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Partial cross-validation of the Wechsler Memory Scale—Revised (WMS-R) General Memory—Attention/Concentration Malingering Index in a nonlitigating sample

Robin C. Hilsabeck[a,b,*], Matthew D. Thompson[a,c], James W. Irby[a,d], Russell L. Adams[a], James G. Scott[a], Wm. Drew Gouvier[b]

[a] *University of Oklahoma Health Sciences Center, Oklahoma City, OK, USA*
[b] *Louisiana State University, Baton Rouge, LA, USA*
[c] *New Orleans Children's Hospital, New Orleans, LA, USA*
[d] *University of Virginia, Charlotlesville, VA, USA*

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Abstract

The Wechsler Memory Scale—Revised (WMS-R) malingering indices proposed by Mittenberg, Azrin, Millsaps, and Heilbronner [Psychol Assess 5 (1993) 34.] were partially cross-validated in a sample of 200 nonlitigants. Nine diagnostic categories were examined, including participants with traumatic brain injury (TBI), brain tumor, stroke/vascular, senile dementia of the Alzheimer's type (SDAT), epilepsy, depression/anxiety, medical problems, and no diagnosis. Results showed that the discriminant function using WMS-R subtests misclassified only 6.5% of the sample as malingering, with significantly higher misclassification rates of SDAT and stroke/vascular groups. The General Memory Index—Attention/Concentration Index (GMI-ACI) difference score misclassified only 8.5% of the sample as malingering when a difference score of greater than 25 points was used as the cutoff criterion. No diagnostic group was significantly more likely to be misclassified. Results support the utility of

* Corresponding author. Present address: Texas Tech. University Health Sciences Center, Department of Neuropsychiatry and Behavioral Science, 3601 4th Street, STOP 8321, Lubbock, TX 79430, USA.
Tel.: +1-806-743-4999x289; fax: +1-806-743-1147.
E-mail address: robin.hilsabec@ttmc.ttuhsc.edu (R.C. Hilsabeck).

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the GMI-ACI difference score, as well as the WMS-R subtest discriminant function score, in detecting malingering.
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1. Introduction

Clinicians have long recognized the need to identify exaggerated cognitive deficits when evaluating neuropsychological functioning, especially when secondary gain is evident (Heaton, Smith, Lehman, & Vogt, 1978; Pankratz, 1983; Rogers, 1997). Since examinees are unlikely to confess their deceit, researchers in this area have concentrated their efforts on increasing their abilities to detect simulated cognitive deficits. One primary method used to help achieve this goal is the identification of aberrant performances on existing neuropsychological measures (Bernard, 1991; Greiffenstein, Baker, & Gola, 1994; Millis, 1994). Research investigating differences in neuropsychological test performance patterns between simulators and truly impaired individuals is important because these tests are routinely administered as part of a typical neuropsychological evaluation; thus, administration is cost effective and time efficient. Further, these tests are not easily recognized as simulation measures.

The Wechsler Memory Scale—Revised (WMS-R; Wechsler, 1987) is the third most frequently administered neuropsychological test in the field of forensic clinical neuropsychology (Lees-Haley, Smith, Williams, & Dunn, 1996). As such, Mittenberg, Azrin, Millsaps, and Heilbronner (1993) proposed a method to detect simulated memory deficits using the WMS-R. These researchers hypothesized that individuals attempting to simulate symptoms of head trauma may perform better on the General Memory Index (GMI) than on the Attention/Concentration Index (ACI), a pattern that is typically not characteristic of individuals with postconcussive memory impairment or global amnesia (Butters et al., 1988; Crossen & Wiens, 1988). They tested their hypothesis in a sample of 39 head trauma patients and 39 matched volunteers instructed to simulate symptoms of head trauma.

Mittenberg et al. (1993) first entered WMS-R subtest scores into a stepwise discriminant function analysis to generate decision rules for identifying malingered performances. They found that 91% of their sample was correctly classified, with a 7.7% false positive rate and a 10.3% false negative rate. Statistical cross-validation was achieved by deriving 78($n - 1$) discriminant functions with a different subject left out of each and classifying that subject with the function (i.e., jackknife procedure). Application of the discriminant function to two independent data sets published in the literature (i.e., a sample of head-injured patients and a sample of undergraduates, half of whom simulated memory impairment and half of whom performed their best) also resulted in acceptably accurate levels of classification.

Because the hypothesized pattern of GMI greater than ACI scores was observed in simulating participants, Mittenberg et al. (1993) utilized the difference score (GMI-ACI) as the independent variable in a discriminant function analysis, resulting in an overall correct classification rate of 83.3%, with a 10.3% false positive rate and a 23.1% false negative rate.

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