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Objective: As the presentation of anxiety may differ between younger and older adults, it is important to select measures that accurately capture anxiety symptoms for the intended population. The 21-item Beck Anxiety Inventory (BAI) is widely used; however, its high reliance on somatic symptoms may result in artificial inflation of anxiety ratings among older adults, particularly those with medical conditions. The 30-item Geriatric Anxiety Scale (GAS) was specifically developed for older adults and has shown strong psychometric properties in community-dwelling and long-term care samples. The reliability and validity of the GAS in a memory clinic setting is unknown. The present study aimed to compare the psychometric properties of the GAS and the BAI in a memory disorder clinic sample.

Participants and Methods: Participants included 35 older adults (age=73.3±5.0 years; edu=15.3±2.8 years; 42% female; 89% non-Hispanic white) referred for a neuropsychological evaluation in a memory disorders clinic. In addition to the GAS and BAI, the Geriatric Depression Scale (GDS) and Montreal Cognitive Assessment (MoCA) were included. Cutoffs for clinically significant anxiety were based on published data for each measure. A dichotomous anxiety rating (yes/no) was created to examine inter-measure agreement; minimal anxiety was classified as “no” and mild, moderate and severe anxiety were classified as “yes.” Internal scale reliability was examined using Cronbach’s alpha. Convergent and discriminant validity were examined using Spearman rank correlation coefficients. Frequency distributions determined the proportion of yes/no anxiety ratings, and a McNemar test compared the proportion of anxiety classifications between the two measures.

Results: Both measures had excellent internal consistency (BAI: $\alpha=.88$; GAS: $\alpha=.94$). The BAI and GAS were highly correlated with each other ($r=.79$, $p<.001$) and positively correlated with a depression measure (BAI-GDS: $r=.51$, $p=.002$; GAS-GDS: $r=.53$, $p=.001$). Discriminant validity was supported by lower correlations between the anxiety measures and cognition (BAI-MoCA:

$r=.38$, $p=.061$; GAS-MoCA: $r=.34$, $p=.098$). The BAI classified 14 participants as having anxiety (40%) and 21 participants as not having anxiety (60%), whereas the GAS classified 21 participants as having anxiety (60%) and 14 participants as not having anxiety (40%). The proportion of anxiety classifications were significantly different between the two measures ($p=.016$). For 28 participants (80%), there was agreement between the anxiety ratings. Seven participants (20%) were classified as having anxiety by the GAS, but not by the BAI; GAS items related to worry about being judged or embarrassed may contribute to discrepancies, as they were frequently endorsed by these participants and are unique to the GAS.

Conclusions: Results support that both anxiety measures have adequate psychometric properties in a clinical sample of older adult patients with memory concerns. It was expected that the BAI would result in higher classification of anxiety due to reliance on somatic symptoms; however, the GAS rated more participants as having anxiety. The GAS may be more sensitive to detecting anxiety in our sample, but formal anxiety diagnoses were not available in the current dataset. Future research should examine the diagnostic accuracy of the GAS in this population. Overall, preliminary results support consideration of the GAS in memory disorder evaluations.

Categories:

Assessment/Psychometrics/Methods (Adult)

Keyword 1: anxiety

Keyword 2: aging (normal)

Keyword 3: psychometrics

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47 Premorbid Intellectual Functioning and Not Education Predicts Memory Performance Virtual Environment Grocery Store

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Objective: Previous research has found that measures of premorbid intellectual functioning may be predictive of performance on memory tasks among older adults (Duff, 2010). Intellectual functioning itself is correlated with education. The purpose of this study was to investigate the incremental validity of a measure of premorbid intellectual functioning over education levels to predict performance on the Virtual Environment Grocery Store (VEGS), which involves a simulated shopping experience assessing learning, memory, and executive functioning.

Participants and Methods: Older adults ($N = 118$, 60.2% female, age 60-90, $M = 73.51$, $SD = 7.46$) completed the Wechsler Test of Adult Reading and the VEGS.

Results: WTAR and education level explained 9.4% of the variance in VEGS long delay free recall, $F = 5.97$, $p = 0.003$). WTAR was a significant predictor ($\beta = 0.25$, $p = 0.006$), while level of education was not.

Conclusions: These results suggest that crystallized intelligence may benefit recall on a virtual reality shopping task.

Categories:

Assessment/Psychometrics/Methods (Adult)

Keyword 1: premorbid functioning

Keyword 2: neuropsychological assessment

Keyword 3: technology

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48 Educational Differences in Digital Clock Drawing for the Command Condition: A Bayesian Network Analysis

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Objective: Research shows that highly educated individuals have at least 20 graphomotor features associated with clock drawing with hands set for '10 after 11' (Davoudi et al., 2021). Research has yet to understand

clock drawing features in individuals with fewer years of education. In the current study, we compared older adults with ≤ 8 years of education to those with ≥ 9 years of education on number and pattern of graphomotor feature relationships in the clock drawing command condition.

Participants and Methods: Participants age 65+ from the University of Florida (UF) and UF Health ($N = 10,491$) completed both command and copy conditions of the digital Clock Drawing Test (dCDT) as a part of a federally-funded investigation. Participants were categorized into two education groups: ≤ 8 years of education ($n = 304$) and ≥ 9 years of education ($n = 10,187$). Propensity score matching was then used to match participants from each subgroup ($n = 266$ for each subgroup) on the following demographic characteristics: age, sex, race, and ethnicity ($n = 532$, age = 74.99 ± 6.21 , education = 10.41 ± 4.45 , female = 42.7%, non-white = 32.0%). Network models were derived using Bayesian Structure Learning (BSL) with the hill-climbing algorithm to obtain optimal directed acyclic graphs (DAGs) from all possible solutions in each subgroup for the dCDT command condition.

Results: Both education groups retained 13 of 91 possible edges (14.29%). For the ≤ 8 years of education group (education = 6.65 ± 1.74 , ASA = 3.08 ± 0.35), the network included 3 clock face (CF), 7 digit, and 3 hour hand (HH) and minute hand (MH) independent, or "parent," features connected to the retained edges (BIC = -7395.24). In contrast, the ≥ 9 years of education group (education = 14.17 ± 2.88 , ASA = 2.90 ± 0.46) network retained 1 CF, 6 digit, 5 HH and MH, and 1 additional parent features representing the total number of pen strokes (BIC = -6689.92). Both groups showed that greater distance from the HH to the center of the clock also had greater distance from the MH to the center of the clock [$\beta_z(\leq 8 \text{ years}) = 0.73$, $\beta_z(\geq 9 \text{ years}) = 0.76$]. Groups were similar in the size of the digit height relative to the distance of the digits to the CF [$\beta_z(\leq 8 \text{ years}) = 0.27$, $\beta_z(\geq 9 \text{ years}) = 0.56$]. Larger HH angle was associated with larger MH angle across groups [$\beta_z(\leq 8 \text{ years}) = 0.28$, $\beta_z(\geq 9 \text{ years}) = 0.23$].

Conclusions: Education groups differed in the ratio of dCDT parent feature types. Specifically, copy clock production in older adults with ≤ 8 years of education relied more heavily on CF parent features. In contrast, older adults with ≥ 9 years of education relied more heavily on HH and MH parent features. Individuals with ≤ 8