

Convergent validity of the Brazilian version of the Theory of Mind Task Battery for the assessment of social cognition in older adults

TAIS FRANCINE DE REZENDE¹, ANA JULIA DE LIMA BOMFIM², NATÁLIA MOTA DE SOUZA CHAGAS³, FLÁVIA DE LIMA OSÓRIO³, MARCOS HORTES NISIHARA CHAGAS¹

¹ Department of Gerontology, Federal University of São Carlos, São Carlos, SP, Brazil.

² Department of Psychology, Federal University of São Carlos, São Carlos, SP, Brazil.

³ Department of Neuroscience and Behavior, University of São Paulo, Ribeirão Preto, SP, Brazil.

Institution where the study was conducted: Federal University of São Carlos, Department of Gerontology, Rodovia Washington Luís, km 235, São Carlos, SP, Brazil.

Received: 12/20/2017 – Accepted: 05/29/2018

DOI: 10.1590/0101-60830000000161

de Rezende TF et al. / Arch Clin Psychiatry. 2018;45(3):75-6

Dear Editor,

Social cognition is an individual's ability to differentiate his/her own mental state from the mental state of another person and recognize the desires, beliefs and feelings of this person¹. The 5th version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) recommends the use of facial emotion recognition tasks and theory of mind to evaluate social cognition². The interest in appropriate Theory of Mind (ToM) tasks for use on older adults increased with the inclusion of social cognition among the criteria for the diagnosis of dementia in the DSM-5².

Our research group recently published the translation and cross-cultural adaptation of the Brazilian version of the Theory of Mind Task Battery (ToM TB) in this journal³. Thus, the objective of this study was to investigate the convergent validation of the ToM TB in a sample of community-dwelling older adults in the community.

The study was conducted in the city of São Carlos, which is located in the state of São Paulo, Brazil. Data collection was performed by a psychologist and gerontologist, who had undergone training exercises for the administration of the instruments. All participants signed a statement of informed consent. The ToM TB is composed of nine different situations arranged in order of increasing difficulty, with the total score ranging from 0 to 15⁴. For convergent validation, the Brazilian version of Reading the Mind in the Eyes Test (RMET) was applied and the correlation between it and the ToM TB was calculated. The RMET consists of 36 figures of eyes and the participant must choose the word that best describes the feeling shown in the figure among four options⁵.

The sample was composed of 20 participants (8 men and 12 women) selected randomly from the list of adults older than 60 years registered at a family health unit. The exclusion criteria were severe cognitive decline, and auditory or visual deficits that could interfere with performance tasks. Mean age was 68.6 years (SD: ± 7.61), mean schooling was 3.55 years (SD: ± 2.63) and the majority (55%) was married. The score on the Mini Mental State Examination⁶ was 22.65 (SD: ± 5.38).

On the RMET, mean number of correct guesses was 14.95 (SD: ± 4.62), with a minimum score of 6 and maximum of 22. For the ToM TB, the total score was 8.85 (SD: ± 3.56), with a minimum score of 1 and maximum of 14. With regard to convergent validity, Pearson's correlation coefficient between the ToM TB and RMET was 0.715 ($p < 0.001$), indicating a strong correlation between the instruments. There was no significant correlation between schooling and the ToM TB ($\rho = 0.200$; $p = 0.399$) as well as between schooling and RMET ($\rho = 0.337$; $p = 0.146$) (Figure 1).

The existence of an instrument for the assessment of theory of mind validated for older adults may contribute to future studies and assist in the clinical evaluation of older adults with neurocognitive

disorders, as impaired social cognition is currently one of the criteria for the diagnosis of dementia.

The small sample may be considered a limitation of the study. However, the minimum sample calculated for a strong correlation coefficient of 0.7, with two-tailed test and 80% test power was 13 individuals, demonstrating that the present sample was suitable for the purposes of the study. Other limitation of the study is that despite the RMET be used by several studies for ToM assessment, a recent study suggested that the RMET measures emotion recognition rather than ToM ability⁷.

Considering the aim and the results of the study, we conclude that the Brazilian version of the ToM TB is a valid instrument for evaluating theory of mind in the older adults.

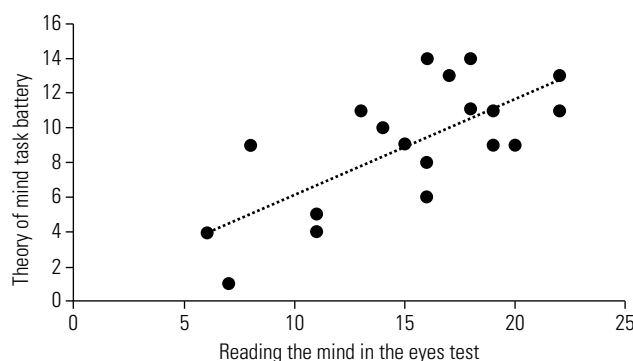


Figure 1. Scatter plot of correlation between Theory of Mind Task Battery and Reading the Mind in the Eyes test.

Acknowledgments

This study received support from the Brazilian fostering agency *Fundação de Amparo à Pesquisa do Estado de São Paulo* (Fapesp [State of São Paulo Research Assistance Foundation]) (grant #2015/16412-1). AJLB is supported by a master scholarship from the Higher Education Improvement Coordination (CAPES).

References

- Frith CD, Frith U. Social cognition in humans. *Curr Biol*. 2007;17(16):R724-32.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Washington DC: American Psychiatric Press; 2013.



3. Chagas MHNC, Chagas NMS, Osorio FL. Translation and transcultural adaptation to Brazilian Portuguese of the Theory of Mind Task Battery for assessment of social cognition in the elderly. Arch Clin Psychiatry. 2017;44(1):30-1.
4. Hutchins TL, Prelock PA, Chace W. Test-retest reliability of a theory of mind task battery for children with Autism Spectrum Disorders. Focus Autism Other Dev Disabl. 2008;23(4):195-206.
5. Sanvicente-Vieira B, Kluwe-Schiavon B, Wearick-Silva LE, Piccoli GL, Scherer L, Tonelli HA, et al. Revised Reading the Mind in the Eyes Test (RMET) – Brazilian version. Rev Bras Psiquiatr. 2014;36(1):60-7.
6. Folstein MF, Folstein SE, McHugh PR. "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res. 1975;12:189-98.
7. Oakley BF, Brewer R, Bird G, Catmur C. Theory of mind is not theory of emotion: A cautionary note on the Reading the Mind in the Eyes Test. J Abnorm Psychol. 2016;125(6):818-23.