50 Remote Assessment has Minimal Effect on Test-Retest Reliability Among Older Adults with Essential Tremor

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Objective: The COVID-19 pandemic increased utilization of remote assessment to allow clinicians and researchers to continue valuable work while maintaining quarantine guidelines. With guidelines relaxing, researchers have returned to in-person assessment. Information is needed regarding the effect of remote assessments on test-retest reliability. COGNET, a longitudinal study of cognition in participants with essential tremor, transitioned from in-person to remote assessments during the pandemic, and has now returned to in-person assessment. The current study investigates the extent to which remote assessment affected test-retest reliability across a range of neuropsychological assessments administered in COGNET.

Participants and Methods: Participants included 27 older adults enrolled in COGNET (mean age=75.0 (9.1), education=16.2 (2.6), 67% female, and 100% white). Memory tests included: California Verbal Learning Test II, Logical Memory subtest of the Wechsler Memory Scales – Revised, and Verbal Paired? Associates. Executive function tests included: Digit Span Backwards and the Delis-Kaplan Executive Function System subtests of Verbal Fluency, Sorting, and Color-Word. Attention tests included Oral Symbol Digit Modalities Test and Digit Span Forward. Language was assessed with the Boston Naming Test. Intraclass correlation coefficients (ICCs) were calculated to examine test-retest reliability of In-Person to In-Person visits (P-P), and combination visits (e.g., In-Person to Remote (P-R), and Remote to In-Person (R-P)). Following Koo & Li (2016), ICCs were interpreted as: >.90 excellent, .75-.90 good, .50-.74 moderate, and <.50 poor reliability. The Feldt approach was used to compare ICCs from P-P visits against ICCs calculated for combination visits (P-R or R-P), with the test statistic compared to an F distribution.

Results: ICCs for person-to-person assessment ranged from .51 to .89. Memory test ICCs ranged from moderate to good (.51 to .80). Executive function test ICCs ranged from moderate to good (.55 to .89). The attention domain had moderate ICCs (.67 - .68). Language ICC was moderate (.70). ICCs for person-to-remote assessment ranged from .42 to .89. Memory tests ranged from moderate to good ICCs (.59 to .83). Executive function tests ranged from poor to good ICCs (.42 to .89). Attention ICCs were moderate to good (.55 to .79). The Language ICC was moderate (.72). ICCs for remote-to-person ranged from .48 to 86. Memory ICCs ranged from moderate to good (.59 to .86). Executive function ICCs ranged from poor to good (.48 to .83). Attention ICCs were moderate to good (.56 to .79). The Language ICC was good (.78). The only test for which an ICC from a combination visit was significantly lower than a person to person visit was Digit Span Backwards.

Conclusions: Test-retest reliability was moderate or better for all P-P assessments, consistent with the known psychometrics of these tests. Only one test of executive function showed lower reliability when remote assessment was introduced. From a broad standpoint, current results suggest that remote administration of neuropsychological tests can be used as a reliable substitute for in-person assessment for many measures, and suggest that caution be used when interpreting any change in Digit Span Backwards across person and remote assessments.

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Assessment/Psychometrics/Methods (Adult)
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51 Importance of Using Baseline Verbal Abilities When Interpreting the MOCA Test Performance

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Objective: The Montreal Cognitive Assessment (MOCA) is widely used as a mental status screening test to detect cognitive impairment in adults over 55 years of age. Performance on this test ranges from 0 to 30. One point is given to individuals with 12 or lower years of education. This accommodation is based on the fact that low education may be a risk factor for dementia (Milani et al., 2018). However, studies suggest the one-point adjustment may not be sufficient to address the impact of low education on test performance (Malek-Ahmadi et al., 2015). The aim of this study is to compare the effects of educational achievement versus baseline verbal abilities on MOCA performance.
Participants and Methods: Fifty patients (25 male; mean age=72.78, SD = 8.11; mean education=16.18, SD = 2.73) with cognitive concerns were referred to Massachusetts General Brigham. All underwent neuropsychological evaluation, including screening with the MOCA. Total MOCA scores were calculated. In this patient group, the MOCA scores ranged from 10 to 29 (mean=22, SD=5.129). Measures of literacy (Wechsler Test of Adult Reading or Test of Premorbid Functioning) were used to estimate baseline verbal abilities. Educational achievement was based on self-reported years of education.
Results: Correlational analyses included the Total MOCA scores, measures of literacy, and years of education. Performance on the MOCA significantly correlated with measures of literacy, $r(43)=.578$, $p< .001$, and a stepwise regression analysis revealed that literacy predicted performance on the MOCA, $R^2=.041$, $F(3,139)= 9.172$, $p<.001$. Years of education correlated with measures of literacy, $r(44)=.494$, $p< .001$, but not with performance on the MOCA.
Conclusions: Findings suggest that education-adjusted scoring on the MOCA may not be sufficient to "level the playing field" in terms of MOCA performance. Years of education had less of an effect on the Total MOCA scores than did baseline verbal abilities. It may be the case that literacy has a more robust effect on MOCA performance due to the inherent verbal nature of the MOCA. Data from this study highlight the importance of considering a patient's baseline verbal abilities in the interpretation of their MOCA performance.

Categories:
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Keyword 2: cognitive screening
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52 Demographic influences on test performance may not be universal: considerations from a cross-country comparison of South Africa and Zimbabwe

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Objective: Appropriate adjustments to normative data for neuropsychological (NP) tests are imperative for their equitable use in brain health practices. Age and education are known to be strong predictors of test performance. In settings where validated tests are not available, common practice has been to adapt and apply them in similar fashion as settings where they were developed. However, demographic adjustments cannot be assumed de facto to be universal in their strength and domain associations. For example, South Africa (SA) and Zimbabwe are neighboring countries with some similarities in their demographic makeup, but with vastly different sociopolitical trajectories– Zimbabwe was colonially occupied until 1980 and SA was oppressed under Apartheid until 1994- which have impacted access to and quality of education by severely limiting educational opportunities for native citizens. The present study explored whether the direction and strength of relationships between age and education on NP test performance were similar or not between SA and Zimbabwe adults living with and without HIV.