4	5	
Z1	Pure orange / guava juice (not others) (sweetened/unsweetend)	0	1	2	3	4	5	
A2	Bananas	0	1	2	3	4	5	
B2	Mangoes	0	1	2	3	4	5	
C2	Apples / pears	0	1	2	3	4	5	
D2	Avocado	0	1	2	3	4	5	



## 8C: TOBACCO USE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
33A	Do you <b>currently smoke</b> any tobacco products, such as cigarettes, cigars, or pipes?	YES .....1 NO .....2	→36
33B	Do you currently smoke tobacco products <b>daily</b> ?	YES .....1 NO .....2	→36
34A	<b>How old</b> were you when you first <b>started</b> smoking daily?	YEARS OLD..... <input type="text"/> <input type="text"/> DON'T REMEMBER/NOT SURE.....98	→35
34B	Do you remember how long ago it was when you first <b>started</b> to smoke daily?	WEEKS AGO.....1 <input type="text"/> <input type="text"/> MONTHS AGO.....2 <input type="text"/> <input type="text"/> YEARS AGO.....3 <input type="text"/> <input type="text"/>	
35	On average, how many of the following items do you smoke each day?  Manufactured cigarettes?  Hand-rolled cigarettes?  Pipes full of tobacco?  Cigars/Cheroots/Cigarillos?  IF NONE, RECORD '00'.	MANUFACTURED CIGARETTES..... <input type="text"/> <input type="text"/> HAND-ROLLED CIGARETTES..... <input type="text"/> <input type="text"/> PIPES FULL OF TOBACCO..... <input type="text"/> <input type="text"/> CIGARS/CHEROOTS/CIGARILLOS..... <input type="text"/> <input type="text"/> .....98	→38A
36	<b>In the past</b> , did you ever smoke daily?	YES .....1 NO .....2	→38A
37A	<b>How old</b> were you when you <b>stopped</b> smoking daily?	YEARS OLD..... <input type="text"/> <input type="text"/> DON'T REMEMBER/NOT SURE.....98	→38A
37B	Do you remember how long ago it was when you <b>stopped</b> smoking daily?	WEEKS AGO.....1 <input type="text"/> <input type="text"/> MONTHS AGO.....2 <input type="text"/> <input type="text"/> YEARS AGO.....3 <input type="text"/> <input type="text"/>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
38A	Do you <b>currently use any</b> smokeless tobacco, such as snuff or chewing tobacco?	YES .....1 NO .....2	→40
38B	Do you currently use smokeless tobacco <b>daily</b> ?	YES .....1 NO .....2	→40
39	On average, how many times do you use each of the following items per day?  Snuff (by mouth)?  Snuff (by nose)?  Chewing tobacco?  IF NONE, RECORD '00'.	SNUFF (BY MOUTH)..... <input type="text"/> <input type="text"/> SNUFF (BY NOSE)..... <input type="text"/> <input type="text"/> CHEWING TOBACCO..... <input type="text"/> <input type="text"/> IF NONE, RECORD '00'.	→41
40	<b>In the past</b> , did you ever use smokeless tobacco, such as snuff or chewing tobacco daily?	YES .....1 NO .....2	
41A	Do you live in a house where other people smoke cigarettes regularly?	YES .....1 NO .....2	
41B	Do you currently work in a job where other people smoke cigarettes around you?	YES .....1 NO .....2	
41C	Have you ever worked in a job where you were regularly exposed to smoke, dust, fumes or strong smells?	YES .....1 NO .....2	→42A
41D	How long did you work in that job?  IF LESS THAN 1 YEAR, WRITE '00'.	YEARS..... <input type="text"/> <input type="text"/>	

## 8D: ALCOHOL USE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
42A	Have you <b>ever consumed</b> a drink that contains alcohol such as beer, wine, spirits or sorghum beer?	YES .....1 NO .....2	→46
42B	Was this within the <b>past 12 months</b> ?	YES .....1 NO .....2	→46
43	In the <b>past 12 months, how frequently</b> have you had at least one drink?  READ ANSWER CATEGORIES TO RESPONDENT.  USE SHOWCARD.	5 OR MORE DAYS A WEEK .....1 1-4 DAYS PER WEEK .....2 1-3 DAYS A MONTH .....3 LESS THAN ONCE A MONTH .....4	
44A	When you drink alcohol, <b>on average</b> , how many drinks do you have during one day?	DRINKS ..... <input type="text"/> <input type="text"/> DON'T KNOW .....98	
44B	During the <b>past 7 days</b> , how many standard drinks of any alcoholic drink did you have each day?  RECORD FOR EACH DAY.  USE SHOWCARD.  IF NONE, RECORD '00'.	MONDAY ..... <input type="text"/> <input type="text"/> TUESDAY ..... <input type="text"/> <input type="text"/> WEDNESDAY ..... <input type="text"/> <input type="text"/> THURSDAY ..... <input type="text"/> <input type="text"/> FRIDAY ..... <input type="text"/> <input type="text"/> SATURDAY ..... <input type="text"/> <input type="text"/> SUNDAY ..... <input type="text"/> <input type="text"/>	
45A	Have you ever felt that you should cut down on your drinking?	YES .....1 NO .....2	
45B	Have people annoyed you by criticizing your drinking?	YES .....1 NO .....2	
45C	Have you ever felt bad or guilty about your drinking?	YES .....1 NO .....2	
45D	Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?	YES .....1 NO .....2	
46	How old were you at your last birthday?	AGE IN COMPLETED YEARS ..... <input type="text"/> <input type="text"/> DON'T KNOW .....98	
47	Which population group do you consider yourself?	BLACK/AFRICAN .....1 COLOURED .....2 WHITE .....3 ASIAN/INDIAN .....4 NO REPLY/NOT SURE .....8	

ADULT DEMOGRAPHIC AND HEALTH SURVEY  
ANTHROPOMETRIC DATA SHEET

48	DATE	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	2	0	0	<input type="text"/>
		d	d	m	m	y	y	y	y
49	FIELDWORKER NUMBER	<input type="text"/>	<input type="text"/>	<input type="text"/>					
50	WEIGHT (KG)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
51	HEIGHT (CM)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
53	WAIST CIRCUMFERENCE (CM)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
54	HIP CIRCUMFERENCE (CM)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
55	SYSTOLIC BLOOD PRESSURE 1	<input type="text"/>	<input type="text"/>	<input type="text"/>					
56	DIASTOLIC BLOOD PRESSURE 1	<input type="text"/>	<input type="text"/>	<input type="text"/>					
57	PULSE 1	<input type="text"/>	<input type="text"/>	<input type="text"/>					
58	SYSTOLIC BLOOD PRESSURE 2	<input type="text"/>	<input type="text"/>	<input type="text"/>					
59	DIASTOLIC BLOOD PRESSURE 2	<input type="text"/>	<input type="text"/>	<input type="text"/>					
60	PULSE 2	<input type="text"/>	<input type="text"/>	<input type="text"/>					
61	SYSTOLIC BLOOD PRESSURE 3	<input type="text"/>	<input type="text"/>	<input type="text"/>					
62	DIASTOLIC BLOOD PRESSURE 3	<input type="text"/>	<input type="text"/>	<input type="text"/>					
63	PULSE 3	<input type="text"/>	<input type="text"/>	<input type="text"/>					
64	PEAK EXPIRATORY FLOW RATE (1)	<input type="text"/>	<input type="text"/>	<input type="text"/>					
	(2)	<input type="text"/>	<input type="text"/>	<input type="text"/>					

**SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY 2003**  
**QUESTIONNAIRE FOR CHILDREN YOUNGER THAN SIX YEARS OLD WHOSE**  
**BIOLOGICAL MOTHER DOES NOT LIVE IN THE HOUSEHOLD**

IDENTIFICATION				
PROVINCE* _____  DISTRICT _____  EA NUMBER.....  EA TYPE (URBAN FORMAL=1; URBAN INFORMAL=2; RURAL FORMAL=3; TRIBAL AREA=4)..... SADHS CLUSTER NUMBER..... STAND NUMBER..... HOUSEHOLD NUMBER..... NAME OF HOUSEHOLD HEAD _____  NAME AND LINE NUMBER OF CHILD _____  NAME AND LINE NUMBER OF GUARDIAN/FOSTER PARENT/OTHER _____	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 5px auto;"></div>			
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
				MONTH <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
				YEAR <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; text-align: center;">200</div>
INTERVIEWER'S NAME				INT.CODE <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
RESULT**				RESULT <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
NEXT VISIT:      DATE				TOTAL NO. OF VISITS <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
TIME				
<b>** RESULT CODES:</b> <div style="display: flex; justify-content: space-between;"> <div>                         1 COMPLETED                          2 NOT AT HOME                          3 POSTPONED                     </div> <div>                         4 REFUSED                          5 PARTLY COMPLETED                          6 INCAPACITATED                     </div> <div>                         7 OTHER _____ (SPECIFY)                     </div> </div>				
LANGUAGE				
LANGUAGE OF QUESTIONNAIRE: <b>ENGLISH</b>  LANGUAGE OF INTERVIEW *** _____  HOME LANGUAGE OF RESPONDENT*** _____  WAS A TRANSLATOR USED? (YES=1, NO=2) ..... <b>*** LANGUAGE CODES:</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 25%;">01 ENGLISH</div> <div style="width: 25%;">04 isiZULU</div> <div style="width: 25%;">07 SePEDI</div> <div style="width: 25%;">10 XITSONGA</div> <div style="width: 25%;">12 OTHER _____ (SPECIFY)</div> <div style="width: 25%;">02 AFRIKAANS</div> <div style="width: 25%;">05 SeSOTHO</div> <div style="width: 25%;">08 SiSWATI</div> <div style="width: 25%;">11 isiNDEBELE</div> <div style="width: 25%;">03 isiXHOSA</div> <div style="width: 25%;">06 SeTSWANA</div> <div style="width: 25%;">09 TshiVENDA</div> </div>				<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; text-align: center;">1</div>
SUPERVISOR		FIELD EDITOR		OFFICE EDITOR
NAME _____	DATE _____	NAME _____	DATE _____	NAME _____
<div style="border: 1px solid black; width: 20px; height: 20px;"></div>	<div style="border: 1px solid black; width: 20px; height: 20px;"></div>	<div style="border: 1px solid black; width: 20px; height: 20px;"></div>	<div style="border: 1px solid black; width: 20px; height: 20px;"></div>	<div style="border: 1px solid black; width: 20px; height: 20px;"></div>

\*PROVINCE: WESTERN CAPE=1; EASTERN CAPE=2; NORTHERN CAPE=3; FREE STATE=4; KWAZULU-NATAL=5; NORTHWEST=6; GAUTENG=7; MPUMALANGA=8; LIMPOPO=9

**SECTION 1: BACKGROUND INFORMATION OF THE CHILD**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP												
101	RECORD THE TIME.	HOUR ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MINUTES..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>													
102	RECORD LINE NUMBER AND NAME FROM COVER PAGE OF THIS QUESTIONNAIRE.	NAME ..... LINE NUMBER ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>													
103	In what month and year was (NAME from Q.102) born?	MONTH ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> DOES NOT KNOW MONTH ..... 98 YEAR..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table> DOES NOT KNOW YEAR..... 9998													
104	How old was (NAME) at his/her last birthday? COMPARE AND CORRECT 103 AND/OR 104 IF INCONSISTENT.	AGE IN COMPLETED YEARS <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>													
105	Is (NAME) a boy or a girl?	MALE ..... 1 FEMALE ..... 2													
106	Which population group does (NAME) belong to?	BLACK/AFRICAN ..... 1 COLOURED ..... 2 WHITE ..... 3 ASIAN/INDIAN ..... 4 OTHER ..... 6 (SPECIFY)													
107	What is your relationship to (NAME)?	BIOLOGICAL FATHER ..... 11 ADOPTIVE PARENT ..... 12 FOSTER PARENT ..... 13 STEP PARENT ..... 14 GRANDPARENT ..... 15 SISTER/BROTHER ..... 16 OTHER FAMILY (e.g. aunt, etc.) ..... 17 UNRELATED CAREGIVER/ GUARDIAN ..... 18 OTHER ..... 96 (SPECIFY)													
108	Why is (NAME)'s biological mother not living with the child?	MOTHER DIED ..... 1 MOTHER LEFT TO SEEK EMPLOYMENT/WORK ELSEWHERE ..... 2 MOTHER SENT CHILD HERE FOR CARE (LIVES ELSEWHERE) ..... 3 MOTHER IN HOSPITAL ..... 4 OTHER ..... 6 (SPECIFY)													

**SECTION 2: IMMUNIZATION, HEALTH AND NUTRITION**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES/SKIP																																																																																																																																		
201	Did (NAME) receive a vitamin A dose like this during the last 6 months?  SHOW AMPULE/CAPSULE.	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8																																																																																																																																		
202	Do you have a card where (NAME'S) vaccinations are written down?  IF YES: May I see it please?	YES, SEEN ..... 1 (SKIP TO 204) ◀ YES, NOT SEEN ..... 2 (SKIP TO 206) ◀ NO CARD ..... 3																																																																																																																																		
203	Did you ever have a vaccination card for (NAME)?	YES ..... 1 (SKIP TO 206) ◀ NO ..... 2																																																																																																																																		
204	(1) COPY VACCINATION DATE FOR EACH VACCINE FROM THE CARD.  (2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED.  BCG POLIO 0 (POLIO GIVEN AT BIRTH) POLIO 1 POLIO 2 POLIO 3 DPT 1 DPT 2 DPT 3 Hep. B 1 Hep. B 2 Hep. B 3 MEASLES VITAMIN A (MOST RECENT)	<div style="display: flex; justify-content: space-around; margin-bottom: 5px;"> <span>DAY</span> <span>MONTH</span> <span>YEAR</span> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>BCG</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>P0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>P1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>P2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>P3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>D1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>D2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>D3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>H1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>H2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>H3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>MEA</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>VIT. A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	BCG										P0										P1										P2										P3										D1										D2										D3										H1										H2										H3										MEA										VIT. A									
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205	Has (NAME) received any vaccinations that are not recorded on this card, including vaccinations received in a national immunization day campaign?  RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, POLIO 0-3, DPT 1-3, HEP 1-3, MEASLES VACCINE(S) AND/OR VITAMIN A.	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN Q 204) (SKIP TO 208) ◀ NO ..... 2 (SKIP TO 208) ◀ DON'T KNOW ..... 8																																																																																																																																		
206	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunization day campaign?	YES ..... 1 NO ..... 2 (SKIP TO 209) ◀ DON'T KNOW ..... 8																																																																																																																																		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES/SKIP
207	Please tell me if (NAME) received any of the following vaccinations:	
207A	A BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that usually causes a scar?	YES..... 1 NO..... 2 DON'T KNOW..... 8
207B	Polio vaccine, that is, drops in the mouth?	YES..... 1 NO..... 2 (SKIP TO 207E) ← DON'T KNOW..... 8
207C	When was the first polio vaccine received, just after birth or later?	JUST AFTER BIRTH..... 1 LATER..... 2
207D	How many times was the polio vaccine received?	NUMBER OF TIMES..... <input type="text"/>
207E	A DPT vaccination, that is, an injection given in the thigh or buttocks, sometimes at the same time as polio drops?	YES..... 1 NO..... 2 (SKIP TO 207G) ← DON'T KNOW..... 8
207F	How many times?	NUMBER OF TIMES..... <input type="text"/>
207G	A Hepatitis B vaccination, that is, an injection given in the arm or shoulders, sometimes at the same time as polio drops?	YES..... 1 NO..... 2 (SKIP TO 207I) ← DON'T KNOW..... 8
207H	How many times?	NUMBER OF TIMES..... <input type="text"/>
207I	An injection to prevent measles?	YES..... 1 NO..... 2 DON'T KNOW..... 8
207J	A Vitamin A dose in an ampule, capsule, tablet, or syrup?	YES..... 1 NO..... 2 DON'T KNOW..... 8
208	Were any of the vaccinations (NAME) received during the last two years given as a part of a national immunization day campaign?	YES..... 1 NO..... 2 NO VACCINATION IN THE LAST 2 YEARS..... 3 DON'T KNOW..... 8
209	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES..... 1 NO..... 2 DON'T KNOW..... 8
210	Has (NAME) had an illness with a cough at any time in the last 2 weeks?	YES..... 1 NO..... 2 (SKIP TO 212) ← DON'T KNOW..... 8
211	When (NAME) had an illness with a cough, did he/she breathe faster than usual with short, fast breaths?	YES..... 1 NO..... 2 DON'T KNOW..... 8



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES/SKIP
212	CHECK 209 AND 210: FEVER OR COUGH? <div style="text-align: center;"> "YES" IN 209 OR 210  <input type="checkbox"/>  ↓ </div>	OTHER <div style="text-align: center;"> <input type="checkbox"/>  ↓  (SKIP TO 218) </div>
213	Did you seek advice or treatment for the fever/cough?	YES..... 1 NO..... 2 <div style="text-align: right;">(SKIP TO 215) ←</div>
214	Where did you seek advice or treatment?  IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  <div style="text-align: center;"> _____  (NAME OF PLACE) </div>  Anywhere else?  RECORD ALL PLACES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL..... A DAYHOSP/CLINIC/COMMUNITY HEALTH CENTRE..... B MOBILE CLINIC..... C  OTHER PUBLIC..... D <div style="text-align: right;">(SPECIFY)</div> PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC..... E PHARMACY..... F PRIVATE DOCTOR..... H MOBILE CLINIC..... I  OTHER PRIVATE MEDICAL..... J <div style="text-align: right;">(SPECIFY)</div> OTHER SOURCE SHOP..... K TRADITIONAL. PRACTITIONER..... L  OTHER..... X <div style="text-align: right;">(SPECIFY)</div>
215	CHECK 209: HAD FEVER? <div style="text-align: center;"> "YES" IN 209  <input type="checkbox"/>  ↓ </div>	"NO" OR "DON'T KNOW" <div style="text-align: center;"> <input type="checkbox"/>  ↓  (SKIP TO 218) </div>
216	Did (NAME) take any drugs for the fever?	YES..... 1 NO..... 2 <div style="text-align: right;">(SKIP TO 218) ←</div>
217	What drugs did (NAME) take?  RECORD ALL MENTIONED.  ASK TO SEE DRUG(S) IF TYPE OF DRUG IS NOT KNOWN. IF TYPE OF DRUG IS STILL NOT DETERMINED, SHOW TYPICAL ANTI-MALARIAL DRUGS TO RESPONDENT.	COARTEM..... A ARSUMAX..... B FANSIDAR..... C ORAL QUININE..... D UNKNOWN DRUG/..... E  OTHER..... X <div style="text-align: right;">(SPECIFY)</div> DON'T KNOW..... Z
218	Has (NAME) had diarrhoea in the last 2 weeks?	YES..... 1 NO..... 2 <div style="text-align: right;">(END) ←</div> DON'T KNOW..... 8
219	Now I would like to know how much (NAME) was offered to drink during the diarrhoea. Was he/she offered less than usual to drink, about the same amount, or more than usual to drink?  IF LESS, PROBE: Was he/she offered much less than usual to drink or somewhat less?	MUCH LESS..... 1 SOMEWHAT LESS..... 2 ABOUT THE SAME..... 3 MORE..... 4 NOTHING TO DRINK..... 5 DON'T KNOW..... 8

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES/SKIP								
220	When (NAME) had diarrhoea, was he/she offered less than usual to eat, about the same amount, more than usual, or nothing to eat?  IF LESS, PROBE: Was he/she offered much less than usual to eat or somewhat less?	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 STOPPED FOOD ..... 5 NEVER GAVE FOOD ..... 6 DON'T KNOW ..... 8								
221	Was he/she given any of the following to drink: a A fluid made from a special packet called SORAL? b A homemade fluid containing salt sugar and water prepared according to recommendations from health personnel?	YES NO DK FLUID FROM SORAL PKT ..... 1 2 8 HOMEMADE FLUID ..... 1 2 8								
222	Was anything (else) given to treat the diarrhoea?	YES ..... 1 NO ..... 2 (SKIP TO 224) ◀ DON'T KNOW ..... 8								
223	What (else) was given to treat the diarrhoea?  Anything else?  RECORD ALL TREATMENTS MENTIONED.	PILL OR SYRUP ..... A INJECTION ..... B (I.V.) INTRAVENOUS ..... C HOME REMEDIES/ HERBAL MEDICINES ..... D OTHER ..... X (SPECIFY)								
224	Did you seek advice or treatment for the diarrhoea?	YES ..... 1 NO ..... 2 (END) ◀								
225	Where did you seek advice or treatment?  IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  Anywhere else?  RECORD ALL PLACES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL ..... A DAYHOSP/CLINIC/COMMUNITY HEALTH CENTRE ..... B MOBILE CLINIC ..... C OTHER PUBLIC ..... D (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... E PHARMACY ..... F PRIVATE DOCTOR ..... H MOBILE CLINIC ..... I OTHER PRIVATE MEDICAL ..... J (SPECIFY) OTHER SOURCE SHOP ..... K TRADITIONAL PRACTITIONER ..... L OTHER ..... X (SPECIFY)								
226	RECORD THE TIME	HOURS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MINUTES ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								

# SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY 2003

## WOMAN'S QUESTIONNAIRE

IDENTIFICATION				
PROVINCE* _____  DISTRICT _____  EA NUMBER ..... EA TYPE (URBAN FORMAL=1; URBAN INFORMAL=2; RURAL FORMAL=3; TRIBAL AREA=4) ..... SADHS CLUSTER NUMBER..... STAND NUMBER..... HOUSEHOLD NUMBER..... NAME OF HOUSEHOLD HEAD _____  NAME AND LINE NUMBER OF WOMAN _____	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; margin-bottom: 5px;"></div> <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px; margin-bottom: 5px;"></div> <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> </div> </div>			
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> MONTH <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> YEAR <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">2</div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> INT.CODE <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> RESULT <div style="border: 1px solid black; width: 20px; height: 20px;"></div>
INTERVIEWER'S NAME				
RESULT**				
NEXT VISIT:      DATE				TOTAL NO. OF VISITS <div style="border: 1px solid black; width: 20px; height: 20px;"></div>
TIME				
<b>** RESULT CODES:</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;">1 COMPLETED</div> <div style="width: 33%;">4 REFUSED</div> <div style="width: 33%;">7 OTHER _____</div> <div style="width: 33%;">2 NOT AT HOME</div> <div style="width: 33%;">5 PARTLY COMPLETED</div> <div style="width: 33%;"></div> <div style="width: 33%;">3 POSTPONED</div> <div style="width: 33%;">6 INCAPACITATED</div> <div style="width: 33%;"></div> </div> <div style="text-align: right;">(SPECIFY)</div>				
LANGUAGE				
LANGUAGE OF QUESTIONNAIRE: <b>ENGLISH</b>  LANGUAGE OF INTERVIEW *** _____  HOME LANGUAGE OF RESPONDENT*** _____  WAS A TRANSLATOR USED? (YES=1, NO=2) ..... <b>*** LANGUAGE CODES:</b> 01 ENGLISH    04 isiZULU    07 SePEDI    10 XITSONGA 02 AFRIKAANS    05 SeSOTHO    08 SiSWATI    11 isiNDEBELE 03 isiXHOSA    06 SeTSWANA    09 TshiVENDA    12 OTHER _____ <div style="text-align: right;">(SPECIFY)</div>				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">1</div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>
SUPERVISOR		FIELD EDITOR		OFFICE EDITOR
NAME _____	DATE _____	NAME _____	DATE _____	NAME _____

\*PROVINCE: WESTERN CAPE=1; EASTERN CAPE=2; NORTHERN CAPE=3; FREE STATE=4; KWAZULU-NATAL=5; NORTHWEST=6; GAUTENG=7; MPUMALANGA=8; LIMPOPO=9

**SECTION 1: RESPONDENT'S BACKGROUND**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR ..... <input type="text"/> <input type="text"/> MINUTES..... <input type="text"/> <input type="text"/>	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, in a town, on a farm or in rural areas, in an informal settlement?	CITY .....1 TOWN.....2 RURAL/FARM .....3 INFORMAL SETTLEMENT .....4	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?  IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS ..... <input type="text"/> <input type="text"/> ALWAYS.....95 VISITOR .....96	→105
104	Just before you moved here, did you live in a city, in a town, or in a rural area/farm?	CITY .....1 TOWN.....2 RURAL/FARM .....3	
105	In what month and year were you born?	MONTH ..... <input type="text"/> <input type="text"/> DOES NOT KNOW MONTH .....98 YEAR..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DOES NOT KNOW YEAR..... 9998	
106	How old were you at your last birthday?  COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS <input type="text"/> <input type="text"/>	
107	Have you ever attended school?	YES .....1 NO .....2	→113
108	What is the highest (standard/grade/year) you completed?	LESS THAN 1 YEAR COMPLETED .....00 SUB A/GRADE 1 .....01 SUB B/GRADE 2 .....02 STANDARD 1/GRADE 3 .....03 STANDARD 2/GRADE 4 .....04 STANDARD 3/GRADE 5 .....05 STANDARD 4/GRADE 6 .....06 STANDARD 5/GRADE 7 .....07 STANDARD 6/GRADE 8 .....08 STANDARD 7/GRADE 9 .....09 STANDARD 8/GRADE 10 .....10 STANDARD 9/GRADE 11 .....11 STANDARD 10/GRADE 12 .....12 FURTHER STUDIES INCOMPLETE .....13 DIPLOMA/OTHER POSTSCHL COMPL. 14 FURTHER DEGREE COMPLETE .....15	
109	CHECK 106: <div style="display: flex; justify-content: space-around; align-items: center;"> <div>AGE 24 OR BELOW <input type="checkbox"/></div> <div>AGE 25 OR ABOVE <input type="checkbox"/></div> </div>		→112
110	Are you currently attending school?	YES .....1 NO .....2	→112

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
111	What was the main reason you stopped attending school?	GOT MARRIED .....01 CARE FOR YOUNGER CHILDREN.....02 FAMILY NEEDED HELP ON FARM OR IN BUSINESS .....03 COULD NOT PAY SCHOOL FEES.....04 NEEDED TO EARN MONEY .....05 GRADUATED/HAD ENOUGH SCHOOLING.....06 DID NOT PASS ENTRANCE EXAMS.....07 DID NOT LIKE SCHOOL .....08 SCHOOL NOT ACCESSIBLE/TOO FAR .....09 GOT PREGNANT .....10 OTHER .....96 (SPECIFY) DO NOT KNOW .....98	
112	CHECK 108: COMPLETED STD 4/ GRADE 6 OR LOWER <input type="checkbox"/> COMPLETED STD 5/ GRADE 7 OR HIGHER <input type="checkbox"/>		→114
113	Now I would like you to read this sentence to me.  SHOW SENTENCES TO RESPONDENT.  IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE:  Can you read any part of the sentence to me?	CANNOT READ AT ALL .....1 CAN ONLY READ PART OF SENTENCE.....2 CAN READ WHOLE SENTENCE .....3 NO CARD WITH REQUIRED LANGUAGE .....4 (SPECIFY)	
114	Apart from your own housework, are you currently working?	YES .....1 NO .....2	→117
115	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business.  Are you currently doing any of these things or any other work?	YES .....1 NO .....2	→117
116	Have you done any work in the last 12 months?	YES .....1 NO .....2	→121
117	What is your occupation, that is, what kind of work do you <b>mainly</b> do?	<div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div>	
118	Do you do this work for a family business, are you employed by someone outside the family or are you self-employed?	FOR FAMILY MEMBER .....1 FOR SOMEONE ELSE .....2 SELF-EMPLOYED .....3	
119	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY .....1 CASH AND KIND .....2 IN KIND ONLY .....3 NOT PAID .....4	↓ →121
120	Who mainly decides how the money you earn will be used?	RESPONDENT .....1 HUSBAND/PARTNER.....2 RESPONDENT AND HUSBAND/PARTNER JOINTLY .....3 SOMEONE ELSE .....4 RESPONDENT AND SOMEONE ELSE JOINTLY .....5	
121	Which population group do you consider yourself?	BLACK/AFRICAN .....1 COLOURED .....2 WHITE .....3 ASIAN/INDIAN.....4  OTHER .....6 (SPECIFY)	

## SENTENCES FOR LITERACY TEST (Q. 113)

### **ENGLISH**

1. The child is reading a book.
2. The rains came late this year.
3. Parents must care for their children.
4. Farming is hard work.

### **AFRIKAANS**

1. Die kind lees 'n boek.
2. Die reën het hierdie jaar laat gekom.
3. Ouers moet vir hulle kinders sorg.
4. Boerdery is harde werk

## SECTION 2: REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	Now I would like to ask you about all the pregnancies that you have had in your lifetime. By this I mean all the children born to you, whether they were born alive or dead, whether still living or not, whether living with you or elsewhere, and all the pregnancies that you have had that did not result in a live birth. I understand that it is not easy to talk about children who have died, or pregnancies that have terminated before full term, but it is extremely important that you tell us about <u>all</u> of them, so that we can develop programs that will help the Government of South Africa improve children's health in the future.		
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES ..... 1 NO ..... 2	→206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES ..... 1 NO ..... 2	→204
203	How many sons live with you?  And how many daughters live with you?  IF NONE, RECORD '00'.	<div style="display: flex; justify-content: space-between;"> <span>SONS AT HOME .....</span> <div style="border: 1px solid black; width: 40px; height: 20px; margin-left: 10px;"></div> </div> <div style="display: flex; justify-content: space-between;"> <span>DAUGHTERS AT HOME.....</span> <div style="border: 1px solid black; width: 40px; height: 20px; margin-left: 10px;"></div> </div>	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES ..... 1 NO ..... 2	→206
205	How many sons are alive but do not live with you?  And how many daughters are alive but do not live with you?  IF NONE, RECORD '00'.	<div style="display: flex; justify-content: space-between;"> <span>SONS ELSEWHERE .....</span> <div style="border: 1px solid black; width: 40px; height: 20px; margin-left: 10px;"></div> </div> <div style="display: flex; justify-content: space-between;"> <span>DAUGHTERS ELSEWHERE...</span> <div style="border: 1px solid black; width: 40px; height: 20px; margin-left: 10px;"></div> </div>	
206	Have you ever given birth to a boy or girl who was born alive but later died?  IF NO, PROBE: Any baby who cried or showed signs of life but did not survive or survived only few hours or days?	YES ..... 1 NO ..... 2	→208
207	How many boys have died?  And how many girls have died?  IF NONE, RECORD '00'.	<div style="display: flex; justify-content: space-between;"> <span>BOYS DEAD .....</span> <div style="border: 1px solid black; width: 40px; height: 20px; margin-left: 10px;"></div> </div> <div style="display: flex; justify-content: space-between;"> <span>GIRLS DEAD .....</span> <div style="border: 1px solid black; width: 40px; height: 20px; margin-left: 10px;"></div> </div>	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL.  IF NONE, RECORD '00'.	TOTAL ..... <div style="border: 1px solid black; width: 40px; height: 20px; margin-left: 10px;"></div>	
209	CHECK 208:  Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct?  <div style="display: flex; justify-content: space-around; align-items: center;"> <span>YES <input type="checkbox"/></span> <span>NO <input type="checkbox"/> → PROBE AND CORRECT 201-208 AS NECESSARY.</span> </div>		
210	CHECK 208:  <div style="display: flex; justify-content: space-around; align-items: center;"> <span>ONE OR MORE BIRTHS <input type="checkbox"/></span> <span>NO BIRTHS <input type="checkbox"/></span> </div>		→225

211 Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had. RECORD NAMES OF ALL THE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.									
212  What name was given to your (first/next) baby?  (NAME)	213  Were any of these births twins?	214  Is (NAME) a boy or a girl?	215  In what month and year was (NAME) born?  PROBE: What is his/her birthday?	216  Is (NAME) still alive?	217 IF ALIVE:  How old was (NAME) at his/her last birthday?  RECORD AGE IN COMPLETED YEARS.	218 IF ALIVE  Is (NAME) living with you?	219 IF ALIVE:  RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	220 IF DEAD:  How old was (NAME) when he/she died?  IF '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221  Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME)?
01	SING....1  MULT...2	BOY .. 1  GIRL . 2	MONTH <input type="text"/> <input type="text"/>  YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1  NO..... 2 ↓ 220	AGE IN YEARS  <input type="text"/> <input type="text"/>	YES..... 1  NO ..... 2	LINE NUMBER  <input type="text"/> <input type="text"/> ↓ (NEXT BIRTH)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	
02	SING....1  MULT...2	BOY .. 1  GIRL . 2	MONTH <input type="text"/> <input type="text"/>  YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1  NO..... 2 ↓ 220	AGE IN YEARS  <input type="text"/> <input type="text"/>	YES..... 1  NO ..... 2	LINE NUMBER  <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1  NO ..... 2
03	SING....1  MULT...2	BOY .. 1  GIRL . 2	MONTH <input type="text"/> <input type="text"/>  YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1  NO..... 2 ↓ 220	AGE IN YEARS  <input type="text"/> <input type="text"/>	YES..... 1  NO ..... 2	LINE NUMBER  <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1  NO ..... 2
04	SING....1  MULT...2	BOY .. 1  GIRL . 2	MONTH <input type="text"/> <input type="text"/>  YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1  NO..... 2 ↓ 220	AGE IN YEARS  <input type="text"/> <input type="text"/>	YES..... 1  NO ..... 2	LINE NUMBER  <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1  NO ..... 2
05	SING....1  MULT...2	BOY .. 1  GIRL . 2	MONTH <input type="text"/> <input type="text"/>  YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1  NO..... 2 ↓ 220	AGE IN YEARS  <input type="text"/> <input type="text"/>	YES..... 1  NO ..... 2	LINE NUMBER  <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1  NO ..... 2
06	SING....1  MULT...2	BOY .. 1  GIRL . 2	MONTH <input type="text"/> <input type="text"/>  YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1  NO..... 2 ↓ 220	AGE IN YEARS  <input type="text"/> <input type="text"/>	YES..... 1  NO ..... 2	LINE NUMBER  <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1  NO ..... 2
07	SING....1  MULT...2	BOY .. 1  GIRL . 2	MONTH <input type="text"/> <input type="text"/>  YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1  NO..... 2 ↓ 220	AGE IN YEARS  <input type="text"/> <input type="text"/>	YES..... 1  NO ..... 2	LINE NUMBER  <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1  NO ..... 2



212	213	214	215	216	217 IF ALIVE:	218 IF ALIVE	219 IF ALIVE:	220 IF DEAD:	221				
What name was given to your next baby?  (NAME)	Were any of these births twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born?  PROBE: What is his/her birthday?	Is (NAME) still alive?	How old was (NAME) at his/her last birthday?  RECORD AGE IN COMPLETED YEARS.	Is (NAME) living with you?	RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	How old was (NAME) when he/she died?  IF <input type="checkbox"/> 1 YR <sup>1</sup> , PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME)?				
08	SING....1 MULT...2	BOY.. 1 GIRL . 2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2				
09	SING....1 MULT...2	BOY.. 1 GIRL . 2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2				
10	SING....1 MULT...2	BOY.. 1 GIRL . 2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2				
11	SING....1 MULT...2	BOY.. 1 GIRL . 2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2				
12	SING....1 MULT...2	BOY.. 1 GIRL . 2	MONTH <input type="text"/> <input type="text"/> YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	YES..... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/> <input type="text"/>	YES..... 1 NO ..... 2	LINE NUMBER <input type="text"/> <input type="text"/> ↓ (GOTO 221)	DAYS..... 1 <input type="text"/> <input type="text"/> MONTHS. 2 <input type="text"/> <input type="text"/> YEARS .... 3 <input type="text"/> <input type="text"/>	YES ..... 1 NO ..... 2				
222	Have you had any live births since the birth of (NAME OF LAST BIRTH)?					YES ..... 1 NO ..... 2							
223	<p>COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK:</p> <p>NUMBERS ARE SAME <input type="checkbox"/> NUMBERS ARE DIFFERENT <input type="checkbox"/> → (PROBE AND RECONCILE)</p> <p>↓</p> <p>CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED.</p> <p>FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED.</p> <p>FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED.</p> <p>FOR AGE AT DEATH 12 MONTHS OR 1 YR.: PROBE TO DETERMINE EXACT NUMBER OF MONTHS.</p>												
224	CHECK 215 AND ENTER THE NUMBER OF BIRTHS IN 1998 OR LATER. IF NONE, RECORD '0'.												

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP								
225	Are you pregnant now?	YES ..... 1 NO ..... 2 UNSURE ..... 8	→228								
226	How many months pregnant are you?  RECORD NUMBER OF COMPLETED MONTHS.	MONTHS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>									
227	At the time you became pregnant did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you <u>not want</u> to have any (more) children at all?	THEN ..... 1 LATER ..... 2 NOT AT ALL ..... 3									
228	Have you ever had a pregnancy that miscarried, was aborted, or ended in a stillbirth?	YES ..... 1 NO/ DON'T KNOW ..... 2	→236								
229	How many such pregnancies did you have?	NO. OF PREGN. DID NOT RESULT IN LIVE BIRTHS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>									
230	When did the last such pregnancy end?	MONTH..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> YEAR..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td></tr></table>									
231	CHECK 230: LAST PREGNANCY ENDED IN <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table> JAN. 2000 OR LATER		LAST PREGNANCY ENDED BEFORE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table> _____ JAN. 2000		→236						
232	How many months pregnant were you when the last such pregnancy ended?  RECORD NUMBER OF COMPLETED MONTHS. CODE DON'T KNOW AS "98"	MONTHS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> DON'T KNOW.....98									
233	Have you ever had any other pregnancies which did not result in a live birth?	YES ..... 1 NO ..... 2	→236								
234	When did the previous such pregnancy end?	MONTH..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> YEAR..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td></tr></table>									
235	How many months pregnant were you when that pregnancy ended?  RECORD NUMBER OF COMPLETED MONTHS.	MONTHS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>									
236	When did your last menstrual period start?  _____ (DATE, IF GIVEN)	DAYS AGO ..... 1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> WEEKS AGO ..... 2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> MONTHS AGO ..... 3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> YEARS AGO ..... 4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> IN MENOPAUSE/ HAS HAD HYSTERECTOMY ..... 994 BEFORE LAST BIRTH ..... 995 NEVER MENSTRUATED ..... 996									
237	From one menstrual period to the next, is there a time when a woman is more likely to become pregnant if she has sexual relations?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	→301								

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
238	Is this time just before her period begins, during her period, right after her period has ended, or half way between two periods?	JUST BEFORE HER PERIOD BEGINS.... 1 DURING HER PERIOD ..... 2 RIGHT AFTER HER PERIOD HAS ENDED ..... 3 HALF WAY BETWEEN PERIODS ..... 4  OTHER ..... 6 (SPECIFY) DON'T KNOW ..... 8	

### SECTION 3. CONTRACEPTION

Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNIZED, AND CODE 2 IF NOT RECOGNIZED. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 301, ASK 302.

301	Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)?	302	Have you ever used (METHOD)?
01	FEMALE STERILIZATION Women can have an operation to avoid having any more children.	YES .....1 NO .....2 ▾	Have you ever had an operation to avoid having any more children? YES ..... 1 NO ..... 2
02	MALE STERILIZATION Men can have an operation to avoid having any more children.	YES .....1 NO .....2 ▾	Have you ever had a partner who had an operation to avoid having any more children? YES ..... 1 NO ..... 2
03	PILL Women can take a pill every day to avoid becoming pregnant.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
05	INJECTABLES Women can have an injection by a health provider which stops them from becoming pregnant for one or more months.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
06	IMPLANTS, NORPLANTS Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
07	MALE CONDOM Men can put a rubber sheath on their penis before sexual intercourse.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
08	FEMALE CONDOM Women can place a sheath in their vagina before sexual intercourse.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
09	DIAPHRAGM, FOAM OR JELLY Women can place a sponge, a suppository, a diaphragm, jelly, or cream in their vagina before intercourse.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
10	LACTATIONAL AMENORRHEA METHOD (LAM) Up to 6 months after childbirth, a woman can use a method that requires that she breastfeeds frequently, day and night, and that her menstrual period has not returned.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
11	RHYTHM OR CALENDER METHOD Every month that a woman is sexually active she can avoid pregnancy by not having sexual intercourse on the days of the month she is most likely to get pregnant.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
12	WITHDRAWAL Men can be careful and pull out before climax.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
13	EMERGENCY CONTRACEPTION Women can take pills up to three days(72 HOURS) after unprotected sexual intercourse to avoid becoming pregnant.	YES .....1 NO .....2 ▾	YES ..... 1 NO ..... 2
14	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES .....1  _____ (SPECIFY)  _____ (SPECIFY) NO .....2	YES ..... 1 NO ..... 2  YES ..... 1 NO ..... 2
303	CHECK 302: <div style="display: flex; justify-content: space-around; align-items: center;"> <div>NOT A SINGLE "YES" (NEVER USED) <input type="checkbox"/></div> <div>AT LEAST ONE "YES" (EVER USED) <input type="checkbox"/></div> </div>		→ 306

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
304	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES .....1 NO .....2	→316
305	What have you used or done?  CORRECT 302 AND 303 (AND 301 IF NECESSARY).		
306	Now I would like to ask you about the first time that you did something or used a method to avoid getting pregnant.  How many living children did you have at that time, if any?  IF NONE, RECORD '00'.	NUMBER OF CHILDREN ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
307	CHECK 302 (01):  WOMAN NOT STERILIZED <input type="checkbox"/> WOMAN STERILIZED <input type="checkbox"/>		→310A
308	CHECK 225:  NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/>		→316
309	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES .....1 NO .....2	→316
310	Which method are you using?  IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD ON LIST.  310A CIRCLE 'A' FOR FEMALE STERILIZATION.	FEMALE STERILIZATION ..... A MALE STERILIZATION ..... B  PILL ..... C IUD ..... D 2-MONTHLY INJECTABLE (NET-EN) ..... E 3-MONTHLY INJECTABLE (DEPO) ..... F IMPLANTS/NORPLANTS ..... G MALE CONDOM ..... H FEMALE CONDOM ..... I DIAPHRAGM/FOAM/JELLY ..... J  HERBS/REMEDIES ..... K LACTATIONAL AMEN. METHOD ..... L PERIODIC ABSTINENCE ..... M WITHDRAWAL ..... N  OTHER ..... X (SPECIFY)	→313A
311	In what facility did the sterilization take place?  IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)	PUBLIC SECTOR GOVT. HOSPITAL .....11 DAY HOSPITAL/CLINIC/COMMUNITY  HEALTH CENTER .....12 OTHER PUBLIC .....16 (SPECIFY)  PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC .....21 PRIVATE DOCTOR .....23 OTHER PRIVATE MEDICAL .....26 (SPECIFY)  OTHER .....96 (SPECIFY) DON'T KNOW .....98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
312	<p>CHECK 310:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>CODE 'A' CIRCLED</p> </div> <div style="text-align: center;"> <p>CODE 'A' NOT CIRCLED</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <p>Before your sterilization operation, were you told that you would not be able to have any (more) children because of the operation?</p> <p>Before the sterilization operation, was your husband/partner told that he would not be able to have any (more) children because of the operation?</p> </div>	<p>YES .....1</p> <p>NO .....2</p> <p>DON'T KNOW .....8</p>	
313	In what month and year was the sterilization performed?	<p>MONTH.....</p> <p>YEAR.....</p>	
313A	<p>For how long have you been using (CURRENT METHOD) now without stopping?</p> <p>PROBE: In what month and year did you start using (CURRENT METHOD) continuously?</p>		
314	<p>CHECK 310/310A:</p> <p>CIRCLE METHOD CODE:</p> <p>IF MORE THAN ONE METHOD CODE CIRCLED IN 310/310A, CIRCLE CODE FOR HIGHEST METHOD IN LIST.</p>	<p>FEMALE STERILIZATION .....01</p> <p>MALE STERILIZATION .....02</p> <p>PILL .....03</p> <p>IUD .....04</p> <p>2-MONTHLY INJECTABLE(NET-EN) .....05</p> <p>3-MONTHLY INJECTABLE (DEPO) .....06</p> <p>IMPLANTS/NORPLANTS .....07</p> <p>MALE CONDOM .....08</p> <p>FEMALE CONDOM .....09</p> <p>DIAPHRAGM/FOAM/JELLY .....10</p> <p>HERBS/REMEDIES .....11</p> <p>LACTATIONAL AMEN. METHOD .....12</p> <p>PERIODIC ABSTINENCE .....13</p> <p>WITHDRAWAL .....14</p> <p>OTHER .....96</p> <p style="text-align: center;">(SPECIFY)</p>	<p>→401</p> <p>→401</p> <p>→401</p>
315	<p>Where did you obtain (CURRENT METHOD) the last time?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p style="text-align: center;">(NAME OF PLACE)</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL ..... 11</p> <p>DAY HOSPITAL/CLINIC/COMMUNITY HEALTH CENTRE ..... 12</p> <p>FAMILY PLANNING CLINIC ..... 13</p> <p>MOBILE CLINIC ..... 14</p> <p>COMMUNITY HEALTH WORKER..... 15</p> <p>OTHER PUBLIC ..... 16</p> <p style="text-align: center;">(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>PRIVATE HOSPITAL/CLINIC ..... 21</p> <p>PHARMACY ..... 22</p> <p>PRIVATE DOCTOR ..... 23</p> <p>OTHER PRIVATE MEDICAL ..... 26</p> <p style="text-align: center;">(SPECIFY)</p> <p><b>OTHER SOURCE</b></p> <p>WORKPLACE ..... 31</p> <p>COMMUNITY-BASED DISTRIBUTOR .. 32</p> <p>SHOP/HOTEL/SCHOOL/CINEMA ..... 33</p> <p>FRIENDS/RELATIVES ..... 34</p> <p>OTHER ..... 96</p> <p style="text-align: center;">(SPECIFY)</p>	<p>→401</p> <p>→401</p>
316	Do you know of a place where you can obtain a method of family planning?	<p>YES .....1</p> <p>NO .....2</p>	→401

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
317	<p>Where is that?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p> <p>Any other place?</p> <p>RECORD ALL PLACES MENTIONED.</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL .....A</p> <p>DAY HOSPITAL/CLINIC/COMMUNITY HEALTH CENTRE .....B</p> <p>FAMILY PLANNING CLINIC .....C</p> <p>MOBILE CLINIC.....D</p> <p>COMMUNITY HEALTH WORKER.....E</p> <p>OTHER PUBLIC _____ F</p> <p>(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>PRIVATE HOSPITAL/CLINIC .....G</p> <p>PHARMACY .....H</p> <p>PRIVATE DOCTOR .....I</p> <p>OTHER PRIVATE MEDICAL _____ J</p> <p>(SPECIFY)</p> <p><b>OTHER SOURCE</b></p> <p>WORKPLACE .....K</p> <p>COMMUNITY-BASED DISTRIBUTOR ....L</p> <p>SHOP/HOTEL/SCHOOL/CINEMA .....M</p> <p>FRIENDS/RELATIVES.....N</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>	

401	CHECK 224: ONE OR MORE BIRTHS IN 1998 OR LATER <input type="checkbox"/>	NO BIRTHS IN 1998 OR LATER <input type="checkbox"/>	→483
402	ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 1998 OR LATER. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, USE LAST COLUMN OF ADDITIONAL QUESTIONNAIRES).  Now I would like to ask you some questions about the health of all your children born in the last five years. (We will talk about each separately)		
403	LINE NUMBER FROM 212	LAST BIRTH LINE NUMBER ..... <input type="text"/> <input type="text"/>	NEXT-TO-LAST BIRTH LINE NUMBER..... <input type="text"/> <input type="text"/>
404	FROM 212 AND 216	NAME ..... LIVING <input type="checkbox"/> DEAD <input type="checkbox"/>	NAME ..... LIVING <input type="checkbox"/> DEAD <input type="checkbox"/>
405	At the time you became pregnant with (NAME), did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you <u>not want</u> to have any (more) children at all?	THEN..... 1 (SKIP TO 407)← LATER..... 2 (SKIP TO 406)← NOT AT ALL ..... 3	THEN..... 1 (SKIP TO 422)← LATER..... 2 (SKIP TO 406)← NOT AT ALL ..... 3
405A	Were you using a contraceptive method when you fell pregnant?	YES ..... 1 (SKIP TO 407)← NO ..... 2	YES ..... 1 (SKIP TO 422)← NO ..... 2
406	How much longer would you like to have waited?	MONTHS ..... 1 <input type="text"/> YEARS ..... 2 <input type="text"/> DON'T KNOW ..... 998	MONTHS ..... 1 <input type="text"/> YEARS ..... 2 <input type="text"/> DON'T KNOW ..... 998
407	Did you see anyone for antenatal care for this pregnancy?  IF YES: Whom did you see? Anyone else?  PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR ..... A NURSE/MIDWIFE ..... B OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... C  OTHER ..... X (SPECIFY) NO ONE ..... Y (SKIP TO 415)←	
407A	Where did the first antenatal care visit take place?  IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)	PUBLIC SECTOR GOVT. HOSPITAL ..... 11 DAY HOSPITAL/ CLINIC/COMMUNITY HEALTH CENTER ..... 12 MOBILE CLINIC ..... 13  OTHER PUBLIC ..... 15 (SPECIFY)  PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... 21 OTHER PVT. MEDICAL ..... 22 (SPECIFY)  OTHER ..... 96 (SPECIFY)	



		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____																		
408	How many months pregnant were you when you first received antenatal care for this pregnancy?	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98																			
409	How many times did you receive antenatal care during this pregnancy?	NO. OF TIMES ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98																			
410	CHECK 409:  NUMBER OF TIMES RECEIVED ANTENATAL CARE	<div> <div>ONCE</div> <div> <input type="checkbox"/> </div> <div>(SKIP TO 412)</div> </div> <div> <div>MORE THAN ONCE OR DK</div> <div> <input type="checkbox"/> </div> </div>																			
411	How many months pregnant were you the last time you received antenatal care?	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98																			
412	During this pregnancy, were any of the following done at least once?  Were you weighed? Was your height measured? Was your blood pressure measured? Did you give a urine sample? Did you give a blood sample?	<table> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>WEIGHT.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>HEIGHT.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>BLOOD PRESSURE.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>URINE SAMPLE .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>BLOOD SAMPLE .....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	WEIGHT.....	1	2	HEIGHT.....	1	2	BLOOD PRESSURE.....	1	2	URINE SAMPLE .....	1	2	BLOOD SAMPLE .....	1	2	
	YES	NO																			
WEIGHT.....	1	2																			
HEIGHT.....	1	2																			
BLOOD PRESSURE.....	1	2																			
URINE SAMPLE .....	1	2																			
BLOOD SAMPLE .....	1	2																			
413	Were you told about the signs of pregnancy complications?	YES ..... 1 NO ..... 2 (SKIP TO 415) ← DON'T KNOW ..... 8																			
414	Were you told where to go if you had these complications?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8																			
415	During this pregnancy, were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth?	YES ..... 1 NO ..... 2 (SKIP TO 417) ← DON'T KNOW ..... 8																			
416	During this pregnancy, how many times did you get this injection?	TIMES ..... <input type="text"/> DON'T KNOW ..... 8																			
417	During this pregnancy, were you given or did you buy any iron tablets?  SHOW TABLET.	YES ..... 1 NO ..... 2 (SKIP TO 419) ← DON'T KNOW ..... 8																			
418	During the whole pregnancy, for how many days did you take the tablets?  IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	NUMBER OF DAYS ..... <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW ..... 998																			
419	During this pregnancy, did you have difficulty with your vision during the daylight?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8																			
420	During this pregnancy, did you suffer from night blindness?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8																			

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
421A	During this pregnancy, did you suffer from malaria?	YES..... 1 NO..... 2 (SKIP TO 421D) ← DON'T KNOW..... 8	
421B	Did you take any drugs <b>to treat</b> malaria during this pregnancy?	YES..... 1 NO..... 2 (SKIP TO 421D) ← DON'T KNOW..... 8	
421C	What drugs did you take <b>to treat</b> malaria? RECORD ALL MENTIONED.	COARTEM..... A ARSUMAX..... B FANSIDAR..... C ORAL QUININE..... D UNKNOWN DRUG..... E  OTHER _____ X (SPECIFY)	
421D	During this pregnancy, did you take any drugs <b>to prevent</b> you from getting malaria?	YES..... 1 NO..... 2 (SKIP TO 422) ← DON'T KNOW..... 8	
421E	What drugs did you take <b>to prevent</b> malaria? RECORD ALL MENTIONED.	DARAMAL..... A MIRQUIN..... B NIVAQUINE..... C PLASMOQUINE..... D PALUDRINE..... E LARIAM..... F MEFLIAM..... G DOXIMAL..... H DOXITAB..... I RANDOCLIN..... J VIBRAMYCIN..... K DOXYCYL..... L DUMOCIN..... M ROLAB CHLOROQUINE..... N PHOSPHATE TABS..... O  OTHER _____ X (SPECIFY)	
422	When (NAME) was born, was he/she very large, larger than average, average, smaller than average, or very small?  UNPROMPTED	VERY LARGE..... 1 LARGER THAN AVERAGE..... 2 AVERAGE..... 3 SMALLER THAN AVERAGE..... 4 VERY SMALL..... 5 DON'T KNOW..... 8	VERY LARGE..... 1 LARGER THAN AVERAGE..... 2 AVERAGE..... 3 SMALLER THAN AVERAGE..... 4 VERY SMALL..... 5 DON'T KNOW..... 8
423	Was (NAME) weighed at birth?	YES..... 1 NO..... 2 (SKIP TO 425) ← DON'T KNOW..... 8	YES..... 1 NO..... 2 (SKIP TO 425) ← DON'T KNOW..... 8
424	How much did (NAME) weigh? RECORD WEIGHT FROM HEALTH CARD, IF AVAILABLE.	GRAMS FROM CARD..... 1 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> GRAMS FROM RECALL..... 2 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW..... 99998	GRAMS FROM CARD..... 1 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> GRAMS FROM RECALL..... 2 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW..... 99998

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
425	<p>Who assisted with the delivery?</p> <p>Anyone else?</p> <p>PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS ASSISTING.</p> <p>IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY.</p>	<p>HEALTH PROFESSIONAL</p> <p>DOCTOR ..... A</p> <p>NURSE/MIDWIFE ..... B</p> <p>OTHER PERSON</p> <p>TRADITIONAL BIRTH ATTENDANT ..... C</p> <p>RELATIVE/FRIEND ..... D</p> <p>OTHER ..... X (SPECIFY)</p> <p>NO ONE ..... Y</p>	<p>HEALTH PROFESSIONAL</p> <p>DOCTOR ..... A</p> <p>NURSE/MIDWIFE ..... B</p> <p>OTHER PERSON</p> <p>TRADITIONAL BIRTH ATTENDANT ..... C</p> <p>RELATIVE/FRIEND ..... D</p> <p>OTHER ..... X (SPECIFY)</p> <p>NO ONE ..... Y</p>
426	<p>Where did you give birth?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER OR CLINIC, WRITE THE NAME OF THE PLACE, PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p>HOME</p> <p>YOUR HOME ..... 11 (SKIP TO 428) ◀</p> <p>OTHER HOME ..... 12</p> <p>PUBLIC SECTOR</p> <p>GOVT. HOSPITAL ..... 21</p> <p>DAYHOSP/CLINIC/COMMUNITY HEALTH CENTER ..... 22</p> <p>MOBILE CLINIC ..... 23</p> <p>OTHER PUBLIC ..... 26 (SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC ..... 31</p> <p>OTHER PVT. MEDICAL ..... 36 (SPECIFY)</p> <p>OTHER ..... 96 (SPECIFY)</p> <p>(SKIP TO 428) ◀</p>	<p>HOME</p> <p>YOUR HOME ..... 11 (SKIP TO 428) ◀</p> <p>OTHER HOME ..... 12</p> <p>PUBLIC SECTOR</p> <p>GOVT. HOSPITAL ..... 21</p> <p>DAYHOSP/CLINIC/COMMUNITY HEALTH CENTER ..... 22</p> <p>MOBILE CLINIC ..... 23</p> <p>OTHER PUBLIC ..... 26 (SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC ..... 31</p> <p>OTHER PVT. MEDICAL ..... 36 (SPECIFY)</p> <p>OTHER ..... 96 (SPECIFY)</p> <p>(SKIP TO 428) ◀</p>
427	Was (NAME) delivered by caesarian section?	<p>YES ..... 1 (SKIP TO 432) ◀</p> <p>NO ..... 2</p>	<p>YES ..... 1 (SKIP TO 434) ◀</p> <p>NO ..... 2</p>
428	After (NAME) was born, did a health professional or a traditional birth attendant check on your health? (A home or at health facility)	<p>YES ..... 1</p> <p>NO ..... 2 (SKIP TO 432) ◀</p>	<p>YES ..... 1</p> <p>NO ..... 2</p>
429	<p>How many days or weeks after the delivery did the first check take place?</p> <p>RECORD '00' DAYS IF SAME DAY.</p>	<p>DAYS AFTER DEL ..... 1</p> <p>WEEKS AFTER DEL ... 2</p> <p>DON'T KNOW ..... 998</p>	
430	<p>Who checked on your health at that time?</p> <p>PROBE FOR MOST QUALIFIED PERSON.</p>	<p>HEALTH PROFESSIONAL</p> <p>DOCTOR ..... 11</p> <p>NURSE/MIDWIFE ..... 12</p> <p>OTHER PERSON</p> <p>TRADITIONAL BIRTH ATTENDANT ..... 21</p> <p>OTHER ..... 96 (SPECIFY)</p>	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
431	Where did this first check take place?  IF SOURCE IS HOSPITAL, HEALTH CENTER OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)	HOME YOUR HOME ..... 11 OTHER HOME ..... 12 PUBLIC SECTOR GOVT. HOSPITAL ..... 21 DAYHOSP/CLINIC/COMMUNITY HEALTH CENTER ..... 22 MOBILE CLINIC ..... 23  OTHER PUBLIC ..... 26 (SPECIFY)  PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... 31 OTHER PVT. MEDICAL ..... 36 (SPECIFY)  OTHER ..... 96 (SPECIFY)	
432	In the first two months after delivery, did you receive a vitamin A dose like this?  SHOW AMPULE/CAPSULE.	YES ..... 1 NO ..... 2	
433	Has your period returned since the birth of (NAME)?	YES ..... 1 (SKIP TO 435) ← NO ..... 2 (SKIP TO 436) ←	
434	Did your period return between the birth of (NAME) and your next pregnancy?		YES ..... 1 NO ..... 2 (SKIP TO 438) ←
435	For how many months after the birth of (NAME) did you <u>not</u> have a period?	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98
436	CHECK 225: IS RESPONDENT PREGNANT?	NOT PREG- <input type="checkbox"/> PREGNANT <input type="checkbox"/> OR UNSURE (SKIP TO 438) ←	
437	Have you resumed sexual intercourse since the birth of (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 439) ←	
438	For how many months after the birth of (NAME) did you <u>not</u> have sexual intercourse?	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98
439	Did you ever breastfeed (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 446) ←	YES ..... 1 NO ..... 2 (SKIP TO 446) ←
440	How long after birth did you first put (NAME) to the breast?  IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY ..... 000  HOURS ..... 1 <input type="text"/> <input type="text"/> DAYS ..... 2 <input type="text"/> <input type="text"/>	IMMEDIATELY ..... 000  HOURS ..... 1 <input type="text"/> <input type="text"/> DAYS ..... 2 <input type="text"/> <input type="text"/>
441	In the first three days after delivery, before your milk began flowing regularly, was (NAME) given anything to drink other than breast milk?	YES ..... 1 NO/ DON'T KNOW ..... 2 (SKIP TO 443) ←	YES ..... 1 NO/ DON'T KNOW ..... 2 (SKIP TO 443) ←

		LAST BIRTH	NEXT-TO-LAST BIRTH
		NAME _____	NAME _____
442	What was (NAME) given to drink before your milk began flowing regularly?  Anything else?  RECORD ALL LIQUIDS MENTIONED	MILK (OTHER THAN BREAST MILK) ..... A PLAIN WATER ..... B SUGAR OR GLUCOSE WATER ..... C GRIPE WATER ..... D SUGAR-SALT-WATER SOLUTION ..... E FRUIT JUICE ..... F INFANT FORMULA ..... G TEA/INFUSIONS ..... H HONEY ..... I OTHER ..... X (SPECIFY)	MILK (OTHER THAN BREAST MILK) ..... A PLAIN WATER ..... B SUGAR OR GLUCOSE WATER ..... C GRIPE WATER ..... D SUGAR-SALT-WATER SOLUTION ..... E FRUIT JUICE ..... F INFANT FORMULA ..... G TEA/INFUSIONS ..... H HONEY ..... I OTHER ..... X (SPECIFY)
443	CHECK 404:  IS CHILD LIVING?	LIVING <input type="checkbox"/> DEAD <input type="checkbox"/> ↓ ↓ (SKIP TO 445)	LIVING <input type="checkbox"/> DEAD <input type="checkbox"/> ↓ ↓ (SKIP TO 445)
444	Are you still breastfeeding (NAME)?	YES ..... 1 (SKIP TO 447) ← NO ..... 2	YES ..... 1 (SKIP TO 447) ← NO ..... 2
445	For how many months did you breastfeed (NAME)?	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98	MONTHS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 98
446	CHECK 404:  IS CHILD LIVING?	LIVING <input type="checkbox"/> DEAD <input type="checkbox"/> ↓ ↓ (SKIP TO 449) (GO BACK TO 404 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 451)	LIVING <input type="checkbox"/> DEAD <input type="checkbox"/> ↓ ↓ (SKIP TO 449) (GO BACK TO 404 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 451)
447	How many times did you breastfeed last night between sunset and sunrise?  IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.  IF CONTINUOUS ACCESS CODE AS "95"	NUMBER OF NIGHTTIME FEEDINGS. <input type="text"/> <input type="text"/>	NUMBER OF NIGHTTIME FEEDINGS. <input type="text"/> <input type="text"/>
448	How many times did you breastfeed yesterday during the daylight hours?  IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF DAYLIGHT FEEDINGS... <input type="text"/> <input type="text"/>	NUMBER OF DAYLIGHT FEEDINGS .. <input type="text"/> <input type="text"/>
449	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8
450	At any time yesterday or last night, was (NAME) given any of the following:	YES NO DK PLAIN WATER ..... 1 2 8 SUGAR WATER/JUICE. 1 2 8 HERBAL/ROOIBOS TEA 1 2 8 BABY FORMULA ..... 1 2 8 ANY KIND OF MILK ..... 1 2 8 OTHER LIQUIDS ..... 1 2 8 FOOD MADE FROM MAIZE/RICE/WHEAT. 1 2 8 EGGS/FISH/POULTRY.. 1 2 8 MEAT ..... 1 2 8 FRUITS OR VEG. .... 1 2 8 OTHER SOLID/ SEMI-SOLID FOODS. 1 2 8	YES NO DK PLAIN WATER ..... 1 2 8 SUGAR WATER/JUICE. 1 2 8 HERBAL/ROOIBOS TEA 1 2 8 BABY FORMULA ..... 1 2 8 ANY KIND OF MILK ..... 1 2 8 OTHER LIQUIDS ..... 1 2 8 FOOD MADE FROM MAIZE/RICE/WHEAT.. 1 2 8 EGGS/FISH/POULTRY.. 1 2 8 MEAT ..... 1 2 8 FRUITS OR VEG. .... 1 2 8 OTHER SOLID/ SEMI-SOLID FOODS. 1 2 8
451		GO BACK TO 404 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 452.	GO BACK TO 404 IN LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 452.

## SECTION 4B. IMMUNIZATION, HEALTH AND NUTRITION

452	ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 1998 OR LATER. (IF THERE ARE MORE THAN 2 BIRTHS, USE LAST COLUMN OF ADDITIONAL QUESTIONNAIRES).					
453	LINE NUMBER FROM 212		LAST BIRTH LINE NUMBER ..... <input type="text"/> <input type="text"/>		NEXT-TO-LAST BIRTH LINE NUMBER..... <input type="text"/> <input type="text"/>	
454	FROM 212 AND 216		NAME _____  LIVING <input type="checkbox"/> DEAD <input type="checkbox"/> <div style="display: flex; justify-content: space-around;"><div style="text-align: center;">↓  (GO TO 454 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 481)</div><div style="text-align: center;">↓  (GO TO 454 IN LAST COLUMN OF NEW QUESTIONNAIRE OR, IF NO MORE BIRTHS, GO TO 481)</div></div>			
455	Did (NAME) receive a vitamin A dose like this during the last 6 months? SHOW AMPULE/CAPSULE/TABLET		YES ..... 1 NO ..... 2 DON'T KNOW ..... 8		YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
456	Do you have a card where (NAME'S) vaccinations are written down?  IF YES: May I see it please?		YES, SEEN..... 1 (SKIP TO 458)← YES, NOT SEEN ..... 2 (SKIP TO 460)← NO CARD ..... 3		YES, SEEN..... 1 (SKIP TO 458)← YES, NOT SEEN ..... 2 (SKIP TO 460)← NO CARD ..... 3	
457	Did you ever have a vaccination card for (NAME)?		YES ..... 1 (SKIP TO 460)← NO ..... 2		YES ..... 1 (SKIP TO 460)← NO ..... 2	
458	(1) COPY VACCINATION DATE FOR EACH VACCINE FROM THE CARD.  (2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED.		DAY MONTH YEAR  BCG ..... P0 ..... P1 ..... P2 ..... P3 ..... D1 ..... D2 ..... D3 ..... H1 ..... H2 ..... H3 ..... MEA.... VIT. A....		DAY MONTH YEAR  BCG ..... P0 ..... P1 ..... P2 ..... P3 ..... D1 ..... D2 ..... D3 ..... H1 ..... H2 ..... H3 ..... MEA.... VIT. A....	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
459	Has (NAME) received any vaccinations that are not recorded on this card, including vaccinations received in a national immunization day campaign?  RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, POLIO 0-3, DPT 1-3, HEP 1-3, MEASLES VACCINE(S) AND/OR VITAMIN A.	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 458) (SKIP TO 462) ..... NO ..... 2 (SKIP TO 462) ..... DON'T KNOW ..... 8	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 458) (SKIP TO 462) ..... NO ..... 2 (SKIP TO 462) ..... DON'T KNOW ..... 8
460	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunization day campaign?	YES ..... 1 NO ..... 2 (SKIP TO 463) ..... DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 463) ..... DON'T KNOW ..... 8
461	Please tell me if (NAME) received any of the following vaccinations:		
461A	A BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that usually causes a scar?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8
461B	Polio vaccine, that is, drops in the mouth?	YES ..... 1 NO ..... 2 (SKIP TO 461E) ..... DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 461E) ..... DON'T KNOW ..... 8
461C	When was the first polio vaccine received, just after birth or later?	JUST AFTER BIRTH ..... 1 LATER ..... 2	JUST AFTER BIRTH ..... 1 LATER ..... 2
461D	How many times was the polio vaccine received?	NUMBER OF TIMES ..... <input type="text"/>	NUMBER OF TIMES ..... <input type="text"/>
461E	A DPT vaccination, that is, an injection given in the thigh or buttocks, sometimes at the same time as polio drops?	YES ..... 1 NO ..... 2 (SKIP TO 461I) ..... DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 461I) ..... DON'T KNOW ..... 8
461F	How many times?	NUMBER OF TIMES ..... <input type="text"/>	NUMBER OF TIMES ..... <input type="text"/>
461G	A Hepatitis B vaccination, that is, an injection given in the arm or shoulder, sometimes at the same time as polio drops?	YES ..... 1 NO ..... 2 (SKIP TO 461I) ..... DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 461I) ..... DON'T KNOW ..... 8
461H	How many times?	NUMBER OF TIMES ..... <input type="text"/>	NUMBER OF TIMES ..... <input type="text"/>
461I	An injection to prevent measles?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8
461J	A Vitamin A dose in an ampule, capsule or tablet?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8
462	Were any of the vaccinations (NAME) received during the last two years given as a part of a national immunization day campaign?	YES ..... 1 NO ..... 2 NO VACCINATION IN THE LAST 2 YEARS ..... 3 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 NO VACCINATION IN THE LAST 2 YEARS ..... 3 DON'T KNOW ..... 8
463	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
464	Has (NAME) had an illness with a cough (any cough wet/dry) at any time in the last 2 weeks?	YES ..... 1 NO ..... 2 (SKIP TO 466) ← DO NOT KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 466) ← DO NOT KNOW ..... 8
465	When (NAME) had an illness with a cough, did he/she breathe faster than usual with short, rapid breaths?	YES ..... 1 NO ..... 2 DO NOT KNOW ..... 8	YES ..... 1 NO ..... 2 DO NOT KNOW ..... 8
466	CHECK 463 AND 464:  FEVER OR COUGH?	"YES" IN 463 OR 464 <input type="checkbox"/> ↓ (SKIP TO 472)	"YES" IN 463 OR 464 <input type="checkbox"/> ↓ (SKIP TO 472)
467	Did you seek advice or treatment for the fever/cough?	YES ..... 1 NO ..... 2 (SKIP TO 469) ←	YES ..... 1 NO ..... 2 (SKIP TO 469) ←
468	Where did you seek advice or treatment?  IF SOURCE IS HOSPITAL, HEALTH CENTER OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  Anywhere else?  RECORD ALL PLACES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL ..... A DAYHOSP/CLINIC/COMMUNITY HEALTH CENTER ..... B MOBILE CLINIC ..... C  OTHER PUBLIC ..... D (SPECIFY)  PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... E PHARMACY ..... F PRIVATE DOCTOR ..... G MOBILE CLINIC ..... H OTHER PRIVATE MEDICAL ..... I (SPECIFY)  OTHER SOURCE SHOP ..... J TRAD. PRACTITIONER ..... K  OTHER ..... X (SPECIFY)	PUBLIC SECTOR GOVT. HOSPITAL ..... A DAYHOSP/CLINIC/COMMUNITY HEALTH CENTER ..... B MOBILE CLINIC ..... C  OTHER PUBLIC ..... D (SPECIFY)  PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... E PHARMACY ..... F PRIVATE DOCTOR ..... G MOBILE CLINIC ..... H OTHER PRIVATE MEDICAL ..... I (SPECIFY)  OTHER SOURCE SHOP ..... J TRAD. PRACTITIONER ..... K  OTHER ..... X (SPECIFY)
469	CHECK 463:  HAD FEVER?	"YES" IN 463 <input type="checkbox"/> ↓ (SKIP TO 472)	"YES" IN 463 <input type="checkbox"/> ↓ (SKIP TO 472)
470	Did (NAME) take any drugs for the fever?	YES ..... 1 NO ..... 2 (SKIP TO 472) ← DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 472) ← DON'T KNOW ..... 8
471	What drugs did (NAME) take?  RECORD ALL MENTIONED.  ASK TO SEE DRUG(S) IF TYPE OF DRUG IS NOT KNOWN.	COARTEM ..... A ARSUMAX ..... B FANSIDAR ..... C ORAL QUININE ..... D UNKNOWN DRUG ..... E  OTHER ..... X (SPECIFY)	COARTEM ..... A ARSUMAX ..... B FANSIDAR ..... C ORAL QUININE ..... D UNKNOWN DRUG ..... E  OTHER ..... X (SPECIFY)
472	Has (NAME) had diarrhea in the last 2 weeks?	YES ..... 1 NO ..... 2 (SKIP TO 480) ← DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 480) ← DON'T KNOW ..... 8



		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
473	Now I would like to know how much (NAME) was offered to drink during the diarrhea. Was he/she offered less than usual to drink, about the same amount, or more than usual to drink?  IF LESS, PROBE: Was he/she offered much less than usual to drink or somewhat less?	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 NOTHING TO DRINK ..... 5 DON'T KNOW ..... 8	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 NOTHING TO DRINK ..... 5 DON'T KNOW ..... 8
474	When (NAME) had diarrhea, was he/she offered less than usual to eat, about the same amount, more than usual, or nothing to eat?  IF LESS, PROBE: Was he/she offered much less than usual to eat or somewhat less?	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 STOPPED FOOD ..... 5 NEVER GAVE FOOD ..... 6 DON'T KNOW ..... 8	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 STOPPED FOOD ..... 5 NEVER GAVE FOOD ..... 6 DON'T KNOW ..... 8
475	Was he/she given any of the following to drink: a A fluid made from a special packet called SORAL? b A homemade fluid containing salt, sugar and water prepared according to recommendations from health personnel?	YES NO DK FLUID FROM SORAL PKT 1 2 8 HOMEMADE FLUID ..... 1 2 8	YES NO DK FLUID FROM SORAL PKT 1 2 8 HOMEMADE FLUID ..... 1 2 8
476	Was anything (else) given to treat the diarrhea?	YES ..... 1 NO ..... 2 (SKIP TO 478) ← DON'T KNOW ..... 8	YES ..... 1 NO ..... 2 (SKIP TO 478) ← DON'T KNOW ..... 8
477	What (else) was given to treat the diarrhea?  Anything else?  RECORD ALL TREATMENTS MENTIONED.	PILL OR SYRUP ..... A INJECTION ..... B (I.V.) INTRAVENOUS ..... C HOME REMEDIES/ HERBAL MEDICINES ..... D OTHER ..... X (SPECIFY)	PILL OR SYRUP ..... A INJECTION ..... B (I.V.) INTRAVENOUS ..... C HOME REMEDIES/ HERBAL MEDICINES ..... D OTHER ..... X (SPECIFY)
478	Did you seek advice or treatment for the diarrhea?	YES ..... 1 NO ..... 2 (SKIP TO 480) ←	YES ..... 1 NO ..... 2 (SKIP TO 480) ←
479	Where did you seek advice or treatment?  IF SOURCE IS HOSPITAL, HEALTH CENTER OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)  Anywhere else?  RECORD ALL PLACES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL ..... A DAYHOSP/CLINIC/COMMUNITY HEALTH CENTER ..... B MOBILE CLINIC ..... C OTHER PUBLIC ..... D (SPECIFY)  PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... E PHARMACY ..... F PRIVATE DOCTOR ..... G MOBILE CLINIC ..... H OTHER PRIVATE MEDICAL ..... I (SPECIFY)  OTHER SOURCE SHOP ..... J TRAD. PRACTITIONER ..... K OTHER ..... X (SPECIFY)	PUBLIC SECTOR GOVT. HOSPITAL ..... A DAYHOSP/CLINIC/COMMUNITY HEALTH CENTER ..... B MOBILE CLINIC ..... C OTHER PUBLIC ..... D (SPECIFY)  PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... E PHARMACY ..... F PRIVATE DOCTOR ..... G MOBILE CLINIC ..... H OTHER PRIVATE MEDICAL ..... I (SPECIFY)  OTHER SOURCE SHOP ..... J TRAD. PRACTITIONER ..... K OTHER ..... X (SPECIFY)
480		GO BACK TO 454 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481.	GO BACK TO 454 IN LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 481.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																								
481	CHECK 475a, ALL COLUMNS:  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> NO CHILD RECEIVED FLUID FROM ORS PACKET <input type="checkbox"/> </div> <div style="text-align: center;"> ANY CHILD RECEIVED FLUID FROM ORS PACKET <input type="checkbox"/> </div> </div>		→484																								
482	Have you ever heard of a special product called [ORS] you can get for the treatment of diarrhea?	YES ..... 1 NO ..... 2																									
483	CHECK 218:  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> HAS ONE OR MORE CHILDREN LIVING WITH HER <input type="checkbox"/> </div> <div style="text-align: center;"> HAS NO CHILDREN LIVING WITH HER <input type="checkbox"/> </div> </div>		→485																								
484	When (your child/one of your children) is seriously ill, can you decide by yourself whether or not the child should be taken for medical treatment?  IF SAYS NO CHILD EVER SERIOUSLY ILL, ASK: If (your child/one of your children) became seriously ill, could you decide by yourself whether the child should be taken for medical treatment?	YES ..... 1 NO ..... 2 DEPENDS ..... 3																									
485	Now I would like to ask you some questions about medical care for you yourself.  Many different factors can prevent women from getting medical advice or treatment for themselves. When you are sick and want to get medical advice or treatment, is each of the following a big problem or not?	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th><th style="width: 25%;">PROBLEM</th><th style="width: 25%;">NOT A PROBLEM</th></tr> </thead> <tbody> <tr> <td>Knowing where to go.</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr> <td>Getting permission to go.</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr> <td>Getting money needed for treatment.</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr> <td>The distance to a health facility.</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr> <td>Having to take transport.</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr> <td>Not wanting to go alone.</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr> <td>Concern that there may not be a female health provider.</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> </tbody> </table>		PROBLEM	NOT A PROBLEM	Knowing where to go.	1	2	Getting permission to go.	1	2	Getting money needed for treatment.	1	2	The distance to a health facility.	1	2	Having to take transport.	1	2	Not wanting to go alone.	1	2	Concern that there may not be a female health provider.	1	2	
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Concern that there may not be a female health provider.	1	2																									

SECTION 5. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	Now I would like to ask you about your marriage and sexual relationships.		
501	Are you currently married or living with a partner?	YES, CURRENTLY MARRIED TO MAN.. 1 YES, LIVING WITH A MAN ..... 2 YES,MARRIED/ LIVING WITH A WOMAN 3 NO, NOT IN UNION ..... 4	→504
502	Have you ever been married or lived with a man?	YES, FORMERLY MARRIED ..... 1 YES, LIVED WITH A MAN ..... 2 NO ..... 3	→508 →511
503	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED ..... 1 DIVORCED ..... 2 SEPARATED ..... 3	→508
504	Is your husband/partner living with you now or is he staying elsewhere?	LIVING WITH HER ..... 1 STAYING ELSEWHERE ..... 2	
505	<p>RECORD THE HUSBAND'S/PARTNER'S NAME AND LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE. IF HE IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.</p> <p>Please tell me the name of your husband (the man you are living together with as if married) now.</p>	<p>NAME _____</p> <p>LINE NO. .... <input type="text"/> <input type="text"/></p>	
506	Besides yourself, does your husband have other wives or does he live, with other women as if married?	YES ..... 1 NO ..... 2	→508
507	How many other wives does he have?	NO. OF OTHER WIVES. .... <input type="text"/> <input type="text"/>	
508	Have you been married or lived with a man only once or more than once?	ONCE ..... 1 MORE THAN ONCE ..... 2	
509	<p>CHECK 508:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>MARRIED/ LIVED WITH A MAN ONLY ONCE</p> <p>↓ <input type="text"/></p> <p>In what month and year did you start living with your husband/partner?</p> </div> <div style="text-align: center;"> <p>MARRIED/ LIVED WITH A MAN MORE THAN ONCE</p> <p>↓ <input type="text"/></p> <p>Now we will talk about your first husband/partner. In what month and year did you start living with him?</p> </div> </div>	<p>MONTH. .... <input type="text"/> <input type="text"/></p> <p>DON'T KNOW MONTH ..... 98</p> <p>YEAR ..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p>DON'T KNOW YEAR ..... 9998</p>	→511
510	How old were you when you started living with him?	AGE ..... <input type="text"/> <input type="text"/>	
511	<p>Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family life issues.</p> <p>How old were you when you first had sexual intercourse (if ever)?</p>	<p>NEVER ..... 00</p> <p>AGE IN YEARS ..... <input type="text"/> <input type="text"/></p> <p>FIRST TIME WHEN STARTED LIVING WITH (FIRST) HUSBAND/PARTNER .... 95</p>	→601
512	<p>CHECK 106:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>15 - 24 YEARS OLD</p> <p>↓ <input type="text"/></p> </div> <div style="text-align: center;"> <p>25 - 49 YEARS OLD</p> <p>↓ <input type="text"/></p> </div> </div>		→514
513	The first time you had sexual intercourse, was a condom used?	YES ..... 1 NO ..... 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																
514	When was the last time you had sexual intercourse?  RECORD 'YEARS AGO' ONLY IF LAST INTERCOURSE WAS ONE OR MORE YEARS AGO. IF 12 MONTHS OR MORE, ANSWER MUST ALSO BE RECORDED IN YEARS.	DAYS AGO ..... 1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> WEEKS AGO ..... 2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MONTHS AGO ..... 3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEARS AGO ..... 4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>																																	→601
515	The last time you had sexual intercourse, was a condom used?	YES ..... 1 NO ..... 2																																	
516	What is your relationship to the man with whom you last had sex?  IF MAN IS "BOYFRIEND" OR "FIANCÉ", ASK:  Was your boyfriend/fiancé living with you when you last had sex with him?  IF YES, CIRCLE '01'. IF NO, CIRCLE '02'.	SPOUSE/COHABITING PARTNER .....01 MAN IS BOYFRIEND/FIANCÉ .....02 OTHER FRIEND .....03 CASUAL ACQUAINTANCE .....04 RELATIVE .....05 COMMERCIAL SEX WORKER .....06  OTHER ..... 96 (SPECIFY)	→518																																
517	For how long have you had sexual relations with this man?	DAYS ..... 1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> WEEKS ..... 2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MONTHS ..... 3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEARS ..... 4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>																																	
518	CHECK 106:  15 - 24 YEARS OLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table> 25 - 49 YEARS OLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table>				→521																														
519	How old is this man?	AGE OF PARTNER ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> DON'T KNOW .....98			→521																														
520	Was this man younger, about the same age or older than you?  IF OLDER: Do you think he was less than 10 years older than you or 10 or more years older than you?	YOUNGER THAN WOMAN .....1 ABOUT THE SAME AGE .....2 LESS THAN 10 YEARS OLDER .....3 10 OR MORE YEARS OLDER .....4 OLDER, DON'T KNOW DIFFERENCE .....5 DO NOT KNOW .....8																																	
521	The last time you had sexual intercourse, did you or your partner drink alcohol?  IF YES: Who was drinking?	RESPONDENT ONLY .....1 PARTNER ONLY .....2 RESPONDENT AND PARTNER .....3 NEITHER .....4																																	
522	Have you had sex with any other man in the last 12 months?	YES .....1 NO .....2	→601																																
523	The last time you had sexual intercourse with another man was a condom used?	YES .....1 NO .....2																																	
524	What is your relationship to this man?  IF MAN IS "BOYFRIEND" OR "FIANCÉ", ASK:  Was your boyfriend/fiancé living with you when you last had sex with him?  IF YES, CIRCLE '01'. IF NO, CIRCLE '02'.	SPOUSE/COHABITING PARTNER .....01 MAN IS BOYFRIEND/FIANCÉ .....02 OTHER FRIEND .....03 CASUAL ACQUAINTANCE .....04 RELATIVE .....05 COMMERCIAL SEX WORKER .....06  OTHER ..... 96 (SPECIFY)	→526																																

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																
525	For how long have you had sexual relations with this man?	DAYS.....1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> WEEKS.....2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MONTHS .....3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> YEARS .....4 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>																																	
526	CHECK 106: <div style="display: flex; justify-content: space-around; align-items: center;"> <div>15 - 24 YEARS OLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table></div> <div>25 - 49 YEARS OLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table></div> </div>						→ 529																												
527	How old is this man?	AGE OF PARTNER..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> DON'T KNOW .....98			→ 529																														
528	Was this man younger, about the same age or older than you?  IF OLDER: Do you think he was less than 10 years older than you or 10 or more years older than you?	YOUNGER THAN WOMAN .....1 ABOUT THE SAME AGE.....2 LESS THAN 10 YEARS OLDER .....3 10 OR MORE YEARS OLDER .....4 OLDER, DON'T KNOW DIFFERENCE ....5 DO NOT KNOW .....8																																	
529	The last time you had sexual intercourse with this partner did you or your partner drink alcohol?  IF YES: Who was drinking?	RESPONDENT ONLY .....1 PARTNER ONLY .....2 RESPONDENT AND PARTNER .....3 NEITHER .....4																																	
530	In total, with how many different men have you had sex in the last 12 months?	NUMBER OF PARTNERS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>																																	
531	In the last 12 months, did any man pay you to have sex?	YES.....1 NO.....2	→ 601																																
532	The last time you were paid to have sex, was a condom used?	YES.....1 NO.....2																																	

## **SECTION 6. FERTILITY PREFERENCES**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP			
601	CHECK 310/310A:  NEITHER STERILIZED <input type="checkbox"/> ↓ HE OR SHE STERILIZED <input type="checkbox"/>	→610				
602	CHECK 226:  NOT PREGNANT OR UNSURE <input type="checkbox"/> ↓ Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?  PREGNANT <input type="checkbox"/> ↓ Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD..... 1 NO MORE/NONE ..... 2 →604 SAYS SHE CAN'T GET PREGNANT..... 3 →610 UNDECIDED/DON'T KNOW: AND PREGNANT..... 4 →610 AND NOT PREGNANT OR UNSURE ..... 5 →608				
603	CHECK 226:  NOT PREGNANT OR UNSURE <input type="checkbox"/> ↓ How long would you like to wait from now before the birth of (a/another) child?  PREGNANT <input type="checkbox"/> ↓ After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS ..... 1 YEARS..... 2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> SOON/NOW ..... 993 →609 SAYS SHE CAN'T GET PREGNANT .... 994 →610 AFTER MARRIAGE..... 995 OTHER ..... 996 →609 (SPECIFY) DON'T KNOW..... 998				
604	CHECK 225:  NOT PREGNANT OR UNSURE <input type="checkbox"/> ↓ PREGNANT <input type="checkbox"/>	→610				
605	CHECK 309: USING A CONTRACEPTIVE METHOD?  NOT ASKED <input type="checkbox"/> ↓ NOT CURRENTLY USING <input type="checkbox"/> ↓ CURRENTLY USING <input type="checkbox"/>	→608				
606	CHECK 603:  NOT ASKED <input type="checkbox"/> ↓ 24 OR MORE MONTHS OR 02 OR MORE YEARS <input type="checkbox"/> ↓ 00-23 MONTHS OR 00-01 YEAR <input type="checkbox"/>	→610				

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
607	<p>CHECK 602:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>WANTS TO HAVE A/ANOTHER CHILD <input type="checkbox"/></p> <p>You have said that you do not want (a/another) child soon, but you are not using any method to avoid pregnancy. Can you tell me why?</p> <p>Any other reason?</p> </div> <div style="text-align: center;"> <p>WANTS NO MORE/ NONE <input type="checkbox"/></p> <p>You have said that you do not want any (more) children, but you are not using any method to avoid pregnancy. Can you tell me why?</p> <p>Any other reason?</p> </div> </div> <p>RECORD ALL REASONS MENTIONED.</p>	<p>NOT MARRIED.....A</p> <p>FERTILITY-RELATED REASONS</p> <p>NOT HAVING SEX.....B</p> <p>INFREQUENT SEX.....C</p> <p>MENOPAUSAL/HYSTERECTOMY.....D</p> <p>SUBFECUND/INFECUND.....E</p> <p>POSTPARTUM AMENORRHEIC.....F</p> <p>BREASTFEEDING.....G</p> <p>FATALISTIC.....H</p> <p>OPPOSITION TO USE</p> <p>RESPONDENT OPPOSED.....I</p> <p>HUSBAND/PARTNER OPPOSED.....J</p> <p>OTHERS OPPOSED.....K</p> <p>RELIGIOUS PROHIBITION.....L</p> <p>LACK OF KNOWLEDGE</p> <p>KNOWS NO METHOD.....M</p> <p>KNOWS NO SOURCE.....N</p> <p>METHOD-RELATED REASONS</p> <p>HEALTH CONCERNS.....O</p> <p>FEAR OF SIDE EFFECTS.....P</p> <p>LACK OF ACCESS/TOO FAR.....Q</p> <p>COSTS TOO MUCH.....R</p> <p>INCONVENIENT TO USE.....S</p> <p>INTERFERES WITH BODY'S NATURAL PROCESSES.....T</p> <p>OTHER.....X (SPECIFY)</p> <p>DON'T KNOW.....Z</p>	
608	<p>In the next few weeks, if you discovered that you were pregnant, would that be a big problem, a small problem, or no problem for you?</p>	<p>BIG PROBLEM.....1</p> <p>SMALL PROBLEM.....2</p> <p>NO PROBLEM.....3</p> <p>SAYS SHE CAN'T GET PREGNANT/ NOT HAVING SEX.....4</p>	
610	<p>CHECK 216:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>HAS LIVING CHILDREN <input type="checkbox"/></p> <p>If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?</p> </div> <div style="text-align: center;"> <p>NO LIVING CHILDREN <input type="checkbox"/></p> <p>If you could choose exactly the number of children to have in your whole life, how many would that be?</p> </div> </div> <p>PROBE FOR A NUMERIC RESPONSE.</p>	<p>NUMBER.....<input style="width: 40px; border: 1px solid black;" type="text"/><input style="width: 40px; border: 1px solid black;" type="text"/></p> <p>OTHER.....96 (SPECIFY)</p>	
611	<p>CHECK 501:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>YES, CURRENTLY MARRIED <input type="checkbox"/></p> </div> <div style="text-align: center;"> <p>YES, LIVING WITH A MAN <input type="checkbox"/></p> </div> <div style="text-align: center;"> <p>NO, NOT IN UNION <input type="checkbox"/></p> </div> </div>		→617
612	<p>CHECK 310/310A:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>ANY CODE CIRCLED <input type="checkbox"/></p> </div> <div style="text-align: center;"> <p>NO CODE CIRCLED <input type="checkbox"/></p> </div> </div>		→614
613	<p>You have told me that you are currently using contraception. Would you say that using contraception is mainly your decision, mainly your husband's decision or did you both decide together?</p>	<p>MAINLY RESPONDENT.....1</p> <p>MAINLY HUSBAND/PARTNER.....2</p> <p>JOINT DECISION.....3</p> <p>OTHER.....6 (SPECIFY)</p>	
614	<p>Now I want to ask you about your husband's/partner's views on family planning.</p> <p>Do you think that your husband/partner approves or disapproves of couples using a contraceptive method to avoid pregnancy?</p>	<p>APPROVES.....1</p> <p>DISAPPROVES.....2</p> <p>DON'T KNOW.....8</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
615	CHECK 3101/310A:  NEITHER STERILIZED <input type="checkbox"/> HE OR SHE STERILIZED <input type="checkbox"/> _____		→617
616	Do you think your husband/partner wants the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER..... 1 MORE CHILDREN..... 2 FEWER CHILDREN ..... 3 DON'T KNOW..... 8	
617	Husbands and wives do not always agree on everything. Please tell me if you think a wife is justified (Is it OK for her) refusing to have sex with her husband when:  She knows her husband has a sexually transmitted disease? She knows her husband has sex with other women? She knows her husband has sex with other wives? She has recently given birth? She is tired or not in the mood?	YES NO DK HAS STD ..... 1 2 8 OTHER WOMEN ..... 1 2 8 OTHER WIVES ..... 1 2 8 RECENT BIRTH ..... 1 2 8 TIRED/MOOD..... 1 2 8	



# SECTION 7. MATERNAL MORTALITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES						SKIP
701	Now I would like to ask you about your brothers and sisters, that is, all of the children born to your natural mother, including those who are living with you, those living elsewhere and those who have died.  How many children did your mother give birth to, including you?	NUMBER OF BIRTHS TO NATURAL MOTHER..... <input type="text"/>						
702	CHECK 701: TWO OR MORE BIRTHS <input type="checkbox"/> ONLY ONE BIRTH (RESPONDENT ONLY) <input type="checkbox"/>							→801
703	How many of these births did your mother have before you were born?	NO. OF PRECEDING BIRTHS... <input type="text"/>						
704	What was the name given to your oldest (next oldest) brother or sister?	[1] <input type="text"/>	[2] <input type="text"/>	[3] <input type="text"/>	[4] <input type="text"/>	[5] <input type="text"/>	[6] <input type="text"/>	
705	Is (NAME) male or female?	MALE .....1 FEMALE.....2	MALE.....1 FEMALE.....2	MALE .....1 FEMALE .....2	MALE .....1 FEMALE.....2	MALE.....1 FEMALE.....2	MALE .....1 FEMALE.....2	
706	Is (NAME) still alive?	YES .....1 NO .....2 GO TO 708↵ DK .....8 GO TO [2] ↵	YES .....1 NO .....2 GO TO 708↵ DK .....8 GO TO [3] ↵	YES .....1 NO .....2 GO TO 708↵ DK .....8 GO TO [4] ↵	YES .....1 NO .....2 GO TO 708↵ DK .....8 GO TO [5] ↵	YES .....1 NO .....2 GO TO 708↵ DK .....8 GO TO [6] ↵	YES .....1 NO .....2 GO TO 708↵ DK .....8 GO TO [7] ↵	
707	How old is (NAME)?	<input type="text"/> GO TO [2]	<input type="text"/> GO TO [3]	<input type="text"/> GO TO [4]	<input type="text"/> GO TO [5]	<input type="text"/> GO TO [6]	<input type="text"/> GO TO [7]	
708	In what year did (NAME) die?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
709	How many years ago did (NAME) die?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
710	How old was (NAME) when he/she died?	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [2]	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [3]	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [4]	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [5]	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [6]	<input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [7]	
711	Was (NAME) pregnant when she died?	YES .....1 GO TO 714↵ NO .....2	YES .....1 GO TO 714↵ NO .....2	YES .....1 GO TO 714↵ NO .....2	YES .....1 GO TO 714↵ NO .....2	YES .....1 GO TO 714↵ NO .....2	YES .....1 GO TO 714↵ NO .....2	
712	Did (NAME) die during childbirth?	YES .....1 GO TO 715↵ NO .....2	YES .....1 GO TO 715↵ NO .....2	YES .....1 GO TO 715↵ NO .....2	YES .....1 GO TO 715↵ NO .....2	YES .....1 GO TO 715↵ NO .....2	YES .....1 GO TO 715↵ NO .....2	
713	Did (NAME) die within two months after the end of a pregnancy or childbirth?	YES .....1 NO .....2 GO TO 715↵	YES .....1 NO .....2 GO TO 715↵	YES .....1 NO .....2 GO TO 715↵	YES .....1 NO .....2 GO TO 715↵	YES .....1 NO .....2 GO TO 715↵	YES .....1 NO .....2 GO TO 715↵	
714	Was her death due to complications of pregnancy or childbirth?	YES .....1 NO .....2	YES .....1 NO .....2	YES .....1 NO .....2	YES .....1 NO .....2	YES .....1 NO .....2	YES .....1 NO .....2	
715	How many children did (NAME) give birth to during her lifetime (before this pregnancy)?	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	

704	What was the name given to your oldest (next oldest) brother or sister?	[7]	[8]	[9]	[10]	[11]	[12]
705	Is (NAME) male or female?	MALE ..... 1 FEMALE ..... 2	MALE ..... 1 FEMALE ..... 2	MALE ..... 1 FEMALE ..... 2	MALE ..... 1 FEMALE ..... 2	MALE ..... 1 FEMALE ..... 2	MALE ..... 1 FEMALE ..... 2
706	Is (NAME) still alive?	YES ..... 1 NO ..... 2 GO TO 708 ↵ DK ..... 8 GO TO [8] ↵	YES ..... 1 NO ..... 2 GO TO 708 ↵ DK ..... 8 GO TO [9] ↵	YES ..... 1 NO ..... 2 GO TO 708 ↵ DK ..... 8 GO TO [10] ↵	YES ..... 1 NO ..... 2 GO TO 708 ↵ DK ..... 8 GO TO [11] ↵	YES ..... 1 NO ..... 2 GO TO 708 ↵ DK ..... 8 GO TO [12] ↵	YES ..... 1 NO ..... 2 GO TO 708 ↵ DK ..... 8 GO TO [13] ↵
707	How old is (NAME)?	<input type="text"/> <input type="text"/> GO TO [8]	<input type="text"/> <input type="text"/> GO TO [9]	<input type="text"/> <input type="text"/> GO TO [10]	<input type="text"/> <input type="text"/> GO TO [11]	<input type="text"/> <input type="text"/> GO TO [12]	<input type="text"/> <input type="text"/> GO TO [13]
708	In what year did (NAME) die?	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
709	How many years ago did (NAME) die?	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>
710	How old was (NAME) when he/she died?	<input type="text"/> <input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [8]	<input type="text"/> <input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [9]	<input type="text"/> <input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [10]	<input type="text"/> <input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [11]	<input type="text"/> <input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [12]	<input type="text"/> <input type="text"/> IF MALE OR DIED BEFORE AGE 12 YEARS GO TO [13]
711	Was (NAME) pregnant when she died?	YES ..... 1 GO TO 714 ↵ NO ..... 2	YES ..... 1 GO TO 714 ↵ NO ..... 2	YES ..... 1 GO TO 714 ↵ NO ..... 2	YES ..... 1 GO TO 714 ↵ NO ..... 2	YES ..... 1 GO TO 714 ↵ NO ..... 2	YES ..... 1 GO TO 714 ↵ NO ..... 2
712	Did (NAME) die during childbirth?	YES ..... 1 GO TO 715 ↵ NO ..... 2	YES ..... 1 GO TO 715 ↵ NO ..... 2	YES ..... 1 GO TO 715 ↵ NO ..... 2	YES ..... 1 GO TO 715 ↵ NO ..... 2	YES ..... 1 GO TO 715 ↵ NO ..... 2	YES ..... 1 GO TO 715 ↵ NO ..... 2
713	Did (NAME) die within two months after the end of a pregnancy or childbirth?	YES ..... 1 NO ..... 2 GO TO 715 ↵	YES ..... 1 NO ..... 2 GO TO 715 ↵	YES ..... 1 NO ..... 2 GO TO 715 ↵	YES ..... 1 NO ..... 2 GO TO 715 ↵	YES ..... 1 NO ..... 2 GO TO 715 ↵	YES ..... 1 NO ..... 2 GO TO 715 ↵
714	Was her death due to complications of pregnancy or childbirth?	YES ..... 1 NO ..... 2	YES ..... 1 NO ..... 2	YES ..... 1 NO ..... 2	YES ..... 1 NO ..... 2	YES ..... 1 NO ..... 2	YES ..... 1 NO ..... 2
715	How many children did (NAME) give birth to during her lifetime (before this pregnancy)?	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>
IF NO MORE BROTHERS OR SISTERS, GO TO 801							

**SECTION 8: AIDS AND OTHER SEXUALLY TRANSMITTED INFECTIONS**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	Now I would like to talk about some important health issues. Have you ever heard of an illness called AIDS?	YES ..... 1 NO ..... 2	→836
802	Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	└→809
803	What can a person do?  Anything else?  RECORD ALL WAYS MENTIONED.	ABSTAIN FROM SEX ..... A USE CONDOMS ..... B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER ..... C LIMIT NUMBER OF SEXUAL PARTNERS ..... D AVOID SEX WITH PROSTITUTES ..... E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS ..... F AVOID SEX WITH HOMOSEXUALS ..... G AVOID SEX WITH PERSONS WHO INJECT DRUGS INTRAVENOUSLY ... H AVOID BLOOD TRANSFUSIONS ..... I AVOID INJECTIONS ..... J AVOID SHARING RAZORS/BLADES ..... K AVOID KISSING ..... L AVOID MOSQUITO BITES ..... M SEEK PROTECTION FROM TRADITIONAL PRACTITIONER ..... N  OTHER ..... W (SPECIFY)  OTHER ..... X (SPECIFY) DON'T KNOW ..... Z	
804	Can people reduce their chances of getting HIV (the virus that causes AIDS) by having just one sex partner who is not infected and who has no other partners?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
805	Can a person get HIV/AIDS from mosquito bites?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
806	Can people reduce their chances of getting HIV/AIDS by using a condom every time they have sex?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
807	Can people get HIV by sharing food with a person who has HIV/AIDS?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
808	Can people reduce their chance of getting HIV/AIDS by not having sex at all?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
809	Can people get HIV/AIDS because of witchcraft or other supernatural means?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
810	Is it possible for a healthy-looking person to have HIV/AIDS?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	
811	Do you know someone personally who has the virus that causes AIDS or someone who died from AIDS?	YES ..... 1 NO ..... 2	
812	Can HIV/AIDS be transmitted from a mother to a child?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8	└→815

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP												
813	Can HIV/AIDS be transmitted from a mother to a child: During pregnancy? During delivery? By breastfeeding?	<table> <tr> <td>YES</td><td>NO</td><td>DK</td></tr> <tr> <td>DURING PREG ..... 1</td><td>2</td><td>8</td></tr> <tr> <td>DURING DELIVERY... 1</td><td>2</td><td>8</td></tr> <tr> <td>BREASTFEEDING .... 1</td><td>2</td><td>8</td></tr> </table>	YES	NO	DK	DURING PREG ..... 1	2	8	DURING DELIVERY... 1	2	8	BREASTFEEDING .... 1	2	8	
YES	NO	DK													
DURING PREG ..... 1	2	8													
DURING DELIVERY... 1	2	8													
BREASTFEEDING .... 1	2	8													
814	Are there any special drugs that a pregnant woman infected with the HIV/ AIDS can take to reduce the risk of transmission to the baby?	YES ..... 1 NO ..... 2 DOES NOT KNOW ..... 8													
815	If you knew that a shopkeeper or vendor had HIV/AIDS would you buy fresh vegetables from them?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8													
816	If a member of your family got infected with HIV/AIDS, would you want it to remain a secret?	YES, REMAIN SECRET ..... 1 NO ..... 2 DO NOT KNOW ..... 8													
817	If a relative of yours became sick with HIV/AIDS, would you be willing to care for her or him in your own household?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS ..... 8													
818	If a teacher has HIV/AIDS, should he or she be allowed to continue teaching in school?	CAN CONTINUE ..... 1 SHOULD NOT CONTINUE ..... 2 DON'T KNOW /UNSURE/DEPENDS ..... 8													
819	Should children aged 12-14 be taught about using a condom to avoid HIV/AIDS?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS ..... 8													
820	CHECK 215:  <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div>           LAST BIRTH SINCE JANUARY 2000           <div style="border: 1px solid black; width: 30px; height: 20px; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; background-color: black;"></div> </div> </div> <div>           LAST BIRTH BEFORE JANUARY 2000           <div style="border: 1px solid black; width: 30px; height: 20px; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; background-color: black;"></div> </div> </div> </div>		→828												
821	Now I would like to ask come questions about your last birth. Did you see anyone for antenatal care during that pregnancy?	YES ..... 1 NO ..... 2	→828												
822	During any of the antenatal visits for that pregnancy, did any one talk to you about:  Things that you can do to prevent getting HIV/AIDS?  Using family planning?	<table> <tr> <td></td><td>YES</td><td>NO</td><td>DK</td></tr> <tr> <td>PREVENT AIDS</td><td>1</td><td>2</td><td>8</td></tr> <tr> <td>FAMILY PLANNING</td><td>1</td><td>2</td><td>8</td></tr> </table>		YES	NO	DK	PREVENT AIDS	1	2	8	FAMILY PLANNING	1	2	8	
	YES	NO	DK												
PREVENT AIDS	1	2	8												
FAMILY PLANNING	1	2	8												
823	I do not want to know the results, but were you tested for HIV/AIDS during any of your antenatal care visits?	YES ..... 1 NO ..... 2	→828												
824	Did you yourself ask for the test, was it offered to you and you accepted, or was it required?	ASKED FOR THE TEST ..... 1 OFFERED AND ACCEPTED ..... 2 REQUIRED ..... 3													
825	I do not want to know the results, but did you get the results of the test?	YES ..... 1 NO ..... 2													
826	Where was the test done?  IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)	<b>PUBLIC SECTOR</b> GOVERNMENT HOSPITAL ..... 11 GOVT. HEALTH CENTRE/CLINIC ..... 12 GOVERNMENT DISPENSARY ..... 13  OTHER PUBLIC ..... 16 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION/CHURCH HOSP. CLINIC ... 21 FP HEALTH CENTRE/CLINIC ..... 22 PRIVATE HOSPITAL/CLINIC ..... 23 PHARMACY ..... 24 PRIVATE DOCTOR ..... 25 NURSING/MATERNITY HOME ..... 26 BLOOD TRANSFUSION SERVICE ..... 31  OTHER ..... 96 (SPECIFY)													

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
827	Have you been tested again for HIV/AIDS since the time you were tested during your last pregnancy?	YES ..... 1 NO ..... 2	→829 →833
828	I do not want to know the results, but have you ever been tested to see if you have HIV/AIDS?	YES ..... 1 NO ..... 2	→833
829	When was the last time you were tested?	LESS THAN 12 MONTHS AGO ..... 1 12-23 MONTHS AGO ..... 2 2 YEARS OR MORE AGO ..... 3	
830	The last time you had the test, did you yourself ask for the test, was it offered to you and you accepted, or was it required?	ASKED FOR THE TEST ..... 1 OFFERED AND ACCEPTED ..... 2 REQUIRED ..... 3	
831	Where was the test done?  IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)	<b>PUBLIC SECTOR</b> GOVERNMENT HOSPITAL ..... 11 GOVT. HEALTH CENTRE/CLINIC ..... 12 GOVERNMENT DISPENSARY ..... 13  OTHER PUBLIC ..... 16 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION/CHURCH HOSP. CLINIC ... 21 FP HEALTH CENTRE/CLINIC ..... 22 PRIVATE HOSPITAL/CLINIC ..... 23 PHARMACY ..... 24 PRIVATE DOCTOR ..... 25 NURSING/MATERNITY HOME ..... 26 BLOOD TRANSFUSION SERVICE ..... 31  OTHER ..... 96 (SPECIFY)	
832	I do not want to know the results, but did you get the results of the test?	YES ..... 1 NO ..... 2	→836
833	Would you want to be tested for HIV/AIDS?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS ..... 8	
834	Do you know a place where you could go to get an HIV/AIDS test?	YES ..... 1 NO ..... 2	→836
835	Where can you go for the test?  IF SOURCE IS HOSPITAL, HEALTH CENTRE, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.  _____ (NAME OF PLACE)	<b>PUBLIC SECTOR</b> GOVERNMENT HOSPITAL ..... 11 GOVT. HEALTH CENTRE/CLINIC ..... 12 GOVERNMENT DISPENSARY ..... 13  OTHER PUBLIC ..... 16 (SPECIFY) <b>PRIVATE MEDICAL SECTOR</b> MISSION/CHURCH HOSP. CLINIC ... 21 FP HEALTH CENTRE/CLINIC ..... 22 PRIVATE HOSPITAL/CLINIC ..... 23 PHARMACY ..... 24 PRIVATE DOCTOR ..... 25 NURSING/MATERNITY HOME ..... 26 BLOOD TRANSFUSION SERVICE ..... 31  OTHER ..... 96 (SPECIFY)	
836	(Apart from HIV/AIDS), have you heard about other infections that can be transmitted through sexual contact?	YES ..... 1 NO ..... 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
837	<p>If a man has a sexually transmitted disease, what symptoms might he have?</p> <p>Any others?</p> <p>RECORD ALL SYMPTOMS MENTIONED.</p>	<p>ABDOMINAL PAIN ..... A</p> <p>GENITAL DISCHARGE/DRIPPING ..... B</p> <p>FOUL SMELLING DISCHARGE ..... C</p> <p>BURNING PAIN ON URINATION ..... D</p> <p>REDNESS/INFLAMMATION IN GENITAL AREA ..... E</p> <p>SWELLING IN GENITAL AREA ..... F</p> <p>GENITAL SORES/ULCERS ..... G</p> <p>GENITAL WARTS ..... H</p> <p>GENITAL ITCHING ..... I</p> <p>BLOOD IN URINE ..... J</p> <p>LOSS OF WEIGHT ..... K</p> <p>IMPOTENCE ..... L</p> <p>OTHER ..... W (SPECIFY)</p> <p>OTHER ..... X (SPECIFY)</p> <p>NO SYMPTOMS ..... Y</p> <p>DON'T KNOW ..... Z</p>	
838	<p>If a woman has a sexually transmitted disease, what symptoms might she have?</p> <p>Any others?</p> <p>RECORD ALL SYMPTOMS MENTIONED.</p>	<p>ABDOMINAL PAIN ..... A</p> <p>GENITAL DISCHARGE ..... B</p> <p>FOUL SMELLING DISCHARGE ..... C</p> <p>BURNING PAIN ON URINATION ..... D</p> <p>REDNESS/INFLAMMATION IN GENITAL AREA ..... E</p> <p>SWELLING IN GENITAL AREA ..... F</p> <p>GENITAL SORES/ULCERS ..... G</p> <p>GENITAL WARTS ..... H</p> <p>GENITAL ITCHING ..... I</p> <p>BLOOD IN URINE ..... J</p> <p>LOSS OF WEIGHT ..... K</p> <p>HARD TO GET PREGNANT/ HAVE A CHILD ..... L</p> <p>OTHER ..... W (SPECIFY)</p> <p>OTHER ..... X (SPECIFY)</p> <p>NO SYMPTOMS ..... Y</p> <p>DON'T KNOW ..... Z</p>	
839	<p>CHECK 511:</p> <p>HAS HAD SEXUAL INTERCOURSE <input type="checkbox"/></p> <p>HAS NOT HAD SEXUAL INTERCOURSE <input type="checkbox"/></p>		→846
840	Now I-would like to ask you some questions about your health in the last 12 months. During the last 12 months, have you had a disease, which you got through sexual contact?	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW ..... 8</p>	
841	<p>Sometimes women experience a bad smelling abnormal genital discharge.</p> <p>During the last 12 months, have you had a bad smelling abnormal genital discharge?</p>	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW ..... 8</p>	
842	<p>Sometimes women have a genital sore or ulcer.</p> <p>During the last 12 months, have you had a genital sore or ulcer?</p>	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW ..... 8</p>	
843	<p>CHECK 840, 841, 842:</p> <p>HAS HAD AN INFECTION <input type="checkbox"/></p> <p>HAS NOT HAD AN INFECTION OR DOES NOT KOW <input type="checkbox"/></p>		→846
844	The last time you had (PROBLEM FROM 840/841/842), did you seek any kind of advice or treatment?	<p>YES ..... 1</p> <p>NO ..... 2</p>	→846

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
845	<p>Where did you go?</p> <p>IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p><b>PUBLIC SECTOR</b></p> <p>GOVERNMENT HOSPITAL ..... 11</p> <p>GOVT. HEALTH CENTER ..... 12</p> <p>FAMILY PLANNING CLINIC ..... 13</p> <p>MOBILE CLINIC ..... 14</p> <p>FIELDWORKER ..... 15</p> <p>OTHER PUBLIC ..... 16</p> <p>(SPECIFY)</p> <p><b>PRIVATE MEDICAL SECTOR</b></p> <p>PRIVATE HOSPITAL/CLINIC ..... 21</p> <p>PHARMACY ..... 22</p> <p>PRIVATE DOCTOR ..... 23</p> <p>MOBILE CLINIC ..... 24</p> <p>FIELDWORKER ..... 25</p> <p>OTHER PRIVATE MEDICAL ..... 26</p> <p>(SPECIFY)</p> <p><b>OTHER SOURCE</b></p> <p>SHOP ..... 31</p> <p>CHURCH ..... 32</p> <p>TRADITIONAL HEALER ..... 33</p> <p>FRIEND/RELATIVE ..... 34</p>	
846	<p>Husbands and wives or boyfriends and girlfriends do not always agree on everything.</p> <p>Please tell me if you think it is ok for a wife/girlfriend refusing to have sex with her husband/boyfriend when she knows he has a disease that can be transmitted through sexual contact?</p>	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW ..... 8</p>	
847	<p>When a wife/girlfriend knows her husband/boyfriend has a disease that can be transmitted through sexual contact, is ok for her to ask that they use a condom?</p>	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW ..... 8</p>	

**SECTION 9. HUSBAND'S BACKGROUND AND WOMAN'S WORK**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																														
901	CHECK 501 AND 502:  <div style="display: flex; justify-content: space-around;"> <div> <p>CURRENTLY MARRIED/ LIVING WITH A MAN</p> <p><input type="checkbox"/></p> </div> <div> <p>FORMERLY MARRIED/ LIVED WITH A MAN</p> <p><input type="checkbox"/></p> </div> <div> <p>NEVER MARRIED AND NEVER LIVED WITH A MAN</p> <p><input type="checkbox"/></p> </div> </div>	<p>→903</p> <p>→906</p>																															
902	How old was your husband/partner on his last birthday?	AGE IN COMPLETED YEARS <input type="text"/> <input type="text"/>																															
903	Did your (last) husband/partner ever attend school?	<p>YES .....1</p> <p>NO .....2</p>	→905																														
904	What was the highest (standard/grade/year) he completed at that level?	<p>LESS THAN 1 YEAR COMPLETED .....00</p> <p>SUB A/GRADE 1 .....01</p> <p>SUB B/GRADE 2 .....02</p> <p>STANDARD 1/GRADE 3 .....03</p> <p>STANDARD 2/GRADE 4 .....04</p> <p>STANDARD 3/GRADE 5 .....05</p> <p>STANDARD 4/GRADE 6 .....06</p> <p>STANDARD 5/GRADE 7 .....07</p> <p>STANDARD 6/GRADE 8 .....08</p> <p>STANDARD 7/GRADE 9 .....09</p> <p>STANDARD 8/GRADE 10 .....10</p> <p>STANDARD 9/GRADE 11 .....11</p> <p>STANDARD 10/GRADE 12 .....12</p> <p>FURTHER STUDIES INCOMPLETE .....13</p> <p>DIPLOMA/OTHER POSTSCHL COMPL 14</p> <p>FURTHER DEGREE COMPLETE .....15</p> <p>DO NOT KNOW .....98</p>																															
905	CHECK 901:  <div style="display: flex; justify-content: space-around;"> <div> <p>CURRENTLY MARRIED/ LIVING WITH A MAN</p> <p><input type="checkbox"/></p> </div> <div> <p>FORMERLY MARRIED/ LIVED WITH A MAN</p> <p><input type="checkbox"/></p> </div> </div> <p>What is your husband's/partner's occupation? That is, what kind of work does he mainly do?</p> <p>What was your (last) husband's/partner's occupation? That is, what kind of work did he mainly do?</p>	<div style="display: flex; justify-content: space-between;"> <div> <p>_____</p> <p>_____</p> <p>_____</p> </div> <div> <p><input type="text"/> <input type="text"/></p> </div> </div>																															
906	Who in your family usually has the final say on the following decisions:  <p>Your own health care?</p> <p>Making large household purchases?</p> <p>Making household purchases for daily needs?</p> <p>Visits to family or relatives?</p> <p>What food should be cooked each day?</p>	<p>RESPONDENT = 1 HUSBAND/PARTNER = 2 RESPONDENT &amp; HUSBAND/PARTNER JOINTLY = 3 SOMEONE ELSE = 4 RESPONDENT &amp; SOMEONE ELSE JOINTLY = 5 DECISION NOT MADE/NOT APPLICABLE = 6</p> <table border="0"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> </table>	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	
1	2	3	4	5	6																												
1	2	3	4	5	6																												
1	2	3	4	5	6																												
1	2	3	4	5	6																												
1	2	3	4	5	6																												
907	PRESENCE OF OTHERS AT THIS POINT (PRESENT AND LISTENING, PRESENT BUT NOT LISTENING OR NOT PRESENT)	<table border="0"> <tr> <th></th> <th>PRES/ LISTEN.</th> <th>PRES/ NOT LISTEN.</th> <th>NOT PRES</th> </tr> <tr> <td>CHILDREN &lt;10 .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>HUSBAND .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>OTHER MALES .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>OTHER FEMALES .....</td> <td>1</td> <td>2</td> <td>8</td> </tr> </table>		PRES/ LISTEN.	PRES/ NOT LISTEN.	NOT PRES	CHILDREN <10 .....	1	2	8	HUSBAND .....	1	2	8	OTHER MALES .....	1	2	8	OTHER FEMALES .....	1	2	8											
	PRES/ LISTEN.	PRES/ NOT LISTEN.	NOT PRES																														
CHILDREN <10 .....	1	2	8																														
HUSBAND .....	1	2	8																														
OTHER MALES .....	1	2	8																														
OTHER FEMALES .....	1	2	8																														



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES			SKIP			
908	Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is it ok for a husband to hit, beat, kick or push his wife in the following situations:	YES	NO	DK				
	If she goes out without telling him?	GOES OUT ..... 1	2	8				
	If she neglects the children?	NEGL. CHILDREN ... 1	2	8				
	If she argues with him?	ARGUES ..... 1	2	8				
	If she refuses to have sex with him?	REFUSES SEX ..... 1	2	8				
	If she burns the food?	BURNS FOOD ..... 1	2	8				
	909	RECORD THE TIME	HOURS .....  MINUTES .....	<table><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>				

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

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COMMENTS ON SPECIFIC QUESTIONS:

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ANY OTHER COMMENTS:

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SUPERVISOR'S/ EDITOR'S OBSERVATIONS

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NAME OF THE SUPERVISOR/EDITOR: \_\_\_\_\_ DATE:

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# SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY 2003 MAN'S QUESTIONNAIRE

IDENTIFICATION				
PROVINCE* _____	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
DISTRICT _____	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
EA NUMBER .....	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
EA TYPE (URBAN FORMAL=1; URBAN INFORMAL=2; RURAL FORMAL=3; TRIBAL AREA=4) .....	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
SADHS CLUSTER NUMBER.....	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
STAND NUMBER.....	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>			
HOUSEHOLD NUMBER .....	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
NAME OF HOUSEHOLD HEAD _____				
NAME AND LINE NUMBER OF MAN _____	<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>			
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY <div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>
INTERVIEWER'S NAME				MONTH <div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>
RESULT**				YEAR <div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">2</div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">0</div> </div>
NEXT VISIT:      DATE				INT.CODE <div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>
TIME				RESULT <div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>
TOTAL NO. OF VISITS				<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<b>** RESULT CODES:</b> <div style="display: flex; justify-content: space-between;"> <div>           1 COMPLETED            2 NOT AT HOME            3 POSTPONED         </div> <div>           4 REFUSED            5 PARTLY COMPLETED            6 INCAPACITATED         </div> <div>           7 OTHER _____            (SPECIFY)         </div> </div>				
LANGUAGE				
LANGUAGE OF QUESTIONNAIRE: <b>ENGLISH</b>			<div style="display: flex; justify-content: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; height: 20px; text-align: center;">1</div> </div>	
LANGUAGE OF INTERVIEW *** _____			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	
HOME LANGUAGE OF RESPONDENT*** _____			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	
WAS A TRANSLATOR USED? (YES=1, NO=2).....			<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	
<b>*** LANGUAGE CODES:</b> 01 ENGLISH    04 isiZULU    07 SePEDI    10 XITSONGA 02 AFRIKAANS    05 SeSOTHO    08 SiSWATI    11 isiNDEBELE 03 isiXHOSA    06 SeTSWANA    09 TshiVENDA    12 OTHER _____ (SPECIFY)				
SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY	
NAME _____	NAME _____			
DATE _____	DATE _____			

\*PROVINCE: WESTERN CAPE=1; EASTERN CAPE=2; NORTHERN CAPE=3; FREE STATE=4; KWAZULU-NATAL=5; NORTHWEST=6; GAUTENG=7; MPUMALANGA=8; LIMPOPO=9

**SECTION 1: RESPONDENT'S BACKGROUND**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR..... <input type="text"/> <input type="text"/> MINUTES ..... <input type="text"/> <input type="text"/>	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, in a town, on a farm or in rural areas, or an informal settlement?	CITY.....1 TOWN.....2 RURAL/FARM .....3 INFORMAL SETTLEMENT .....4	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?  IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS ..... <input type="text"/> <input type="text"/> ALWAYS.....95 VISITOR .....96	→105
104	Just before you moved here, did you live in a city, in a town, or in the rural area/farm?	CITY.....1 TOWN.....2 RURAL/FARM .....3	
105	In what month and year were you born?	MONTH..... <input type="text"/> <input type="text"/> DOES NOT KNOW MONTH.....98 YEAR..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DOES NOT KNOW YEAR.....9998	
106	How old were you at your last birthday?  COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS <input type="text"/> <input type="text"/>	
107	Have you ever attended school?	YES.....1 NO .....2	→113
108	What is the highest standard or grade you completed?	LESS THAN 1 YEAR COMPLETED.....00 SUB A/GRADE 1 .....01 SUB B/GRADE 2 .....02 STANDARD 1/GRADE 3 .....03 STANDARD 2/GRADE 4 .....04 STANDARD 3/GRADE 5 .....05 STANDARD 4/GRADE 6 .....06 STANDARD 5/GRADE 7 .....07 STANDARD 6/GRADE 8 .....08 STANDARD 7/GRADE 9 .....09 STANDARD 8/GRADE 10 .....10 STANDARD 9/GRADE 11 .....11 STANDARD 10/GRADE 12 .....12 FURTHER STUDIES INCOMPLETE.....13 DIPLOMA/OTHER POSTSCHL COMPL. 14 FURTHER DEGREE COMPLETE.....15	
109	CHECK 106: <div style="display: flex; justify-content: space-around; align-items: center;"> <div>AGE 24 OR BELOW <input type="checkbox"/></div> <div>AGE 25 OR ABOVE <input type="checkbox"/></div> </div>		→112
110	Are you currently attending school?	YES.....1 NO .....2	→112

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
111	What was the main reason you stopped attending school?	GOT MARRIED .....01 CARE FOR YOUNGER CHILDREN.....02 FAMILY NEEDED HELP ON FARM OR IN BUSINESS.....03 COULD NOT PAY SCHOOL FEES .....04 NEEDED TO EARN MONEY.....05 GRADUATED .....06 DID NOT PASS ENTRANCE EXAMS.....07 DID NOT LIKE SCHOOL .....08 SCHOOL NOT ACCESSIBLE/TOO FAR .....09  OTHER.....96 (SPECIFY) DO NOT KNOW.....98	
112	CHECK 108: COMPLETED STD 4/ GRADE 6 OR LOWER <input type="checkbox"/> COMPLETED STD 5/ GRADE 7 OR HIGHER <input type="checkbox"/>		→114
113	Now I would like you to read this sentence to me.  SHOW SENTENCES TO RESPONDENT.  IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE:  Can you read any part of the sentence to me?	CANNOT READ AT ALL.....1 CAN ONLY READ PART OF SENTENCE.....2 CAN READ WHOLE SENTENCE .....3 NO CARD WITH REQUIRED LANGUAGE.....4 (SPECIFY)	
114	Are you currently working?	YES.....1 NO .....2	→116
115	What is your occupation, that is, what kind of work do you <b>mainly</b> do?	<div style="text-align: right;"> <input type="text"/> <input type="text"/> </div>    	
116	Now I would like to ask about any children you have had. I am interested in the children that are biologically yours as well as the children for whom you take social and financial responsibility even if they are not biologically yours, regardless of whether they are living with you, living somewhere else, or have died.  Have you ever biologically or socially fathered any children?	YES.....1 NO .....2 DON'T KNOW.....8	→118
117	How many children have you fathered according to the definition I provided in the previous question?  How many of these are your biological children?  IF NONE, WRITE '00'.  IF RESPONDENT DOESN'T KNOW, ASK HIM TO ESTIMATE.	TOTAL ..... <input type="text"/> <input type="text"/>  BIOLOGICAL CHILDREN..... <input type="text"/> <input type="text"/>  <div style="text-align: right;"> <input type="text"/> <input type="text"/> </div>	
118	Which population group do you consider yourself?	BLACK/AFRICAN .....1 COLOURED .....2 WHITE .....3 ASIAN/INDIAN.....4  OTHER .....6 (SPECIFY)	

## SENTENCES FOR LITERACY TEST (Q. 113)

### **ENGLISH**

1. The child is reading a book.
2. The rains came late this year.
3. Parents must care for their children.
4. Farming is hard work.

### **AFRIKAANS**

1. Die kind lees 'n boek.
2. Die reën het hierdie jaar laat gekom.
3. Ouers moet vir hulle kinders sorg.
4. Boerdery is harde werk

## SECTION 2. CONTRACEPTION

Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.

CIRCLE CODE 1 IN 201 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 201, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNISED, AND CODE 2 IF NOT RECOGNISED. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 201, ASK 202.

201	Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)?		202 Have you ever used (METHOD)?
01	FEMALE STERILISATION/TIE THE TUBES Women can have an operation to avoid having any more children.	YES ..... 1 NO ..... 2	
02	MALE STERILISATION Men can have an operation to avoid having any more children.	YES ..... 1 NO ..... 2 <input type="checkbox"/>	Have you ever had an operation to avoid having any more children? YES ..... 1 NO ..... 2
03	PILL Women can take a pill every day to stop them from becoming pregnant.	YES ..... 1 NO ..... 2	
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES ..... 1 NO ..... 2	
05	INJECTIONS Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months.	YES ..... 1 NO ..... 2	
06	IMPLANTS, NORPLANT Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES ..... 1 NO ..... 2	
07	MALE CONDOM Men can put a rubber sheath on their penis before sexual intercourse.	YES ..... 1 NO ..... 2 <input type="checkbox"/>	YES ..... 1 NO ..... 2
08	FEMALE CONDOM Women can place a sheath in their vagina before sexual intercourse.	YES ..... 1 NO ..... 2	
09	DIAPHRAGM, FOAM OR JELLY Women can place a sponge, a suppository, a diaphragm, jelly, or cream in their vagina before intercourse.	YES ..... 1 NO ..... 2	
10	LACTATIONAL AMENORRHEA METHOD (LAM) Up to 6 months after childbirth, a woman can use a method that requires that she breastfeeds frequently, day and night, and that her menstrual period has not returned.	YES ..... 1 NO ..... 2 <input type="checkbox"/>	YES ..... 1 NO ..... 2
11	RHYTHM, CALENDAR METHOD Every month that a woman is sexually active she can avoid pregnancy by not having sexual intercourse on the days of the month she is most likely to get pregnant.	YES ..... 1 NO ..... 2 <input type="checkbox"/>	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8
12	WITHDRAWAL Men can be careful and pull out before climax.	YES ..... 1 NO ..... 2 <input type="checkbox"/>	YES ..... 1 NO ..... 2
13	EMERGENCY CONTRACEPTION Women can take pills up to three days (72 HOURS) after unprotected sexual intercourse to avoid becoming pregnant.	YES ..... 1 NO ..... 2 <input type="checkbox"/>	YES ..... 1 NO ..... 2
14	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES ..... 1  (SPECIFY)  (SPECIFY) NO ..... 2 <input type="checkbox"/>	YES ..... 1 NO ..... 2

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
203	Just to double check, have you or any of your partners ever used a method to avoid pregnancy?	YES.....1 NO .....2 DOES NOT KNOW.....8	<input type="checkbox"/> → 206
204	I would like to ask you about the first time that you or your partner did something or used a method to avoid pregnancy.  How many living children did you have at that time, if any?	NUMBER OF CHILDREN..... <input type="text"/> <input type="text"/>  DON'T KNOW.....98	
205	How old were you when you first used something to avoid pregnancy?	AGE AT FIRST USE..... <input type="text"/> <input type="text"/>	
206	I will now read you some statements about female contraception. Please tell me if you agree or disagree with each one.  a) Female contraception is women's business and a man should not have to worry about it.  b) Women who use female contraception may become promiscuous. c) A woman is the one who gets pregnant so she should be the one to get sterilized. d) A woman who uses female contraception risks being sterile	<div> <u>AGREE</u>    <u>DISAGREE</u>    <u>DK</u> </div> a)            1            2            8 b)            1            2            8 c)            1            2            8 d)            1            2            8	



**SECTION 3. MARRIAGE, SEXUAL ACTIVITY AND CONTRACEPTIVE USE**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
301	Are you currently married or living with a partner?  NOTE TO INTERVIEWER: 'MARRIED' MEANS HAVING GOTTEN MARRIED THROUGH TRADITIONAL, CIVIL AND/OR RELIGIOUS CEREMONY.	YES, CURRENTLY MARRIED TO A WOMAN.....1 YES, LIVING WITH A WOMAN .....2 YES, MARRIED/LIVING WITH A MAN .....3 NO, NOT IN UNION .....4	→304 →310 →305
302	Do you have one wife or more than one wife? IF ONLY ONE WIFE, ENTER '01'. IF MORE THAN ONE, ASK: How many wives do you currently have?	NUMBER OF WIVES ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table>	
303	Are there any other women with whom you live as if married?	YES ..... 1 NO ..... 2	→308
304	Are you living with one (other) woman or more than one (other) woman as if married?  IF ONE LIVE-IN PARTNER, ENTER '01'. IF MORE THAN ONE, ASK: How many women are you living with as if married?	NUMBER OF ..... <table border="1" style="display: inline-table; width: 40px; height: 20px; vertical-align: middle;"></table> LIVE-IN PARTNERS	→308
305	Do you currently have regular, occasional, or no sexual partners?	REGULAR PARTNER(S) ONLY .....1 OCCASIONAL PARTNER(S) ONLY .....2 REGULAR AND OCCASIONAL PARTNERS.....3 NO SEXUAL PARTNER .....4	
306	Have you ever been married or lived with a woman?	YES, FORMERLY MARRIED ONLY .....1 YES, LIVED WITH A WOMAN ONLY .....2 YES, BOTH .....3 NO .....4	→310 →310
307	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED .....1 DIVORCED/SEPARATED .....2 DIVORCED/COHABITING .....3	→310

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
308	<p>WRITE THE LINE NUMBERS FROM THE HOUSEHOLD QUESTIONNAIRE FOR EACH WIFE/PARTNER REPORTED IN QUESTIONS 302 AND 304 ONLY. IF A WIFE/PARTNER IS NOT LISTED IN THE HOUSEHOLD SCHEDULE, ENTER '00' IN THE LINE NUMBER BOXES. THE NUMBER OF LINES FILLED IN MUST BE EQUAL TO THE NUMBER OF WIVES AND PARTNERS. (IF RESPONDENT HAS MORE THAN TEN WIVES/PARTNERS USE ADDITIONAL QUESTIONNAIRE(S)).</p> <p>CHECK: 302 AND 304</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>SUM OF 302 AND 304 = 01</p> <p>↓</p> <p>Please tell me the name of your wife/partner.</p> </div> <div style="text-align: center;"> <p>SUM OF 302 AND 304 &gt; 01</p> <p>↓</p> <p>Please tell me the name of each wife/partner that you live with, starting with the one you lived with first.</p> </div> </div> <p>WIFE/PARTNER NUMBER</p> <div style="display: flex;"> <div style="flex: 1;"> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>7 _____</p> <p>8 _____</p> <p>9 _____</p> <p>10 _____</p> </div> <div style="flex: 1; text-align: center;"> <p>LINE NUMBER IN HOUSEHOLD QUESTIONNAIRE</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> <div><div style="border: 1px solid black; width: 20px; height: 20px;"></div><div style="border: 1px solid black; width: 20px; height: 20px;"></div></div> </div> </div> </div>		
310	<p>Now I need to ask you some questions about sexual activity in order to gain a better understanding of some health issues.</p> <p>How old were you when you first had intercourse?</p>	<p>NEVER.....00</p> <p>AGE IN YEARS ..... <div style="border: 1px solid black; display: inline-block; width: 20px; height: 20px;"></div></p> <p>FIRST TIME WHEN STARTED LIVING WITH (FIRST) HUSBAND/PARTNER ....95</p>	→334
311	<p>CHECK 106:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>15-24 YEARS OLD</p> <p>↓</p> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> <div style="text-align: center;"> <p>25-49 YEARS OLD</p> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> </div>		→314
312	<p>The first time you had sexual intercourse, did you or your partner use any contraception/protection?</p>	<p>YES ..... 1</p> <p>NO..... 2</p> <p>DON'T KNOW/UNSURE..... 8</p>	→314

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP								
313	<p>What kind of contraception/ protection was used that first time you had sex?</p> <p>IF MORE THAN ONE METHOD USED, RECORD THE HIGHEST METHOD ON THE LIST.</p>	<p>FEMALE STERILIZATION .....01</p> <p>MALE STERILIZATION .....02</p> <p>PILL .....03</p> <p>IUD .....04</p> <p>INJECTABLES .....05</p> <p>IMPLANTS .....06</p> <p>MALE CONDOM .....07</p> <p>FEMALE CONDOM .....08</p> <p>DIAPHRAGM/FOAM/JELLY .....09</p> <p>LACTATIONAL AMEN. METHOD .....11</p> <p>RHYTHM, CALENDAR METHOD .....12</p> <p>WITHDRAWAL .....13</p> <p>HERBS/REMEDIES .....10</p> <p>OTHER .....96</p> <p>(SPECIFY)</p> <p>DON'T KNOW .....98</p>									
314	<p>When did you last have sexual intercourse?</p> <p>RECORD 'YEARS AGO' ONLY IF LAST INTERCOURSE WAS ONE OR MORE YEARS AGO.</p> <p>IF 12 MONTHS OR MORE, ANSWER MUST BE RECORDED IN YEARS.</p>	<p>DAYS AGO ..... 1</p> <p>WEEKS AGO ..... 2</p> <p>MONTHS AGO ..... 3</p> <p>YEARS AGO ..... 4</p> <table><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>									<p>→ 334</p>
315	<p>The last time you had sexual intercourse, did you or your partner use any contraception/ protection?</p>	<p>YES ..... 1</p> <p>NO ..... 2</p> <p>DON'T KNOW/UNSURE ..... 8</p>	<p>→ 317</p> <p>→ 320</p>								
316	<p>What method of contraception/ protection was used the last time you had sex?</p> <p>IF MORE THAN ONE METHOD USED, RECORD THE HIGHEST METHOD ON THE LIST.</p>	<p>FEMALE STERILIZATION .....01</p> <p>MALE STERILIZATION .....02</p> <p>PILL .....03</p> <p>IUD .....04</p> <p>INJECTABLES .....05</p> <p>IMPLANTS .....06</p> <p>MALE CONDOM .....07</p> <p>FEMALE CONDOM .....08</p> <p>DIAPHRAGM/FOAM/JELLY .....09</p> <p>LACTATIONAL AMEN. METHOD .....11</p> <p>RHYTHM, CALENDAR METHOD .....12</p> <p>WITHDRAWAL .....13</p> <p>HERBS/REMEDIES .....10</p> <p>OTHER .....96</p> <p>(SPECIFY)</p> <p>DON'T KNOW .....98</p>	<p>→ 318</p>								

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
317	<p>What is the reason a method was not used?</p> <p>RECORD ALL MENTIONED.</p> <p>UNPROMPTED</p>	<p>CASUAL SEX PARTNER SO DOES NOT CARE ..... A CONTRACEPTION WOMEN'S BUSINESS..... B</p> <p>FERTILITY-RELATED REASONS WIFE/PARTNER MENOPAUSAL/HAD HYSTERECTOMY ..... C COUPLE SUBFECUND/INFECUND ... D WIFE/PARTNER WAS PREGNANT .... E WIFE/PARTNER WAS POSTPARTUM AMENORRHEIC ..... F WIFE/PARTNER WAS BREASTFEEDING..... G WANTED (MORE) CHILDREN ..... H</p> <p>OPPOSITION TO USE RESPONDENT OPPOSED ..... I WIFE/PARTNER OPPOSED ..... J OTHERS OPPOSED ..... K RELIGIOUS PROHIBITION ..... L</p> <p>LACK OF KNOWLEDGE KNOWS NO METHOD..... M KNOWS NO SOURCE..... N</p> <p>METHOD-RELATED REASONS HEALTH CONCERNS ..... O FEAR OF SIDE EFFECTS ..... P LACK OF ACCESS/TOO FAR ..... Q COST TOO MUCH..... R INCONVENIENT TO USE..... S INTERFERES WITH BODY'S NORMAL PROCESSES ..... T</p> <p>OTHER ..... X (SPECIFY)</p> <p>DON'T KNOW ..... Z</p>	<p>→ 320</p>
318	<p>CHECK 316:</p> <p>MALE CONDOM USED <input type="checkbox"/> OTHER METHOD USED <input type="checkbox"/></p>		<p>→ 320</p>
319	<p>What was the main reason you used a condom on that occasion?</p>	<p>WANTED TO PREVENT DISEASE ..... 1 WANTED TO PREVENT PREGNANCY ... 2 WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY ..... 3 DID NOT TRUST PARTNER/THOUGHT SHE HAD OTHER PARTNERS ..... 4 PARTNER REQUESTED/INSISTED ..... 5</p> <p>OTHER ..... 6 (SPECIFY)</p>	
320	<p>What is your relationship to the person with whom you last had sexual intercourse?</p> <p>IF WOMAN IS "GIRLFRIEND" OR "FIANCÉE", ASK:</p> <p>Was your girlfriend/fiancé living with you when you last had sex with her?</p> <p>IF YES, CIRCLE '01'. IF NO, CIRCLE '02'.</p>	<p>WIFE/COHABITING PARTNER ..... 01 WOMAN IS GIRLFRIEND/FIANCÉE ..... 02 OTHER FRIEND ..... 03 CASUAL ACQUAINTANCE ..... 04 RELATIVE ..... 05 FEMALE COMMERCIAL SEX WORKER ..... 06 MALE COMMERCIAL SEX WORKER ... 07</p> <p>OTHER ..... 96 (SPECIFY)</p>	
322	<p>In the last 12 months, have you had sexual intercourse with any other person?</p>	<p>YES ..... 1 NO ..... 2</p>	<p>→ 331</p>
323	<p>The last time you had sexual intercourse with this other person (besides the person in Q. 320), did you or your partner use any contraception/ protection?</p>	<p>YES ..... 1 NO ..... 2 DON'T KNOW/UNSURE ..... 8</p>	<p>→ 325 → 328</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
324	<p>What method of contraception/ protection was used the last time you had sex?</p> <p>IF MORE THAN ONE METHOD USED, RECORD THE HIGHEST METHOD ON THE LIST.</p>	<p>FEMALE STERILIZATION .....01</p> <p>MALE STERILIZATION .....02</p> <p>PILL.....03</p> <p>IUD.....04</p> <p>INJECTABLES.....05</p> <p>IMPLANTS .....06</p> <p>MALE CONDOM.....07</p> <p>FEMALE CONDOM .....08</p> <p>DIAPHRAGM/FOAM/JELLY .....09</p> <p>LACTATIONAL AMEN. METHOD.....11</p> <p>RHYTHM, CALENDAR METHOD.....12</p> <p>WITHDRAWAL .....13</p> <p>HERBS/REMEDIES.....10</p> <p>OTHER _____96</p> <p>(SPECIFY)</p> <p>DON'T KNOW .....98</p>	<p>→ 326</p>
325	<p>What is the reason a method was not used?</p> <p>RECORD ALL MENTIONED.</p>	<p>CASUAL SEX PARTNER SO DOES NOT CARE .....A</p> <p>CONTRACEPTION WOMEN'S BUSINESS.....B</p> <p>FERTILITY-RELATED REASONS</p> <p>WIFE/PARTNER MENOPAUSAL/HAD HYSTERECTOMY .....C</p> <p>COUPLE SUBFECUND/INFECUND...D</p> <p>WIFE/PARTNER WAS PREGNANT...E</p> <p>WIFE/PARTNER WAS POSTPARTUM AMENORRHEIC.....F</p> <p>WIFE/PARTNER WAS BREASTFEEDING.....G</p> <p>WANTED (MORE) CHILDREN .....H</p> <p>OPPOSITION TO USE</p> <p>RESPONDENT OPPOSED .....I</p> <p>WIFE/PARTNER OPPOSED .....J</p> <p>OTHERS OPPOSED .....K</p> <p>RELIGIOUS PROHIBITION .....L</p> <p>LACK OF KNOWLEDGE</p> <p>KNOWS NO METHOD.....M</p> <p>KNOWS NO SOURCE.....N</p> <p>METHOD-RELATED REASONS</p> <p>HEALTH CONCERNS .....O</p> <p>FEAR OF SIDE EFFECTS.....P</p> <p>LACK OF ACCESS/TOO FAR.....Q</p> <p>COST TOO MUCH.....R</p> <p>INCONVENIENT TO USE.....S</p> <p>INTERFERES WITH BODY'S NORMAL PROCESSES .....T</p> <p>OTHER _____X</p> <p>(SPECIFY)</p> <p>DON'T KNOW .....Z</p>	<p>→ 328</p>
326	<p>CHECK 324:</p> <p>MALE CONDOM USED <input type="checkbox"/> OTHER METHOD USED <input type="checkbox"/> _____</p>		<p>→ 328</p>
327	<p>What was the main reason you used a condom on that occasion?</p>	<p>WANTED TO PREVENT DISEASE.....1</p> <p>WANTED TO PREVENT PREGNANCY...2</p> <p>WANTED TO PREVENT BOTH STD/HIV AND PREGNANCY.....3</p> <p>DID NOT TRUST PARTNER/THOUGHT SHE HAD OTHER PARTNERS .....4</p> <p>PARTNER REQUESTED/INSISTED.....5</p> <p>OTHER _____6</p> <p>(SPECIFY)</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																								
328	<p>What is your relationship to the person with whom you last had sexual intercourse?</p> <p>IF WOMAN IS "GIRLFRIEND" OR "FIANCÉE", ASK:</p> <p>Was your girlfriend/fiancé living with you when you last had sex with her?</p> <p>IF YES, CIRCLE '01'.</p> <p>IF NO, CIRCLE '02'.</p>	<p>WIFE/COHABITING PARTNER.....01</p> <p>WOMAN IS GIRLFRIEND/FIANCÉE .....02</p> <p>OTHER FRIEND .....03</p> <p>CASUAL ACQUAINTANCE .....04</p> <p>RELATIVE.....05</p> <p>FEMALE COMMERCIAL SEX WORKER .....06</p> <p>MALE COMMERCIAL SEX WORKER ...07</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p>																																									
329	Other than these two people, have you had sex with any other person in the last 12 months?	<p>YES .....1</p> <p>NO .....2</p>	→331																																								
330	<p>In total, with how many different people have you had sexual intercourse in the last 12 months?</p> <p>ANSWER SHOULD BE '03' OR MORE.</p>	<p>NUMBER OF PARTNERS..... <input type="text"/> <input type="text"/></p>																																									
331	If you needed or wanted to use a male condom, would it be easy, somewhat difficult, or very difficult/impossible for you to get one?	<p>EASY ..... 1</p> <p>SOMEWHAT DIFFICULT..... 2</p> <p>VERY DIFFICULT/IMPOSSIBLE ..... 3</p> <p>DON'T KNOW/UNSURE..... 8</p>																																									
332	<p>CHECK 202(07), 313, 316, 324: EVER USED A MALE CONDOM?</p> <p>HAS USED CONDOM <input type="checkbox"/> NEVER USED A CONDOM <input type="checkbox"/></p>		→334																																								
333	How old were you when you used a male condom for the first time?	<p>AGE AT FIRST USE ..... <input type="text"/> <input type="text"/></p> <p>DON'T REMEMBER .....98</p>																																									
334	<p>I will now read you some statements about male condom use. Please tell me if you agree or disagree with each.</p> <p>a) Male condoms diminish a man's sexual pleasure.</p> <p>b) A male condom is very inconvenient to use.</p> <p>c) It's okay to re-use a male condom if you wash it.</p> <p>d) Male Condoms protect against disease.</p> <p>e) Buying male condoms is embarrassing.</p> <p>f) A woman has no right to tell a man to use a male condom.</p> <p>g) Male condoms contain HIV.</p> <p>h) Male condoms are a good way to protect against unwanted pregnancy</p> <p>i) People who use male condoms are not trustworthy in that they may have HIV or some other sexually transmitted infection.</p>	<table border="1"> <thead> <tr> <th></th><th>AGREE</th><th>DISAGREE</th><th>DK</th></tr> </thead> <tbody> <tr><td>a)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>b)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>c)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>d)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>e)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>f)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>g)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>h)</td><td>1</td><td>2</td><td>8</td></tr> <tr><td>i)</td><td>1</td><td>2</td><td>8</td></tr> </tbody> </table>		AGREE	DISAGREE	DK	a)	1	2	8	b)	1	2	8	c)	1	2	8	d)	1	2	8	e)	1	2	8	f)	1	2	8	g)	1	2	8	h)	1	2	8	i)	1	2	8	
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# **SECTION 4. FERTILITY PREFERENCES**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	CHECK 301:  CURRENTLY MARRIED OR LIVING TOGETHER <input type="checkbox"/> NOT MARRIED/NOT IN UNION <input type="checkbox"/>		→404
402	Is your wife/partner currently pregnant? IF MORE THAN ONE WIFE/PARTNER, ASK: Are any of your wives/partners currently pregnant?	YES.....1 NO .....2 NOT SURE .....3	
403	CHECK 402:  WIFE/PARTNER(S) NOT PREGNANT/NOT SURE (CODE '2' OR '3') <input type="checkbox"/> YES, WIFE/PARTNER(S) PREGNANT (CODE '1') <input type="checkbox"/>  Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?  Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD.....1 NO MORE/NONE .....2 WIFE/WIVES CANNOT GET PREGNANT/STERILIZED .....3 UNDECIDED/DON'T KNOW .....8	
404	CHECK 117:  HAS HAD CHILDREN <input type="checkbox"/> HAS NEVER HAD ANY CHILDREN <input type="checkbox"/>  If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?  If you could choose exactly the number of children to have in your whole life, how many would that be?  <u>PROBE FOR A NUMERIC RESPONSE.</u>	NONE .....00  NUMBER .....  OTHER .....96 (SPECIFY)	
405	If you could choose the sex of your children, would you prefer to have more girl children or boy children or would sex not matter (CODE AS "EITHER")?	MORE BOYS .....1 MORE GIRLS .....2 EITHER (SEX DOES NOT MATTER).....3	
406	Do you approve, disapprove of or feel neutral about couples using a method to avoid getting pregnant?	APPROVE .....1 DISAPPROVE .....2 NEUTRAL .....3 DON'T KNOW/UNSURE .....8	
407	CHECK 301:  CURRENTLY MARRIED OR LIVING TOGETHER (CODE 1 OR 2) <input type="checkbox"/> NOT MARRIED/NOT IN UNION (CODE 3 OR 4) <input type="checkbox"/>		→501
408	Do you think your wife/partner wants the same number of children that you want, or does she want more or fewer than you want?	SAME NUMBER.....1 MORE CHILDREN .....2 FEWER CHILDREN .....3 DON'T KNOW.....8	
409	In your relationship, would you say that using family planning methods is mainly your decision, mainly your wife's/partner's decision or do you both decide together?	MAINLY RESPONDENT.....1 MAINLY WIFE/PARTNER .....2 JOINT DECISION .....3 NEITHER PARTNER DECIDES/NOT DISCUSSED/NOT USING .....4  OTHER .....6 (SPECIFY)	

**SECTION 5. HIV/AIDS AND OTHER SEXUALLY-TRANSMITTED INFECTIONS**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	Now I would like to talk about some important health issues. Have you ever heard of an illness called AIDS?	YES..... 1 NO..... 2	→515
502	Is there anything a person can do to avoid getting HIV/AIDS?	YES..... 1 NO..... 2 DON'T KNOW..... 8	↳504
503	What can a person do?  Anything else?  RECORD ALL MENTIONED.  UNPROMPTED RESPONSE	ABSTAIN FROM SEX..... A USE CONDOMS..... B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER..... C LIMIT NUMBER OF SEXUAL PARTNERS ..... D AVOID SEX WITH PROSTITUTES ..... E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS ..... F AVOID SEX WITH HOMOSEXUALS..... G AVOID SEX WITH PERSONS WHO INJECT DRUGS INTRAVENOUSLY ... H AVOID BLOOD TRANSFUSIONS ..... I AVOID INJECTIONS ..... J AVOID SHARING RAZORS/BLADES .... K AVOID KISSING ..... L AVOID MOSQUITO BITES..... M SEEK PROTECTION FROM TRADITIONAL PRACTITIONER ..... N  OTHER ..... W (SPECIFY)  OTHER ..... X (SPECIFY) DON'T KNOW..... Z	
504	Please tell me all the ways that you think HIV/AIDS can be transmitted.  Any other way?  RECORD ALL MENTIONED.  UNPROMPTED RESPONSE	UNPROTECTED SEX ..... A UNPROTECTED SEX WITH A PERSON WHO HAS HIV/AIDS ..... B MOSQUITO/ OTHER INSECT BITES .... C SHARING CUPS/SPOONS/OTHER UTENSILS WITH AN HIV POSITIVE PERSON ..... D FROM MOTHER TO CHILD DURING PREGNANCY ..... E FROM MOTHER TO CHILD DURING DELIVERY ..... F FROM MOTHER TO CHILD DURING BREASTFEEDING ..... G CONTACT WITH BLOOD OR OTHER BODILY FLUIDS ..... H  OTHER ..... X (SPECIFY) DON'T KNOW..... Z	
505A	Can people reduce their chances of getting HIV/AIDS by using a condom every time they have sex?	YES..... 1 NO..... 2 DON'T KNOW..... 8	↳505C
505B	Can a person get HIV/AIDS from mosquito bites?	YES..... 1 NO..... 2 DON'T KNOW..... 8	
505C	Do you think using a condom occasionally during sex is as effective, more effective or less effective in reducing the chances for getting HIV/AIDS than using a condom every time during sex?	AS EFFECTIVE ..... 1 LESS EFFECTIVE ..... 2 MORE EFFECTIVE ..... 3 DON'T KNOW..... 8	
505D	Can people reduce their chances of getting HIV/AIDS by not having sex at all?	YES..... 1 NO..... 2 DON'T KNOW..... 8	



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
505E	Can people get HIV by sharing food with a person who has HIV/AIDS?	YES.....1 NO.....2 DON'T KNOW.....8	
505F	Can people reduce their chances of getting HIV/AIDS by having just one sex partner who is not infected and who has no other partners?	YES.....1 NO.....2 DON'T KNOW.....8	
506	Is it possible for a healthy-looking person to have HIV/AIDS?	YES.....1 NO.....2 DON'T KNOW.....8	
507	Do you know someone personally who has the virus that causes AIDS or someone who died from AIDS?	YES.....1 NO.....2	
508	At this point in time, do you think AIDS can be cured or do you think it cannot be cured?	YES, CAN BE CURED.....1 NO, CANNOT BE CURED.....2 DON'T KNOW/NOT SURE.....8	
509	Can HIV/AIDS be transmitted from a mother to her child:  During pregnancy? During delivery? By breastfeeding?	<b>YES NO DK</b> DURING PREGNANCY.....1 2 8 DURING DELIVERY.....1 2 8 BY BREASTFEEDING.....1 2 8	
510	Are there any special drugs that a pregnant woman infected with the HIV/ AIDS can take to reduce the risk of transmission to the baby?	YES.....1 NO.....2 DOES NOT KNOW.....8	
511	Have you heard of services offered in government antenatal clinics for preventing mother-to-child HIV/AIDS transmission?	YES.....1 NO.....2 DOES NOT KNOW.....8	
512	I do not want to know the results, but have you ever been tested to see if you have HIV/AIDS?	YES.....1 NO.....2	→514
513	I do not want to know the results, but did you get the results of the test?	YES.....1 NO.....2	→515
514	Would you want to be tested for HIV/AIDS?	YES.....1 NO.....2 DK/NOT SURE/DEPENDS.....8	
515	(Apart from AIDS), have you heard about (other) infections that can be transmitted through sexual contact?	YES.....1 NO.....2	→518
516	If a man has a sexually transmitted disease (STD), what symptoms might he have?  Any others?  CIRCLE ALL MENTIONED.	ABDOMINAL PAIN.....A GENITAL DISCHARGE/DRIPPING.....B FOUL SMELLING DISCHARGE.....C BURNING PAIN ON URINATION.....D REDNESS/INFLAMMATION IN GENITAL AREA.....E SWELLING IN GENITAL AREA.....F GENITAL SORES/ULCERS.....G GENITAL WARTS.....H GENITAL ITCHING.....I BLOOD IN URINE.....J LOSS OF WEIGHT.....K IMPOTENCE/NO ERECTION.....L  OTHER.....W (SPECIFY)  OTHER.....X (SPECIFY) NO SYMPTOMS.....Y DON'T KNOW.....Z	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP															
517	<p>If a woman has a sexually transmitted disease (STD), what symptoms might she have?</p> <p>Any others?</p> <p>CIRCLE ALL MENTIONED.</p>	<p>ABDOMINAL PAIN .....A</p> <p>GENITAL DISCHARGE .....B</p> <p>FOUL SMELLING DISCHARGE..... C</p> <p>BURNING PAIN ON URINATION..... D</p> <p>REDNESS/INFLAMMATION IN</p> <p>    GENITAL AREA.....E</p> <p>SWELLING IN GENITAL AREA.....F</p> <p>GENITAL SORES/ULCERS ..... G</p> <p>GENITAL WARTS..... H</p> <p>GENITAL ITCHING.....I</p> <p>BLOOD IN URINE.....J</p> <p>LOSS OF WEIGHT .....K</p> <p>HARD TO GET PREGNANT/HAVE</p> <p>    A CHILD..... L</p> <p>OTHER _____ W</p> <p>                    (SPECIFY)</p> <p>OTHER _____ X</p> <p>                    (SPECIFY)</p> <p>NO SYMPTOMS .....Y</p> <p>DON'T KNOW.....Z</p>																
518	<p>CHECK 309:</p> <p>HAS HAD SEXUAL INTERCOURSE <input type="checkbox"/></p> <p>HAS NOT HAD SEXUAL INTERCOURSE <input type="checkbox"/></p>		→529															
519	<p>CHECK 515:</p> <p>KNOWS STD <input type="checkbox"/></p> <p>DOES NOT KNOW STD <input type="checkbox"/></p>		→521															
520	<p>Now I would like to ask you some questions about your health in the last 3 months. During the last 3 months, have you had a sexually transmitted disease (STD)?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>DON'T KNOW.....8</p>																
521	<p>Sometimes, men experience an abnormal discharge from their penis. During the last 3 months, have you had an abnormal discharge from your penis?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>DON'T KNOW.....8</p>																
522	<p>Sometimes men have a sore or ulcer on or near their penis. During the last 3 months, have you had a sore or ulcer on or near your penis?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>DON'T KNOW.....8</p>																
523	<p>CHECK 520/521/522:</p> <p>HAS HAD AN INFECTION <input type="checkbox"/></p> <p>HAS NOT HAD AN INFECTION OR DOES NOT KNOW <input type="checkbox"/></p>		→529															
524	<p>The last time you had (PROBLEM(S) FROM 520/521/522), did you seek any kind of advice or treatment?</p>	<p>YES.....1</p> <p>NO.....2</p>	→526															
525	<p>The last time you had (PROBLEM(S) FROM 520/521/522), did you do any of the following? Did you....</p> <p>Go to a clinic, hospital or private doctor?</p> <p>Consult a traditional healer?</p> <p>Seek advice or buy medicines in a shop or pharmacy?</p> <p>Ask for advice from friends or relatives?</p>	<table><thead><tr><th></th><th>YES</th><th>NO</th></tr></thead><tbody><tr><td>CLINIC/HOSPITAL .....</td><td>1</td><td>2</td></tr><tr><td>TRADITIONAL HEALER... 1</td><td></td><td>2</td></tr><tr><td>SHOP/PHARMACY .....</td><td>1</td><td>2</td></tr><tr><td>FRIENDS/RELATIVES .....</td><td>1</td><td>2</td></tr></tbody></table>		YES	NO	CLINIC/HOSPITAL .....	1	2	TRADITIONAL HEALER... 1		2	SHOP/PHARMACY .....	1	2	FRIENDS/RELATIVES .....	1	2	
	YES	NO																
CLINIC/HOSPITAL .....	1	2																
TRADITIONAL HEALER... 1		2																
SHOP/PHARMACY .....	1	2																
FRIENDS/RELATIVES .....	1	2																
526	<p>When you had (PROBLEM(S) FROM 520/521/522), did you tell the person(s) with whom you were having sex?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>SOME/NOT AT ALL.....3</p> <p>DID NOT HAVE A PARTNER.....4</p>	→529															
527	<p>When you had (PROBLEM(S) FROM 520/521/522), did you do anything to avoid infecting your sexual partner(s)?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>PARTNER(S) ALREADY INFECTED .....3</p>	→529															

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKIP
528	What did you do to avoid infecting your partner(s)? Did you....	<b><u>YES</u></b>	<b><u>NO</u></b>	
	Use medicine?	USED MEDICINE .....	1 2	
	Stop having sex?	STOPPED SEX .....	1 2	
	Use a condom when having sex?	USED CONDOMS .....	1 2	
	Go together with your partner to clinic to seek advice?	WENT TO CLINIC.....	1 2	
	Ask your partner to go to the clinic to seek advice/treatment?	ASK PARTNER TO GO ....	1 2	
529	Some men in South Africa have been circumcised. Have you been circumcised?	YES.....	1	
		NO.....	2	

SECTION 6. ATTITUDES TOWARDS GENDER ROLES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES				SKIP
601	In a couple, who do you think should have the greater say in each of the following decisions: the husband, the wife, or both equally:	<b>HUSB- AND</b>	<b>WIFE</b>	<b>BOTH EQUALLY</b>	<b>DK/ DEPENDS</b>	
	a) Making large household purchases?	a) 1	2	3	8	
	b) Making small daily household purchases?	b) 1	2	3	8	
	c) Deciding when to visit family, friends or relatives?	c) 1	2	3	8	
	d) Deciding what to do with the money she earns for her work?	d) 1	2	3	8	
	e) Deciding how many children to have and when to have them?	e) 1	2	3	8	
	f) Deciding on family planning?	f) 1	2	3	8	
602	Sometimes a man is annoyed or angered by things that his wife/partner does. In your opinion, is a husband justified (is it O.K.) to hit, kick, beat or push his partner in the following situations...	<b>YES</b>	<b>NO</b>		<b>DK/ DEPENDS</b>	
	a) If she goes out without telling him?	a) 1	2		8	
	b) If she neglects the children?	b) 1	2		8	
	c) If she argues with him?	c) 1	2		8	
	d) If she refuses to have sex with him?	d) 1	2		8	
	e) If she burns the food?	e) 1	2		8	
	f) If she is sexually unfaithful/has other sex partners?	f) 1	2		8	
603	When a woman knows her partner has a sexually transmitted disease, is she justified in asking that they use a condom?	YES..... 1 NO..... 2 DOES NOT KNOW..... 8				
604	Men and women do not always agree on everything. Please tell me if you think a woman is justified in refusing to have sex with her partner if...	<b>YES</b>	<b>NO</b>		<b>DK/ DEPENDS</b>	
	a) She is tired and not in the mood?	a) 1	2		8	
	b) She has recently given birth?	b) 1	2		8	
	c) She knows her partner has sex with other women?	c) 1	2		8	
	d) She knows her partner has a sexually transmitted disease?	d) 1	2		8	
605	Do you think that if a woman refuses to have sex with her partner when he wants her to, he has the right to...	<b>YES</b>	<b>NO</b>		<b>DK/ DEPENDS</b>	
	a) Get angry and reprimand her?	a) 1	2		8	
	b) Refuse to give her money or other means of financial support?	b) 1	2		8	
	c) Use force and have sex with her even if she does not want to?	c) 1	2		8	
	d) Have sex with another woman?	d) 1	2		8	
606	RECORD THE TIME.					
	HOURS .....				<input type="text"/>	<input type="text"/>
	MINUTES .....				<input type="text"/>	<input type="text"/>