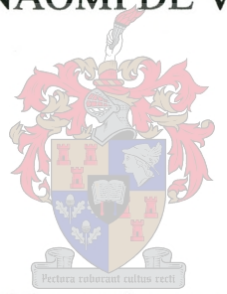
MALINGERING IN PERSONS WITH A DIAGNOSIS OF DEPRESSION

VESTA NAOMI DE VILLIERS



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Supervisor: Dr. F.J. Hugo

Co-supervisor : Dr. J.J. Spangenberg

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and has not previously, in its entirety or in part, been submitted at any university for a degree.

Vesta Naomi de Villiers

The article format of this thesis is in accordance with the requirements of the Department of Psychology.

ABSTRACT

Malingering is the intentional production or exaggeration of symptoms for personal gain in the context of external incentives. Due to the absence of objective symptoms, depression may represent a relatively attractive option for malingerers. Existing approaches to distinguish between depressive symptoms and possible malingering often use time-consuming psychometric tests or unreliable interview techniques. Short screening tests for malingering may be a practicable alternative and recently South African cut-off scores on tests for malingering were determined for a student sample. The purpose of this study was to establish South African cut-off scores for persons with a diagnosis of depression on screening instruments for malingering.

Fifty-one subjects with a diagnosis of depression (measured by the Zung Depression Scale) were randomly ascribed to one of two groups: an experimental group of 25 subjects (instructed to simulate symptoms based on a malingering case scenario) and a control group of 26 subjects (instructed to do their best in the tests). No incentive was provided to the subjects. Each subject completed the 21-item verbal memory forced choice test (FCT), the Rey 15-item test (Rey 15-item), the dot-counting test (DCT), the Word Recognition test (WR) that is part of the Alzheimer Disease Assessment Scale Cognitive Battery (ADAS-Cog) and the Structured Inventory of Malingered Symptomatology (SIMS).

The WR test correctly classified 74.5% of subjects with a sensitivity of 93%. The FCT, with a cut-off of > 15.5, correctly classified 72.5% of subjects. A regression equation was computed by combining the FCT, DCT and SIMS. This correctly classified 74.5% of patients with a sensitivity of 69%. The DCT accurately identified 64% of the malingerers using a cut-off

score of > 65.57. The Rey15-item test showed poor results and does not seem to be useful as a screening instrument.

The WR test shows promise as a screening instrument for malingering. Combining tests when screening for malingering proved to be an effective way to distinguish between malingering of depressive symptoms and real symptoms. The results of this study will help provide guidelines to mental health workers on how to diagnose malingering in patients with depression more objectively.

OPSOMMING

Malingering is die opsetlike nabootsing of oordrywing van simptome vir persoonlike gewin in die konteks van eksterne vergoeding. As gevolg van die subjektiewe aard van simptome, kan depressie 'n relatief aantreklike opsie wees wanneer psigiatriese kondisies gesimuleer word. Bestaande maniere om te onderskei tussen werklike depressiewe simptome en moontlike malingering, gebruik tydrowende psigometriese toetse of onbetroubare onderhoudstegnieke. Kort siftingstoetse vir malingering kan 'n praktiese altenatief wees en onlangse Suid-Afrikaanse afsnypunte op toetse vir malingering is bepaal vir 'n studentesteekproef. Die doel van hierdie studie was om Suid-Afrikaanse afsnypunte te verkry vir malingeringstoetse vir mense met 'n diagnose van depressie.

Een en vyftig subjekte met 'n diagnose van depressie (gemeet deur die Zung Depressieskaal) is ewekansig toegewys aan een van twee groepe: 'n eksperimentele groep van 25 subjekte (met die opdrag om simptome te simuleer op grond van 'n malingering-scenario) en 'n kontrolegroep van 26 subjekte (met die opdrag om hulle bes te doen in die toetse). Geen vergoeding is aan proefpersone gebied nie. Elke subjek het die *21-item verbal memory forced choice test* (FTC), die *Rey 15-item test* (Rey 15-item), die *dot-counting test* (DCT), die *Word Recognition test* (WR) wat deel vorm van die *Alzheimer Disease Assessment Scale Cognitive Battery* (ADAS-Cog) en die *Structured Inventory of Malingered Symptomatology* (SIMS) voltooi.

Die WR het 74.5% van die subjekte korrek geklasifiseer met 'n sensitiwiteit van 93%. Die FCT, met 'n afsnypunt van <15.5, het 72.5% van die subjekte korrek geklassifiseer. 'n Regressie-vergelyking is bereken deur 'n kombinering van die FCT, DCT en SIMS. Dit het

74.5% van die subjekte korrek geklassifiseer met 'n sensitiwiteit van 69%. Die DCT kon 64% van die malingeerders akkuraat identifiseer deur gebruik te maak van 'n afsnypunt van > 65.57. Die Rey 15-item toets het swak resultate getoon en blyk nie bruikbaar te wees as 'n siftingstoets nie.

Die WR toon potensiaal as 'n siftingstoets vir malingering. Die kombinering van toetse wanneer pasiënte gesif word vir malingering blyk 'n effektiewe manier te wees om te onderskei tussen die malingering van depressiewe simptome en werklike simptome. Die resultate van hierdie studie kan help om riglyne te skep vir geestesgesondheidswerkers oor hoe om malingering van depressie meer objektief te diagnoseer.

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Malingering in Persons with a Diagnosis of Depresion

Vesta N. de Villiers*, Frans J. Hugo** and Judora J. Spangenberg*

Departments of Psychology* and Psychiatry**

University of Stellenbosch, South Africa

ABSTRACT

Malingering is the intentional production or exaggeration of symptoms for personal gain in the context of external incentives. Due to the absence of objective symptoms, depression may represent a relatively attractive option for malingerers. Existing approaches to distinguish between depressive symptoms and possible malingering often use time-consuming psychometric tests or unreliable interview techniques. Short screening tests for malingering may be a practicable alternative and recently South African cut-off scores on tests for malingering were determined for a student sample. The purpose of this study was to establish South African cut-off scores for persons with a diagnosis of depression on screening instruments for malingering. Fifty-one subjects with a diagnosis of depression (measured by the Zung Depression Scale) were randomly ascribed to one of two groups: an experimental group of 25 subjects (instructed to simulate symptoms based on a malingering case scenario) and a control group of 26 subjects (instructed to do their best in the tests). No incentive was provided to the subjects. Each subject completed the 21-item verbal memory forced choice test (FCT), the Rey 15-item test (Rey 15-item), the dot-counting test (DCT), the Word Recognition test (WR) that is part of the Alzheimer Disease Assessment Scale Cognitive Battery (ADAS-Cog) and the Structured Inventory of Malingered Symptomatology (SIMS). The WR test correctly classified 74.5% of subjects with a sensitivity of 93%. The FCT, with a cut-off of > 15.5, correctly classified 72.5% of subjects. A regression equation was computed by combining the FCT, DCT and SIMS. This correctly classified 74.5% of patients with a sensitivity of 69%. The DCT accurately identified 64% of the malingerers using a cut-off score of > 65.57. The Rey15-item test showed poor results and does not seem to be useful as a screening instrument. The WR test shows promise as a screening instrument for malingering. Combining tests when screening for malingering proved to be an

effective way to distinguish between malingering of depressive symptoms and real symptoms. The results of this study will help provide guidelines to mental health workers on how to diagnose malingering in patients with depression more objectively.

Malingering in Persons with a Diagnosis of Depression.

Simulation or malingering is defined as the intentional production or exaggeration of symptoms for personal gain in the context of external incentives (American Psychiatric Association, 1994). The incentives often consist of third party and insurance payouts where financial compensation motivates individuals to simulate illness or to exaggerate existing illness. For psychiatric conditions, depression may represent a relatively easy target for the individual who is tempted to simulate for financial gain. Many individuals experience depressive symptoms at some time in there lives and they may feel that it is relatively easy to exacerbate these symptoms. For clinicians, the absence of objective symptoms often makes it difficult to objectively gauge the presence and degree of depression with accuracy.

A number of studies have examined ways to distinguish simulated from real depressive symptoms in the context of possible malingering. Detection strategies include interview techniques, existing psychometric tests (such as the Minnesota Multiphasic Personality Inventory – MMPI) and self-report screening instruments specially developed for malingering (Hersch & Alexander 1990; Lezak, 1995; Meisner, 1988; Rogers, 1997). Experienced clinicians use interview techniques to elicit signs suggestive of malingering, but these can be fallible (Faust & Guilmette, 1990; Resnick, 1993). Many clinicians do not have experience with patients that malinger and the signs are often subtle. Psychometric tests usually take time to administer and require special expertise for interpretation (Bagby et al., 1997). Self-report screening instruments require limited time for administration and should conceptually provide a threshold method for the screening of malingering when used alone. In combination with additional testing and clinical skill, they may also serve as a source of confirmatory data (Kulisevsky, Berthier, Avila, Gironell & Escartin, 1998).

Theron (1999) examined a short battery of tests for malingering in a sample of students. Results showed that the dot counting test, SIMS and twenty-one item forced choice test were able to distinguish malingerers from honest responding individuals. These results have given us an indication of cut scores for a non-psychiatric South African subject sample. Theron (1999) used a simulation design for their study. In this design normal subjects are divided into two groups; one group is requested to malinger and the other to perform optimally on tests designed to elicit malingering. These groups are then compared and optimal cut scores are computed for the tests. This design has good internal validity but often compromises external validity (Rogers & Cruise, 1998). One of the complications for external validity involves the use of "normal" subjects. Consequently, cut scores have to be examined on patient samples that include psychiatric conditions commonly encountered.

We selected a sample of depressed patients with the Zung depression rating scale and then requested half to simulate illness and the other half to perform optimally on a selection of psychometric tests (Zung, 1990). Our goal was to determine if these psychometric tests were able to distinguish malingering from optimal performance and thus to determine cut scores for a sample of depressed individuals. We used the same battery of tests as described by Theron (1999) and added another test for recognition memory.

Method

Subjects

The subjects were obtained from both inpatient and outpatient facilities of the Department of Psychiatry, University of Stellenbosch, and the Unit for Clinical Psychology, University of Stellenbosch. No incentive was provided for participation in the study.

Inclusion criteria were a score of 50 and above on the Zung self-rating Depression Scale (ZDS) (indicating depression) and an education of grade 8 or higher. Subjects completed the ZDS under normal clinical care conditions. Exclusion criteria were disturbed consciousness and inability to perform psychometric tests due to physical incapacity.

We screened 83 subjects and excluded 32 (39%) on the basis of the aforementioned inclusion and exclusion criteria. Most subjects were excluded due to low ZDS scores. The final sample consisted of 51 individuals, 17 male and 34 female. Subjects were randomised into an experimental group (n=26) and a control group (n=25). The mean age for all subjects was 34.6 (range 18-64). The average ZDS score for all subjects was 64.9 (range 50-94). The average ZDS score for the control group was 65.0 and for the malingering group 65.2.

Measures

The measures consisted of five psychometric tests:

Theron (1999) describes the modification of the FCT test. The theory of the test was previously described by Pankratz et al. (1975). The 21 items are read to the subject and then he/she is instructed to recall as many as possible of the words. Subsequently, word pairs are read to the subject. One of the words are from the original list and the subject is instructed to name this word and, if he/she cannot remember, to guess. Subjects thus have a 50% chance of guessing correctly and persons simulating would be expected to perform at a level lower than chance.

DCT entails the counting of dots on a card. On the first six cards the dots are arranged in random order and on the last six cards the dots are grouped to facilitate faster counting. The premise is that a person with the intent of giving his/her optimal performance will count the grouped dots faster (Lezak, 1995). The study by Theron (1999) used multiple measurements on this task and found that total time for all 12 cards was most effective in distinguishing simulators

from optimal performers. In this study total time was the only measurement used for statistical computations. Malingering is indicated by longer time for test completion.

In the Rey 15-item memory test the subject is instructed to remember 15 items that include letters, numbers and shapes (Lezak, 1995). The subject is shown the items for 10 seconds whereupon he/she has to reproduce them from memory. The fact that *15 separate items* will be shown, and *only 10 seconds* will be allowed for memorisation is emphasised. The task is in fact particularly easy as the items are associated with five principles and even severely brain damaged patients are able to remember these items. Total number of items correctly recalled after the first trial was considered for analysis and a low score indicates simulation.

Another test of verbal memory was devised, based on word recognition that forms part of the Alzheimer Disease Assessment Scale Cognitive Battery (ADAS-Cog) (Mohs & Cohen, 1988). This word recognition test measures malingering on the same premise as the FCT test. Subjects are asked to read aloud a list of 12 target words and instructed to remember these words. A second list is then shown that contains, in random order, the 12 target words and 12 distracter words. The subject is asked to identify the target words in the second list. Two trials were administered, each with different distracter words. Again, persons performing optimally were expected to perform better than chance and malingerers worse. One mark was allocated for correct responses, which provided a range of 0-48. A low score indicates possible simulation.

Subjects then completed the SIMS, a 75-item true-false self-report test constructed to detect the presence of malingering in several clinical domains (Smith & Burger, 1997). It consists of five scales to evaluate what was judged to be the most commonly malingered conditions: low intelligence, affective disorders, neurological impairment, psychosis and amnesia. Smith and Burger (1997) and Theron (1999) showed that the scale effectively

distinguished between malingerers and optimal performance on a student sample instructed to either malinger or perform at their best. High scores indicate malingering (Theron, 1999).

A post assessment interview was performed on all subjects. After unblinding subject allocation, the researcher requested subjects who were asked to simulate to rate on a 1 – 3 point scale their ability to perform according to protocol requirements. A score of 1 indicated that the subject did not simulate his/ her performance, a score of 2 indicated a moderate degree of simulation and a score of 3 indicated complete simulation of symptoms.

Subjects were evaluated in their home language. All tests were translated into Afrikaans and English. The same translations used by Theron (1999) were used.

Procedure

We selected a sample of patients suffering from depression (as described under Subjects) and then applied a simulation design on these individuals. The control group was instructed to perform optimally on psychometric tests for malingering and the experimental group was instructed to simulate depression on the same tests. The groups were compared and cut scores were computed that optimally distinguished between the groups.

The Ethics Committee of the University of Stellenbosch Medical Faculty approved all protocol procedures. Informed consent was obtained before subjects participated in the study.

Simulation was encouraged by reading the following scenario:

> *"You are depressed: You feel down; things that you used to enjoy no longer seem interesting; you are not sleeping well and don't feel like eating - life hardly seems worth living. You have had problems concentrating on your work and have forgotten things and made mistakes. Your boss does not seem to understand, thinks you are lazy and wants to fire you. You doctor feels that you should be*

given extended paid leave. Your doctor sends you to be tested. Prove to management on the tests that you are not coping properly at work due to your depression, and deserve extended leave."

The control group read the following instruction:

"Please do the best that you can on the following tests".

Subjects were not given any additional information about symptoms characteristic of depression and thus had to rely on what they already knew about the illness to malinger successfully.

A researcher, who was blinded to patient assignment, then applied a short battery of five psychometric tests in the order in which they are mentioned here. The 21 item Forced Choice test (FCT), Dot Counting Test (DCT), Rey 15 item-memory test, Word Recognition test (WR) which is part of Alzheimer Disease Assessment Scale Cognitive Battery (ADAS-Cog) and Structured Inventory of Malingered Symptomatology (SIMS) (Lezak, 1995; Mohs & Cohen, 1988; Pankratz, Fausti & Peed, 1975; Smith & Burger, 1997). The psychometric tests took approximately 15 minutes to administer. The SIMS, a self-report test, took subjects approximately 20 to 30 minutes to complete.

Statistical analyses

Statistical analysis consisted of descriptive statistics that included sample mean and sample standard deviation. T-tests were used to examine performance differences due to language diversities. Optimal cut scores for malingering were computed by selecting a value that maximised the number of correctly classified subjects. Sensitivity was calculated as the percentage of participants correctly identified as malingering and specificity as the percentage of individuals correctly identified as not malingering. Confidence intervals for sensitivity and specificity were also computed. Weighted linear combinations of scores were analysed with

discriminant analysis on the three variables that had the highest proportion correctly classified in the paper by Theron (1999). Thus, for the FCT, DCT and SIMS Total score a regression equation was computed.

Results

Fifty-one subjects were included in the study. Forty-one (80.4%) were Afrikaans and 10 (19.6%) English. There was no statistical difference on test performance between Afrikaans and English subjects ($p > 0.05$, t-test).

Descriptive statistics for the psychometric tests are summarised in Table 1. On the FCT, optimal performers achieved a mean score of 16.9 and simulators 13.8. None of the subjects were able to achieve the maximum score of 21. A cut-off of < 15.5 for malingering correctly classified 72.5% of subjects with a sensitivity of 73% and specificity of 72% (Table 2).

The Rey 15 item-test did not illustrate a significant difference between the groups with means of 10.9 and 10.5 respectively for optimal performers and simulators. Thus only 60.8% was correctly classified with a cut score of < 14.5 for malingering. Specificity was 73% and this shows that a high proportion of participants was correctly identified as optimal performers. However, a wide confidence interval of 55.0 was found.

For the DCT test optimal performers achieved a mean of 59.9 seconds and the simulators on average took longer to complete the test with a mean of 76.5 seconds. A cut score of 65.57 correctly classified 64.7% of individuals with a sensitivity of 68% and specificity of 62%.

The WR subtest of the ADAS-Cog showed a mean score of 44.6 for optimal performers and 36.8 for simulators. A cut score of 38.5 was determined for the best possible separation of the two groups and this correctly classified 74.5% of individuals. Sensitivity was 93% and

specificity 67%. Thus a high percentage of individuals were correctly identified as displaying malingering.

The SIMS total score demonstrated a mean of 22.0 and 28.0 respectively for optimal performers and simulators. A sensitivity of 68% and specificity of 65% were demonstrated. Values for sub-tests are shown in tables I and II. The affective scale, which consists of questions on malingering of depression, achieved 64.7% for correct classification. Interestingly, the psychotic sub-test demonstrated a higher mean value for optimal performers and therefore no cut score was determined.

The results of the FCT, DCT and SIMS total score were combined and the following regression equation was computed: y = 0.594 + 0.0737*FCT - 0.00245*DCT- 0.00259*SIMS Total Score. The best cut score was 1.5 and this correctly classified 74.5% of subjects. Sensitivity was 69% and specificity 80%. Apart from the word recognition test, this represented the best combination of sensitivity and specificity scores.

Subjects allocated to the simulation group rated their ability to successfully simulate on a three-point scale. Eight subjects indicated that they did not simulate, 15 subjects indicated a moderate degree of successfully simulating and only 3 subjects were satisfied that they had succeeded in successfully simulating.

Discussion

In our sample of depressed subjects we requested half to simulate and half to perform optimally on a battery of psychometric tests. We then determined cut scores that gave us the highest percentage for correct classification. Between 60.8% and 74.5% of subjects were correctly classified with our cut scores. Sensitivity ranged from 58% to 93% and specificity between 62% and 82%. The FCT, WR test and SIMS total score gave the best results for correct

classification. A combination of FCT, DCT and SIMS total score with determination of a regression equation resulted in a high percentage correctly classified (74.5%), high sensitivity (69%) and specificity (80%).

Theron (1999) obtained superior results on a sample of students instructed to malinger or perform optimally. In their study the percentage correctly classified on FCT, DCT and SIMS total score were 97%, 96% and 97% respectively. Our sample differed on two important aspects. Firstly, our subjects suffered from depression, which is associated with lack of concentration, decreased energy and psychomotor retardation, and this can effect motivation to comply with study procedures. Secondly, we included subjects with a lower standard of education. Our inclusion criterion of grade 8 was lower than that of Theron (1999), which included university students. Subjects in our study were possibly less sophisticated to comply with protocol demands.

In the post assessment interview, 8 of 26 subjects (30.8%) in the malingering group indicated that they did not simulate. his high percentage could possibly be ascribed to the absence of incentives. However, incentives (whether negative or positive) influence external validity and were therefore omitted from our study. Recently, it has been shown that incentive has a main effect on the SIMS (Rogers & Cruise, 1998). Simulators under negative incentives appeared more focused in their feigning and they produced more bogus depressed symptoms, but fewer symptoms unrelated to depression.

In our sample the FCT provided good results with a cut-off of 15.5. This signifies that optimal performers will usually recognise 16 or more words out of 21 on this memory test and malingerers 15 or less. The cut-off of 15.5 was the same as that found by Theron (1999) and was higher than expected. A number of studies have shown that the optimal cut score is in fact above

chance (Guilmette, Hart & Giuliano, 1993; Martin, Bolter, Tocc, Goucier & Niccolls, 1993). Below chance performance provide the most convincing evidence of malingering but only a small proportion of simulators achieve this (Binder, 1992; Slick, Hopp, Strauss, Hunter & Pich, 1994). The FCT seems a fairly robust screening test for malingering as it gave sensitivity and specificity values of above 70% in our study and above 90% in the study by Theron (1999). The 21-item version used in our study has the further advantage of brevity. In the study by Guilmette et al. (1993) the FCT was administered to brain damaged patients, psychiatric inpatients suffering from depression, nonpatients responding honestly, and nonpatients feigning memory impairment. The simulators performed significantly worse than the brain damaged or depressed patients and only 34% of the simulating group performed below chance. The results support the use of the FCT as a screening test for feigning.

Rey 15-item correctly classified only 60.8% of participants with a low sensitivity and higher specificity. This corroborates the results of Theron (1999). Our cut score for optimally separating the two groups was 14.5, which is high. Lezak (In Bagby et al., 1997) originally recommended a score of less than 9 for simulation. Goldberg and Miller (1986) showed that honest responding psychiatric patients recalled 9 or more items but 37.5% of mentally retarded patients failed to recall that many. Other studies on malingering have demonstrated that the Rey 15-item test lacks specificity at a variety of cut scores and that the test has a low sensitivity (Bernard & Fowler, 1990; Hays, Emmons & Lawson, 1993). Abnormal findings on the Rey 15-item test, especially bizarre responses, are a good indicator of malingering but any normal score does not imply much. The test has little value as a screening instrument. A recent modification of the test with the introduction of more complex figures has demonstrated improved sensitivity and specificity (Griffin, Gassmire, Henderson & McCann, 1997).

The DCT was somewhat ineffective and only classified 64.7% of participants correctly. This is in contrast to the results provided by Theron (1999), who found a 97% correct classification rate. The patients in our sample were all depressed and that probably affected performance with both groups so that it complicated statistical separation. Our cut score of 65.57 seconds compares well with the 63.5 seconds found by Theron (1999). The clinical impression was that simulators take longer to complete the test because they tend to mull over possible ways of malingering while performing the task. In the study by Paul, Franzen, Cohen and Femouw (1992) the DCT was studied using normal subjects, psychiatric inpatients, and patients with brain disorders. Normal subjects counted the dots significantly faster than psychiatric patients and patients with brain disorders. Normal subjects and psychiatric patients who were instructed to simulate made significantly more errors than neurology patients but completion time did not differ.

The WR test, which is part of the ADAS-Cog battery, provided the best data. A high percentage (74.5) was correctly classified and this was accompanied by good sensitivity and specificity data. Theron (1999) did not use this test. The test is an expansion of the FCT test and provides a greater range of scores (0-48). It takes about five minutes to administer, which is not much longer than for the FCT. The test shows promise as an enhanced forced choice test and should be further evaluated in similar studies.

The SIMS test total score correctly classified 66.7% of individuals with sensitivity and specificity rates in the sixties. The affective subscale showed a lower rate for correct classification and the cut score of 8.5 was higher than the cut score proposed by Smith and Burger (1997). This probably reflects the presence of depression in both control and experimental groups in our study. It is difficult to explain the higher mean value for optimal

performers found on the psychotic scale. The psychotic scale includes a number of peculiar statements such as "When I hear voices I feel as though my teeth are leaving my body" and it may be possible that subjects responded randomly or irrelevantly.

A self-report inventory like the SIMS test has the advantage of not requiring clinician time for administration. The SIMS is also easy to administer and requires about 20-30 minutes to complete. However, Rogers, Hinds and Sewell (1995) caution that the instrument should only be used for its intended purpose, i.e. as a screening instrument and not to render a diagnosis of malingering.

Edens, Otto and Dwyer (1999) examined the value of the SIMS in differentiating truly symptomatic persons from persons fabricating symptoms. They found that the SIMS showed only moderate correlations with the Symptom Checklist-90-Revised and that specificity rates were lowest among a subset of participants reporting clinically significant levels of distress. This raises concerns regarding the potential for high false positive rates among clinical populations. Our study confirms that the high sensitivity and specificity rates found in non-clinical samples may be lower in clinical samples.

We computed a regression equation by combining the results of the FCT, DCT and SIMS total score. This equation gave a 74.5% correct classification. We believe that combining tests for malingering is the most accurate way to examine malingering with screening instruments. Each test has certain characteristics that make the test special and combining scores takes advantage of this. The modest change in sensitivity and more pronounced change in specificity underscore this premise.

The psychometric tests employed in this study relied heavily on assessment of malingered cognitive deficits. The FCT, Rey 15-item test and WR test evaluate malingering of

memory impairment while the DCT assesses concentration and motivation for task completion. Only the SIMS included subscales for the malingering of psychopathology (affective symptoms and psychotic symptoms). Our study did not give subjects instructions to malinger cognitive deficits. Results therefore indicate that malingerers extended their malingering to other non-affective functions. Indeed, in this sample of depressed subjects, the affective scale of the SIMS test had a low specificity compared with cognitive tests.

Subjects were evaluated immediately after reading the instructions and may not have had enough time to prepare for possible simulation. In a study that used the Personality Assessment Inventory to detect malingering, undergraduate students with minimal preparation were compared with psychology graduate students with a one-week preparation for simulating specific psychiatric disorders (Rogers, Ornduff & Sewell, 1993). In this study, preparation for feigning did not appear to be relevant to successful feigning.

Other psychometric tests have been used in depression to identify malingerers. The MMPI-2 has been evaluated as a method for the assessment of malingering where research participants were asked to feign depression and schizophrenia (Bagby et al., 1997). This study found that MMPI-2 validity scales and indicators were better at detecting feigned schizophrenia than feigned depression, and that this could possibly be attributed to closer familiarity with depressive experiences. The Beck Depression Inventory is often used as a part of clinical assessment for depression in litigation cases. Lees-Haley (1989) cautioned against this practice in a study which found that in a group of 52 untrained volunteers, 96% were able to fake depression on the inventory and 58% successfully faked extremely severe depression. The psychometric tests described in our study represent an enhanced method of assessment of faking

in litigation cases and should be used in conjunction with established screening measures for depression such as the Beck Depression Inventory.

The results of this study are hampered by the relatively small sample size. A large number of screened subjects had to be excluded (39%). Subjects in the simulation group also did not fully comply with protocol procedures because only 3 out of 26 subjects indicated that they were satisfied with successfully malingering. These factors affected statistical computations.

This study evaluated simulation in a group of clinically depressed individuals. Results indicate that easily administered psychometric tests can assist the clinician when evaluating for possible malingering. The tests described here should always be viewed as screening measures and the final diagnosis of malingering should always be supported by a comprehensive clinical evaluation.

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Table 1

Descriptive Statistics for the Total Sample and the Two Experimental Groups

	Total sample				Optimal Performers	Simulators
	Mean	SD	Max	Min	Mean	Mean
Forced Choice Test	15.3	3.0	20	8	16.9	13.8
Rey 15 Item Test	11.0	3.7	15	3	10.9	10.5
Dot Counting Test	68.3	28.5	176.06	18.22	59.9	76.5
Word Recognition	40.6	7.5	48	18	44.6	36.8
SIMS* Total	25.0	12.1	54	8	22.0	28.0
SIMS Neurologic scale	5.3	3.6	14	0	4.6	6.0
SIMS Affective scale	7.9	2.4	12	4	7.2	8.5
SIMS Psychotic scale	4.3	6.4	43	0	5.2	3.3
SIMS Low Intelligence scale	4.3	2.2	8	0	3.6	5.0
SIMS Amnesia scale	4.5	3.6	13	0	3.9	5.1

*SIMS = Structured Interview for Malingered Symptomatology

Table 2

Results for Distinguishing between Optimal Performance and Malingering

	Cut-off for Malingering	Percentage Correctly Classified	Sensitivity (%)	Confidence Interval for Sensitivity	Specificity (%)	Confidence Interval for Specificity
Forced Choice Test	<15.5	72.5	73	61.1-91.0	72	61.1-91.0
Rey 15 Item Test	<14.5	60.8	58	42.1-73.7	73	39.0-94.0
Dot Counting Test	>65.57	64.7	68	45.1-86.1	62	42.2-79.3
Word Recognition	<38.5	74.5	93	68.1-99.8	67	49.0-81.4
SIMS* Total	>24.5	66.7	68	46.5-85.1	65	44.3-82.8
SIMS Neurologic scale	>2.5	62.7	59	43.3-75.1	75	42.8-94.5
SIMS Affective scale	>8.5	64.7	67	44.7-84.4	63	42.3-80.6
SIMS Low Intelligence scale	>2.5	64.7	60	43.3-75.1	82	48.2-97.7
SIMS Amnesia scale	>4.5	66.7	71	47.8-88.7	63	43.9-80.1
Regression Equation	<1.5	74.5	69	48.2-85.7	80	59.3-93.2

* SIMS = Structured Interview for Malingered Symptomatology