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28 Factor Structure of Conventional Neuropsychological Tests and NIH-Toolbox in Healthy Older Adults

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Objective: The National Institutes of Health-Toolbox cognition battery (NIH-TCB) is widely used in cognitive aging studies and includes measures in cognitive domains evaluated for dimensional structure and psychometric properties in prior research. The present study addresses a current literature gap by demonstrating how NIH-TCB integrates into a battery of traditional clinical neuropsychological measures. The dimensional structure of NIH-TCB measures along with conventional neuropsychological tests is assessed in healthy older adults.
Participants and Methods: Baseline cognitive data were obtained from 327 older adults. The following measures were collected: NIH-Toolbox cognitive battery, Controlled Oral Word Association (COWA) letter and animals tests, Wechsler Test of Adult Reading (WTAR), Stroop Color-Word Interference Test, Paced Auditory Serial Addition Test (PASAT), Brief Visuospatial Memory Test (BVMT), Letter-Number Sequencing (LNS), Hopkins Verbal Learning Test (HVLT), Trail Making Test A&B, Digit Span. Hmisc, psych, and GPARotation packages for R were used to conduct exploratory factor analyses (EFA). A 5-factor solution was conducted followed by a 6-factor solution. Promax rotation was used for both EFA models.
Results: The 6-factor EFA solution is reported here. Results indicated the following 6 factors: working memory (Digit Span forward, backward, and sequencing, PASAT trials 1 and 2, NIH-Toolbox List Sorting, LNS), speed/executive function (Stroop color naming, word reading, and color-word interference, NIH-Toolbox Flanker, Dimensional Change, and Pattern Comparison, Trail Making Test A&B), verbal fluency (COWA letters F-A-S), crystallized intelligence (WTAR, NIH-Toolbox Oral Recognition and Picture Vocabulary), visual memory (BVMT immediate and delayed), and verbal memory (HVLT immediate and delayed. COWA animals and NIH-Toolbox Picture Sequencing did not adequately load onto any EFA factor and were excluded from the subsequent CFA.
Conclusions: Findings indicate that in a sample of healthy older adults, these collected measures and those obtained through the NIH-Toolbox battery represent 6 domains of cognitive function. Results suggest that in this sample, picture sequencing and COWA animals did not load adequately onto the factors created from the rest of the measures collected. These findings should assist in interpreting future research using combined NIH-TCB and neuropsychological batteries to assess cognition in healthy older adults.

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29 Examining the Relationship between Symptom and Performance Validity Measures Across Referral Subtypes

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Objective: Performance validity (PVT) and symptom validity tests (SVT) have become standard practice in assessing credibility of neuropsychological profiles and symptom report. While PVTs assess cognitive task engagement, SVTs assess credibility of patient symptom report. Although prior research aimed to conceptualize the relationship between the two validity measure types, it generally focused on SVTs from the Minnesota Multiphasic Personality Inventory (MMPI-2 &RF) and the Structured Inventory of Malingered Symptoms (SIMS; Ord et al., 2021, MMPI-2; Van Dyke et al., 2013). Further studies have demonstrated mixed results, with many studies concluding that symptom and performance validity are separate but related constructs. The current study aimed to assess the relationship between PVTs and SVTs utilizing symptom validity measures from the Personality Assessment Inventory (PAI) across three samples, including neurodevelopmental, psychiatric, and traumatic brain injury groups.
Participants and Methods: Participants included 634 individuals consecutively referred for neuropsychological assessment who completed the Test of Memory Malingering (TOMM) and the PAI (mean Age = 41.7, SD = 15.7; mean Education = 13.7, SD = 2.7; 53% female; 89% Caucasian). Participants were divided into three groups based on referral, including neurodevelopmental (mean Age = 26.6, SD = 10.7; mean Education = 13.4, SD = 2.5; 39% female; 79% Caucasian), psychiatric (mean Age = 44.7, SD = 15.0; mean Education = 13.8, SD = 2.8; 58% female; 90% Caucasian), and traumatic brain injury samples (mean Age = 42.7, SD = 15.5; mean Education = 13.3, SD = 2.3; 50% female; 91% Caucasian). Four structural equation models (latent variable models) were constructed. The first model was fit across the entire sample while the remaining three were fit for the aforementioned subsamples. TOMM trials modeled the performance validity latent variable while SVTs from the PAI modeled the symptom validity latent variable (Positive Impression Management and Defensiveness Index modeled underreporting; Negative Impression Management, Malingering Index, and Cognitive Bias Scale modeled overreporting).
Results: In the full sample model overreporting significantly predicted performance validity ($p < 0.001$, $r = -0.31$), indicating higher symptom overreporting related to poorer performance validity while symptom underreporting did not significantly predict performance validity ($p = 0.09$, $r = 0.08$). In the neurodevelopmental model overreporting did not significantly predict performance validity ($p = 0.44$, $r = 0.10$). Further, symptom underreporting did not significantly predict performance validity ($p = 0.40$, $r = 0.10$). Similarly, for the TBI model, overreporting did not significantly predict performance validity ($p = 0.82$, $r = -0.02$) and symptom underreporting did not significantly predict performance validity ($p = 0.50$, $r = -0.08$). For the psychiatric sample symptom underreporting did not significantly predict performance validity ($p = 0.06$, $r = 0.11$); however, symptom overreporting significantly predicted performance validity ($p < 0.001$, $r = -0.39$).
Conclusions: The current study expands on prior research comparing the relationship between SVTs and PVTs in neuropsychological evaluation utilizing SVTs from the PAI. Results of the present study suggest the relationship between the SVTs and PVTs varies by referral type and further supports using both PVTs and SVTs in neuropsychological assessment.

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30 Examining the Base Rates of Low Scores in Older Adults with Subjective Cognitive Impairment from a Specialist Memory Clinic

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Objective: Cognitively healthy individuals who complete a neuropsychological test battery can obtain very low scores. These very low scores are not likely indicative of cognitive impairment but are rather considered spuriously low scores. The expected number of low scores varies based on number and type of neuropsychological tests. Typically, base rates have been determined from normative samples,

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