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Use of MMPI-2 to predict cognitive effort: A hierarchically optimal classification tree analysis

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Abstract

Neuropsychologists routinely rely on response validity measures to evaluate the authenticity of test performances. However, the relationship between cognitive and psychological response validity measures is not clearly understood. It remains to be seen whether psychological test results can predict the outcome of response validity testing in clinical and civil forensic samples. The present analysis applied a unique statistical approach, classification tree methodology (Optimal Data Analysis: ODA), in a sample of 307 individuals who had completed the MMPI-2 and a variety of cognitive effort measures. One hundred ninety-eight participants were evaluated in a secondary gain context, and 109 had no identifiable secondary gain. Through recurrent dichotomous discriminations, ODA provided optimized linear decision trees to classify either sufficient effort (SE) or insufficient effort (IE) according to various MMPI-2 scale cutoffs. After "pruning" of an initial, complex classification tree, the Response Bias Scale (*RBS*) took precedence in classifying cognitive effort. After removing *RBS* from the model, *Hy* took precedence in classifying IE. The present findings provide MMPI-2 scores that may be associated with SE and IE among civil litigants and claimants, in addition to illustrating the complexity with which MMPI-2 scores and effort test results are associated in the litigation context. (*JINS*, 2008, *14*, 842–852.)

Keywords: Malingering, Neuropsychological assessment, Optimal discriminant analysis, Personality assessment, Response validity, Response Bias Scale (RBS)

INTRODUCTION

Psychological and cognitive response validity measures are often administered concurrently in secondary gain (SG) contexts to provide greater understanding with regard to the veracity of individual neuropsychological performances. Regarding psychological response validity measures, the Minnesota Multiphasic Personality Inventory (MMPI-2; Butcher et al., 1989) has been the most widely examined instrument in this area of research, and depending upon the SG setting, MMPI-2 profiles may represent "under-reporting" or "over-reporting" of symptoms. For example, clinicians that administer the MMPI-2 as part of a hiring process (Pope et al., 2000) or in the context of custody litigation (Posthuma & Harper, 1998) may reasonably expect respondents to have characteristic underreporting validity and clinical profiles. Conversely, other studies have examined whether select MMPI-2 validity scales (e.g., the *F*-family: *F*, *Fb*, *Fp*) and clinical scales (e.g., *Hs, D, Hy, Pt, Sc*) may be differentially sensitive to over-reporting of symptoms in secondary gain (SG) contexts, such as personal injury litigation. Whereas the *F*-scale and *Fp* (Arbisi &

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