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Content Validity of the Affective Disorder Subscale of the SIMS

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Abstract

***Background and Objective:** The Structured Inventory of Malingered Symptomatology (SIMS) is used widely to "detect malingering" of medical symptoms, even though there is no convincing evidence that it does differentiate malingerers from patients with legitimate symptoms. This study focuses on the Affective Disorder (AF) subscale of the SIMS.*

***Method:** In Study 1, ten raters (3 psychologists and 7 psychiatrists), each with more than 35 years of clinical experience, evaluated whether the AF items have any capacity to differentiate malingerers from legitimate patients. Study 2 evaluated responses to AF items by 16 survivors of high impact car accidents (6 men and 10 women; mean age 36.6 years, SD=12.3). Study 3 compared responses of these 16 patients to SIMS responses of 30 instructed malingerers and also to 47 medical patients who sustained only relatively minor injuries in car accidents (data from a 2014 study led by Capilla Ramírez with González Ordi).*

***Results:** All ten raters agreed that none of the AF items would be endorsed only by malingerers: on the contrary, all AF items list only legitimate symptoms of depression. The most frequently endorsed items by our 16 post-accident patients were those dealing with lack of energy (100% of the patients) and sleep problems (93.8%). 87.5% of these 16 patients who survived high impact car collisions would be falsely classified by the AF as "malingering an affective disorder." These 16 patients obtained significantly higher AF scores and higher total SIMS score than the 47 Spanish patients who sustained only relatively minor injuries in their car accidents (t-tests, $p<.001$). The 16 patients did not differ significantly in their AF and total SIMS scores from the instructed malingerers recruited in the Spanish study ($p>.05$).*

***Discussion and Conclusions:** The AF subscale of the SIMS contains no items with reasonable capacity to differentiate malingerers from legitimate patients. The SIMS is a fallacious test: its use on real patients is iatrogenic.*

Keywords: *malingering, depression, post-concussion syndrome, whiplash, SIMS.*

Introduction

The Structured Inventory of Malingered Symptomatology (SIMS) [1] was written by Glenn Smith while he was a psychology student and was first published in 1997 [2]. The SIMS has not been adequately constructed and validated for clinical or legal use in accordance with the standards specified by the American Psychological Association [3]. A recent study by a Canadian team [4] showed that none of the items

of the Psychosis subscale of the SIMS was considered by a team of three clinical psychologists and three psychiatrists as having any reasonable capacity to differentiate malingerers from truly psychotic patients with acute symptoms. All six healthcare professionals had each more than 35 years of clinical experience, including also the frontline work with severely ill psychiatric patients.Their impressions of the 15 items comprising the SIMS Psychosis subscales were as follows: six of the 15 SIMS items (i.e., 40%) obviously refer to auditory hallucinations in the form of "voices," six other items (i.e., other 40%) deal with delusions or thought disorder, and two other items imply possible psychotic misperceptions or misinterpretation of reality. Another item is descriptive of visions of morbid nature such as reported by some patients with schizophrenia or mood disorder. [4]

The SIMS has also been used by psychologists who work for the military: young recruits that may develop a psychosis during their basic military training or after a battle experience are likely to be branded as malingerers, court-martialled, and deprived of proper psychiatric treatment. Similarly, persons in correctional institutions who honestly describe their symptoms on the Psychosis subscale may be deprived of medical treatment because the SIMS classifies them as malingerers.

Of special interest here is the Affective Disorder (AF) subscale of the SIMS: the scale also consists of only 15 items, see their full text in the left column of Table 1. The cutoff score for this AF subscale is > 5 points: as soon as 6 items are endorsed, the patient is classified by the SIMS as "malingering a affective disorders." [1, 2]

Table 1: *Frequencies of endorsed items of the AF subscales of the SIMS*

Items from the Structured Inventory of Malingered Symptomatology (SIMS) *Items followed by the (T) count, in SIMS scoring system, one point towards malingering when marked by the patient as "True" and those with the (F) count one point towards malingering when marked by the patient as "False"*	Frequencies of patients in our Study 2 (N=16) reporting the symptom
2. When my depression becomes too severe, I go out for long walks or do some form of exercise to reduce the tension. (T)	50.0%
6. I seldom laugh. (T)	62.5%
16. Even though I'm depressed most of the time, I feel best in the morning after a good night's sleep. (T)	12.5%
17. My mood is worse at night. (T)	50.0%
19. At times I am so depressed I welcome going to bed early to "sleep it off." (T)	68.8%
23. I seldom cry. (F, i.e., inverse scoring)	31.2%
24. The more depressed I get, the more I want to eat. (T)	43.8%
32. I have trouble sleeping. (T)	93.8%
37. As the day progresses my mood gets worse. (T)	75.0%
43. I have no trouble falling asleep but I wake up often during the night. (T)	31.2%
47. I am depressed all the time. (T)	43.8%
52.I do not seem to have the energy I used to have. (T)	100.0%
55. When I'm "down," I can get a lift through my hobbies, interests, or friends. (F, i.e., inverse scoring)	56.2%
60. I can't seem to express my feelings. (T)	50.0%
72. Even though things seem pretty bad, I try to remain hopeful that they'll get better. (F, i.e., inverse scoring)	81.2%

The SIMS manual by Widows and Smith [1] blatantly misinforms the readers that the SIMS items are "*atypical, improbable, inconsistent, or illogical symptoms*" that would be *"highly atypical in patients with genuine psychiatric or cognitive disorders…",* see Widows and Smith, page 15.

Careful perusal of the items in Table 1 indicates that these items describe complaints similar or identical to those voiced by depressed patients: these are certainly not atypical or illogical symptoms uncommon in clinical practice. The Item 60 could refer to alexithymia which has been statistically shown to occur frequently with depressive symptoms, as a part of the syndrome, in a Finnish study on 2,018 persons [5].

Of special concern here is that depression can be associated (e.g., in the form of an adjustment disorder with mixed depression and anxiety) with other medical conditions such as severe pain from industrial or vehicular injuries. Pain is one of the key symptoms in survivors of motor vehicle accidents (MVAs), in addition to pain related insomnia and symptoms within the post-concussion whiplash spectrum [6, 7]. Unable to work due to their injuries, the related pain, and other post-MVA symptoms, these patients, if seeking insurance compensation, often face an insurance contracted psychologist who administers them the SIMS. These patients are likely to score above the cutoff criterion of 5 points on the Affective Disorder (AF) subscale of the SIMS [1]. Those with post-concussion whiplash syndrome may also score above the cutoff points on other SIMS subscales such as those "measuring the malingering" of Neurological Impairment and of Amnestic Disorder. A recent investigation [8] analyzed the conceptual overlap of SIMS items with item content of the River-mead Post-Concussion Symptoms scale [9] and the Post-MVA Neurological Symptoms scale [7] that assesses subjective whiplash symptoms. The results indicated that more than 50% of all 75 SIMS items can be endorsed legitimately by survivors of car accidents [8], without any intent to malinger: these patients are then denied therapy by being falsely branded as malingerers via SIMS. Health complaints of some of these persons may subsequently remain ignored by medical specialists across various clinical settings because these patients' medical files might mention that they "are malingerers" or "suspected malingerers."

When assessing persons who survived car accidents, it is important to recall the recent pioneering research by the brilliant neuropathologist Bennet Omalu [10, 11] on players of American football. His research demonstrated that cerebral damage in concussions occurs with sudden acceleration or deceleration of the head even in persons who neither sustained visible head injuries nor fully lost consciousness. These persons, within minutes after the concussion, may still appear able to perform at least some simple physical tasks such as those involved in playing football. However, microvascular injuries and axonal shearing occur in such incidents while the gray and the white parts of the brain slide over each other during the sudden excessive acceleration or deceleration of the skull that is usually associated with a slight rotational movement. This cerebral damage can be assessed via clinical measures such as the Rivermead Post-Concussion Symptoms scale [9]. The Rivermead scale includes depression as one of post-concussive symptoms.

Capilla Ramírez, González Ordi, Santamaría Fernández, and Casado Morales [12] used the Spanish translation of the SIMS [13] to detect malingering of whiplash symptoms. Their study compared SIMS responses of 30 uninjured healthy persons who were instructed to malinger post-accident whiplash symptoms to SIMS responses of 47 real post-accident patients. The selection criteria indicated that only post-accident patients with minor injuries were included:"*Como criterios de inclusión, los pacientes debían cumplir los siguientes requisitos: poseer una exploración física AP y lateral sin alteraciones de la columna cervical, aunqueadmitimos la hipolordosis cervical; EMG sin signosclínicos de afectación radicular; y, finalmente, una RM sin lesiones que justificaran la clínica dolorosa cronificada que presentaban los pacientes*." [12] In an English translation: "*Inclusion criteria specified that all patients had the following: normal results in their physical examination; AP and lateral radiography not indicating changes in cervical spine (though patients with cervical hypolordosis were not excluded); EMG without clinical signs of radiculopathy; and finally, MRI without lesions that would justify the chronic pain complaints clinically presented by these patients*." Such patients with only minor injuries might report fewer symptoms on lists of essentially legitimate medical symptoms such as the SIMS than do instructed malingerers: in the Spanish study [12], these patients' scores on the SIMS were indeed significantly lower than those of instructed malingerers. It should be noted that if SIMS items mainly describe legitimate medical symptoms, then such attempts at "validating" the SIMS as a test of "malingering" are inherently fallacious.

The Goal of the Present Investigation is to Evaluate

(1) if psychiatrists and psychologists with clinical experience of more than 3 decades in psychiatry would consider the 15 items of the Affective Disorder (AF) subscale as an adequate tool for differentiating malingerers from depressed persons.

(2) to what extent these 15 items are endorsed by patients who survived high impact collisions in which their vehicle was damaged so extensively that it was later on deemed not worthy of repair (thus including only collisions more likely to cause pain, pain related insomnia, post-concussion whiplash syndrome, and depression).

(3) if total scores of our 16 survivors of high impact collisions are significantly above those reported by SIMS validation sample of 47 patients in the Spanish study [12] led by CapillaRamírez with González Ordi: their patients were carefully pre-screened to exclude those with more salient post-MVA physical problems and hence those with more severe and extensive subjective whiplash symptoms (i.e., symptoms which could increase their SIMS scores dramatically, perhaps even above the level of the "instructed malingerers").

Materials and Method

Study 1

Three psychologists and seven psychiatrists, each with more than 35 years of clinical experience with psychiatric patients were instructed to rate the 15 items of SIMS Affective Disorder (AF) subscale [1] to decide whether they represent symptoms that would be endorsed only by malingerers or perhaps if they could instead be symptoms commonly experienced by sufferers of legitimate medical conditions such as depression.

Study 2

The SIMS was completed by 16 patients (6 men and 10 women; mean age 36.6 years, SD=12.3, age 19 to 60 years) who were in high impact motor vehicle accidents (MVAs). Their vehicle was damaged extensively by the MVA and was later on deemed not worthy of repair. The age of the cars was known in 10 of the 16 cases: 60% of these vehicles were less than 4 years old.

The average scores of these patients were 37.4 (SD=13.2) on the Rivermead Post-Concussion Symptoms scale [9], 17.2 (SD=11.0) on the PMNS scale [7], 6.5 (SD=1.4) on the average pain item of the Brief Pain Inventory [14], and 23.4 (SD=3.4) on the Insomnia Severity Index (ISI) [15]. The ISI score was unknown for one patient. The ISI scores of the 15 remaining patients were within the category of moderate insomnia for 5 patients and in the category of severe insomnia for 10 patients.

Study 3

We calculated comparisons of the SIMS data (SIMS total score and also the score on the AF subscale) of our 16 patients to those of 47 post-MVA patients from the Spanish study led by Capilla Ramírez and González Ordi [12]. As explained earlier, these 47 Spanish patients were carefully preselected to exclude those with serious post-MVA physical problems. The study of the team led by Capilla Ramírez and González Ordi also reports SIMS scores of 30 healthy persons instructed to malinger. We compared scores of these 30 instructed malingerers to those of our 16 patients.

Results

In the Study 1, all ten raters agreed that none of the 15 items of SIMS AF subscale has a reasonable capacity to differentiate malingerers from legitimate medical patients, and above all from patients reporting depressive symptoms. The agreement was 100%, so no rater agreement statistics need to be calculated.

In our Study 2, responses of the 16 post-accident patients' were evaluated separately to each of the 15 items of SIMS AF subscale: the frequencies of their responses are listed in the right column of Table 1. The lowest endorsement frequency was for Item 16 (12.5%) which is descriptive of diurnal variation in depressive symptoms. The highest frequencies were for the Item 52 (100%) indicating lack of energy and for Item 32 (93.8%) which reports sleep problems.

The total score for these 16 patients on the SIMS AF subscale ranged from 4 to 12 points: 87.5% of our 16 patients would be classified as "malingering Affective Disorder" via cutoff > 5 points stipulated by the SIMS manual [1]. Their average SIMS AF subscale score was 8.2 points (SD=2.1).

According to SIMS manual [1], the total SIMS score is calculated by adding scores on all 5 SIMS subscales (each of the 5 subscales is comprised of 15 items): Psychosis, Neurologic Impairment, Amnestic Disorders, Low Intelligence, and Affective Disorder. The total SIMS score of our 16 patients ranged from 9 to 41 points, with the average at 20.3 (SD=7.8).

The SIMS manual [1] recommends the cutoff score of > 14 points to classify the patient as a malingerer (presumably as a malingerer of "any" medical symptoms). In our group of 16 post-MVA patients, 75.0% scored above the cutoff point, i.e., they could be classified by insurance contracted psychologists as malingerers and deprived of legally owed insurance benefits and therapies.

In Germany, some neuropsychologists recommend to use the cutoff score of > 16 points instead: this German criterion does still misclassify 68.8% of patients in our sample, i.e., the majority, as malingerers.

In Study 3, we compared the data of our 16 patients to those of 47 post-MVA patients from the study led by Capilla Ramírez and González Ordi [12]. As explained earlier, those 47 Spanish patients were carefully preselected to exclude any with serious post-MVA physical problems and thus, those with more numerous legitimate subjective symptoms. The total SIMS scores of those 47 Spanish patients averaged at 10.4 (SD=5.3) and their average score on SIMS AF subscale was 5.0 (SD=2.2). This means, according to the SIMS Manual, that the average total SIMS score of these Spanish post-MVA patients was within the normal category, but that their average AF score would fall at the border of the category of "malingering the Affective Disorder."

When we calculated the t-tests to compare average total SIMS scores of our 16 patients (20.3, SD=7.8) to the average of 47 Spanish patients (10.4, SD=5.3), the test of homogeneity of variance showed significant difference in variance between the groups, and so we proceeded with the t-test based on unequal variances which resulted in the t=4.7, df=20, p<.001: the Spanish patients had significantly lower total SIMS scores, presumably because the SIMS lists mainly various legitimate medical symptoms (depression, insomnia, and symptoms within the post-concussion whiplash spectrum) which were more common in our sample. As already mentioned, the Spanish patient sample was carefully preselected by the Spanish authors to include only less injured post-MVA patients.

When we calculated the t-tests to compare average score on the SIMS AF subscale of our 16 patients (8.2, SD=2.1) to the one reported for the 47 Spanish patients (5.0, SD=2.2), the test of homogeneity of variance showed no significant difference in variance between the groups, and so we proceeded with the t-test based on equal variances which resulted in the t=5.1, df=61, p<.001: the Spanish patients had significantly lower scores on the Affective Disorder (AF) subscale of the SIMS.

In the study by Capilla Ramírez and González Ordi's team [12], 30 healthy Spanish persons were instructed to malinger post-MVA symptoms: they obtained an average of 7.6 points (SD=2.0) on the AF subscale and average total SIMS score of 16.4 (SD=6.8). When we calculated t-tests to compare average SIMS AF score of our 16 patients (8.2, SD=2.1) to average score of the 30 instructed malingerers (7.6, SD=2.0), the test of homogeneity of variance showed no significant difference in variance between the groups, and so we proceeded with the t-test based on equal variances which resulted in the t=1.0, df=44, p=.346: the two group did not differ significantly in their AF scores.

When we calculated t-tests to compare average total SIMS scores of our 16 patients (20.3, SD=7.8) to average score of the 30 instructed malingerers (16.4, SD=6.8), the test of homogeneity of variance showed no significant difference in variance between the groups, and so we proceeded with the t-test based on equal variances which resulted in the t=1.8, df=44, p=.085: the two groups did not differ significantly in their total SIMS scores.

Discussion

Content validity of a questionnaire is defined here as the conceptual congruence of the item content with the explicit goal of the test. With respect to the SIMS, this poses the question whether its item content is likely to adequately differentiate between malingerers and the legitimate patients. The expert ratings by ten experienced psychiatric professionals indicated that the content of all items of the SIMS Affective Disorder subscale is consistent with legitimate medical symptoms, most obviously those of depression. The Item 60 is suggestive of alexithymia which has been found, at a statistically significant level, to be associated with depression, see Honkalampia et al. [5]. The SIMS is unlikely to ever be a valid test of malingering.

Our data suggest that survivors of high impact MVAs may legitimately endorse, on the average, 8 of the 15 items that constitute the SIMS AF subscale: an endorsement of its depressive symptoms could be clinically expected from similar groups of injured patients with the post-accident polytraumatic syndrome that includes an unrelenting pain, pain

related insomnia, and the post-concussion whiplash syndrome.

Since SIMS questionnaire appears to consist entirely or almost entirely of items descriptive of legitimate medical symptoms, then validation studies attempting to compare real post-MVA patients to instructed malingerers are prone to provide different results depending on the severity of impairment in the group of those legitimate post-MVA patients. If the "real post-MVA patients" are carefully preselected to suffer only from a few post-accident symptoms, as was done in the Spanish "validation" study, then the instructed malingerers might indeed report more symptoms and reach higher scores on lists of legitimate symptoms such as the SIMS. This is a futile pseudovalidation with potentially iatrogenic consequences: the Spanish version of the SIMS [13] is now available internationally for clinical and legal use not only on mildly injured but also on patients with more intense and unrelenting chronic whiplash pain, pain related insomnia, depression, and symptoms within the post-concussion whiplash spectrum.

Our present study showed that a comparison of the 30 Spanish instructed malingerers to our 16 patients who survived high impact MVAs with respect to their SIMS AF scores and total scores was not statistically significant: both groups reported similar levels of medical symptoms.

Thousands of American and European psychologists who are not sufficiently familiar with scientific principles of test construction and validation have been deceived or misguided by pseudovalidation studies of the SIMS. The onus is on scientific psychology to demonstrate the fallacious nature of this test.

Conclusions

The SIMS was neither properly constructed nor adequately validated according to standards of the American Psychological Association [3]. Its Affective Disorder subscale consists entirely of items consistent with legitimate depression, i.e., not of symptoms "highly atypical in patients with genuine psychiatric or cognitive disorders" as claimed by the SIMS manual. Validations comparing SIMS scores of instructed malingerers to those of legitimate post-accident patients are futile: both groups might obtain comparable scores, unless as in the Spanish "validation" study, the "patients" are carefully preselected to include only those with minor injuries. The iatrogenic consequences of widespread use of the SIMS are worrisome. The use of SIMS by psychologists constitutes poor practice.

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