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Detecting Malingering in Correctional Settings: A Comparison of Several Psychological Tests

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Abstract

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ABSTRACT

In this study, the Miller Forensic Assessment of Symptoms Test (M-FAST), Structured Interview of Reported Symptoms (SIRS), and Personality Assessment Inventory (PAI) were examined for detecting malingering in corrections. The main goals of the study were to investigate the utility of the M-FAST as a malingering screening device in a sample of 100 male and female inmates and add to the relatively small literature base on this measure. Results provided mixed support for the M-FAST as a screening measure and some evidence that the M-FAST was a better predictor of possible feigning than the PAI. The results suggest the M-FAST should continue to be investigated as a screening measure for malingering to clarify its utility in a correctional population.

Keywords:

Malingering

Correctional Inmates

Psychological Tests

M-FAST

PAI

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Detecting Malingering in Correctional Settings: A Comparison of Several Psychological

Tests

Malingering is defined in the Diagnostic and Statistical Manual of Mental

Disorders, Fourth Edition, Text Revision (DSM-IV-TR) as the intentional production of

false or greatly exaggerated physical or psychological symptoms that is motivated by

external incentives (American Psychiatric Association, 2000). People may malinger for a

variety of reasons, including money, avoiding legal consequences, and obtaining

insurance benefits. Malingering may take place in several mental health settings,

including outpatient, inpatient, and correctional institutions. Estimates of the base rate of

malingering in past studies have varied depending on the samples used. In forensic

evaluations, 8% of defendants were diagnosed as malingering in one study (Cornell &

Hawk, 1989). In a survey of forensic psychologists, Rogers, Sewell, and Goldstein (1994)

found that 15.7% of forensic evaluees were classified as malingerers. Among jail inmates

referred for mental health services, 20% of participants were found to be feigning mental

illness (Rogers, Ustad, & Salekin, 1998).

Malingering can include presenting mental illnesses such as psychosis or

depression and cognitive issues like memory problems or attention deficits (Rogers,

2008). Prison inmates might feign or exaggerate psychological symptoms to get

psychotropic medications or gain placement in more comfortable or less restrictive

housing units. The presence of malingering in correctional settings provides a challenge

for clinicians in identifying inmates who are truly in need of mental health services. In

this study, the focus will be on the feigning of symptoms of mental illness in prison

inmates.

Malingering is a different phenomenon than other psychiatric conditions. In Factitious Disorder, individuals feign psychological or physical symptoms to assume the role of a sick patient (APA, 2000). This disorder is distinguished from malingering because it is not motivated by external incentives like money or avoiding prosecution (APA, 2000). Rather, people with Factitious Disorder are motivated by unconscious reasons to gain attention and are not normally aware of the reason for symptom feigning (APA, 2000). In addition, malingering does not always take place independent of genuine mental illness. Rogers (2008) discusses the common misconception that malingering and authentic disorders are mutually exclusive. In clinical settings, individuals with mental disorders may also feign symptoms when presented with situations in which some desirable incentive is attainable. As a result, assessment of malingering must take into account the circumstances surrounding the symptoms and evaluators should be careful to not conclude an absence of mental illness if malingering is present.

Best clinical practice suggests that several methods should be used to detect malingering to maximize reliability and validity. In clinical and diagnostic decision making, using multiple pieces of data to make decisions is important for being accurate. With malingering, this becomes especially relevant because the diagnosis can become a label that follows people in future mental health contacts. Also, a client may misrepresent the truth about certain aspects of their functioning, but this does not necessarily indicate malingering. As with any assessment process, a detailed clinical interview and psychosocial history should be conducted (Knoll & Resnick, 2006). If available, collateral information from other sources should be compared with the inmate's self-reported symptoms. For example, behavioral observations of the inmate provided by

correctional officers may also be helpful in measuring current level of functioning and symptoms.

In addition, psychological tests are useful in detecting malingering in correctional settings. Both personality inventories and more specific measures of malingering have been studied in correctional settings. Although researchers have investigated this area in the past, mixed results have been found concerning the reliability and validity of different tests to detect feigning of symptoms among inmates. In this study, we will compare several psychological tests and their ability to detect malingering among prison inmates. The overall goal of this study is to identify which tests are most efficient and useful in a correctional setting for detecting deception regarding psychopathology. In addition, we will compare the assessment strategies, alone and in combination, to examine how mental health providers can conserve time and resources in identification of malingering.

<div align="center">Psychological Tests</div>

Structured Interview of Reported Symptoms

The Structured Interview of Reported Symptoms (SIRS; Rogers, Bagby, & Dickens, 1992) is currently considered the most reliable test for detecting malingering. It is a 172-item interview that provides a detailed assessment of strategies commonly used by individuals feigning mental disorders (Edens, Poythress, & Watkins-Clay, 2007). Based on these strategies, eight primary scales on the SIRS were constructed: rare symptoms, symptom combination, improbable or absurd symptoms, blatant symptoms, subtle symptoms, selectivity of symptoms, severity of symptoms, and reported versus observed symptoms (Rogers et al., 1992). Items on the SIRS are scored on a 4-point scale (X for no answer, zero for no, one for a qualified yes, and two for a definite yes).

In an initial validation study of the SIRS, Rogers, Gillis, Dickens, and Bagby (1991) investigated the test's utility in differentiating between psychiatric patients and community participants. The community sample included 81 participants, with 41 instructed to respond honestly (honest) and 40 instructed to feign symptoms of mental illness (simulators). A group of 34 psychiatric outpatients was also instructed to respond honestly. The authors found that simulators scored significantly higher than the honest and outpatient groups on all SIRS scales except the Defensive Symptoms scale. In a second investigation, Rogers et al. examined the SIRS in a sample of 26 psychiatric inpatients and 25 suspected malingerers from the same assessment unit. The researchers found differences between the two groups, with suspected malingerers scoring significantly higher than other patients on nine of the 13 scales on the SIRS. Based on the results of both studies, Rogers et al. concluded that the SIRS was a valid and reliable measure in malingering assessment.

In another study, Rogers, Gillis, and Bagby (1990) examined the SIRS in a sample of 51 male correctional inmates. The authors split the sample into two groups, 26 inmates instructed to respond honestly and 25 inmates told to fake a major mental illness. In addition to comparing these two groups, the authors compared their results with those of Rogers et al. (1991) described above. Across the samples, the SIRS was able to correctly classify 88% of participants. The authors concluded that the development of the SIRS appeared to be of value in malingering research.

Rogers, Gillis, Bagby, and Monteiro (1991) took a slightly different approach to studying the SIRS. They compared 90 male and female participants split into coached and uncoached groups and instructed to feign mental illness on the test. Participants in

the coached group were given a two page description on faking mental illness that included information about the onset, course, and consistency of mental health symptoms. Rogers et al. found that the SIRS correctly identified 100% of uncoached participants and 91.1% of coached participants. The authors concluded that further investigation of the influence of coaching in malingering detection research was needed.

In a more recent study, Edens et al. (2007) used three indexes on the SIRS that are recommended for use in detecting malingering. These include: a total score on the SIRS of 76 or greater, one or more primary scales in the "definite malingering" range, or three or more primary scales in the "probable malingering" range. These authors administered the SIRS to four groups of male correctional inmates from a general prison population and mental health unit. General population inmates were separated into two groups, inmates instructed to fake serious mental illness (simulators; $n = 30$) and controls ($n = 30$), whereas mental health unit inmates were designated as either patients ($n = 30$) or suspected malingerers ($n = 26$) based on ratings by psychiatrists. Edens et al. found that using the cutoff of 76 or greater on the SIRS correctly classified 76% of all participants. With respect to the four study groups, however, the SIRS total score cutoff was not as strong in predicting group membership. For example, only 50% of suspected malingerers and 60% of patients were correctly identified with this indicator. By contrast, 90% of simulators and 100% of controls were correctly classified using the SIRS. The authors concluded that the SIRS needs further investigation in clinical samples of inmates.

Personality Assessment Inventory

In addition to the SIRS, the Personality Assessment Inventory (PAI; Morey, 1991) has been studied in correctional settings to determine its usefulness in detecting

symptom feigning. The PAI is a 344-item objective measure of personality and psychopathology that contains four validity and 11 clinical scales (Morey, 2003). The test author suggests three scales can be used to examine symptom validity and malingering. These include the Negative Impression Management scale (NIM), the Rogers Discriminant Function (RDF), and the Malingering Index (MAL; Morey, 2003). In previous research, these indicators have received mixed results concerning their utility and accuracy in detecting malingering.

In one study, Wang et al. (1997) examined the PAI and SIRS in a sample of 334 adult male inmates. Their sample was drawn from clinical records of inmates requesting or getting mental health services from an inpatient psychiatric facility within the prison system over a 5-month period. They found that 12% (40 inmates) of their sample had elevated scores on the NIM scale of the PAI or other clinical indicators of potential malingering. Only these 40 inmates were administered the SIRS. For this group, NIM scores were significantly related to all of the eight primary scales on the SIRS. The MAL scale was also significantly correlated with four of the eight scales from the SIRS, but the RDF did not show any significant association with the SIRS scales. Based on SIRS criteria for malingering (one or more scales in the "definite malingering" range, or three or more scales in the "probable malingering" range), Wang et al. labeled these 40 participants as either feigning (37.5 %) or nonfeigning (62.5 %) to examine whether PAI scores differed between the two groups. Participants in the feigning group had significantly higher scores on both the NIM and MAL than those in the nonfeigning group. On the RDF, participants' scores did not differ significantly between groups. Wang et al. suggested that future research be conducted using the PAI in correctional

settings to determine whether combining validity indexes would help assess for symptom feigning.

In a more recent study, Edens et al. (2007) compared the PAI with the SIRS in a sample of male correctional inmates. These authors found all three PAI scales (NIM, MAL, and RDF) were significantly correlated with participants' total scores on the SIRS. Edens et al. also investigated whether the SIRS added incremental validity to the PAI scales in predicting malingering. They found the SIRS significantly improved the ability of the RDF to detect feigning of symptoms, increasing classification accuracy from 70% to 77% with the addition of the SIRS. Similar results were found when the NIM and MAL were each substituted for the RDF scale prior to adding the SIRS. Compared with other research, this study stands out because of the investigation of the combined potential of two measures in assessing for deception.

The PAI has also been studied in forensic settings to determine its usefulness as a malingering detection tool. Kucharski, Toomey, Fila, and Duncan (2007) examined the PAI in a sample of criminal defendants involved in federal court cases. They administered the PAI and SIRS to all participants as part of forensic evaluations. Like the Wang et al. (1997) study described above, Kucharski et al. used the same SIRS criteria to separate participants into malingering and nonmalingering groups. Based on the SIRS, 26.7% of defendants were classified as malingering and 73.3% as not malingering. The authors found that the NIM scale significantly distinguished the malingering from the nonmalingering group, whereas the RDF and MAL did not. Although the NIM ($d = 1.82$) and MAL ($d = 1.21$) displayed large effect sizes in discriminating between groups, the RDF effect size ($d = -.09$) was clearly nonsignificant. The authors found a strong positive

relationship between NIM and MAL scores. Kucharski et al. also examined the relationship between the PAI indexes of malingering and the SIRS total and primary scale scores. They found NIM and MAL displayed a significant positive relationship with the SIRS total score and all eight scale scores. By contrast, the RDF did not show a significant correlation with any of the scores on the SIRS. The authors concluded that the PAI and SIRS should be used in combination when examining malingering in criminal defendants because of the different results provided by each test.

In contrast to Kucharski et al.'s (2007) examination of the PAI in federal cases, Rogers et al. (1998) investigated this test's usefulness in a sample of mental health referrals in a large urban jail. Similar to other studies, these authors were interested in how the NIM scale was related to other measures of symptom feigning. To examine this relationship, Rogers et al. administered the SIRS, PAI, and other measures of clinical symptoms to male inmates at a county jail. With respect to the overall sample, the SIRS classified 20% of participants as feigning. The authors found significant positive correlations between participants' scores on the NIM scale and all eight primary scales of the SIRS. When participants were separated into two groups based on SIRS indicators of possible malingering, those in the "feigning" group scored significantly higher on the NIM scale than those in the "patient" group. Based on these results, Rogers et al. opined that the PAI demonstrates clinical utility in measuring response style in jail inmates.

In all four studies of the PAI (Edens et al., 2007, Kucharski et al., 2007, Rogers et al., 1998, Wang et al., 1997), support was found for the NIM scale as an indicator of possible symptom feigning. Some evidence was also found in three of these studies for the MAL as a potentially useful index for examining malingering (Edens et al., 2007,

Kucharski et al., 2007, Wang et al., 1997). The RDF scale of the PAI was only found to be a useful tool for malingering detection in one study (Edens et al., 2007). Although these results are hopeful concerning the PAI in correctional settings, more research is needed to clarify its usefulness in different types of correctional samples. For instance, research on female inmates and more studies of prison samples would add new information to the existing literature.

Miller Forensic Assessment of Symptoms Test

In addition to the PAI, more specific measures of symptom validity have also been examined in correctional settings. For instance, the Miller Forensic Assessment of Symptoms Test (M-FAST; Miller, 2001) is a brief screening instrument for detecting malingering that has received attention from correctional researchers. The M-FAST is a 25-item structured interview that includes seven strategies employed by known malingerers including: unusual hallucinations, reported versus observed symptoms, rare symptom combinations, extreme symptomatology, negative image, unusual symptom course, and suggestibility (Miller, 2001). In contrast to the SIRS administration time (30 to 45 minutes), the M-FAST takes approximately five minutes to complete (Guy & Miller, 2004). This discrepancy is important to consider when looking at mental health services in correctional settings. Clinicians in these environments often have limited time and resources available to make comprehensive determinations regarding malingering. Use of the M-FAST as a screen for malingering could identify individuals in need of further, more comprehensive examination to determine if malingering is present. The instrument was recently developed and there is a small body of research that exists examining its validity.

Guy and Miller (2004) examined the ability of the M-FAST to discover malingering in a sample of 50 male inmates from a prison psychology clinic. Researchers administered the M-FAST and SIRS to all participants, with the SIRS classifying 42% of all participants as malingering. Based on SIRS scores, the sample was divided into two groups: malingerers and honest responders. Participants' total scores on the M-FAST were significantly related to their total scores on the SIRS. Inmates in the malingering group also had significantly higher scores than those in the honest responding group on the M-FAST total scale and all subscales. The highest effect sizes were found for the M-FAST total score ($d = 2.06$) and the Rare Combinations scale ($d = 2.15$) in differentiating between groups. Guy and Miller also attempted to determine the most effective cutoff score on the M-FAST to make a distinction between honest responders and malingerers. With this sample, the authors found a total score of six or higher resulted in adequate sensitivity (86%) and specificity (83%). In addition, Guy and Miller found that the M-FAST performed similarly across African American, Caucasian, and Hispanic inmates in the overall sample. The consideration of ethnicity in this study stands out in comparison to the lack of research in this area in most other studies of malingering (Guy & Miller, 2004). Based of their findings, these authors concluded that the M-FAST exhibits potential as a useful instrument to screen for malingered psychopathology in male inmates.

Like the PAI, the M-FAST has also been investigated in samples of criminal defendants. Miller (2004) assessed 50 male defendants found incompetent to stand trial with the M-FAST, SIRS, and Minnesota Multiphasic Personality Inventory-2 (MMPI-2). Similar to other studies, participants were placed into two groups based on their SIRS

scores: honest or malingering. In this study, however, inmates were classified as malingering if they had at least two primary scales on the SIRS in the probable faking range and a total SIRS score of more than 76. Miller found that the malingering group ($M = 12.79$) had significantly higher scores than the honest group ($M = 2.44$) on the M-FAST total scale. Four M-FAST subscales significantly distinguished between groups, with the Rare Combinations scale again producing the highest effect size among the subscales. In addition, Miller found that a total score of six on the M-FAST was most effective in sorting participants into groups, with good sensitivity (93%), specificity (83%), and overall classification ability (86%). When compared with the MMPI-2, M-FAST total and scale scores were moderately correlated (.35 to .78) with fake bad indices (*F, Fb,* and *F(p)*). One aspect of this study that sets it apart from others is the consideration of administration time for the M-FAST. Miller found that defendants in the malingering group ($M = 6.17$ minutes) took significantly longer to finish the M-FAST than those in the honest responding group ($M = 4.18$ minutes), with a 5-minute average completion time for all participants. The author concluded that the M-FAST may be a valid and efficient screening tool for criminal defendants suspected of malingering.

In another study of criminal defendants, Jackson, Rogers, and Sewell (2005) examined the utility of the M-FAST in competency to stand trial evaluations. The authors compared four groups in this study: inmates instructed to simulate mental illness ($n = 51$), inmates directed to respond honestly ($n = 96$), competency patients responding honestly ($n = 41$), and competency patients suspected of malingering ($n = 8$). Similar to other studies, patients were divided into honest and malingering groups based on their scores on the SIRS. Jackson et al. found that both simulators and suspected malingerers

scored significantly higher than the two other groups on the M-FAST total scale and all subscales. These authors also investigated the total score of six suggested by Miller (2001) as a cutoff for distinguishing honest from malingering groups. In their sample, using this cutoff correctly classified 86% of the entire sample, but only 76% of participants in the malingering and simulation groups. Based on these results, Jackson et al. concluded that the M-FAST is a potentially valuable screen for malingered psychopathology.

Besides being studied on its own, the M-FAST has been compared with other malingering screens in competency evaluations. Vitacco, Rogers, Gabel, and Munizza (2007) looked at the M-FAST, the Structured Inventory of Malingered Symptomatology (SIMS), and the Evaluation of Competency to Stand Trial-Revised Atypical Presentation Scale (ECST-R ATP) in competency patients. A sample of 100 male patients was separated into two groups, probable malingerers and nonmalingerers, based on scores from the SIRS. Vitacco et al. found that all three screening tools demonstrated large effect sizes in differentiating between probable and nonmalingering groups. For the M-FAST and SIMS, the largest effects were found for each measure's total score. In terms of suggested cutoff scores, a total score of six on the M-FAST again was found to function well, correctly classifying 92% of the entire sample. Due to the existence of false positives (10%), or participants classified as malingering when they are not, the authors caution that the M-FAST should continue to be used as a screen and not a comprehensive measure of malingering. The most noteworthy finding from this study appears to be the M-FAST's relative strength when compared to other screens for feigned symptoms of psychopathology. Specifically, the M-FAST total score performed better

than the SIMS total score with respect to positive predictive power and overall classification rate.

The M-FAST has also been studied in individuals not involved with the legal system. For example, Veazey, Hays, Wagner, and Miller (2005) researched this test in a sample of 70 psychiatric inpatients at an acute care hospital. They compared patients' M-FAST scores with their scores on several PAI scales. Veazey et al. found that M-FAST scores had a significant positive relationship to participants' scores on the NIM and MAL indexes of the PAI. In contrast to studies conducted with inmates, the authors found that a total score of eight on the M-FAST was the best screen for malingering. Veazey et al. concluded that the M-FAST should only be used as a screening tool in measuring symptom faking or exaggeration.

The Present Study

After reviewing the literature on malingering detection in correctional settings, some limitations of past studies are apparent. First, some shortcomings are present with respect to the composition of the samples researchers have used. In terms of gender, the majority of studies were conducted with all male samples. Only a few studies included female participants and one study did not have any information regarding gender (Kucharski et al., 2007). To address this limitation, we will include both male and female inmates in our sample in this study.

Second, many studies were also lacking in the consideration of whether ethnicity might affect the utility of different tests in detecting symptom feigning. Although almost all studies had ethnically diverse samples, only one examined test generalizability across ethnic groups (Guy & Miller, 2004). This may be due to small sample sizes for different

groups in some cases, but this issue warrants further investigation in the future. In correctional settings, clinicians are often asked to evaluate inmates from different ethnic groups. As a result, measures of malingering that demonstrate utility across different types of ethnicity are essential. One goal of this study will be to attempt to gain a diverse sample of correctional inmates.

In addition, researchers should inspect the ability of two or more tests in combination to detect deceptive responding. Only one of the studies in this review included information on the incremental validity that one measure could add to another in discovering malingering (Edens et al., 2007). This suggestion is also supported by the recurring advice of researchers in this area that determinations of malingering should always be made on the basis of multiple sources of information (Knoll & Resnick, 2006). In this study, we will investigate the utility of several tests and combinations of these test scores in detecting deception among prison inmates.

Across the studies reviewed above, another limitation is the large percentage of research that has been conducted by the test authors. For example, the authors of the SIRS (Rogers et al., 1992) are cited in most of the validation research described in this paper. For the M-FAST, the test author (Miller, 2001) is listed as an author in four of six references for this measure. As a result, more independent data is needed to add to the literature base on these measures.

Finally, more research is needed to examine the utility of different tests in prison inmate populations. Although jail inmates, criminal defendants, competency evaluation patients, and prison inmates are similar in many respects, differences are likely to exist between groups in terms of motivation to malinger, types of secondary gain, and

symptom presentation. Certain tests have received more attention than others in research with individuals in prison. The PAI, for example, has been studied much more than the M-FAST with incarcerated samples. Because the M-FAST has been examined sparingly in pure samples of prison inmates, the present study will focus on this test in a mixed gender prison inmate sample.

The purpose of this study is to examine the relationship between several psychological tests for detecting malingering in correctional inmates. Specifically, participants' scores on three PAI scales (NIM, RDF, and MAL) will be compared with their performance on the SIRS and M-FAST. Although some studies have been conducted using these tests separately in correctional samples, few investigations exist concerning all of these measures studied together. A second aim of this study is to look at the utility of the M-FAST as a screening measure for malingering in mental health assessment of prison inmates. In addition, another goal of this study is to add to the relatively small literature base on the M-FAST, as it is a much shorter and time efficient tool than the SIRS. With limited time and resources for mental health services in corrections, clinicians would benefit from a screening tool like the M-FAST to aid in identifying inmates who are truly in need of mental health treatment.

Hypotheses

There are several main hypotheses that we will inspect in a mixed gender, ethnically diverse sample of prison inmates. First, a positive relationship between SIRS and PAI scale (RDF, MAL, and NIM) scores is predicted. Second, a positive relationship between M-FAST total scores and PAI RDF, MAL, and NIM scales is expected. Similarly, it is predicted that as participants' M-FAST scores increase, SIRS total scores will increase as well. Finally, it is hypothesized that the SIRS will classify fewer participants as malingering than the M-FAST. In other words, the M-FAST is expected to function as a screening device and have a lower threshold for deception than the SIRS.

Next, the incremental validity of using the various measures in combination with one another will be examined. Because there is no clear indication of deceptive behavior, and the SIRS is considered the "gold standard" measurement of deceptive responding, the PAI and M-FAST will be used to predict SIRS scores. It is predicted that the M-FAST will add incremental validity to the NIM, MAL, and RDF scales of the PAI in predicting participants' scores on the SIRS. In addition, the M-FAST total cutoff score is predicted to demonstrate adequate sensitivity, specificity, and overall classification accuracy. Finally, the M-FAST is expected to more effectively identify group membership of individuals classified by the SIRS compared to the NIM, MAL and RDF scales of the PAI.

METHOD

Participants

Participants were correctional inmates on intake status at Coffee Creek

Correctional Facility (CCCF) of the Oregon Department of Corrections (ODOC) in

Wilsonville, Oregon (N = 100). They included 50 females (50%) and 50 males (50%). In

addition, 31 inmates (25 female, 6 male) refused to take part in the study. The

participants' ages ranged from 18-73 (M = 35.13, SD = 11.25). In terms of ethnicity, the

sample was 80% Caucasian, 12% Hispanic/Latino, 3% African American, 3% American

Indian/Alaskan Native, and 2% Biracial/Multiracial. Data collected on the current marital

status of participants' revealed the sample was 49% single, 20% divorced, 19% married,

11% separated, and 1% widowed. The number of children participants reported having

ranged from 0-8 (M = 2.03, SD = 1.70). Participants' years of education ranged from 7-

18 (M = 11.36, SD = 2.00). With respect to mental health treatment, 39% of participants

reported they had attended treatment in the past, whereas 61% of participants reported

they had not.

There were several exclusionary criteria for participant selection. Individuals who

were under the age of 18, did not speak or understand English, or did not have the

behavioral stability to complete an hour-long interview were excluded from the study.

Individuals who had too low reading ability to complete the PAI (i.e., below a 4th grade

reading level) were not included in this study.

Experimenters

Experimenters were the principal investigator and another psychology doctoral

student involved in a related study. Both experimenters had clinical assessment

experience with a correctional population prior to the beginning of the study. Experimenters completed several practice administrations of the measures prior to the start of data collection.

<div align="center">Measures</div>

Demographic Questionnaire. A short demographic questionnaire was administered to all participants by the experimenters. This measure included information on age, gender, marital status, ethnicity, education level, number of children, and previous mental health treatment.

Personality Assessment Inventory (PAI). The PAI (Morey, 1991) is a 344-item self-report measure of psychopathology. In this study, three scales from the PAI that have been suggested in past research for examining malingering were used. The Negative Impression Management (NIM) scale was designed to detect individuals who may be portraying themselves in a more negative manner than is observed by others (Morey, 2003). The Malingering Index (MAL) consists of eight features of the PAI profile that have been observed much more often in profiles of people simulating mental disorders than in actual patients (Morey, 2003). The third measure, the Rogers Discriminant Function (RDF), is based on combinations of 20 different PAI scores and is designed to differentiate between the profiles of actual patients and simulators on the PAI (Morey, 2003). Items on the PAI are rated by participants on a 4-point scale: False or Not at all True (F), Slightly True (ST), Mainly True (MT), or Very True (VT). The PAI has been reported to have adequate internal consistency, test-retest reliability (Morey, 1991), and concurrent and discriminant validity (Boyle, 1997). Participants' scores from the PAI were obtained from the ODOC following completion of data collection.

Miller Forensic Assessment of Symptoms Test (M-FAST). The M-FAST (Miller, 2001) is a 25-item structured interview designed to help identify individuals who may be malingering psychopathology. It contains seven subscales based on strategies employed by known malingerers including: Unusual Hallucinations (UH), Reported versus Observed (RO), Rare Combination (RC), Extreme Symptomatology (ES), Negative Image (NI), Unusual Symptom Course (USC), and Suggestibility (S) (Miller, 2001). Scores range from 0 to 25, with higher scores suggesting a greater degree of symptom feigning. Participants are asked to respond true or false to items such as: "Most times when people are talking to me, I see the words they speak spelled out," "Lately my eyesight is so good that I think I have a special power," and "Sometimes I hear music coming from nowhere" (Miller, 2001). The M-FAST has been shown to have good validity for identifying malingering in clinical and nonclinical samples (Miller, 2001). In this study, possible total scores for the M-FAST ranged from 0 to 14 (M = 1.94, SD = 2.36).

Structured Interview of Reported Symptoms (SIRS). The SIRS (Rogers et al., 1992) is a 172-item interview that is designed to detect individuals who may be feigning mental disorders. This measure contains eight primary scales for the evaluation of feigning, including Rare Symptoms (RS), Symptom Combination (SC), Improbable or Absurd symptoms (IA), Blatant Symptoms (BL), Subtle Symptoms (SU), Selectivity of Symptoms (SEL), Severity of Symptoms (SEV), and Reported versus Observed symptoms (RO) (Rogers et al., 1992). Participants are asked questions such as: "Do you have exactly two nightmares every evening?", "Do you sometimes like to fool or mislead doctors?", and "Do you have to cross your arms before you can cross the street?" (Rogers

et al., 1992). The test authors report good internal consistency, with a mean alpha coefficient of .86 for the primary scales. The mean interrater reliability for the SIRS was found to be .96 in one study (Rogers et al., 1991) and .98 in another (Rogers et al., 1992). In the test manual, Rogers et al. (1992) report finding solid evidence for the construct validity of the SIRS across several validation studies. In this study, possible total scores for the SIRS ranged from 7 to 112 (M = 47.50, SD = 22.00).

<div align="center">Procedure</div>

Participants were randomly selected from the population of inmates on intake status at CCCF. All procedures were approved by the Institutional Review Board of Pacific University and the ODOC before the start of the study. All participants had already completed the PAI during the ODOC intake process. Experimenters obtained a list of individuals who had taken the PAI from the ODOC intake staff and approached these inmates on an individual basis to ask them if they were interested in participating in the study. Prior to beginning the study, participants were informed that they had to be 18 years of age or older and speak English to participate.

With all participants, interviews lasted approximately 45 to 60 minutes. This period of time included the SIRS, the M-FAST, and also allowed time for informed consent and debriefing. Administration time ranged from 13 to 40 minutes for the SIRS (M = 22.64, SD = 5.63) and 2 to 6 minutes for the M-FAST (M = 4.55, SD = 1.11). The order of the measures was counterbalanced across participants.

Experimenters (psychology doctoral students) went onto the correctional housing units at CCCF and interviewed inmates in interview rooms on the housing units. Experimenters first went over the informed consent form with all participants, making

sure that inmates understood the concept of informed consent and answered any questions participants had. Participants were assured that their answers would be kept confidential and not released to the ODOC or anyone else. All participants were assigned a random identification code which was used to identify all their testing materials. The random codes protected the inmates' confidentiality throughout the study. Experimenters administered a short demographic questionnaire, as well as the M-FAST and SIRS to all participants. Following the interview, experimenters debriefed participants concerning the purpose of the study and provided information on what resources (e.g. ODOC Behavioral Health Services) were available if participation caused psychological discomfort or distress. Participants also completed a debriefing form to confirm that they agreed to have their test data used in the study. Participants were not given any type of compensation for their participation. Finally, participants were thanked for taking part in the study.

RESULTS

From the 100 participants, PAI data for 4 participants was not available and was not included in the analyses that involved the PAI scales (NIM, RDF, and MAL). An alpha level of .05 was used for all statistical analyses. Preliminary analyses were conducted to determine if participants' scores on malingering variables (M-FAST, SIRS, NIM, RDF, and MAL) differed based on demographic characteristics. Age was significantly correlated with the MAL scale of the PAI, $r(96) = -.402, p < .001$, but did not correlate significantly with the RDF, NIM, M-FAST, or SIRS. One-way analyses of variance (ANOVA) revealed no significant differences on malingering variables for participants based on gender, ethnicity, or test order. Participants who reported previous mental health treatment ($M = 57.49, SD = 21.92$) scored significantly higher on the SIRS than those who did not report previous mental health treatment ($M = 41.11, SD = 19.69$), $F(1, 99) = 15.05, p < .001$. For the M-FAST total score, participants reporting previous treatment ($M = 2.67, SD = 2.79$) also scored significantly higher than those not reporting previous treatment ($M = 1.48, SD = 1.91$), $F(1, 99) = 6.41, p < .05$. Table 1 displays the descriptive statistics for all measures used in this study.

Table 1

Descriptive Statistics for Study Measures

Measures	M	SD	Range
M-FAST Total	1.94	2.36	0-14
SIRS Total	47.50	22.00	7-112
PAI NIM	53.58	10.26	44-81
PAI RDF	38.91	12.26	4-62
PAI MAL	54.58	6.48	50-80

N = 100 for M-FAST Total and SIRS Total.

N = 96 for PAI NIM, RDF, and MAL.

The first hypothesis of this study, that positive relationships would exist between the M-FAST, SIRS, and PAI scale (NIM, RDF, and MAL) scores, was tested through correlational analysis. Pearson correlations were computed between the M-FAST and (a) the SIRS, (b) the PAI NIM scale, (c) the PAI RDF, and (d) the PAI MAL. The first hypothesis was supported by the results of the Pearson correlations. Significant positive relationships were found between the M-FAST and all of the other measures listed above. The strongest relationships were found between the M-FAST and SIRS, the M-FAST and NIM, and the SIRS and NIM. The RDF scale of the PAI, however, was only significantly correlated with the M-FAST and showed quite low correlations with all other scales. For example, the RDF was actually negatively correlated with the MAL. Table 2 displays the results.

Table 2

Pearson Correlations between M-FAST, SIRS, and PAI scales

	M-FAST	SIRS	PAI NIM	PAI RDF	PAI MAL
M-FAST		.704**	.560**	.215*	.312**
SIRS			.477**	.070	.349**
PAI NIM				.116	.338**
PAI RDF					-.107

* *p* < .05.

** *p* < .01.

The second hypothesis of this study was that the SIRS would classify fewer participants as malingering than the M-FAST. To test this prediction, the number of participants classified as malingering on the SIRS and M-FAST was compared. For the SIRS, the test authors suggest that an examinee be classified as feigning if he or she meets any one of three criteria: one or more scales in the definite feigning range, three or more scales in the probable feigning range, or a total SIRS score of 76 or greater (Rogers et al., 1992). Using this approach in the present study, 12 participants (12%) were classified as malingering on the SIRS. Among these 12 participants, 11 had a SIRS score of 76 or higher, three had one or more scales in the definite range, and three had three or more scales in the probable range. Only one participant had all three indicators, whereas two inmates had a total score of 76 or more and three or more scales in the probable range. In addition, one participant had one or more scales in the definite range and a total score of 76 or greater. For the M-FAST, Miller (2001) suggests using a cutoff score of six to provide the best balance of sensitivity and specificity in screening for malingering. Using this criterion, participants with scores of six or greater on the M-FAST are

classified as possible malingerers. In the present sample, seven participants (7%) were classified as feigning based on M-FAST scores alone. Thus, the second hypothesis was not supported, as the SIRS classified five more participants as feigning than the M-FAST.

Examining the characteristics of the participants the M-FAST and SIRS classified as feigning might also aid in expanding on this finding. For example, the M-FAST and SIRS only achieved agreement in classifying possible feigning in three cases. In nine cases, the SIRS designated participants as feigning, whereas the M-FAST did not. For these nine participants, the mean M-FAST score was 3.67. For four participants, the M-FAST score indicated possible feigning and the SIRS indicators did not. Comparing these groups on demographic variables such as age and education level did not yield any significant differences.

The third hypothesis in this study was that the M-FAST would add incremental validity to the NIM, RDF, and MAL scales of the PAI in predicting participants' group membership on the SIRS. Participants were split into two groups based on the SIRS criteria for feigning described above. If a participant met any one of the three SIRS criteria for feigning (one or more scales in the definite range, three or more scales in the probable range, total score of 76 or greater), he or she was placed in the malingering group (n = 12). All other participants were placed in the nonmalingering group (n = 88). Hierarchical logistic regression analysis was used to test whether the M-FAST would add validity to the PAI (NIM, RDF, or MAL) in predicting SIRS group (malingering or nonmalingering).

For the hierarchical logistic regression analysis, the PAI scale (NIM, RDF, or MAL) was entered at Step 1, with the M-FAST entered at Step 2. Entering the NIM first,

the overall model was significant, χ2 (1, $N = 96$) = 10.19, $p < .001$. The Wald statistic for

this model was 9.11 ($p < .003$) and the odds ratio was 1.10. The overall rate of

classification accuracy was 88.5%. When the M-FAST was entered at Step 2, the overall

model remained significant, χ2 (2, $N = 96$) = 18.11, $p < .001$, and the χ2 value increased

by 7.92. For the M-FAST, the Wald statistic was 6.52 ($p < .011$) and the odds ratio was

1.58. The overall classification rate decreased slightly to 87.5%.

Entering the RDF first, the overall model was significant, χ2 (1, $N = 96$) = 4.33, p

$< .038$. The Wald statistic for this model was 3.78 ($p < .052$) and the odds ratio was 1.06.

The overall rate of classification accuracy was 88.5%. When the M-FAST was entered at

Step 2, the overall model remained significant, χ2 (2, $N = 96$) = 17.78, $p < .001$, and the

χ2 value increased by 13.45. For the M-FAST, the Wald statistic was 9.92 ($p < .002$) and

the odds ratio was 1.68. The overall classification rate decreased slightly to 86.5%.

Entering the MAL first, the overall model was not significant, χ2 (1, $N = 96$) =

3.34, $p < .068$. The Wald statistic for this model was 3.49 ($p < .062$) and the odds ratio

was 1.08. The overall rate of classification accuracy was 88.5%. When the M-FAST was

entered at Step 2, the overall model was significant, χ2 (2, $N = 96$) = 17.09, $p < .001$, and

the χ2 value increased by 13.75. For the M-FAST, the Wald statistic was 9.51 ($p < .002$)

and the odds ratio was 1.68. The overall classification rate decreased slightly to 87.5%.

To compare the predictive power of the M-FAST with the PAI scales, the

hierarchical logistic regression analysis was repeated in the reverse order, entering the M-

FAST at Step 1 and the PAI scale (NIM, RDF, or MAL) at Step 2. Entering the M-FAST

first, the overall model was significant, χ2 (1, $N = 96$) = 16.43, $p < .001$. The Wald

statistic for this model was 11.01 ($p < .001$) and the odds ratio was 1.72. The overall rate

of classification accuracy was 87.5%. When the NIM was entered at Step 2, the overall

model remained significant, χ2 (2, $N = 96$) = 18.11, $p < .001$, and the χ2 value increased

by 1.68. For the NIM, the Wald statistic was 1.68 ($p < .195$) and the odds ratio was 1.05.

The overall classification rate remained 87.5%. When the RDF was entered at Step 2, the

overall model remained significant, χ2 (2, $N = 96$) = 17.78, $p < .001$, and the χ2 value

increased by 1.35. For the RDF, the Wald statistic was 1.25 ($p < .264$) and the odds ratio

was 1.04. The overall classification rate decreased slightly to 86.5%. When the MAL was

entered at Step 2, the overall model was significant, χ2 (2, $N = 96$) = 17.09, $p < .001$, and

the χ2 value increased by .66. For the MAL, the Wald statistic was .69 ($p < .405$) and the

odds ratio was 1.04. The overall classification rate remained 87.5%.

The results of the hierarchical logistic regression analyses supported the

hypothesis that the M-FAST would add incremental validity to the PAI scales in

predicting SIRS group membership. Across the PAI scales (NIM, RDF, and MAL), the

addition of the M-FAST produced much larger increases in predictive power, as

measured by the χ2 value and the odds ratio, than when the PAI scales were added to the

M-FAST. The addition of the M-FAST to the PAI scales, however, did not produce any

increase in classification accuracy rates. From Step 1 to Step 2, the overall classification

rate actually decreased slightly for all three variables (NIM, RDF, and MAL) after the M-

FAST was added.

The fourth hypothesis of this study involved the prediction that the M-FAST total

cutoff score would demonstrate adequate sensitivity, specificity, and overall classification

accuracy when predicting SIRS-identified feigning. Receiver operating characteristics

(ROC) analysis was used to test the overall diagnostic efficiency of the M-FAST.

Specifically, the area under the curve (AUC) was examined. The AUC was .90 (SE = .03), with a 95% confidence interval of .84 to .97 ($p < .001$). Based on the suggested cutoff score of 6, the M-FAST displayed a sensitivity of 25%, specificity of 95%, and an overall classification rate of 87%. The positive predictive power (PPP) for the M-FAST was 43%, whereas the negative predictive power (NPP) was 90%. Thus, the fourth hypothesis was partially supported, as the specificity and overall classification rate were adequate, but the sensitivity and PPP were poor. To determine whether the low sensitivity was due to the SIRS criteria for feigning being too inclusive, follow-up analyses were conducted with more stringent indicators of possible feigning on the SIRS. Due to the finding that 11 of 12 participants identified by the SIRS as possibly feigning had a total score of 76 or greater, this criterion was dropped and SIRS indicators of one or more scales in the definite range or three or more scales in the probable range were examined. With these new criteria, the M-FAST cut score of 6 displayed a sensitivity of 40%, specificity of 95%, PPP of 29%, NPP of 97%, and overall classification rate of 92%. Although the M-FAST's sensitivity increased slightly from 25 to 40%, it remained poor and was still below what is expected for a screening measure. The ROC curve for the M-FAST is displayed in Figure 1.
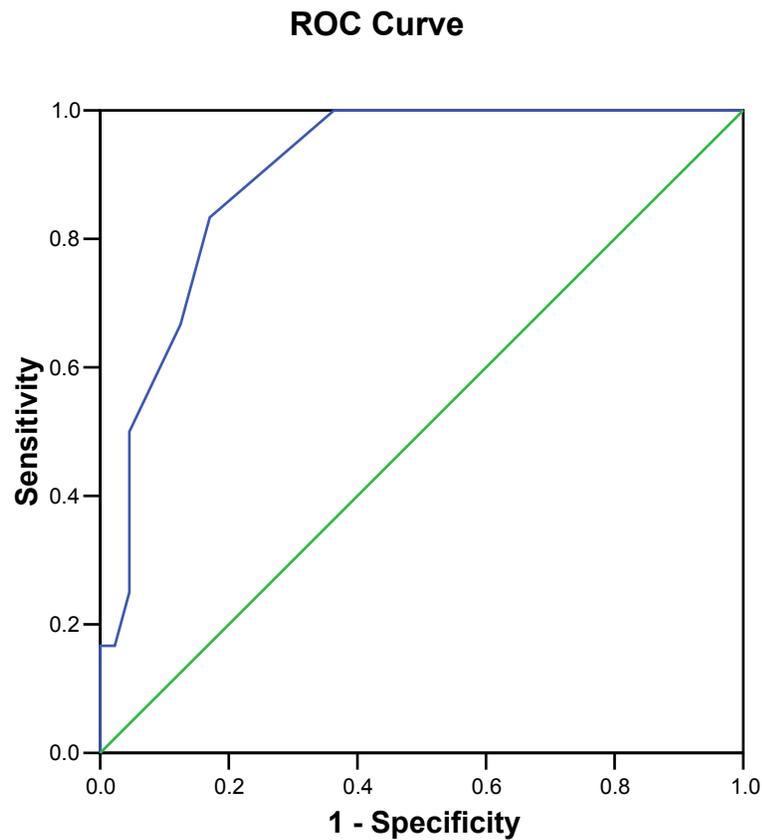
ROC Curve

Figure 1. Receiver Operating Characteristics (ROC) Curve indicating diagnostic efficiency of the Miller Forensic Assessment of Symptoms Test in predicting Structured Inventory of Reported Symptoms group.

The final hypothesis in the present study was that the M-FAST would more effectively identify group membership of individuals classified by the SIRS compared to the PAI scales (NIM, RDF, and MAL). ROC analysis was used to test the diagnostic efficiency of the M-FAST compared to the PAI scales, with the M-FAST (AUC = .90) performing better than each of the PAI scales (NIM, AUC = .79; RDF and MAL, AUC =

.69). Thus, this hypothesis was supported by the results of the ROC analysis. Based on the suggested T score cutoff of 84 (Morey, 2003), the NIM scale displayed a sensitivity of 0% and a specificity of 100%. For the MAL, the suggested raw score cutoff of three (Morey, 2003) resulted in a sensitivity of 0% and specificity of 99%. For the RDF, the suggested raw score cutoff of above zero (Morey, 2003) resulted in a sensitivity of 45% and specificity of 84%. Applying more stringent SIRS criteria (dropping the total score) did not produce any change in the sensitivity or specificity of the NIM or MAL. For the RDF, the sensitivity increased from 45 to 75% and the specificity decreased from 84 to 83%. The ROC curve for the M-FAST and PAI scales is displayed in Figure 2.
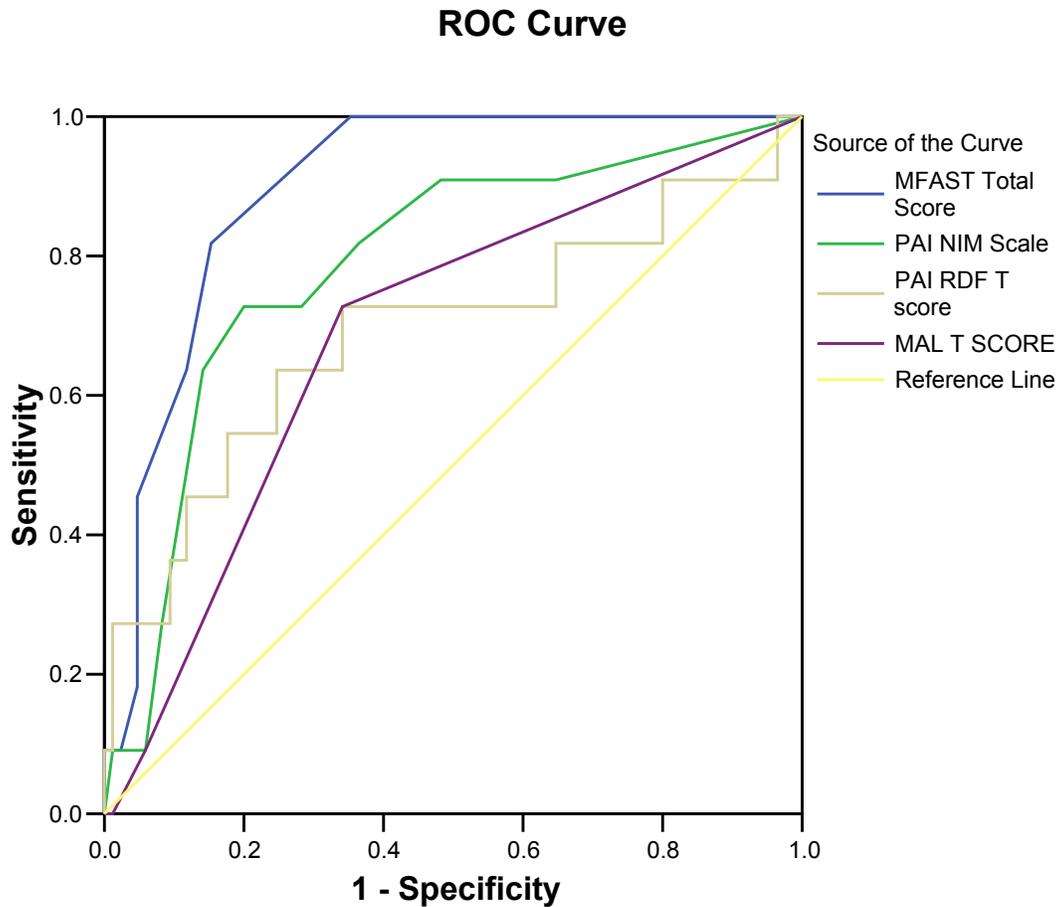
ROC Curve

Figure 2. Receiver Operating Characteristics (ROC) Curve comparing Miller Forensic

Assessment of Symptoms Test and Personality Assessment Inventory Scales in predicting

Structured Inventory of Reported Symptoms group.

DISCUSSION

Summary of Results

In this study, the aim was to examine the relationship between several psychological tests for detecting feigning in correctional inmates. In particular, one of the main goals of this study was to investigate the utility of the M-FAST as a screening measure for malingering in correctional settings. Participants' scores on the M-FAST and SIRS were compared with their NIM, RDF, and MAL scores from the PAI. As predicted, significant relationships were found between the M-FAST and all other study variables. In addition, the M-FAST demonstrated adequate overall diagnostic efficiency and was more effective than the PAI scales (NIM, RDF, and MAL) in predicting group membership on the SIRS. The M-FAST also added predictive validity to the PAI scales in predicting SIRS group (malingering or nonmalingering), but did not produce any increase in classification accuracy. Using the SIRS as the criterion measure for possible feigning, the M-FAST displayed very good specificity and negative predictive power, but performed poorly in terms of sensitivity and positive predictive power. This finding stands out because screening measures like the M-FAST are usually expected to display high sensitivity and have difficulty maintaining high specificity. Compared to the SIRS, the M-FAST classified fewer individuals as feigning, meaning it did not function as a screening device. Based on suggested cutoff scores in previous research, the M-FAST and SIRS achieved agreement in indicating possible malingering in only 3 cases. For several participants (n = 9), the SIRS indicated possible feigning and the M-FAST did not.

Implications of Findings

Compared to previous research on the M-FAST and SIRS, the results of this study display mixed agreement with what most investigators have found. The significant relationship found between the M-FAST and the SIRS matches what has appeared in other studies. Contrary to what was expected, the M-FAST did not function as a screening device compared to the SIRS. The M-FAST only classified 7% of the sample as possible malingerers, whereas the SIRS indicators of feigning suggested that 12% of the sample may have been malingering. In addition, the M-FAST correctly identified only 3 of 12 (25%) participants that the SIRS indicators identified as feigning. This very low sensitivity (.25) stands out as quite poor for a screening measure such as the M-FAST. Even after dropping the SIRS total score criterion to make the outcome variable more restrictive, the sensitivity of the M-FAST only increased to 40%, a value that is still considered poor for a screening device.

There are several possible explanations for the findings mentioned above. One hypothesis for this result is that the composition of the sample influenced the M-FAST scores. For example, the sample consisted of a randomly selected group of general population inmates on intake status from the ODOC. There was no specific goal of including inmates with mental health problems in the sample, which may have restricted the amount of psychopathology among the participants. As a result, M-FAST items asking about unusual psychotic symptoms and rare combinations of symptoms may have appeared odd to most participants. Related to level of psychopathology, the base rate of malingering bears mentioning here. Using the SIRS as a rough estimate of the base rate in this sample, 12% of participants would be classified as probably feigning. This

percentage fits well with the approximate range of 8 to 20% of individuals in forensic and correctional settings thought to be malingering in other studies (Cornell & Hawk, 1989, Rogers et al., 1994, Rogers et al., 1998). In addition, the face validity of many M-FAST items may have cued participants to the fact that the symptoms were rare or unusual indicators of mental illness. The SIRS, with more subtle and varied inquiries about feigning, may have been more sensitive to detecting possible malingering in this sample. The SIRS is also much longer and time consuming than the M-FAST, with more questions designed to detect inconsistent reporting of symptoms associated with possible feigning.

For the PAI, the findings of this study may provide some clarity regarding the utility of the NIM, RDF, and MAL scales for detecting malingering. The results regarding these PAI scales suggest they may not be very useful for detecting feigning among general population inmates in a correctional setting. Although the NIM, RDF, and MAL all showed a significant correlation with the M-FAST, only the NIM and MAL were positively related to the SIRS. Compared to previous studies (Kucharski et al., 2007, Wang et al., 1997), these results agree with the findings that the NIM and MAL show significant positive relationships with SIRS scales, but the RDF does not. An intriguing finding for the RDF is that it displayed much higher sensitivity (45%) than either the NIM (0%) or MAL (0%) in predicting SIRS-identified feigning. This finding stood out even more when the SIRS total score criterion was taken away, with the RDF showing satisfactory sensitivity (75%) and specificity (83%). This implies that the RDF does an adequate job in this sample of predicting possible feigning on the SIRS with respect to scales in the definite or probable ranges. This is also consistent with the present

finding that the RDF does not correlate significantly with the SIRS total score. One factor to keep in mind here, however, is the low base rate of possible feigning on the SIRS both before (11.5%) and after (4.2%) the total score criterion is removed.

When combined with the M-FAST to predict SIRS group (malingering or nonmalingering), each of the three PAI scales did not add much predictive power to the M-FAST. This result suggests that the PAI adds no incremental validity beyond using the M-FAST in predicting individuals considered feigning by the SIRS. Given the positive relationship between the SIRS and two of the PAI scales (NIM, MAL), an elevation on one or both of these scales does indicate that a more in-depth examination of malingering is needed.

One goal of this study was to add to the relatively small base of research with the M-FAST in correctional settings. The overall diagnostic efficiency, specificity, and NPP of the M-FAST found in this study compared favorably with what other authors have found in previous work (Guy & Miller, 2004, Jackson et al., 2005, Miller, 2004, Vitacco et al., 2007). A closer look at the sensitivity and PPP found in this study, however, reveals some large differences compared to results from the four studies cited above. For example, the sensitivity in this study (.25) was much lower than in previous investigations (.76 to 1.00). The PPP (.43) was also much smaller than the values found in other studies (.72 to .78). As a screening measure, the M-FAST should display high sensitivity to ensure that all potential feigners are identified and can be assessed further with other methods (e.g. SIRS). The results in this study, however, show the opposite pattern, with sensitivity being very low. Sensitivity and specificity are susceptible to change when the base rate of possible feigning increases or decreases in a given sample.

In this study, the SIRS identified 12% of participants as potential feigners, a figure that fell to 5% after the total score criterion was removed. This rate also differs slightly from what has been found in past studies (Edens et al., 2007, Vitacco et al., 2007), and must be considered when evaluating the current finding of low sensitivity.

When combined with the PAI scales, the M-FAST was helpful in adding incremental validity to the PAI scales in predicting whether participants were feigning or not, as measured by the SIRS. According to our results, the M-FAST is a more useful tool than any of the PAI scales for examining feigning in this correctional setting. In addition, this study involved an independent investigation of the M-FAST that was not conducted by anyone professionally related to the test author. This may also be an important advancement in building the research base for this measure.

In addition to the research implications mentioned above, there are several practical implications of the findings in this study. The most salient result in this study was that the M-FAST did not function well as a screening device. For clinicians in correctional settings, a brief measure like the M-FAST could be an efficient way to assess possible feigning among inmates. In this study, however, the M-FAST actually classified fewer participants as potential malingerers than the SIRS did. Furthermore, the M-FAST only agreed with the SIRS in classifying a participant as feigning in three cases. Given these findings, correctional psychologists might want to consider using only the SIRS when data from the PAI or other sources points to malingering being present. In addition, the suggested cutoff score of 6 on the M-FAST may not be optimal for this population. Lowering the cutoff score may increase positive predictive power and provide clinicians with more accurate information regarding inmates who require further malingering

assessment. The face validity and shorter length of the M-FAST may have made it less sensitive to detecting feigning in this sample of inmates. For forensic and correctional psychologists assessing malingering among individuals with more severe psychopathology, further evidence is needed to determine whether the M-FAST can function as an effective screening device.

The results of this study may also be important for the ODOC intake process of screening inmates for mental health issues. In Oregon, all incoming inmates who are able to read above a certain level are administered the PAI. The large number of inmates in the intake department at any given time makes it difficult to screen for more specific issues such as malingering. The present findings indicate the PAI scales (NIM, RDF, and MAL) should not be used alone to make decisions about inmates who may be feigning psychological symptoms. Although the M-FAST was found to be a better predictor of SIRS-identified feigning than the PAI scales, it did not function well enough in this study to support its use as a screening device for malingering. If clinicians have time to administer it, the SIRS remains the best tool for a comprehensive assessment of malingering.

For psychologists in other settings where malingering is a concern, the findings of this study may offer some guidance as well. When using the PAI or M-FAST, practitioners should pay attention to particular scale elevations. Due to the finding that the SIRS total score is significantly correlated with the NIM, MAL, and M-FAST total score, high scores on these scales should cue clinicians to the possibility of feigning. Before concluding that an individual is malingering, a detailed examination of response style and symptom validity beyond just the PAI or M-FAST needs to be completed. This

recommendation echoes that of other researchers in this area who have emphasized that multiple sources of data must be considered in any assessment of malingering (Rogers, 2008).

Limitations

There were several limitations to this study that may have affected the results. During the data analyses, the SIRS was used as a criterion measure for placing participants into probable malingering and nonmalingering groups. In the absence of external criteria to classify participants as feigning (e.g. clinical judgment), this was the most practical way to examine the usefulness of the M-FAST and PAI scales in this study. Although the SIRS has been established as the "gold standard" for malingering detection in previous research (Rogers, 2008), it is still a large assumption to use this test as the only criterion for feigning. This approach has been employed in several studies (Guy & Miller, 2004, Kucharski et al., 2007, Miller, 2004, Rogers et al., 1998, Vitacco et al., 2007) to study the utility of either the M-FAST or PAI. As known malingerers were not available and participants were not instructed to feign symptoms, the SIRS was chosen as the best available criterion for separating participants into possible feigning and nonfeigning groups. Using the outcome variable of possible feigning on the SIRS limits the conclusions that can be made.

The second drawback of this study is the non-experimental design. This means that a third variable may have impacted the significant findings of positive relationships between the M-FAST, SIRS, and PAI variables. Although this study was non-experimental in nature, this approach may have been the best way to examine the relationships among the variables. One would expect the M-FAST and SIRS to be highly

correlated due to the idea that both measures were designed to tap into the same underlying construct – malingering.

Another potential problem in this study was that the PAI was not administered to participants at the same time as the other measures. Because the PAI is completed by all inmates shortly after they arrive at the ODOC intake center, there was no way for the researchers to control the time between their PAI completion date and the administration of the rest of the study. This means that mood or other extraneous factors could have created some discrepancy in the way participants responded to the PAI compared to the other measures. On the other hand, the design used in this study was the most practical approach in working with ODOC inmates without significantly interfering in the prison's intake process. Furthermore, the total time inmates spend on intake status is usually fairly short (e.g. about one month), meaning the time between PAI completion and the other measures was probably not very long in any particular case.

The next possible factor that may have had an impact on the outcome of this study was the confidentiality provided to inmates. Although this was clearly essential for ethical reasons, it may have limited the degree to which participants feigned psychological symptoms on the M-FAST and SIRS. Because inmates were assured that their responses would not be released to the ODOC, they may not have had any clear incentive for producing or exaggerating symptoms. In future studies, researchers could investigate whether rates of malingering increase or decrease when inmates are told that their answers will be shared with correctional staff or mental health practitioners.

One final limitation that may have affected the results in this study was the random sampling of inmates on intake status. This method of sampling may have meant

that our sample did not contain as much psychopathology as a more specific type of correctional group, such as inmates receiving mental health services. One way to provide a rough estimate of the amount of psychopathology is the mean elevation on the clinical scales of the PAI. The mean clinical elevation (T score) was 57.84 (SD = 7.10) in this sample, suggesting the overall level of pathology endorsed by inmates may not have been very high. Because malingering often overlaps with genuine psychopathology (Rogers, 2008), the lack of pathology in the sample may have limited the number of inmates who were identified as possibly feigning psychological symptoms.

<div align="center">Recommendations for Future Research</div>

Based on the results of the study and the limitations described above, several recommendations for future research are offered. The first suggestion for future work is to use an experimental design so that researchers can make comparisons between groups. Researchers could place participants into different groups based on several types of criteria. For example, investigators could employ a simulation groups approach and instruct participants to feign psychological symptoms or respond honestly to items on the SIRS, M-FAST, and PAI. This type of design could also include a comparison of inmates simulating mental illness with inmates who are currently receiving mental health treatment. In addition to a simulation groups design, researchers should attempt to use a known groups approach to examine malingering. This approach could be used on its own or in combination with a simulation design. One way to identify correctional inmates with a history of malingering might be to select all individuals who have been examined in a criminal forensic evaluation prior to arriving in prison. Investigators could then

compare inmates who were suspected of malingering in past evaluations with those who were not based on some set of established criteria.

As an extension of the current study, researchers could also examine how the M-FAST and PAI perform at detecting feigning in more specialized groups of correctional inmates. These groups could include inmates from the mental health infirmary, segregation, death row, or inmates nearing release. In the present study, it was not possible to collect information on the current security level of participants, as this was being determined during the intake process. In future research, it might be interesting to compare how inmates from maximum, medium, and minimum security levels perform on measures like the PAI, M-FAST, and SIRS.

One final recommendation is for more research to be conducted with the measures from this study in correctional settings in general. Although the current study adds to the relatively small literature base on the M-FAST, more work is needed to examine its utility among correctional inmates, especially to clarify the current findings regarding the low sensitivity and much higher specificity. Compared to the M-FAST, the PAI has been investigated in corrections for many different uses. Research on the PAI is still growing and continued investigation is necessary to figure out the meaning of elevations on different PAI scales, especially the RDF. When looking at new tests for detecting feigning, the SIRS must continue to be included in the conversation, as it remains the benchmark against which all other measures of malingering are compared.

Conclusion

The findings of this study provide mixed support for the use of the M-FAST in correctional settings. Based on groups established by the SIRS, the M-FAST achieved

very good diagnostic efficiency in identifying feigning of psychological symptoms. In addition, there was evidence to support the M-FAST as a better predictor of feigning than any of the PAI scales (NIM, RDF, or MAL). However, the most intriguing finding in this investigation was that the M-FAST did not function as a screening device for SIRS-identified feigning and displayed extremely poor sensitivity. None of the alternative explanations for this finding stand out as a clear potential cause at this time. More research is needed to determine exactly what type of response style the M-FAST is or is not picking up in correctional inmates. In the future, researchers should examine the use of differential cut scores on the M-FAST for indicating potential feigning. Taken together, the results of this study appear to be an important step towards expanding the empirical base for the M-FAST in corrections.

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