Utility of the Structured Inventory of Malingered Symptomatology in Identifying Persons Motivated to Malinger Psychopathology

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The Structured Inventory of Malingered Symptomatology (SIMS) is one of a number of recently developed instruments designed to identify persons exaggerating and/or fabricating psychiatric and cognitive symptomatology. Preliminary analog research indicated that the SIMS showed some promise as a screening device for identifying malingerers. This study examined the utility of the SIMS for identifying malingerers and, more importantly, its ability to distinguish truly symptomatic persons from persons fabricating symptomatology. In a sample of 197 participants who completed the SIMS and Symptom Checklist-90-Revised (SCL-90-R) under both honest and malingering instructional sets, sensitivity and specificity rates were generally high for the SIMS Total score and subscales. However, moderate correlations with the SCL-90-R were obtained in this sample, and specificity rates were lowest among a subset of participants reporting clinically significant levels of distress; both findings raise concerns regarding the potential for high false positive rates among clinical populations. Implications for clinical forensic practice are discussed and recommendations for future research are offered.

Assessment of test-taking sets is one of the most important aspects of forensic evaluation, given the stakes involved for persons undergoing such examinations. In some forensic contexts, examinees may be motivated to minimize psychopathology (e.g., when seeking release from a civil or forensic hospital, or when seeking custody of one's child). In other contexts, however, examinees may be motivated to exaggerate or fabricate psychopathology (e.g., when seeking damages for psychological pain and injury in personal injury litigation, or when seeking disability payments).

Historically, forensic examiners have

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been left to assess the test-taking set and veracity of reported symptomatology by way of a clinical interview and use of various validity scales embedded within standardized assessment instruments (e.g., the L, F, K, Mp, and Ds scales of the MMPI/MMPI-2; the Wb and Co scales of the California Psychological Inventory (CPI)/CPI-R; the Desirability, Debasement, and Disclosure scales of the MCMI-II/MCMI-III). Within the past 10 years, however, a number of instruments have been developed for the purpose of identifying persons who are exaggerating or fabricating psychopathology (e.g., the M Test,[1] Malingering Scale,[2] Malingering Probability Scale (MPS),[3] Structured Inventory of Malingered Symptomatology (SIMS),[4, 5] and Structured Interview of Reported Symptoms (SIRS)[6]).

This investigation examined the ability of the SIMS[7] to identify persons responding honestly and those exaggerating/fabricating psychopathology of various types. The SIMS is a 75-item true-false test that can be administered in 15 minutes. The SIMS has five subscales (Low Intelligence (LI), Affective Disorders (AF), Neurologic Impairment (N), Psychosis (P), and Amnestic Disorders (AM)), each consisting of 15 items and each designed to identify persons malingering a particular type of disability. Some SIMS items are similar to items contained in existing psychological measures such as the MMPI, SIRS, and Wechsler Adult Intelligence Scale-Revised (WAIS-R), whereas others were developed specifically for the instrument, based on characteristics of malingerers reported in the literature.

Preliminary research with the SIMS has been promising. Smith and Burger[8] developed the SIMS using a college student population and reported that it identified both "honest" and "malingered" profiles with a fairly high degree of accuracy (i.e., with reported sensitivity and specificity rates ranging between 73% and 95%, excluding the LI scale, which had a specificity rate of 52%). Rogers *et al.*[9] examined the utility of the SIMS using a sample of 53 adolescents undergoing court-ordered treatment and reported high sensitivity rates. These preliminary findings led Rogers and colleagues[10] and the instrument's author[11] to describe the SIMS as an instrument showing promise as a screen for malingered psychopathology and cognitive impairment, at least insofar as it is brief, self-administered, and has met with some success in differentiating honestly responding and malingering participants.

While preliminary findings are encouraging, important questions remain. For example, no investigators have examined the relationship between performance on the SIMS and genuine psychopathology. Of particular concern is whether honestly responding persons with psychiatric symptomatology may be misclassified by the SIMS as exaggerating or fabricating psychopathology. That is, although preliminary studies have offered encouraging findings about the sensitivity of the SIMS, its specificity is essentially untested, since there are no studies reporting its classification utility when administered to honestly responding, symptomatic persons. In this study we investigated the ability of the SIMS to classify persons

when responding honestly and when instructed to malinger symptoms of psychopathology or cognitive impairment. Given preliminary research findings, we hypothesized that the SIMS would: (1) produce high rates of sensitivity and specificity when classifying asymptomatic participants who responded to the SIMS under honest and malingering instructional sets; and (2) produce high sensitivity rates along with lower specificity rates when classifying symptomatic participants who responded to the SIMS under honest or malingering instructions.

Materials and Methods

Participants Participants (n = 196) were recruited from the subject pool of a large southeastern state university. Participation in the study was voluntary, and students received extra course credit for completing the research protocol. To increase involvement in the experiment, participants were instructed that 1 of every 50 who did the best job of malingering without "getting caught" would receive a $25 bonus payment.

Measures. *SIMS* See above for a description.

Symptom Checklist-90-Revised (SCL-90-R) The SCL-90-R[12] is a 90-item, structured, self-report instrument that assesses emotional functioning and psychopathology. Examinees, using a five-point Likert scale, report on how much they were distressed (0 = not at all, 4 = extremely) by a variety of symptoms in the previous week. There are nine clinical scales (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, Psychoticism) and three global indices of distress (Global Severity Index, Positive Symptom Distress Index, Positive Symptom Total), and a subsequently developed cognitive deficit scale (CD[13]). The SCL-90-R provides separate norms for sex as well as patient status (i.e., nonpatient, outpatient, and inpatient). The SCL-90-R is best considered as a global measure of emotional distress, since there is considerable overlap among scales, and factor analyses suggest two, three, or four main factors.[14–17]

Post-Test Questionnaire Participants also completed a post-test questionnaire that gathered relevant demographic information (including mental health treatment history), assessed their understanding of the instructional sets, and queried them about malingering strategies they employed. Participants also rated perceptions of their "success" at malingering, their motivation to do well when attempting to malinger, and how impaired a profile they believed they produced, using five-point Likert scales (1 = not at all, 5 = extremely).

Procedure All participants completed the SIMS and SCL-90-R twice, once when instructed to answer honestly and once when instructed to malinger one of three disorders (psychosis, depression, cognitive impairment). In the malingering condition, participants were instructed to assume that they were litigants in a personal injury lawsuit and were attempting to fabricate specific symptomatology (i.e., either psychosis, n = 59; depression, n = 65; or cognitive impairment, n = 72) in an attempt to receive a large monetary

award. Instructions were provided both orally and in written form. When instructed to malinger, participants were warned that the tests were designed to detect faking and that their task was to successfully fake the disorder without being so identified. While participants always completed the SCL-90-R first, followed by the SIMS, the order of conditions was counterbalanced so that some first completed the instruments honestly, while others first completed the SCL-90-R and SIMS under malingering instructions.

Prior to completing the SCL-90-R and SIMS in the malingering condition, participants were provided with a summary of the disorder to insure that they were knowledgeable about the symptomatology they were to malinger. Participants were permitted to refer to these instructions while completing the SCL-90-R and SIMS.* Participants next completed the post-testing questionnaire and were then debriefed.

Results

Protocol Validity Because this was an analog design, a number of techniques were used to assess participants' involvement in the experimental process and to identify test protocols that were invalid. First, although a total of 295 subject pool participants attended the testing sessions, 68 (23%) did not complete the protocols or completed them incorrectly and were thus excluded from the analyses. Next, analyses of participants' involvement in the experimental procedure were conducted. After completing the SCL-90-R and SIMS in both the honest and malingering conditions, participants completed the post-test questionnaire and answered multiple choice questions about the experimental manipulation (e.g., what disorder they were to malinger, what role they were to assume, what types of symptoms were indicative of the disorder they were attempting to malinger, whether they were to answer honestly or malinger). Only the protocols of participants who correctly answered five of the six questions were analyzed (196 of 227 participants, 86.3%).† Thus, of the original 295 study protocols, 196 (66%) were considered valid and complete and were included in the analyses. Not surprisingly, those participants who either provided incomplete protocols or who failed to correctly answer at least five of the six post-test questions acknowledged being significantly less motivated to do well when instructed to malinger than those participants who correctly answered five or more of the questions ($t(288) = 5.01$, $p = .026$).

Demographic Data This undergraduate sample was young (age (years), $M = 23.14$, $SD = 5.94$), primarily single (83%), Caucasian (77%; African American comprised 9% and Asian American,

* Participants were permitted to refer to the instructions to increase the external validity of the experiment because it is reasonable to conclude that persons motivated to malinger would have some knowledge about the disorder they are malingering; the result, therefore, was a more stringent test of the utility of the SIMS.

† A number of authorities identify the need to insure the validity of research protocols in analog malingering research (e.g., Rogers[23]). Our rate of completed but invalid profiles (13.7%) is similar to rates reported by other investigators who employed manipulation checks for determining inclusion of research protocols in analog research (e.g., Edens *et al.*,[24] 18% rejection rate; Robertson and Milner,[25] 17% rejection rate).

Table 1
Mean SCL-90-R Raw Scale Scores Across Honest and Malingering Conditions[a]

	Condition					
	Depression (n = 65)		Psychosis (n = 59)		Cognitive impairment (n = 72)	
SCL-90-R Scale	Honest *M* (*SD*)	Malingering *M* (*SD*)	Honest *M* (*SD*)	Malingering *M* (*SD*)	Honest *M* (*SD*)	Malingering *M* (*SD*)
Global Severity Index	.50 (.41)	1.96 (.78)	.57 (.55)	1.95 (.66)	.45 (.46)	1.52 (.71)
Depression	.67 (.66)	3.03 (.77)	.69 (.64)	1.80 (.80)	.58 (.59)	1.69 (.80)
Psychoticism	.28 (.34)	1.81 (.94)	.36 (.51)	2.14 (.81)	.20 (.37)	1.24 (.84)
Somatization	.39 (.38)	1.39 (.89)	.46 (.61)	1.24 (.85)	.43 (.52)	1.32 (.91)
Obsessive-Compulsive	.84 (.64)	2.14 (.80)	.77 (.66)	1.91 (.80)	.67 (.61)	2.52 (.72)
Interpersonal Sensitivity	.70 (.56)	2.17 (1.02)	.79 (.81)	2.13 (.79)	.59 (.65)	1.38 (.89)
Anxiety	.36 (.36)	1.62 (1.05)	.47 (.64)	2.18 (.81)	.32 (.47)	1.41 (.92)
Hostility	.42 (.43)	1.29 (.97)	.48 (.61)	2.01 (1.07)	.43 (.57)	1.24 (1.00)
Phobic Anxiety	.16 (.26)	1.26 (1.06)	.31 (.56)	2.12 (.96)	.15 (.44)	1.34 (1.05)
Paranoid Ideation	.56 (.59)	1.77 (1.09)	.75 (.78)	2.70 (.86)	.53 (.56)	1.35 (.97)
Cognitive Deficit	.73 (.57)	2.12 (.82)	.73 (.63)	1.98 (.80)	.66 (.65)	2.59 (.64)

[a]Mean raw scale scores can range from 0 to 4.00.

5%), and female (83%). Seventeen percent (n = 33) of the participants reported current or prior involvement in some type of mental health treatment (outpatient psychotherapy, 15%; psychotropic medication, 6%; and/or psychiatric hospitalization, 2%).

SCL-90-R To examine the effects of malingering on the SCL-90-R, three separate repeated-measures multivariate analyses of variance (MANOVAs) were performed examining mean SCL-90-R scale raw scores across the three malingering conditions. As expected, a significant multivariate effect was obtained for each condition: Depression = $F(10, 55) = 41.33$, $p < .001$; Psychosis = $F(10, 47) = 21.42$, $p < .001$; Cognitive Impairment = $F(10, 62) = 39.80$, $p < .001$. For each MANOVA, significant univariate analyses (all p values $< .001$) were obtained for each subscale comparison, with t values ranging between 37.98 and 380.61. Similar results were obtained for the Global Severity Index score across the honest and malingering conditions. These findings indicate that when instructed to malinger, participants tended to produce elevated scores on each SCL-90-R scale, regardless of the specific condition they were instructed to malinger. As well as producing global elevations, participants in each specific condition also produced the highest mean elevations on scales consistent with the disorder they were instructed to malinger. For example, members of the malingered depression group obtained their highest mean elevation on the SCL-90-R Depression scale, whereas members of the malingered cognitive impairment group obtained their highest mean score on the Cognitive Deficit scale (see Table 1).

SIMS Similar to the analyses performed on the SCL-90-R, repeated-measures MANOVAs were conducted on the

Table 2
Descriptive Statistics for SIMS Across Honest and Malingering Conditions

	Condition					
	Depression (n = 65)		Psychosis (n = 59)		Cognitive impairment (n = 72)	
SIMS Scale[a]	Honest M (SD)	Malingering M (SD)	Honest M (SD)	Malingering M (SD)	Honest M (SD)	Malingering M (SD)
Total score	7.78 (4.47)	32.54 (13.41)	8.09 (3.82)	40.71 (14.19)	7.87 (4.73)	38.60 (11.40)
AF	3.77 (1.94)	9.95 (1.79)	3.94 (1.81)	7.69 (2.08)	3.50 (1.87)	7.28 (2.76)
P	.45 (.79)	3.58 (4.02)	.42 (.67)	9.95 (4.49)	.67 (1.35)	3.38 (3.90)
N	1.00 (1.30)	6.57 (3.68)	.90 (1.02)	8.08 (4.07)	.90 (1.21)	8.16 (3.83)
AM	.91 (1.42)	8.11 (4.72)	1.05 (1.46)	8.78 (4.64)	.82 (1.57)	12.29 (3.63)
LI	1.65 (1.45)	4.33 (3.10)	1.76 (1.47)	6.20 (3.64)	1.97 (1.49)	7.50 (3.40)

[a]AF = affective disorders; P = psychosis; N = neurologic impairment; AM = amnestic disorders; LI = low intelligence.

scales of the SIMS across the three malingering conditions. As expected, mean SIMS scale scores varied as a function of the condition (honest versus malingering) under which participants completed the SIMS (see Table 2). Univariate analyses indicated that each sample produced significantly higher mean scores across all SIMS subscales in the malingering condition compared with the honest condition (t values ranging from 32.25 to 554.51, all p values $< .001$). Similar results also were obtained for the SIMS Total score across the three malingering conditions.

Sensitivity and specificity rates of the SIMS scales and Total score are presented in Table 3. Using cutoff scores recommended by Smith and Burger,[18] the Affective (AF) scale (cutoff > 5) correctly identified 100 percent of the participants malingering depression, the

Table 3
Classification Rates for SIMS Total and Scale Scores

	Condition							
	Depression (n = 65)		Psychosis (n = 59)		Cognitive impairment (n = 72)		Combined (n = 196)	
SIMS Scale[a]	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
	%		%		%		%	
Total score	92.3	89.2	98.3	93.2	98.6	91.7	96.4	91.3
AF	100.0	81.5	86.4	76.3	73.6	87.5	86.2	82.1
P	56.9	89.2	91.5	93.2	58.3	86.1	67.9	89.3
N	83.1	89.2	89.8	93.1	94.4	93.1	89.3	91.8
AM	83.1	90.8	84.7	88.1	95.8	91.7	88.3	90.3
LI	66.2	69.2	83.1	72.9	91.7	71.8	80.6	71.3
Any scale elevation	100.0	50.8	100.0	49.2	100.0	52.8	100.0	51.0

[a]See Table 2 footnote for scale definitions.

Neurologic Impairment (N) scale (cutoff > 2) correctly identified 94.4 percent of the participants malingering cognitive impairment, and the Psychosis (P) scale (cutoff > 1) correctly identified 91.5 percent of the participants malingering psychotic symptoms. The Total SIMS score (cutoff > 14) correctly identified 96.4 percent of all the malingered protocols.

The specificity of the SIMS was also generally impressive, with the majority of presumably honestly responding persons being classified as not malingering symptomatology (see Table 3). For the entire sample when responding honestly, the AF scale misidentified 17.9 percent as malingering, the P scale misidentified 10.7 percent, the N scale misidentified 8.2 percent, the Amnesia (AM) scale (cutoff > 2) misidentified 9.7 percent, and the Low Intelligence (LI) scale (cutoff > 2) misidentified 28.7 percent. Using the Total SIMS score, only 8.7 percent of the honest profiles were incorrectly classified as malingered. However, if one were to interpret an elevation on *any* SIMS scale as indicative of potential malingering, the specificity rate drops precipitously to 51 percent for the total sample of honest protocols.

As noted above, no published research has examined the relationship of the SIMS to genuine psychopathology or its specificity among clinical populations. As a preliminary analysis of this relationship, correlation coefficients were computed between the SIMS Total and subscale scores and the SCL-90-R Global Severity Index (using all protocols from the honest condition). Although ideally indices of malingered psychopathology should be relatively uncorrelated with genuine symptomatology, moderate correlations were in fact obtained between the Global Severity Index (GSI) and AF (r = .49), P (r = .23), N (r = .43), AM (r = .28), and SIMS Total score (r = .52) scales, all significant at $p < .001$. Only the LI scale (r = .11, p = n.s.) was not significantly associated with this measure of global distress.

Next, we examined the specificity of the SIMS when completed by participants reporting clinically significant symptomatology. From our pool of 196 participants, we identified two clinical subsamples. Thirty-three participants who reported current or prior mental health treatment comprised a "treatment history" subsample. A second clinical subsample of participants reporting current psychological distress also was identified using the GSI score. Those participants who obtained a GSI T score of 45 or higher using the outpatient SCL-90-R norms (non-patient T score equivalent is approximately 65) comprised the subsample (n = 27).[‡]

When classifying those participants with a mental health treatment history who responded to the SIMS honestly, there was considerable variability among the SIMS scales in terms of specificity (see Table 4). The LI and AF scales misidentified a fairly large number of honestly responding participants reporting a

[‡] Participants in the mental health treatment history subgroup were those who reported past or current outpatient psychotherapy/counseling, use of psychotropic medication, and/or inpatient hospitalization. Participants in the SCL-90-R group were those who obtained Global Severity Index scores ≥ 45 T (based on outpatient norms) when responding honestly.

Table 4
Classification of Participants Reporting Significant Symptomatology or Mental Health History

	Subsample[b]			
	Mental health history (n = 33)		Honest SCL-90-R, GSI $T \geq$ 45 (n = 27)	
SIMS Scale[a]	Sensitivity	Specificity	Sensitivity	Specificity
	%		%	
Total score	97.0	90.9	100.0	77.8
AF	84.8	72.7	92.6	51.9
P	60.6	90.9	77.8	85.2
N	90.9	97.0	92.6	73.1
AM	90.9	84.8	100.0	81.5
LI	81.8	75.8	85.2	74.1
Any scale elevation	100.0	42.4	100.0	29.6

[a]See Table 2 footnote for scale definitions.
[b]Participants in the "mental health history" group were those who reported past or current outpatient psychotherapy/counseling, use of psychotropic medication, and/or inpatient hospitalization. Participants in the SCL-90-R group were those who obtained Global Severity Index scores ≥45 T (based on outpatient norms) when responding honestly.

treatment history (24.2% and 27.3%, respectively), whereas the N scale and Total SIMS scale provided lower rates of misclassification (3.0% and 9.1%, respectively). As expected, the SIMS scales were more likely to misclassify participants reporting current symptomatology (as measured by the GSI) than participants simply reporting current or past involvement in mental health treatment (see Table 4). The worst performing SIMS scale (AF) misclassified 49.1 percent of the honest SIMS protocols as malingered and the best performing scale (P) misclassified 14.8 percent. The Total SIMS score misclassified 22.2 percent of the participants responding to the SIMS honestly. Of particular concern is the finding that 70.4 percent of these participants were identified as malingering on at least one SIMS scale when answering honestly.

Discussion

Consistent with preliminary findings offered by Smith and Burger[19] and Rogers and colleagues,[20] our results indicate that the SIMS is relatively sensitive to various types of malingered psychopathology—more specifically, malingered psychosis, depression, and cognitive impairment. There was considerable variability among the scales in terms of their sensitivity and, at the same time, there is only limited support for the claim that the scales are focused on the symptomatology they assess. That is, with the exception of the P scale (which had low sensitivity for detecting non-psychotic conditions), the SIMS scales showed a general tendency to identify persons who were malingering, regardless of the specific symptomatology they were malingering. Scales designed to identify partic-

ular types of malingered disorders (e.g., psychosis) did not do a much better job than scales designed to identify other types of malingered symptomatology such as amnestic disorders or neurological impairment (e.g., AM; N) . This finding may reflect either considerable overlap among the SIMS scales, that malingerers are not specific in the symptomatology they malinger, or both. Findings regarding the sensitivity of the SIMS scales are particularly encouraging in light of the fact that our participants were (1) provided with brief descriptions of the disorders they were to malinger and (2) informed that the tests were designed to detect malingering. This design makes for a more rigorous test of the instrument and also increases the external validity of the study, insofar as persons motivated to exaggerate or fabricate symptomatology in real world settings may educate themselves about the nature of the disorders they are malingering.

This study was the first to examine the utility of the SIMS with a clinical population, as defined by self-reported mental health history or global level of distress as measured by the SCL-90-R. Consistent with our hypotheses, our findings indicate that genuinely symptomatic persons are at risk for being identified as malingering on the SIMS. The AF scale seems particularly vulnerable to misclassifying truly symptomatic persons. Although the P scale was relatively specific in the determination of malingering (i.e., few false positives among symptomatic persons), its sensitivity was low among persons instructed to malinger non-psychotic symptoms (see Table 3). Results from the total sample as well as the two clinical subgroups suggest that the SIMS Total score is perhaps the most discriminating of all the scales, in that it was quite sensitive to malingering and also relatively specific, at least for the three disorders examined in this study.

Although the SIMS was developed to assess various types of malingered psychopathology, there appears to be some degree of content overlap with legitimate symptomatology, based on the moderately positive correlations between the SIMS scales and GSI of the SCL-90-R. As hypothesized, higher false positive rates were obtained when the SIMS was used with a clinical population (compare these findings to those of Smith and Burger[21]), and even higher false positive rates might be expected if the SIMS was completed by persons who were more symptomatic or exhibited greater levels of distress (e.g., persons in inpatient or outpatient settings). As a percentage of the population examined by forensic evaluators can be expected to show significant levels of distress, use of the SIMS in forensic contexts should still be considered with caution, given the potential for high false positive rates. If used, it should be used only as a general screening device, as recommended by the author,[22] and the significant potential for false positives must be kept in mind. Further examination of the utility of the SIMS, using other clinical populations, is clearly warranted. In particular, higher cutoff scores ultimately may be needed to increase specificity (at the expense of decreased sensitivity) in clinical forensic populations.

A caveat regarding the SCL-90-R is also offered here. As might be expected, our analyses indicated that our coached participants were able to manipulate their SCL-90-R profiles with relative ease. This finding, in combination with the absence of validity scales on the SCL-90-R, raises serious questions about its use in forensic evaluations and other contexts where examinees may be motivated to portray themselves in a less than candid manner.

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