Letter to the Editor

Meta-Analysis of the Morel Emotional Numbing Test for PTSD: Comment on Singh, Avasthi, and Grover

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Abstract

Singh, Avasthi, and Grover (2007) presented a review on the detection of malingering psychiatric disorders, including malingered Posttraumatic Stress Disorder (PTSD). They suggested that a number of psychometric tests designed to detect feigned symptoms of PTSD were ineffectual. Their objections to the specific tests mentioned in their article under “Other Scales”, which included the Morel Emotional Numbing Test for PTSD (MENT), were not supported by appropriate references to the scientific literature. We, therefore, respond to Singh and colleagues’ statement by first presenting pertinent information on the MENT from a systematic review of several major scientific research databases. Then, using all of the studies applicable to the question of the efficacy of the MENT to detect response bias, we statistically averaged the effect across studies using meta-analysis. The findings provide empirically-grounded probabilistic evidence of the effectiveness of the MENT to detect response bias (German J Psychiatry 2008;11:128-131).

Keywords: MENT, Meta-Analysis, PTSD, Malingering, Response Bias

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Introduction

In a recent article in this journal, Singh, Avasthi, and Grover (2007) stated that several tests purportedly used to detect malingered posttraumatic stress disorder (PTSD) “have not been encouraging” (p. 129). They specifically mention the M-Test (Beaber, Marston, Michelli, & Mills, 1985), Wildman Symptom Checklist (WSC; Wildman & Wildman, 1999), Trauma Symptom Inventory (TSI; Briere, 1995), Mississippi Scale for Combat-Related PTSD (MSC; Keane, Caddell, & Taylor, 1988), and the Morel Emotional Numbing Test for PTSD (MENT; Morel, 1998). While the MSC is not a malingering test per se, Singh and his colleagues do correctly cite one of the studies that demonstrated that the MSC cannot detect mendacious examinees (i.e., Dalton, Tom, Rosenblum, 1989). Nevertheless, the authors failed to support their proposition that the other tests noted above are not effective at detecting malingering, as they did not cite any references in the scientific literature.

The question of whether the M-Test, WSC, or TSI are effective psychometric tests to detect malingered PTSD may be debated (e.g., Gillis, Rogers, & Bagby, 1991; Hurley & Deal, 2006; Rosen, Sawchuk, Atkins, Brown, Price, & Lees-Haley, 2006), but the evidence in the scientific literature on the efficacy of the MENT as a symptom validity test (SVT) for PTSD is unequivocal in the positive. And so, to respond to Singh and colleagues’ statement we first present information from a systematic review of several major scientific literature databases. Next, using all of the studies applicable to the question of the efficacy of the MENT to detect response bias, we statistically average the effect across studies using meta-analysis. Our hypotheses are that (1) the relevant scientific literature supports the efficacy of the MENT to detect response bias, and (2) statistical analysis of the pooled data from applicable studies will provide empirically-grounded probabilistic evidence of the effectiveness of the MENT to detect response bias.
Method and Results

Table 1 lists the online EBSCO Host research databases, along with an internet Google search, in which we entered the following key search terms, "Morel, emotional, numbing, test, PTSD, and malingering." To minimize bias, our electronic search included dissertations, unpublished literature, presentations, and non-public sources. The results of the search are listed in the references to this article and are denoted with an asterisk. A review of the articles revealed that all suggested the MENT was a promising psychometric instrument to detect response bias, with some noting that research to replicate the findings would lend further support. This was addressed in subsequent studies with military populations (Geraerts, Kozaric-Kovacic et al., 2007; Morel, 2008a, 2008b) and civilian populations (Mergelbach, Peters, Jelicic, Brands, & Smeets, 2006; Messer & Fremouw, 2007). Thus, a systematic review of the scientific literature clearly suggest that Singh and colleagues assertion that studies on the effectiveness of the MENT "have not been encouraging" (p. 129) are incorrect and unsupported.

Table 1. Scientific Literature Databases Searched Electronically Online

<table>
<thead>
<tr>
<th>EBSCO Host Research Databases</th>
<th>EJS E-Journals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Reference Collection: Comprehensive</td>
<td>Nursing and Allied Health Collection: Comprehensive</td>
</tr>
<tr>
<td>Psychology and Behavioral Sciences Collection</td>
<td>Health Business Fulltext Elite</td>
</tr>
<tr>
<td>MEDLINE</td>
<td>CINAHL</td>
</tr>
<tr>
<td>Pre-CINAHL</td>
<td>Health Source - Consumer Edition</td>
</tr>
<tr>
<td>International Pharmaceutical Abstracts</td>
<td>PsychINFO</td>
</tr>
<tr>
<td>Cochrane Database of Systematic Reviews</td>
<td>Database of Abstracts of Reviews of Effects</td>
</tr>
<tr>
<td>Cochrane Central Register of Controlled Trials</td>
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</table>

Note. An online search was also conducted on Google and Google Scholar Beta.

In order to test our second hypothesis, we systematically combined the results of all applicable research on the MENT and quantitatively analyzed the pooled data using meta-analysis. Using the information from our literature search we selected all applicable studies on the MENT. Studies were selected for analysis if the article included data assessing the sensitivity and specificity of the MENT to detect response bias and included suspected malingerers, simulated malingerers, and/or the presence of secondary gain. Although, the findings from case studies supported the efficacy of the MENT to detect response bias, they were removed due to insufficient sample size for inclusion in meta-analysis (i.e., Morel, 1995 N=4; Mergelbach et al., 2006, N=1). One other study (Geraerts, Jelicic et al., 2006) was not selected because it did not include suspected malingerers, simulated malingerers, or evidence of the presence of secondary gain. Redundant studies utilizing the same data were also excluded (i.e., data from a thesis/dissertation that was later presented at a national conference symposium and subsequently published as a journal article). This resulted in data from 5 original studies applicable for quantitative synthesis of research findings. This includes a variety of different types of studies but with similar hypotheses, namely assessing the efficacy of the MENT to detect response bias. As a result, the generalizability of the meta-analysis is enhanced from the inclusion of a variety of studies.

Two issues pertinent to the homogeneity of the studies were noted. The first one was the inclusion of the institutionalized patients diagnosed with schizophrenia in Morel's 1998 study. These patients had higher MENT error scores than other credible patient groups. The inclusion of this subsample was relevant as it included a patient population with known deficits in affect recognition. This "floor effect" strategy provided a base rate of legitimately poor performance on the MENT. The second issue was regarding Geraerts, Kozaric-Kovic's et al. (2007) study. Geraerts and colleagues did not identify suspected malingerers but rather investigated whether the MENT could differentiate between Croatian military veterans receiving treatment for PTSD from Croatian veterans seeking monetary compensation for PTSD. Although MENT scores were significantly higher in the latter group (presumably due to secondary gain), the authors did not specifically identify individuals suspected of malingering from those not suspected of malingering within the compensation seeking group. Therefore, the group likely included both honest claimants and mendacious claimants. As coders, we debated whether to exclude this study based on the discussion above but conservatively decided to include it. Our pooled estimates were computed using standard meta-analysis techniques, assuming random effects models and following the approach of DerSimonian and Laird (1986) for estimates of the number of errors on the MENT and a generalized linear mixed model for estimates of sensitivity and specificity (Chu & Cole, 2006).

The sensitivity (percentage of malingerers detected) for the MENT in the five studies ranged from 63% to 92%, with a pooled sensitivity estimate of 79.0% (95% confidence interval [CI] 65.6, 88.1%), see Table 2. Specificity (percentage of non-malingerers correctly classified as credible examinees) was also high, ranging from 77% to 100%, with a pooled estimate of 95.9% (95% CI 85.4, 98.9%). Suspected malingerers averaged 14.9 errors on the MENT (95% CI 10.5, 19.3), whereas credible examinees averaged 4.1 errors (95% CI 2.7, 5.4). The average difference in the number of errors between suspected malingerers and credible examinees was 10.8 (95% CI 4.9, 16.7), demonstrating a highly significant difference in scores (p=0.0003). In terms of the numbers of errors, the study of Geraerts et al. was statistically different from the other four (heterogeneity between studies was detected for the average error rate among malingerers, p<0.001; credible examinees, p<0.001; and their difference, p<0.001). When the pooled data was reanalyzed excluding Geraerts, Kozaric-Kovic's et al. (2007) study, the mean number of errors was 17.3 (95% CI 16.1, 18.5) for the suspected malingerers and 3.3 (95% CI 2.6, 4.1) for the credible examinees, and the average differ
ence was 13.1 (95% CI 10.9, 15.3, p<0.001). The sensitivity and specificity estimates after removing the study were 72.8% (95% CI 61.1, 82.1%) and 96.8% (95% CI 80.0, 99.6%), respectively. Results of the meta-analysis provide strong evidence supporting the efficacy of the MENT to detect response bias.

Conclusions and Discussion

The findings from both summaries of relevant studies and statistical analysis of data synthesis clearly provide analytic support for the MENT as a psychometric instrument to assess response bias. Contrary to Singh and colleagues’ opinion, our review of the scientific literature and meta-analysis of applicable studies provide strong evidence of the efficacy of the MENT to detect response bias in assessments for PTSD. We, nevertheless, recognize that the development of SVTs and methods to evaluate their effectiveness may not be well understood by some clinicians and researchers who are not directly involved in creating psychometric instruments. To remedy this, efforts are under way to publish the basic statistical principles and procedures that can be used to design and develop a SVT for PTSD (Morel & Shepherd, 2008) and a set of criteria to critique a SVT (Morel & Marshman, 2008).

A final consideration concerns the use of SVTs. Some believe that SVTs, such as the MENT, can be used only for providing objective evidence of response bias in cases in which secondary gain is present. Although that is certainly an appropriate use of SVTs, it should be emphasized that SVTs can also provide valuable information in interpreting other tests administered to the examinee (Green, 2006) and in determining the credibility of patient’s self-reports. For example, poor performance on SVTs (also referred to as effort tests) is correlated with a wide range of psychological tests and has a greater impact on test scores than even severe traumatic brain injury (Green, Rohling, Lecs-Haley, & Allen, 2001). Nevertheless, SVTs should not be interpreted in isolation but rather considered along with collateral information, a review of medical records, and discoveries made during clinical interview. In this context, the MENT appears to be a clinically useful SVT to assess response bias, either to support the patient’s valid presentations of symptoms of PTSD or to identify non-credible self-reports.

References


Table 2. Meta-Analysis Results of the Morel Emotional Numbing Test for PTSD (MENT) to Detect Response Bias

<table>
<thead>
<tr>
<th>Study (Year)</th>
<th>Sensitivity (n)</th>
<th>Specificity (n)</th>
<th>Malingerers (95% CI)</th>
<th>Credible (95% CI)</th>
<th>Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morel (1998)</td>
<td>82.4% (14/17)</td>
<td>100% (85/85)</td>
<td>17.8 (16.4, 19.2)</td>
<td>3.3 (2.8, 3.8)</td>
<td>15.5 (13.0, 15.9)</td>
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<tr>
<td>Messer &amp; Fremouw (2007)</td>
<td>83.4% (26/41)</td>
<td>92.3% (96/104)</td>
<td>17.4 (11.9, 22.9)</td>
<td>3.0 (2.5, 3.5)</td>
<td>14.4 (8.9, 19.9)</td>
</tr>
<tr>
<td>Morel (2008a)</td>
<td>63.6% (14/22)</td>
<td>100% (15/15)</td>
<td>14.5 (9.6, 19.4)</td>
<td>2.2 (1.1, 3.3)</td>
<td>12.3 (7.3, 17.3)</td>
</tr>
<tr>
<td>Morel (2008b)</td>
<td>87.0% (20/23)</td>
<td>77.3% (34/44)</td>
<td>15.7 (12.5, 18.9)</td>
<td>5.4 (4.0, 6.8)</td>
<td>10.3 (6.8, 13.8)</td>
</tr>
<tr>
<td>Geraerts et al. (2007)</td>
<td>91.8% (45/49)</td>
<td>95.7% (6770)</td>
<td>9.8 (8.4, 11.1)</td>
<td>6.5 (5.7, 7.3)</td>
<td>3.3 (1.7, 4.9)</td>
</tr>
<tr>
<td>Meta-analysis (all studies 95% CI)</td>
<td>79.0% (65.6, 88.1%)</td>
<td>95.9% (85.4, 98.9%)</td>
<td>14.9</td>
<td>4.1 (10.8</td>
<td></td>
</tr>
<tr>
<td>Meta-analysis (excluding Geraerts)</td>
<td>72.8% (61.1, 82.1%)</td>
<td>96.8% (80.0, 99.6%)</td>
<td>17.3 (16.1, 18.5)</td>
<td>3.3 (2.6, 4.1)</td>
<td>13.1 (10.9, 15.3)</td>
</tr>
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</table>

Note. Statistically, the meta-analysis average for malingerers minus the meta-analysis average for credible examinees does not necessarily equal the meta-analysis average of the difference between malingerers and credible examinees.


Messer J Fremouw W. Detecting malingering PTSD using the Morel Emotional Numbing Test-Revised (MENT-R) and the Miller Forensic Assessment of Symptoms Test (M-FAST). J Forensic Psychol Practice 2007;7(3).*


