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Inappropriate Use of the Modified Somatic Perception Questionnaire (MSPQ) to Diagnose Malingering

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Abstract

***Background**: The Modified Somatic Perception Questionnaire (MSPQ) is frequently used by psychologists contracted by car insurance companies as a measure of malingering medical symptoms. The MSPQ has not been validated on patients injured in car accidents: the use of MSPQ on that patient group deserves methodological scrutiny.*

***Method**: The overlap of individual MSPQ items with symptoms typically reported by patients injured in motor vehicle accidents (MVAs) was examined, including also the post-concussive and whiplash symptoms and signs of autonomic dysregulation as often noted with unrelenting pain, pain related insomnia, and sudden spikes of stabbing back or neck pain.*

***Results**: About two-thirds of MSPQ items (8 of the 13 scored items, i.e., 61.3%) show a definite overlap with medical symptoms legitimately experienced by post-MVA patients. Three of these, the dizziness, blurring of vision, and nausea, are listed in the widely used Rivermead Post-Concussion Symptoms scale where they are scored correctly as indicators of the post-concussion syndrome, not as signs of malingering. Three other items, "Muscles in neck aching," "Legs feeling weak," and "Muscles twitching or jumping", can be considered as associated with whiplash injury to cervical spine or also with sprain or strain of other tissues, and the associated fatigue. Furthermore, symptoms of "Feeling hot all over" and Sweating all over" are familiar to persons who experienced sudden episodes of excruciating back pain.*

***Discussion**: Symptoms similar to post-MVA patients are also experienced by patients with industrial injuries such as on construction sites, and also in war veterans who sustained concussive and whiplash injuries in their exposure to violent blasts. These patients are particularly vulnerable to being falsely diagnosed as malingerers (or expressed in other words, as magnifying or exaggerating their symptoms).*

***Conclusions**: Using the MSPQ as a test of malingering on such (or on similar) clinical groups constitutes malpractice.*

Keywords: *malingering, pain, MSPQ, post-concussion syndrome, whiplash syndrome*

Introduction

The Modified Somatic Perception Questionnaire (MSPQ)[1] is used frequently by some psychologists to diagnose malingering, especially by those contracted by car insurance companies to examine the validity of claims by persons who report injuries from motor vehicle accidents (MVAs). For instance, 5 of 43 psychological reports (i.e., 11.6%) prepared in 2017-18 as expert testimonies by psychologists evaluating the legitimacy of such insurance claims (the 43 reports were provided by Karyn Hamilton, a senior insurance official in Greater Toronto Area), included the MSPQ as the assessment instrument for detection of malingering.

The MSPQ was developed by Chris J. Main and published in 1983.[1] The author described it as "*a*

scale for the measurement of heightened somatic and autonomic awareness" in back pain patients. One of the initial validations of the MSPQ evaluated the correlations between the MSPQ score, the Zung Depression Inventory[2] and the first three clinical scales of the MMPI[3] (i.e., Hs. D, and Hy) in a study on 25 patients. The MSPQ correlated 0.61 with MMPI (HS), 0.36 with MMPI (D), 0.03 with MMPI (Hy), and 0.54 with the Zung Depression Inventory. The correlations involving the Hs and D scale of the MMPI and the Zung scale are significant at $p<.05$ in a 1-tailed test. As reported in the MMPI textbook by Duckworth and Anderson, the Hs scale "*does not distinguish actual from imagined physical difficulties*" (see page 79).[3] Uncontrolled chronic pain is almost always associated with depression: this explains the significant correlations of MSPQ to D scale of the MMPI and to Zung scale. Accordingly, Chris Main interpreted the significant correlations involving his MSPQ as showing "*some relationship with emotional distress*."

An MSPQ study that aimed at its use to detect malingering was published in 2014 by Bianchini's team.[4] Their study compared normal controls to patients rank-ordered according to the suspected degree of malingering. From a methodological perspective, their study is problematic in at least 2 respects. First, patients with moderate or more severe traumatic brain injury were excluded. This precludes the generalization of their study to patients injured in MVAs due to the frequent presence of the post-concussion syndrome or to war veterans with possible concussive injuries from explosive blasts. Second, and the most damaging is that the authors grouped the chronic pain patients according to the degree of suspected malingering: the suspicion of malingering was determined with Symptom Validity Tests such as Paul Green's Word Memory Test (WMT)[5] that is now known to have, at most, a doubtful value for differentiating malingerers from legitimate patients (see a review by Richard Frederick).[6]

Paul Green is reported, at some point, to have claimed statistical 100% sensitivity and 100% specificity outcomes for his WMT,[6] i.e., unrealistic values or not reliably replicable findings. The WMT falls in the category of so called "*effort tests*" that use signs of poor effort as an indicator of malingering. It is noteworthy in this context that the American Academy of Clinical Neuropsychology published a consensus statement to indicate that scores on "*effort tests*" can be confounded by factors such as fatigue (see Heilbronner, Sweet, Morgan, Larrabee, et al.,)[7] page 1100. Fatigue is a very frequent symptom in post-MVA patients and in war veterans with comparable injuries.

The outcomes of Bianchini's study[4] showed higher MSPQ scores in those patients who were a priori ranked as more likely to malinger (on the basis of tests such as the WMT). Bianchini's study seems to be often misunderstood by some psychologists as documenting the validity of MSPQ as a measure of malingering. In fact, Bianchini's team was more cautious in their conclusion, suggesting that elevated MSPQ scores might provide information on psychosocial complications that could interfere with clinical pain management and rehabilitation.

Balasanyan's team[8] examined the validity of the MSPQ for detecting malingering among outpatients referred for neuropsychological assessment. The patients were divided into a credible and a noncredible group, depending on their performance on 9 of so called performance validity tests (PVT). Balasanyan's team[8] concluded that "*MSPQ scores were minimally related to PVT data, but were more strongly correlated with MMPI-2-RF scales, particularly over-report validity scales, RC1, and Somatic/Cognitive scales, with more widespread relationships observed in noncredible patients*."

It needs to be noted that the MMPI-2-RF scales, including its measures of validity of the patient's self-reports,[9] were validated for use on the usual psychiatric patients, i.e., not on physically injured patients with the polytraumatic symptom pattern (pain, pain related insomnia, post-concussion and whiplash syndrome, etc.) as sustained in car accidents, industrial accidents, or also by war veterans in combat. According to standards for psychological testing stipulated by the American Psychological Association,[10] the test is not to be blindly administered to clinical groups for which it has not been adequately validated. This also applies to the MMPI-2. [9]

Crighton's team[11] "compared 144 disability litigants, predominantly presenting a history of musculoskeletal injuries with psychiatric overlay, with 167 nonlitigating pain patients who were predominantly in treatment for chronic back pain issues and other musculoskeletal conditions."[11] Crighton concluded from these comparisons that the MSPQ was differentiating between the 2 groups

and is "useful to screen for pain malingering in forensic evaluations." [10] However, an alternative interpretation of Crighton's data could be as follows. There is always a possibility that patients who litigate for their disability have been injured more severely, have more severe symptoms, and are more worried that disability benefits would be denied to them than less injured patients.

As already mentioned, the author of the MSPQ, Chris J. Main, described his test in 1983 as "*a scale for the measurement of heightened somatic and autonomic awareness*" in back pain patients:[1] he did not consider it to be a measure of malingering. Since injured patients, particularly those with pain and pain related insomnia, in general tend to exhibit a "*heightened somatic and autonomic awareness,*" it is not clear why would some psychologists score the MSPQ as a test of malingering.

The present study examines the content validity of MSPQ items with respect to their capacity to differentiate malingerers from legitimate patients.

Method

The Modified Somatic Perception Questionnaire (MSPQ) consists of 22 items of which 13 are scored on a scale from 0="Not at all" to 3="Extremely, could not have been worse." The items that are listed in italics are usually not scored. See the item text in Table 1.

Table1. *The MSPQ*

	Not at all	A little, slightly	A great deal, quite a bit	Extremely, could not have been worse
Heart rate increase				
Feeling hot all over				
Sweating all over				
Sweating in a particular part of the body				
Pulse in neck				
Pounding in head				
Dizziness				
Blurring of vision				
Feeling faint				
Everything appearing unreal				
Nausea				
Butterflies in stomach				
Pain or ache in stomach				
Stomach churning				
Desire to pass water				
Mouth becoming dry				
Difficulty swallowing				
Muscles in neck aching				
Legs feeling weak				
Muscles twitching or jumping				
Tense feeling across forehead				
Tense feeling in jaw muscles				

Recommended diagnostic cutoffs for MSPQ vary from author to author. For instance, Bianchini's team[4] suggested the cutoff >16 points as providing "*a strong indication that symptoms and disability are being deliberately exaggerated*," but also mentions that even scores of > 12 points are "*acceptable indicators of malingering*." Crighton's study[11] suggested the cutoff of >13 points. In contrast, Balasanyan's team[8] reported that "*a cut-off of 18 resulted in few false positives in credible nonsomatoform patients, and appears appropriate for identifying physical symptom over-report (due to malingering or somatoform orientations), with associated sensitivity of 29%.*"

Balasanyan's team cautioned clinicians against "*using the MSPQ in patients with systemic, neurologic, and substance abuse conditions, and in ethnic minorities and non-monolingual English-speakers*." [8] It should be noted that post-concussive and whiplash symptoms of post-MVA patients and of similarly injured war veterans are neurological conditions.

The focus of the present study is on examining the overlap of individual MSPQ items with symptoms typically reported by patients injured in motor vehicle accidents (MVAs), i.e., including also the post-concussive and whiplash symptoms and signs of autonomic dysregulation as commonly associated with unrelenting pain, pain related insomnia, and sudden spikes of stabbing back or neck pain.

Results

About two-thirds of the 13 scored MSPQ items (8 of 13, i.e., 61.3%) show a definite overlap with medical symptoms legitimately experienced by post-MVA patients or injured war veterans.

Overlap with Signs of the Post-Concussion Syndrome

Three MSPQ items, i.e., 23.1% of those scored are commonly considered as post-concussive symptoms. These three are dizziness, blurring of vision, and nausea. All three are listed in the widely used Rivermead Post-Concussion Symptoms scale[12] where they are scored correctly as indicators of the post-concussion syndrome, not as signs of malingering.

Overlap with Signs of Whiplash Injury to Cervical Spine or with Muscular Strain/Sprain

The items "Muscles in neck aching," "Legs feeling weak," and "Muscles twitching or jumping" (i.e., another 23.1% of the scored items within the MSPQ) are signs associated with whiplash injury to cervical spine or also with sprain or strain of other tissues, and the associated fatigue.

Signs of Autonomic Dysregulation or Perception of Acute Pain

Symptoms of "Feeling hot all over" and Sweating all over" (15.4% of the 13 scored MSPQ items) are familiar to persons who experienced sudden episodes of excruciating back pain or of pain in other areas of their bodies. They could also occur intermittently as a consequence of unrelenting pain, pain related insomnia, and exhaustion.

Discussion

It is absurd to score items legitimately experienced by injured patients as indicators of malingering. Both the malingerers and legitimate patients may report the same number of symptoms on such tests. While there is much need for tests to measure malingering, the test standards must not be lowered to include tests prone to only differentiate between reporters and non-reporters of medical or psychological symptoms. This issue has already been discussed elsewhere with respect to the Structured Inventory of Malingered Symptomatology (SIMS) [13] which also only correctly classifies the reporters and non-reporters of symptoms, but does not properly differentiate malingerers from legitimate patients.[14] The SIMS consists only of items that list obviously legitimate medical symptoms[15,16,17] that could be endorsed by both patients and malingerers at similar rates, or also of arithmetic and logical reasoning tasks or tasks assessing general knowledge on which patients tired by chronic illness, or those with the post-concussion syndrome, or persons whose attentional focus is disrupted by chronic pain may perform worse than uninjured persons.[18,19]

As already mentioned, symptoms similar to post-MVA patients are also experienced by patients with industrial injuries such as those occurring on construction sites, and also in war veterans who sustained concussive and whiplash injuries in their exposure to violent blasts. Symptoms of such patients show a typical polytraumatic pattern. These patients are particularly vulnerable to being falsely diagnosed as malingerers, or in other, less overtly aggressive words, as magnifying or exaggerating their symptoms. Such "diagnoses" lead to denials of therapies and of other lawfully owed benefits to the injured patients.

Conclusions

About two-thirds of the 13 scored MSPQ items show a definite overlap with medical symptoms legitimately

experienced by post-MVA patients, injured construction workers, or injured war veterans. For these injured persons, the MSPQ is likely to differentiate reporters from non-reporters of symptoms, but not malingerers from legitimate patients. Psychologists who use MSPQ to "detect malingerers" are unwittingly engaging in malpractice.

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