

type of cognition directly. Meanwhile, an embedded PVT is a task design to evaluate some sort of cognition (e.g., memory) by using traditional neuropsychological tests (e.g., Trail Making Test) and performance validity. Research suggests that undergraduate college students are not always performing to the best of their abilities when completing a comprehensive neuropsychological battery. In fact, in one study where an undergraduate college sample was given three PVTs, it was reported that 56% of the participants failed at least one PVT in their first session and 31% in their second session. Research has also shown that speaking multiple languages can influence cognition. The purpose of this study was to identify in three credible language groups of college students what PVTs does bilingualism influence higher failure rates. It was predicted that bilingual college students would significantly demonstrate higher PVTs failure rates compared to monolingual college students.

Participants and Methods: The sample consisted of 70 English first language monolinguals (EFLM), 33 English first language bilinguals (EFLB), and 68 English second language bilinguals (ESLB) that were psychologically and neurologically healthy. All participants completed a comprehensive neuropsychological battery in English. The Rey-Osterrith complex figure copy test, Comalli Stroop part A, B, and C, Trail Making Test part A and B, Symbol Digit Modalities Test written and oral parts, Controlled Oral Word Association Test (COWAT) letter fluency, and Finger Tapping Test were the tasks used as embedded PVTs to evaluate failure rates in our sample. Moreover, all participants were credible (i.e., they did not fail two or more PVTs). PVT cutoff scores were selected for each embedded PVT from previous literature. Chi-square analysis were used to evaluate failure rates between language groups on each PVT.

Results: We found no significant failure rate differences between language groups on any of the PVTs. However, while no significant group differences were found, on the COWAT letter fluency results revealed higher failure rates between the three language groups (i.e., 13% EFLM, 24% EFLB, and 22% ESLB) compared to other PVTs.

Conclusions: Our data suggested no significant failure rate differences between language groups. It has been suggested in previous studies that linguistic factors impact PVT performance and test interpretation. On the

COWAT letter fluency task, it is possible that language is driving higher failure rates between bilingual speakers, even though we found no significant failure rates or performance differences between the three language groups. Future studies should examine language groups and other cultural variables (e.g., time perspective) to determine what may be driving high failure rates on the COWAT letter fluency task in credible participants.

Categories: Forensic Neuropsychology/Malingering/Noncredible Presentations

Keyword 1: malingering

Keyword 2: effort testing

Keyword 3: bilingualism/multilingualism

Correspondence: Daniel W. Lopez-Hernandez, University of California San Diego Health, wdlopez31@gmail.com

84 Using a Combination Score from the Full Rey Complex Figure Test (RCFT) as a Performance Validity Measure (PVT)

Jessica M. Fett¹, Timothy J. Arentsen^{1,2}, Brad L. Roper^{1,2}

¹Memphis VA Medical Center, Memphis, TN, USA. ²University of Tennessee Health Science Center, Memphis, TN, USA

Objective: Some RCFT indices are effective Performance Validity Test (PVTs) during neuropsychological evaluations. A combination score that includes the copy score, true positive recognition, and atypical errors has proven to be especially useful (see Lu et al, 2003). However, this score was derived from administration that deviated from protocols outlined by Meyers & Meyers (1995) in that the Recognition trial was administered after the 3-minute delay instead of the 30-minute delay. The current study examined the utility of the RCFT combination score as a performance validity test (PVT) when completing the recognition trial after the 30-minute delay.

Participants and Methods: This study utilized archival data from 298 Veterans who presented for a clinical neuropsychological evaluation at a southern Veterans Affairs Medical Center. The evaluation included up to nine PVTs and all trials of the RCFT (per Meyers & Meyers,

1995). Patients were considered credible if all PVT performance fell within normal limits. This resulted in 232 patients in the credible group (Mage = 52.9 years, SDage = 15.2, Medu = 14.0, SDedu = 2.5, 88% male, 71.2% White, 28.3% Black/African American). Patients were considered non-credible if they failed ≥ 2 PVTs. This resulted in 66 patients in the non-credible group (Mage = 51.6, SDage = 13.79, Medu = 13.1, SDedu = 2.4, 92.4% male, 56.1% White, 43.9% Black/African American). Group assignment was also clinically confirmed. Receiver operating characteristic (ROC) curve analyses were conducted to discriminate between credible and non-credible groups utilizing the established RCFT combination score.

Results: RCFT combination scores distinguished groups, with credible participants scoring higher than non-credible participants ($F[1, 296]=63.76, p<.001, d=1.11; M = 56.9, SD = 9.3$ vs. $M = 46.5, SD = 9.5$, respectively). A ROC analysis indicated $AUC = .800$ (95% CI = .73 to .86). When specificity was set at $>90\%$, a cut-score of ≤ 46.5 yielded sensitivity at 46.0%. The analogous cut-score from the Lu et al. (2003) study (i.e., ≤ 47) was associated with a specificity of 88.7 and sensitivity of 46.0% in the current study.

Conclusions: As the Lu et al. (2003) established the combination score of the RCFT with procedures that deviated from the standardized protocol outlined by Meyers and Meyers (1995), clinicians who opted to adhere to Meyers and Meyers' full protocol may have concerns about using the combination score as a PVT. The current study established a similar cut-off score to what Lu et al., (2003) reported (i.e., ≤ 46.5 vs. ≤ 47) while following a different administration procedure of the RCFT. Also, the index was moderately sensitive in the current study (i.e., 45.5%) but less so than what Lu et al. reported when using a cut-score that had $>90\%$ specificity (i.e., 75.9% sensitivity). This suggests that the index may be robust to deviations in administration procedures. Difference in sensitivity could be related to difference between samples. As the current sample was derived from a clinical, VA setting, current findings extend the generalizability of the index. Future research would benefit exploring if any subgroups would benefit from adjusted cut-scores to reduce the risk of false positive identification.

Categories: Forensic Neuropsychology/Malingering/Noncredible Presentations

Keyword 1: performance validity

Keyword 2: neuropsychological assessment

Keyword 3: psychometrics

Correspondence: Jessica M. Fett, Memphis VA Medical Center, jnich055@gmail.com

85 Use of Embedded Performance Validity Measures Using Verbal Fluency Tests in a Clinical Sample of Military Veterans

Keith P Johnson, Lee Ashendorf, Lauren M Baumann

VA Central Western Massachusetts, Worcester, Massachusetts, USA

Objective: As neuropsychologists aim to collect valid data, maximize the utility of assessments, make effective use of time, and best serve patient populations, measurement of performance validity is considered a critical issue for the field. As effort may vary across an evaluation, including performance validity tests (PVTs) throughout the assessment is important. Incorporating embedded PVTs in addition to free standing PVTs can be particularly useful in this regard. COWAT and animal naming are commonly administered verbal fluency measures. While there have been past investigations into their potential for detecting invalid performance, they are limited, and more research is needed. Perhaps most promising, Sugarman and Axelrod (2015) described a logistic regression derived formula utilizing the combined raw scores of COWAT and animal naming. The current study aimed to investigate the use of embedded PVTs within COWAT and animal naming to provide further support for the use of embedded PVTs in these measures.

Participants and Methods: All subjects were from a mixed clinical sample comprising military veterans from two VA Medical Centers in the northeast U.S., who were referred for neuropsychological evaluation. Subjects deemed credible had zero PVT failures. Subjects were considered non-credible performers if they failed at least two out of a possible eight PVTs administered. Subjects who failed one PVT were excluded from the study ($n = 53$). The final sample consisted of 116