Brief report

Should the Retention trial of the Test of Memory Malingering be optional?

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Abstract

The present study examined the false negative error rate associated with the optional use of the Retention trial in the Test of Memory Malingering (TOMM). TOMM scores from 150 traumatic brain injury and 150 chronic pain patients were examined. Results indicated that early termination of the TOMM resulted in 3% of patients going undetected by the TOMM. The practical cost of this error was minimized by the inclusion of at least one other SVT. Clinical implications are discussed.

Keywords: Malingering; TOMM; Symptom validity test; Traumatic brain injury; Chronic pain

Neuropsychologists are under increasing pressure to do more with less time. This has led to the development and implementation of a range of brief or abbreviated test procedures (e.g., WASI, shorter CVLT). This trend can also be seen in the area of effort testing. The Word Memory Test (Green, Allen, & Astner, 1996) has an option for early termination when performance is good. The Portland Digit Recognition Test (PDRT; Binder, 1993) has two published abbreviated forms (Binder, 1993; Greiffenstein, Baker, & Gola, 1994). Agreement between the standard PDRT and the Binder abbreviated form was 99% in a large sample of traumatic brain injury and chronic pain patients (Doane, Greve, & Bianchini, in press).

The Test of Memory Malingering (TOMM; Tombaugh, 1996, 1997) is another widely used SVT (Slick, Tan, Strauss, & Hultsch, 2004), which allows early termination when performance is adequate. The TOMM is a two-choice discrimination task using line drawings of common objects rather than words or digits. Three trials (Trial 1, Trial 2, Retention) are administered; the first is immediately followed by the second, with the third administered about 15 min later. Scores below 45/50 correct are considered evidence of negative response bias. According to the recommended early termination criterion, when a patient scores 45 or higher on Trial 2, the Retention trial does not need to be administered.

Despite the recommendations in the manual, we are not aware of any studies examining the risk of false negative errors that may accompany early termination. This concern is not idle. Using the early termination rule, Gervais, Redling, Green, and Ford (2004) found an 11% failure rate for the TOMM compared to a 32% failure rate for the WMT. This difference in failure rates may be due in part to not giving the Retention trial. Thus, the purpose of the
present study is to examine the diagnostic cost of optional use of the Retention trial of the TOMM. Specifically, this study examined the agreement between Trial 2 and the Retention trial in samples of traumatic brain injury and chronic pain patients.

1. Methods

TOMM scores were obtained from 150 traumatic brain injury and 150 chronic pain patients randomly selected from the files of an independent clinical psychology/neuropsychology practice. All selected patients had external incentive by virtue of involvement in a workers compensation claim or personal injury litigation and were referred by physicians, case managers, and attorneys. The TOMM was administered in standard fashion. It is the standard practice of this clinic to always give the Retention trial regardless of the outcome of Trial 2. In addition, at least one other SVT (usually the PDRT) was routinely given. The test battery for both TBI and pain patients always includes the Wechsler Adult Intelligence Scale, the California Verbal Learning Test, and the Minnesota Multiphasic Personality Inventory. The neuropsychological test battery also includes a range of other measures appropriate to the comprehensive evaluation of cognitive function.

2. Results

Consistent with the manual, scores of 45 or higher on Trial 2 and the Retention trial were considered negative. Scores of 44 or lower were considered positive. Overall agreement between the two trials was 94% for TBI and 97% for the pain sample. For the entire sample it was 95%. In the TBI sample, 21.3% failed one or both of the trials compared to 16.7% in the chronic pain group. Eighty-three percent (124) of the TBI patients and 85% (128) of the pain patients were negative on Trial 2. On the Retention trial, 81% (121) of the TBI patients and 86% (127) of the pain patients were negative.

The value of primary interest in this study is the percent of patients negative on Trial 2 who were positive on the Retention trial. Of the 124 TBI patients who were negative on Trial 2, six (4.8%) were positive on the Retention trial. Of the 128 pain patients negative on Trial 2, three (2.3%) were positive on the Retention trial. Overall, 83% (124) of the TBI patients and 85% (128) of the pain patients were negative on Trial 2. On the Retention trial, 81% (121) of the TBI patients and 86% (127) of the pain patients were negative.

All of the six TBI patients who were negative on Trial 2 and positive on the Retention trial met the Slick, Sherman, and Iverson (1999) criteria for at least Probable Malingered Neurocognitive Dysfunction (MND). Of these, five would have been diagnosed with MND in the absence of the TOMM since they were all positive on the Portland Digit Recognition Test (two met criteria for Definite MND). The sixth patient was negative on the PDRT, his only positive finding on an independent forced-choice symptom validity test (SVT) was 41 on the TOMM Retention trial. Of the three pain patients who were negative on Trial 2 and positive on the Retention trial, two were positive on other SVTs (the PDRT and WMT, respectively). The third passed the SVTs but showed exaggeration on the Minnesota Multiphasic Personality Inventory. None would have met the Slick et al. (1999) criteria for MND nor the more recent criteria for Probable or Definite Malingered Pain-Related Disability (MPRD; Bianchini, Greve, & Glynn, 2005) in the absence of the TOMM. The third would have met criteria for malingering with the addition of the TOMM.

3. Discussion

The present study demonstrated that early termination of the TOMM resulted in about 3% of patients going undetected by the TOMM. The practical cost of this error was minimized by the inclusion of at least one other SVT. Nonetheless, one TBI and one pain patient who met criteria for Probable MND would have gone undetected had the Retention trial not been given. These findings also suggest that the relatively poor sensitivity of the TOMM reported by Gervais et al. (2004) was due in part to Retention trials that were not administered. Their sample was predominantly pain patients and the TOMM was positive in 11% of their cases. Because the Retention trial was only administered when Trial 2 was positive, its administration did not add anything to the hit rate of the TOMM in that study. In our pain sample, 14.7% failed Trial 2, a comparable value. The mandatory administration of the Retention trial resulted in an increase of 4% in the rate of positive findings. In the TBI sample, administration of the Retention trial increased the hit rate from 17.3 to 21.3%. Thus, while the routine inclusion of the Retention trial did not increase the TOMM’s hit rate to
that of the WMT, it appears that following the optional termination rule did contribute to the TOMM’s relatively poorer performance in Gervais et al. (2004). At the same time, it is not possible to determine how meaningful those observed differences are in the absence of data on specificity of the cutoffs used. In short, not administering the Retention trial reduces the classification accuracy of the TOMM alone. The present study suggests that so long as at least one other well validated forced-choice SVT is also administered the Retention trial can be dropped. The Retention trial should never be dropped if the TOMM is the only SVT given.

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References


