

Detecting malingering in traumatic brain injury and chronic pain with an abbreviated version of the Meyers Index for the MMPI-2

Luis E. Aguerrevere^{a,b}, Kevin W. Greve^{a,b,*}, Kevin J. Bianchini^{a,b}, John E. Meyers^c

^a Department of Psychology, University of New Orleans-Lakefront, New Orleans, LA 70148, United States

^b Jefferson Neurobehavioral Group, Metairie, LA, United States

^c Center for Neurosciences, Orthopedics and Spine, Dakota Dunes, SD, United States

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Abstract

Meyers, Millis, and Volkert [Meyers, J. E., Millis, S. R., & Volkert, K. (2002). A validity index for the MMPI-2. *Archives of Clinical Neuropsychology*, 17, 157–169] developed a method to detect malingering in chronic pain patients using seven scales from the Minnesota Multiphasic Inventory-2 (MMPI-2). This method may be impractical because two of the scales (Obvious minus Subtle and Dissimulation-revised) are not reported by the commercially available Pearson computerized scoring system. The current study recalculated the Meyers Index using the five Pearson-provided scales in the chronic pain data sets of Meyers et al. [Meyers, J. E., Millis, S. R., & Volkert, K. (2002). A validity index for the MMPI-2. *Archives of Clinical Neuropsychology*, 17, 157–169] and Bianchini, Etherton, Greve, Heinly, and Meyers [Bianchini, K. J., Etherton, J. L., Greve, K. W., Heinly, M. T., & Meyers, J. E. (in press). Classification accuracy of MMPI-2 validity scales in the detection of pain-related malingering: A known-groups approach. *Assessment*], and the traumatic brain injury data of Greve, Bianchini, Love, Brennan, and Heinly [Greve, K. W., Bianchini, K. J., Love, J. M., Brennan, A., & Heinly, M. T. (2006). Sensitivity and specificity of MMPI-2 validity scales and indicators to malingered neurocognitive dysfunction in traumatic brain injury. *The Clinical Neuropsychologist*, 20, 491–512]. Classification accuracy of the abbreviated Meyers Index was comparable to the original. These findings demonstrate that the abbreviated Meyers Index can be used as a substitute of the original Meyers Index without decrements in classification accuracy.

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Keywords: MMPI; Malingering; Chronic pain; Traumatic brain injury

The Meyers validity scale composite index (Meyers Index; Meyers, Millis, & Volkert, 2002) for the Minnesota Multiphasic Personality Inventory 2nd edition (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) was designed to assess exaggeration of self-reported psychological symptoms by weighting and integrating seven individual MMPI-2 validity scales. Each scale score is weighted 0, 1, or 2 depending on how strongly the score indicates exaggeration (see Table 1 for scales and weights). The Meyers Index was originally developed comparing chronic pain patients with external incentive to exaggerate symptoms, chronic pain patients without incentive, and medically sophisticated but uninjured simulators (e.g., nurses).

* Corresponding author at: Department of Psychology, University of New Orleans-Lakefront, New Orleans, LA 70148, United States. Tel.: +1 504 280 6185; fax: +1 504 280 6049.

E-mail address: kgreve@uno.edu (K.W. Greve).

Table 1
Weightings of scores on Meyers original validity scale and the Meyers abbreviated validity scale

Scale	Score	Weight	Score	Weight	Score	Weight
<i>F – K</i>	<1	0	1–9	1	≥10	2
F	<75	0	75–89	1	≥90	2
FBS	<25	0	25–29	1	≥30	2
Fp	<75	0	75–89	1	≥90	2
Ds-r ^a	<75	0	75–89	1	≥90	2
ES	>30	0	21–30	1	≤20	2
<i>O – S</i> ^a	<100	0	100–149	1	≥150	2

F – K, *F – K* raw score; F, *F* scale *T*-score; FBS, Fake Bad Scale raw score; Fp, Infrequency-pathology scale *T*-score; Ds-r, Dissimulation Scale-revised *T*-score; ES, Ego Strength *T*-score; *O – S*, Obvious – Subtle.

^a Scales that were removed from the abbreviated Meyers Index.

The results have since been replicated in traumatic brain injury (TBI) (Greve, Bianchini, Love, Brennan, & Heinly, 2006) and patients with chronic pain (Bianchini, Etherton, Greve, Heinly, & Meyers, in press) using a known-groups validation research design. These studies have shown that the Meyers Index can accurately differentiate clinically diagnosed malingerers from non-malingerers. Despite its promise in the detection of malingered psychological symptoms, the Meyers Index may be impractical to use because two of the scales (Obvious minus Subtle and Dissimulation-revised) are not reported by the Pearson scoring software.

The purpose of this study is to examine the ability of an abbreviated (5-scale) Meyers Index to detect malingering in TBI and chronic pain. To this end, Meyers Index was recalculated in the Greve et al. (2006) and Bianchini et al. (in press) data sets using the five Pearson-provided scales. This study includes both the original and abbreviated Meyers indices and reports the classification accuracy of each for comparison.

1. Methods

1.1. Participants

Data for this study were derived from three sources. Clinical cases were identified from the files of over 500 patients referred for neuropsychological ($n = 314$) or pain psychological ($n =$ about 200) evaluations in a large clinical psychology/neuropsychology practice in the Southeastern United States. These cases were referred by physicians, workers compensation case managers/adjusters, and attorneys. The neuropsychological evaluations included 185 TBI patients and 129 general clinical referrals. These patients are described in detail in Greve et al. (2006). A sample of college student simulators was obtained from a liberal arts university in the same metropolitan area. An additional 100 chronic pain patients originally reported in Meyers et al. (2002) were also included. Note that the participants and the classification methods are described in minimal detail because they have been previously described in published papers (i.e., Bianchini et al., in press; Etherton, Bianchini, Ciota, & Greve, 2005; Etherton, Bianchini, Greve, & Heinly, 2005; Greve et al., 2006; Meyers et al., 2002).

All the patients were divided on the basis of the presence or absence of external financial incentive. Three separate groups without identified financial incentive (No-Inc) were included: (1) TBI ($n = 18$); (2) chronic pain (Bianchini et al.: $n = 23$; Meyers et al.: $n = 100$), this group also lacked evidence of non-financial incentive (e.g., drug-seeking); and (3) general clinical ($n = 129$). By definition, these patients cannot be diagnosed as malingering.

The patients with external incentive were divided on the basis of the Slick, Sherman, and Iverson (1999) criteria for Malingered Neurocognitive Dysfunction (MND; TBI patients) or Bianchini, Greve, and Glynn's (2005) criteria for Malingered Pain-Related Disability (MPRD; chronic pain patients). The methods by which these criteria were operationalized and applied are described in detail in Greve et al. (2006) for TBI patients and Bianchini et al. (in press), Etherton, Bianchini, Ciota, et al. (2005) and Etherton, Bianchini, Greve, et al. (2005) for chronic pain.

The classification method resulted in the following subgroups: (1) incentive only without evidence of malingering; (2) probable MND; and (3) definite MND/MPRD. Patients with external incentive but who were negative on all other malingering criteria and who showed no other evidence of exaggeration or poor effort (psychometric or clinical

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