

**Notes:**

1. Variable names are listed next to their respective questions
2. Percentages listed exclude missing data (N = 3).
3. There are two question number "1"s and question number "6" is missing – however, the variable names are correctly numbered.

**CHAOS Phase 1 Coding Manual****Participant's Details****Household/ Water & Sanitation #:**

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**Mother/ Caregiver Name:**

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**Mother/ Caregiver #:**

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**Surname:**

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**CHAOS SCALE**

Questions		Y	% (n)	N	% (n)
1. There is little commotion in our home* PCHAOS1		<input type="radio"/>	64.9 (930)	<input type="radio"/>	35.1 (504)
1. We can usually find things when we need them* PCHAOS2		<input type="radio"/>	85.2 (1222)	<input type="radio"/>	14.8 (212)
2. We almost always seem to be rushed PCHAOS3		<input type="radio"/>	35.5 (509)	<input type="radio"/>	64.5 (925)
3. We are usually able to stay on top of things* PCHAOS4		<input type="radio"/>	77.0 (1104)	<input type="radio"/>	23.0 (330)
4. No matter how hard we try, we always seem to be running late PCHAOS5		<input type="radio"/>	43.4 (622)	<input type="radio"/>	56.6 (812)
5. It's a real zoo in our home PCHAOS6		<input type="radio"/>	27.1 (388)	<input type="radio"/>	72.9 (1046)
7. No matter what our family plans, it usually doesn't seem to work out PCHAOS7		<input type="radio"/>	49.6 (711)	<input type="radio"/>	50.4 (723)
8. You can't hear yourself think in our home PCHAOS8		<input type="radio"/>	33.8 (485)	<input type="radio"/>	66.2 (949)
9. I often get drawn into other people's arguments at home PCHAOS9		<input type="radio"/>	34.8 (499)	<input type="radio"/>	65.2 (935)
10. Our home is a good place to relax* PCHAOS10		<input type="radio"/>	86.1 (1234)	<input type="radio"/>	13.9 (200)
11. The telephone takes up a lot of our time at home PCHAOS11		<input type="radio"/>	39.1 (560)	<input type="radio"/>	60.9 (873)
12. The atmosphere in our home is calm* PCHAOS12		<input type="radio"/>	84.0 (1204)	<input type="radio"/>	16.0 (230)

This is the English version of the CHAOS SCALE used in the Asenze study leaves out 3 items: 1. At home we can talk with each other without being interrupted 2. There is often a fuss going on in our home? 3. First thing in the day, we have a regular routine at home. Also, the questions with a star (\*) need to be reverse coded to obtain the total CHAOS scale.

## Confusion, Hubbub, and Order Scale (CHAOS) Notes – Phase 1

- N = 1434; 3 missing questionnaires total (these individuals did not respond to any of the questions); except for question #11 with 4 missing responses (one person did not respond to question #11)
- The frequencies and percentages listed are from a subset of the main data set – this subset deleted duplicated adults
- All questions were “Yes” or “No” responses; 0 = “No”; 1 = “Yes”; . = “Missing”
- Percentage listed exclude missing data
- Total Number of Questions: 12; Total Number of Variables: 13
- The extra variable in the data set was “TOTALCHA” which was calculated by adding the values from each of the 12 questions (1 = Yes, 0 = No)
- **Note:** This composite variable is an inappropriate measure for calculating total chaos level because it does not account for the fact that some questions were meant to be positively coded while others were meant to be negatively coded. Thus the frequencies and percentages for this variable have not been listed.
- **Note:** Adult ID Tag 8577’s response to PCHAOS7 is “11”, an invalid value → Cross-checking this with the variable TOTALCHA shows that a recording error was made and that the actual response was intended to be recorded as “1” (= Yes). The percentages and counts in the above table reflect the corrected version where the “11” response is included in the “1” or “Yes” category.

### How to Code Asenze CHOAS Scale

- To arrive at a composite chaos measure, reverse code the following variables: PCHAOS1, PCHAOS2, PCHAOS4, PCHAOS10, and PCHAOS12 (in the table on the previous page, these variables have a star (\*) listed next to them), and then add up the scores for each question. Higher scores represent higher levels of chaos.

### References – Studies that used the CHAOS Scale

- Original Article Reference: Matheny, A. P., Wachs, T. D., Ludwig, J. L., & Phillips, K. (1995). Bringing order out of chaos: Psychometric characteristics of the confusion, hubbub, and order scale. *Journal of Applied Developmental Psychology, 16*(3), 429-444.
  - URL: [http://ac.els-cdn.com/0193397395900284/1-s2.0-0193397395900284-main.pdf?\\_tid=db5d2f58-4031-11e5-b50e-00000aacb362&acdnat=1439302038\\_63ede2915b4f69482c3a924add95bebe](http://ac.els-cdn.com/0193397395900284/1-s2.0-0193397395900284-main.pdf?_tid=db5d2f58-4031-11e5-b50e-00000aacb362&acdnat=1439302038_63ede2915b4f69482c3a924add95bebe)
  - A paper on the validity and reliability of the CHAOS scale – based on two studies conducted in Louisville, KY and Tippecanoe, IN
  - This version has 15 questions instead of the 12 that were used in Asenze’s shortened version (The three questions that were excluded in Asenze were 1. At home we can talk with each other without being interrupted 2. There is often a fuss going on in our home? 3. First thing in the day, we have a regular routine at home.)
  - A simple sum method was used to calculate the total CHAOS score; since some of the questions are positive and some are negative, the positive questions were set to be reverse keyed (1 = No; 0

= Yes as opposed to 1 = Yes and 0 = No) – the higher the score, the more disorganized and chaotic the home was seen to be.

- Dumas, J. E., Nissley, J., Nordstrom, A., Smith, E. P., Prinz, R. J., & Levine, D. W. (2005). Home chaos: Sociodemographic, parenting, interactional, and child correlates. *Journal of Clinical Child and Adolescent Psychology*, 34(1), 93-104.
  - URL: [http://www.tandfonline.com/doi/pdf/10.1207/s15374424jccp3401\\_9](http://www.tandfonline.com/doi/pdf/10.1207/s15374424jccp3401_9)
  - Used the same scale and methods as the Matheny Article – conducted in the Midwest United States – further validated the use of the scale
- Petrill, S. A., Pike, A., Price, T., & Plomin, R. (2004). Chaos in the home and socioeconomic status are associated with cognitive development in early childhood: Environmental mediators identified in a genetic design. *Intelligence*, 32(5), 445-460.
  - URL: <http://www.sciencedirect.com/science/article/pii/S0160289604000558>
  - A study conducted in England and Wales on twins (TEDS – Twins Early Development Study) used the short form of CHAOS with six questions that were rated on a 5-point Likert scale (1 = definitely untrue, 5 = definitely true). The scores were summed, using reverse scoring for the positive questions so that a high score = higher chaos. Assessed when children were 3 and 4 years of age
- Coldwell, J., Pike, A., & Dunn, J. (2006). Household chaos—links with parenting and child behaviour. *Journal of Child Psychology and Psychiatry*, 47(11), 1116-1122.
  - URL: <http://onlinelibrary.wiley.com/doi/10.1111/j.1469-7610.2006.01655.x/full>
  - Conducted in English families to assess household chaos – used the short form and scored via “averaging across the items” (Known as the “Sisters and Brothers” study)
- Deater-Deckard, K., Mullineaux, P. Y., Beekman, C., Petrill, S. A., Schatschneider, C., & Thompson, L. A. (2009). Conduct problems, IQ, and household chaos: A longitudinal multi-informant study. *Journal of Child Psychology and Psychiatry*, 50(10), 1301-1308.
  - URL: <http://onlinelibrary.wiley.com/doi/10.1111/j.1469-7610.2009.02108.x/full>
  - Used the same methodology for the short form, citing the Petrill and Coldwell papers
  - Noted that the six items are: ‘I have a regular morning routine’ (reverse scored), ‘You can’t hear yourself think in our home’, ‘It’s a real zoo in our home’, ‘We are usually able to stay on top of things’ (reverse scored), ‘There is usually a television turned on somewhere in our home’, and ‘The atmosphere in our house is calm’ (reverse scored).



**Notes:**

1. Variable names are listed next to their respective questions
2. Percentages listed exclude missing data (N = 2 except for PCHAOS4 which had Missing N= 4).
3. There are two question number "1"s and question number "6" is missing – however, the variable names are correctly numbered.

**CHAOS Phase 2 Coding Manual****Participant's Details****Household/ Water & Sanitation #:**

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**Mother/ Caregiver Name:**

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**Completed By:**

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**Mother/ Caregiver #:**

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**Date Completed:**

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**Date Checked:**

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**CHAOS SCALE**

Questions		Y	% (n)	N	% (n)
1. There is little commotion in our home* PCHAOS1		<input type="radio"/>	58.1 (738)	<input type="radio"/>	41.9 (533)
1. We can usually find things when we need them* PCHAOS2		<input type="radio"/>	80.4 (1022)	<input type="radio"/>	19.6 (249)
2. We almost always seem to be rushed PCHAOS3		<input type="radio"/>	32.4 (412)	<input type="radio"/>	67.6 (859)
3. We are usually able to stay on top of things* PCHAOS4		<input type="radio"/>	82.1 (1042)	<input type="radio"/>	17.9 (227)
4. No matter how hard we try, we always seem to be running late PCHAOS5		<input type="radio"/>	40.2 (511)	<input type="radio"/>	59.8 (760)
5. It's a real zoo in our home PCHAOS6		<input type="radio"/>	30.7 (390)	<input type="radio"/>	69.3 (881)
7. No matter what our family plans, it usually doesn't seem to work out PCHAOS7		<input type="radio"/>	47.7 (606)	<input type="radio"/>	52.3 (665)
8. You can't hear yourself think in our home PCHAOS8		<input type="radio"/>	36.2 (460)	<input type="radio"/>	63.8 (811)
9. I often get drawn into other people's arguments at home PCHAOS9		<input type="radio"/>	33.6 (427)	<input type="radio"/>	66.4 (844)
10. Our home is a good place to relax* PCHAOS10		<input type="radio"/>	85.7 (1089)	<input type="radio"/>	14.3 (182)
11. The telephone takes up a lot of our time at home PCHAOS11		<input type="radio"/>	70.3(893)	<input type="radio"/>	29.7 (378)
12. The atmosphere in our home is calm* PCHAOS12		<input type="radio"/>	86.4 (1098)	<input type="radio"/>	13.6 (173)

This is the English version of the CHAOS SCALE used in the Asenze study leaves out 3 items: 1. At home we can talk with each other without being interrupted 2. There is often a fuss going on in our home? 3. First thing in the day, we have a regular routine at home. Also, the questions with a star (\*) need to be reverse coded to obtain the total CHAOS scale.

## **Confusion, Hubbub, and Order Scale (CHAOS) Notes Phase 2**

- N = 1271; 2 missing questionnaires total (these individuals did not respond to any of the questions); except for PCHAOS4 with 4 missing responses (two people did not respond to this question)
- The frequencies and percentages listed are from a subset of the main data set – this subset deleted duplicated adults
- All questions were “Yes” or “No” responses; 0 = “No”; 1 = “Yes”; . = “Missing”
- Percentage listed exclude missing data
- Total Number of Questions: 12; Total Number of Variables: 13
- The extra variable in the data set was “TOTALCHA” which was calculated by adding the values from each of the 12 questions (1 = Yes, 0 = No)
- **Note:** This composite variable is an inappropriate measure for calculating total chaos level because it does not account for the fact that some questions were meant to be positively coded while others were meant to be negatively coded. Thus the frequencies and percentages for this variable have not been listed.

## **How to Code Asenze CHOAS Scale + Annotated References**

**→ See CHAOS Phase 1 Coding Manual**