



## **Malingering Posttraumatic Stress on the Personality Assessment Inventory**

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### **Abstract**

The amenability of posttraumatic stress disorders to compensation claims points to the need for validated means of assessing malingered posttraumatic stress. This study investigated the ability of the Personality Assessment Inventory (PAI) to differentiate between genuine and malingered posttraumatic stress symptoms. Treatment-seeking patients with acute stress disorder (ASD,  $n = 15$ ), uncoached simulators who were provided with no information about posttraumatic stress ( $n = 21$ ), and coached simulators who were provided with information about posttraumatic stress symptoms ( $n = 21$ ) were administered the PAI. Both uncoached and coached malingerers produced PAI profiles that over-endorsed the majority of clinical scales relative to ASD participants. Both groups of malingerers also endorsed more items on the NIM validity scale, Malingering Index and Critical items list than ASD participants. These findings are discussed in terms of the utility of the PAI as a measure of malingered posttraumatic stress.

*Keywords:* Malingering; posttraumatic stress; PTSD; assessment

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### INTRODUCTION

The inclusion of the precipitating stressor as part of the definition of posttraumatic stress disorder (PTSD) results in a direct causal link being inferred between an event and the subsequent symptoms. This situation has resulted in PTSD being the subject of many compensation and criminal claims (Resnick, 1997). The increasingly prominent role of PTSD in forensic matters underscores the need for reliable means to discriminate between genuine and malingered PTSD (Lipton, 1994). Considerable research has documented the proficiency with which individuals can fake posttraumatic stress symptoms during clinical interviews and self-report symptom inventories (Bryant & Harvey, 1998a; Freuh & Kinder, 1994; Lees-Haley & Dunn, 1994; Liljequist, Kinder, &

Schinka, 1998). Accordingly, researchers have focused considerable attention on standardized psychometric inventories that include specific scales that index malingering (Resnick, 1997).

Recent attention has focused on the utility of the Personality Assessment Inventory (PAI; Morey, 1991) to identify malingerers. The PAI is a self-administered inventory that contains 344 items and includes: 4 Validity scales, 11 Clinical scales, 5 Treatment scales, and 2 Interpersonal Scales (Morey, 1991). The Validity scales include the Negative Impression scale (NIM), Positive Impression scale (PIM), Malingering Index, and Critical Items scale. The NIM scale has been effective in identifying malingering of general mental disorders (Liljequist et al., 1998; Morey,

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1991). For example, adopting a cut-off score  $>8$ , the NIM has been shown to be variably successful for identifying participants feigning schizophrenia (91%), depression (56%), and anxiety (39%) (Rogers, Bagby, & Chakraborty, 1993). Gaies and Kinder (1995) found that malingerers scored significantly higher on the PAI's Malingering Index than controls and depressed subjects. Prison inmates suspected of feigning score higher on the NIM, Malingering Index and most Clinical scales than do non-feigners (Wang, Rogers, Giles, Diamond, Herrington-Wang, & Taylor, 1997). Further, a cut-off score of NIM  $> 10$  has been shown to accurately identify 62% of feigners and 95% of genuine patients (Rogers, Sewell, Morey, & Ustad, 1996). In terms of PTSD, Liljequist et al. (1998) administered the PAI to students instructed to feign PTSD, substance abuse veterans with PTSD and veterans without PTSD. Malingerers produced higher scores on the NIM, Malingering Index, and on the Anxiety and Schizophrenia clinical scales. Although the PAI appears to have utility in detecting malingering with PTSD, existing research is limited to studies of veteran populations. Accordingly, one goal of the present study indexed the utility of the PAI to assess malingering in civilians.

A further issue that needs to be explored is the extent to which the PAI discriminates between uncoached and coached malingerers. There is increasing evidence that attorney "coaching" of clients is common (Lees-Haley, 1997; Wetter & Corrigan, 1995). Cases have been reported in which attorneys have specifically advised clients on PTSD symptoms (Rosen, 1995; Wetter & Corrigan, 1995). Additionally, there is growing public knowledge and awareness of the symptoms of PTSD (Lees-Haley & Dunn, 1994; Mendelson, 1997). Accordingly, this study compared the responses on the PAI of uncoached and coached malingerers. Rogers et al. (1996) found that whereas naïve simulators displayed a global elevation on the majority of clinical scale on the PAI, coached subjects were more focused on feigning the specific disorder they were directed to feign.

This study indexed feigning of posttraumatic stress symptoms by comparing simulators with nonsexual assault victims who met criteria for acute stress disorder (ASD). The diagnosis of ASD describes posttraumatic stress symptoms that occur in the initial month after a trauma (Bryant & Harvey, 1997). There is considerable evidence that the majority of people who initially display ASD subsequently suffer chronic PTSD (Bryant & Harvey, 1998; Harvey & Bryant, 1998b). We

hypothesized that uncoached and coached malingerers would produce higher scores on the NIM scale and the Malingering Index than ASD participants. Further, it was hypothesized that the coached malingerers would display higher scores on ASD-related scales (anxiety, anxiety-related disorders and depression) than uncoached malingerers.

## METHOD

### *Participants*

The ASD sample comprised 20 (5 males, 15 females) participants who were referred to the Westmead Hospital PTSD Unit for treatment following a nonsexual assault. Exclusion criteria included poor English proficiency, concurrent psychiatric diagnosis, aged less than 16 years or older than 65 years, evidence of traumatic brain injury, outstanding compensation issues, and use of narcotic analgesia (with the exception of codeine) at the time of assessment. Diagnosis of ASD was made using the Acute Stress Disorder Interview (ASDI; Bryant, Harvey, Dang, & Sackville, 1998), which is a structured clinical interview that contains 19 dichotomously scored items that relate to ASD symptoms and provides a total score of acute stress severity (range 1 to 19). The ASDI possesses sound test-retest reliability over a period of two to seven days (Cronbach's  $r = 0.95$ ) and has good sensitivity (91%) and specificity (93%) relative to independent clinician diagnosis of ASD (Bryant et al., 1998).

Participants in the malingering groups were undergraduate psychology students who participated in the study in return for research credit. There were 21 participants (4 male, 17 female) of mean age 24.23 years ( $SD = 2.24$ ) in the uncoached malingering group and 21 participants (11 male, 10 female) of mean age 22.67 years ( $SD = 2.80$ ) in the coached malingering group. A structured interview administered to malingerers established that no simulators had experienced a traumatic event in the previous 12 months.

### *Procedure*

Each session was conducted on an individual basis and administered by one of three forensic/clinical psychologists. Following written informed consent, simulators were instructed that the purpose of the study was to find out how well people can fake posttraumatic stress. They were told to imagine they have been victims of a violent non-sexual

assault within the last month and that their task was to respond to the following self-report inventory in a manner that would convince the examiner that they were suffering from posttraumatic stress. Coached simulators were then given a list of posttraumatic stress symptoms based on the DSM-IV criteria for PTSD. Specifically, this list informed coached simulators that posttraumatic stress symptoms include intrusive memories, nightmares, flashbacks, distress at reminders of the trauma, physiological reactivity to trauma reminders, avoidance of trauma-related thoughts and conversations, avoidance of trauma-related places and people, dissociative amnesia, social withdrawal, emotional numbing, disinterest in activities, a sense of foreshortened future, insomnia, irritability, concentration deficits, heightened startle response, and hypervigilance. All simulators were then given four minutes to consider their simulation, and the list of symptoms was retrieved from the coached simulators.

All genuine and simulating participants were then administered the PAI. Participants in the malingering group were reminded to respond to the PAI items in the way they would if they wanted the examiner to believe that they were suffering from ASD. At the completion of this, the ASD participants were then administered the ASDI.

## RESULTS

### *Participant Characteristics*

A oneway analysis of variance (ANOVA) of participants' age indicated that ASD participants,

uncoached simulators, and coached simulators did not differ in terms of age,  $F(2, 56) = .09$ , ns.

### *PAI Validity Scales*

The mean PAI Validity scores are presented in Table 1. Oneway ANOVAs were conducted between the three groups for each of the PAI scales. On the basis of 24 comparisons being conducted, a Bonferroni adjustment was made for an alpha rate of .002 that provided an overall alpha rate of .05. Separate oneway ANOVAs indicated significant differences on the NIM and PIM Validity scales. Posthoc Tukey comparisons indicated that uncoached and coached malingering groups obtained higher scores than the ASD group on the NIM validity scale and significantly lower mean scores on the PIM validity scale. The sensitivity and specificity of different cut-off scores for the NIM scale for accurately identifying genuine and malingered responses was also examined. A cut-off score of  $NIM \geq 52T$  correctly classified 100% of malingers and misclassified relatively few ASD patients (17%).

Both malingering groups scored higher on the Malingering Index than the ASD group. Using a cut-off score of  $\geq 3$ , 76% of malingers were correctly identified and 17% of the ASD patients were incorrectly classified. Similarly, both malingering groups endorsed a greater number of items on the Critical Items than the ASD group.

**Table 1**

A oneway analysis of variance (ANOVA) of participants' age indicated that ASD participants,

**Table 1**  
*Means Scores on PAI Validity Scales*

PAI validity scales, Malingering Index & Critical Items	Uncoached Malingering		Coached Malingering		ASD Patient		$F(1,56)$	$P$
	M	SD	M	SD	M	SD		
Inconsistency	46.19	7.97	45.19	8.12	51.5	7.10	4.93	n.s.
Infrequency	57.81	10.39	62.57	11.55	59.83	10.35	0.49	n.s.
Negative Impression	104.33	23.38	93.67	19.74	54.5	15.72	27.86	.001
Positive Impression	34.95	8.36	33.76	5.77	53.33	14.32	34.54	.001
Malingering Index	3.76	1.34	3.52	1.21	2.00	1.60	7.07	.001
Critical Items	3.00	0.84	2.43	1.33	0.67	1.15	17.00	.001

*PAI Clinical Scales*

Table 2 presents the mean scores on the Clinical Scales, Interpersonal Scales and Treatment Scales. Separate oneway ANOVAs indicated significant differences between the simulators and the ASD group on a number of the PAI scales. Posthoc Tukey comparisons found both uncoached and coached malingerers scored higher on the Somatic Complaints, Anxiety, Anxiety-Related Disorders, Depression, Paranoia, Schizophrenia, Borderline

Features, Antisocial Features, Alcohol Problems and Drug Problems scales than ASD patients. The malingering groups also scored lower on the Warmth Interpersonal Scale than ASD participants.

In terms of the PAI Treatment Scales and Interpersonal Scales, the malingering groups obtained higher scores on the Aggression, Suicide, Stress, and Nonsupport Treatment Scales than ASD patients. The malingering groups also scored lower on the Treatment Rejection Scale than ASD patients.

**Table 2**  
*Mean Scores on PAI Clinical, Treatment and Interpersonal Scales*

PAI Clinical, Treatment and Interpersonal Scales	Uncoached Malingering		Coached Malingering		ASD Patient		F(1,56)	p
	M	SD	M	SD	M	SD		
<b>Clinical Scales</b>								
Somatic Complaints	89.05	17.12	84.43	11.78	56.67	19.33	17.33	.001
Anxiety	94.62	9.21	92.19	7.01	61.50	19.55	35.44	.001
Anxiety-related	92.57	11.66	90.14	8.75	60.33	18.99	28.07	.001
Depression	100.57	11.16	95.48	8.95	64.50	19.15	33.75	.001
Mania	55.05	9.10	53.00	7.64	47.67	14.8	2.05	n.s.
Paranoia	91.71	13.88	87.38	11.03	52.00	8.11	48.57	.001
Schizophrenia	93.81	17.95	89.33	10.63	56.17	9.68	31.20	.001
Borderline Features	82.05	10.24	80.62	8.33	55.17	12.26	31.81	.001
Antisocial Features	62.81	14.74	64.62	12.14	42.67	5.48	13.95	.001
Alcohol Problems	75.38	20.53	70.62	17.09	50.00	7.48	8.87	.001
Drug Problems	78.48	19.44	71.9	19.76	48.00	3.62	12.09	.001
<b>Treatment Scales</b>								
Aggression	63.14	15.50	70.81	11.87	48.67	17.83	8.59	.001
Suicidal Ideation	99.52	19.64	92.52	17.84	47.83	8.79	37.91	.001
Stress	78.00	13.26	67.90	9.49	51.17	13.94	18.81	.001
Nonsupport	75.05	16.89	76.67	13.60	52.00	7.03	13.69	.001
Treatment Rejection	34.86	8.86	39.00	5.65	49.17	12.45	10.29	.001
<b>Interpersonal Scales</b>								
Dominance	30.90	11.49	34.71	7.30	40.83	7.92	4.37	n.s.
Warmth	25.76	11.93	23.43	7.52	47.17	8.54	25.68	.001

**DISCUSSION**

These findings support the utility of the NIM scale and the Malingering Index for detecting malingered profiles on the PAI (Liljequist et al., 1998; Rogers et al., 1996; Rogers, Ustad, Salekin, 1998b; Wang et al., 1997). Participants in the uncoached and coached malingering groups produced higher scores on the NIM Scale and Malingering Index than ASD

patients. The optimal cut-off scores in this study found an accurate classification of 100% of malingerers and 83% of ASD patients on the NIM Scale and 76% of malingerers and 83% of ASD patients on the Malingering Index.

Recently commentators have questioned the applicability of the NIM and Malingering Index across forensic and non-forensic samples (Rogers et al., 1996; Rogers et al., 1998a). This caution is

underscored by the finding that the optimum cut-off scores on these measures reported in this study are substantially lower than those stated in previous studies. There is increasing evidence that the utility of validity scales (and particularly the cut-off scores for these scales) may be specific to the particular population investigated (e.g., Freuh, Gold & Arellano, 1997; Freuh & Kinder, 1994; Greene, 1997; Lees-Haley, 1992). Future research needs to replicate these findings and further investigate the accuracy of the NIM and the Malingering Index to identify malingered PTSD in various forensic and clinical populations.

Differences between malingerers and genuine ASD patients were further evident in the overall pattern of responding on the PAI scales. Generally, malingerers tended to exaggerate their symptoms resulting in a substantial elevation of their scores on nearly all clinical scales, interpersonal scales and treatment scales when compared to ASD patients. These findings replicate the pattern observed by Liljequist et al. (1998), which found that malingering PTSD participants exaggerated problems on most clinical scales relative to veterans with PTSD. These findings are consistent with considerable evidence that malingerers of PTSD endorse more symptomatology and impairment than genuine PTSD participants in both self-report and inventories than genuine respondents (Hickling, Taylor, Blanchard, & Devineni, 1999; McBride & Bryant, 2001).

Coaching malingerers in this study did not markedly alter the performance of malingerers on the PAI. This finding contrasts with previous research that has found significant differences between uncoached and sophisticated malingerers on the PAI (Rogers et al., 1993; Rogers et al., 1996). It is possible that coaching had minimal effect because items on the PAI provided cues to the uncoached malingerers about the symptoms they should endorse. Alternately, it is possible that we provided inadequate coaching to our malingerers. Although we provided malingerers with a list of PTSD symptoms because this has been reported as a common practice in medico-legal settings (Neal, 1994), malingerers may require more intensive rehearsal. For example, in their study that found a difference between coached and uncoached malingerers, Rogers et al. (1996) provided their malingerers with a week to prepare for their malingering performance.

The present study has a number of methodological limitations. First, the use of undergraduate psychology students as malingerers may have limited generalization to populations of actual malingerers. Second, it can be difficult to

sufficiently motivate malingerers within experimental contexts to malingering effectively (Rogers et al., 1993). Future research of malingering posttraumatic stress should attempt to heighten participants' motivation to effectively feign the condition. Third, the suggested cut-offs found in this study need to be evaluated in future research with forensic or clinical populations who are identified as being suspected malingerers (Lees-Haley, 1992; Liljequist et al., 1998). Fourth, interpreting these results need to consider that there is little knowledge about the prevalence of malingering in different settings (Lees-Haley, 1997). The sensitivity of psychometric measures to detect malingering will be influenced by the prevalence of malingering. Determination of the base rates of malingering will allow accurate psychometric estimates of positive and negative predictive power of malingering (Rogers, 1997).

Considering the potential implications of inaccurately identifying genuine or malingered presentations of posttraumatic stress, the PAI appears to have utility in assisting more accurate identification of feigned presentations. There is a need for more systematic study of malingered posttraumatic stress on the PAI to permit accumulative data from different populations that will allow development of reliable formula for discriminating between genuine and feigned reports of posttraumatic stress

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