

at a community-based outpatient neurology clinic.

Participants and Methods: We utilized data from N=26 patients [mean age = 50.5 (SD = 22.0), 31% female, mean education = 13.5 (SD = 2.3)] who completed neuropsychological evaluations as part of their clinical care at an outpatient neurology clinic. Participants were included in this study if they had complete data for all variables of interest. We used Pearson correlation analyses to investigate associations between each predictor variable of interest (years of education, WRAT-5 Reading, WASI-2 Vocabulary) and age-norm corrected D-KEFS Verbal Fluency scores. Prior to analysis, all variables were converted to z-scores.

Results: We found that years of education ($r = 0.49$, $p = 0.01$) and vocabulary ($r = 0.41$, $p = 0.04$) were significantly positively correlated with category fluency performance. Reading was also positively correlated with category fluency at trend level, but this association was not statistically significant ($r = 0.36$, $p = 0.07$). We found that vocabulary ($r = 0.47$, $p = 0.02$) and reading ($r = 0.51$, $p = 0.007$) were significantly positively correlated with phonemic fluency performance, while the association between education and phonemic verbal fluency performance was not significant ($r = 0.27$, $p = 0.18$).

Conclusions: Our results suggest that educational attainment and crystallized verbal skills are positively associated with verbal fluency performance, though the degree of influence of these individual factors may differ for category fluency vs phonemic fluency performance. Our results have implications for the clinical practice of neuropsychology. Namely, appreciating a patient's educational attainment and crystallized verbal skills can help guide clinical interpretation of whether or not a patient's verbal fluency test scores reflect a decline from their baseline. This may be particularly important to consider among patients with high educational attainment or high premorbid verbal skills, as a subtle decline in their verbal fluency abilities may not be appreciated if relying only on age-based norms for interpretation. This is clinically relevant including when assessing for the early stages of neurodegenerative disorders (e.g., Alzheimer's disease, Primary Progressive Aphasia) or for subtle changes associated with stroke or brain injury.

Categories:

Assessment/Psychometrics/Methods (Adult)

Keyword 1: academic achievement

Keyword 2: assessment

Keyword 3: language

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14 A Potential Behavioral Sign for Detection of Mild HIV-Related Neuropsychological Impairment

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Objective: Even though the severity of HIV-associated neurocognitive disorders (HAND) has decreased with the introduction of combination antiretroviral therapy, mild forms of HAND remain prevalent. Many HIV-infected individuals live alone, so mild cognitive impairments are easily missed. It is important to check their neurocognitive and everyday functions during hospital visits; however, it is challenging for Japanese clinicians because many hospitals do not have enough clinical psychologists or neuropsychologists. Additionally, neuropsychological (NP) test results may not detect those mild cognitive impairments. A micro error has been given more attention as a new behavioral sign of the early stages of cognitive decline, especially among people with Mild Cognitive Impairment (MCI). The current study aimed to 1) develop a touch-panel HAND screening battery and 2) evaluate if the micro errors could differentiate individuals with HAND from their counterpart healthy individuals.

Participants and Methods: Forty HIV-infected men (age: 49.0±8.51 years old, education: 18.5±2.17 years) and 44 healthy men (age:

45.4±8.49 years old, education: 14.4±2.27 years) completed the touch-panel HAND screening battery which assessed six NP domains by seven subtests, everyday functions, and depression. A micro error is defined as a subtle action disruption or hesitation occurring immediately before making final actions. We evaluated the micro errors in short-term memory (STM) and long-term memory (LTM) of verbal learning tests (VLT).

Results: Mann Whitney U tests revealed that the HIV+ group made significantly more micro errors on both STM (HIV+: 1.45±0.90 times, Healthy: 0.52±0.84 times) and LTM (HIV+: 1.85±0.73 times, Healthy: 1.29±0.71 times) than the healthy group (STM: $W=1362$, $p<.001$, Effect Size (EF)= .548; LTM: $W=1199.5$, $p=.002$, EF= .363). An independent samples T-test showed that the HAND group made significantly more micro errors than the non-HAND group ($t=1.822$, $p=.038$, ES= .595) on STM; moreover, the Asymptomatic Neurocognitive Impairment (ANI) group made significantly more micro errors than the healthy group ($W=446$, $p<.001$, ES= .689). On LTM, no significant micro error differences between HAND and non-HAND ($W=184.5$, $p=.539$, ES= -.189) nor between ANI and healthy group ($W=327.5$, $p=.103$, ES= .241) were found.

Conclusions: The present study suggests that a novel behavioral measure, micro errors, may be able to help detect even the mildest form of HAND, ANI. Given that the touch-panel HAND screening battery consists of NP and IADL tests, it is important to evaluate micro errors on these various measures. Additionally, the touch-panel screening battery requires minimal administrative staff involvement, which could be beneficial for busy HIV clinicians.

Categories:

Assessment/Psychometrics/Methods (Adult)

Keyword 1: HIV/AIDS

Keyword 2: assessment

Keyword 3: test development

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15 Construct Validity of the Stroop Interference task in Youth and the Contribution of Effort

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Objective: Previous literature has studied the cognitive processes that contribute to performance on the Stroop interference condition in adults and found that the Stroop task performance (i.e., color-word interference) is comprised of multiple cognitive skills, including speed of visual search, working memory, and conflict monitoring (Perianez et al. 2020). However, the relationship of these cognitive processes to Stroop interference in youth remains understudied. Moreover, no studies have examined the contribution of effort measurement to the interference condition in healthy youth.

Participants and Methods: Golden Stroop Test interference performance was examined in healthy youth athletes ($n=174$) aged 8-16 years (mean age=12.07) who participated in a baseline neuropsychological evaluation as part of a clinical research program on sports concussion. Predictor variables included speed of visual search, working memory, processing speed, verbal fluency effort (i.e., validity tests), visuospatial abilities, visual processing, and executive functioning skills such as cognitive flexibility and reasoning.

Results: Speed of visual search as measured by Trail Making Test visual scanning time ($p<0.00$), and effort as measured by Reliable Digit Span and Trail Making Test ratio ($p=0.03$; $p<0.00$, respectively) significantly contributed to Stroop interference performance in healthy youth. We provided three validity measures; however, only those requiring higher-order cognitive processes predicted Stroop performance: Reliable Digit Span ($p=0.03$) and the Trail Making Test ratio ($p<0.00$). The standalone validity measure (TOMM) was not a significant predictor of Stroop performance ($p>0.05$).

Conclusions: In contrast to adults, working memory and processing speed did not significantly predict Stroop performance, while visual search speed did predict Stroop interference. Furthermore, two embedded validity indicator (EVI) measures predicted Stroop interference, in contrast to a standalone validity measure requiring lower cognitive processes, which did not predict Stroop performance. Therefore, EVI's that include an