

Group 0 always representing the lower scoring group. Across samples, Group 1's baseline risk of impairment and Group 0's relative risk were varied, and these determined the prevalence of cognitive impairment in the groups. Three facets of measurement bias were varied in the simulation: how much lower Group 0's average score was than Group 1's, the degree of non-homogeneity of variance between groups, and how much less reliable the measure was for Group 0. Additional parameters were included and varied to ensure the robustness of findings across a variety of situations. Samples reflected all possible combinations of all varied parameters. For each sample, a baseline AUC was calculated when impairment was regressed on the unadjusted test score. Then, test scores were adjusted for demographic group and difference in adjusted and unadjusted AUC was calculated. This adjusted/unadjusted AUC difference was then regressed on the simulation parameters to quantify their relative influence.

Results: The more Group 0's average score was reduced by measurement bias, the more improvement in AUC was seen after adjustment ($\beta = 1.76$). Trivial but significant main effects of variance non-homogeneity ($\beta = .09$), increased relative risk ($\beta = -.08$), and reduced reliability ($\beta = .02$) were also found, but more importantly, each of these predictors significantly interacted with Group 0 mean score reduction, such that higher relative risks ($\beta = -1.22$), lower reliability ($\beta = .36$), and higher variance ($\beta = -.15$) in Group 0 compared to Group 1 each reduced the association between Group 0 mean score reduction and improvement in AUC.

Conclusions: Demographic adjustment only improves AUC when the mean reduction in scores due to measurement bias is sufficiently high while risk for impairment, test reliability and test score variances are sufficiently equivalent among the demographic groups. When this is not the case, demographic adjustment can be counter-productive, reducing the AUC of the test. We conclude by proposing a novel method for adjusting test scores.

Categories:

Assessment/Psychometrics/Methods (Adult)

Keyword 1: neuropsychological assessment

Keyword 2: test theory

Keyword 3: normative data

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25 The Relationship between Judgment and Cognitive Performance in a Mixed-Clinical Older Adult Veteran Sample

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Objective: Judgment, defined as the capacity to make decisions carefully after consideration of available information, which may entail a variety of sources, has come to be regularly assessed within neuropsychology, and impairment of judgment has been demonstrated across multiple disorders (Rabin, Borgos, & Saykin, 2008). This study aimed to re-examine the relationship between judgment and performance on measure of cognitive functioning including (memory, attention, language, visuospatial abilities, speed, and aspects of executive functioning) in a mixed-clinical sample of older adult veterans.

Participants and Methods: Data for this study was collected from the Cognitive Functioning in Older Adult Veteran's database repository (CFOAV) at a large Veteran Affairs Healthcare System (VAHCS). Participants were veterans seeking treatment in the Neuropsychology Assessment Clinic. Inclusion criteria were that participants must have answered the nine questions from the TOP-J and received a score based on the specific criteria. Participants were excluded if they appeared to lack adequate test engagement or had a serious mental illness. The final sample for the current study consisted of 83 veterans (73% male, $n = 76$), ranging from 50 to 89 years ($M = 72.01$, $SD = 9.70$), with an average of 13 years of education ($SD = 3.21$). Of the sample, 75% reported that they were White, 7% African American/Black, and 1% Latino/Hispanic, and ICD-10 diagnoses ranged from age-related cognitive decline, mild cognitive impairment, vascular dementia, and dementia in other disease classified.

Results: Using SPSS (Version 27), Pearson correlations were conducted to examine the relationship between the TOP-J raw score, demographic variables, and measures of cognitive functioning, including the WTAR, the RBANS index scores, WAIS-DS, TMT A, TMT B, COWAT, and ANT. Missing data were excluded pairwise in the analyses. Correlation analyses revealed a significant small-to-medium correlation between the TOP-J and the. There were small to medium correlations between the

TOP-J, WTAR ($r = .31, p = .01$), TMT A ($r = .27, p = .02$), WAIS DS ($r = .30, p = .01$), and RBANS Attention index ($r = .35, p = .04$). There was a significant large relationship between the TOP-J and the RBANS Immediate Memory index ($r = .52, p = .002$). There were no significant associations between the TOP-J, demographic variables (e.g., biological sex, age, and education), TMT-B, COWAT, or ANT.

Conclusions: The study supported previous decision making research (Moye, Karel, Gurrera & Asar, 2006) that has found the ability to attend to and immediately retain information to be an important foundational component. While the present study did not fully replicate previous findings that the Top-J was correlated to measures of executive functioning, strong correlations did emerge with verbal memory and a measure of crystallized verbal abilities similar to Rabin et al. (2007). Such research informs the assessment practical judgment. It also indicates that one's ability to acquire and encoded unstructured and contextual verbal information, as well as pre-morbid verbal abilities, may provide potential targets to improve or compensate from decrements in overall practical judgement. This is certainly an areas for future research.

Categories:

Assessment/Psychometrics/Methods (Adult)

Keyword 1: cognitive functioning

Keyword 2: decision-making

Keyword 3: aging disorders

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26 Cognitive Correlates of Functional Assessment Tool in Veterans with Mild Traumatic Brain Injury

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Objective: Limitations of traditional neuropsychological assessment include testing in a highly controlled environment designed to minimize distraction. While informative, it may not fully capture real-world cognitive functioning. This may be particularly important for individuals with mild traumatic brain injury (mTBI), a subset

of whom report subtle challenges with complex cognitive functioning that are not consistently captured by neuropsychological assessment. The objective of this study was to extend previous work examining cognitive correlates of performance on functional assessment tool, the Goal Processing Scale (GPS), in a larger sample of Veterans with mTBI.

Participants and Methods: 46 Veterans with chronic mTBI completed GPS and neuropsychological measures (mean age = 43.5; education = 15 years; 89% male). 93% of participants had clinically significant PTSD (PCL-M > 31). The GPS is an ecologically valid assessment in which participants plan and execute a complex task following specified rules under a time constraint. Performance is rated on a 0 (not able) to 10 (absolutely not a problem) scale in 8 domains: 1) Planning, 2) Initiation, 3) Self-Monitoring, 4) Maintenance of Attention, 5) Sequencing and Switching of Attention, 6) Flexible Problem Solving, 7) Task Execution, and 8) Learning and Memory. The GPS Overall Performance is average of 8 domain scores. Neuropsychological assessment data were scored using standardized norms and transformed into z-scores. Scores were averaged into 2 domains: 1) Overall Attention/Executive Function (4 subdomains: Working Memory [Auditory Consonant Trigrams, WAIS-III Letter Number Sequencing], Sustained Attention [Digit Vigilance Test], Inhibition [D-KEFS Stroop Inhibition], Mental Flexibility [Trail Making Test B, D-KEFS Stroop Inhibition Switching, Design Fluency Switching, Verbal Fluency Switching]) and 2) Overall Memory (2 subdomains: Total Recall [HVLt-R, BVMT-R], and Delayed Recall [HVLt-R, BVMT-R]). Pearson correlation coefficients were used to determine relation between overall GPS and overall executive function performance, as well as 8 GPS subdomain and 8 neuropsychological domain/subdomain scores. To adjust for multiple comparisons, $p < .01$ was used.

Results: Overall GPS performance was statistically significantly related to Overall Attention/Executive Functioning and Overall Memory. Investigating further, multiple significant subdomain relations emerged. GPS Planning was related to Inhibition. GPS Self-Monitoring and GPS Task Execution were related to Mental Flexibility. GPS Maintenance of Attention and GPS Flexible Problem Solving were related to Mental Flexibility and Inhibition. GPS Sequencing and Switching of Attention was related to Mental Flexibility and Total Recall.