



# MMPI-2 and MMPI-2-RF Overreporting Validity Scale Scores for Forensic State Hospital Malingering and Non-Malingering Patients

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## INTRODUCTION

- ▶ Malingering is the intentional overreporting of psychopathology, somatic, or cognitive symptoms for secondary gain.<sup>1</sup>
- ▶ Overreporting can attenuate the criterion validity of substantive scales, and if undetected, lead to erroneous conclusions during evaluations.<sup>2,3</sup>
- ▶ Previous research demonstrated the MMPI-2<sup>4</sup> and MMPI-2-RF<sup>5</sup> overreporting validity scales can identify protocols invalidated by overreporting of psychopathology, somatic, and cognitive complaints, with most studies using simulation designs or another test as a criterion to identify suspected malingerers.
- ▶ For instance, using M-FAST elevations to identify suspected malingerers in a disability claimant sample, Chmielewski et al.<sup>6</sup> recently found that all examined MMPI-2 and MMPI-2-RF overreporting Validity Scales significantly distinguished between groups. Greatest effects were observed for the MMPI-2 F<sub>B</sub> and F scales as well as the MMPI-2-RF F-r scale.

## AIMS & HYPOTHESES

- ▶ The current study extends extant research using uncontaminated DSM-IV-TR malingering V Code presence as the criterion to compare mean MMPI-2 and MMPI-2-RF scores of malingering and non-malingering forensic inpatients.
- ▶ We examined independent samples *t*-tests, Hedges' *g* values, and Receiver Operating Characteristic (ROC) Area Under the Curve (AUC) values.
- ▶ We hypothesized there would be larger differences in mean scores on the psychopathology overreporting scales (i.e., F-r, Fp-r) than on the cognitive or somatic overreporting scales (i.e., Fs, FBS-r, RBS), given the significant potential incentives for overreporting psychological distress in this setting.

## METHOD

### Participants

- ▶ A total of 931 forensic psychiatric inpatients completed the MMPI-2 in clinical or forensic evaluations. After invalid protocols were removed, *n* = 716:
  - ▶ Age: *M* = 39.92 years (*SD* = 11.00 years)
  - ▶ Education: *M* = 12.16 years (*SD* = 2.65 years)
  - ▶ Sex: *n* = 505 (70.5%) Male
  - ▶ Most patients were committed as :
    - ▶ Not Guilty by Reason of Insanity (*n* = 366, 51.1%)
    - ▶ Incompetent to Stand Trial (*n* = 139, 19.4%)
    - ▶ Mentally Disordered Offender (*n* = 139, 19.4%)

### Measures

- ▶ **MMPI-2**: a 567-item True/False self-report measure of psychopathology and personality dysfunction that also includes four overreporting Validity Scales.
- ▶ **MMPI-2-RF**: A shortened version of the MMPI-2 that includes five overreporting Validity Scales.
- ▶ Each measure has garnered significant empirical attention. See Graham<sup>7</sup> and Ben-Porath<sup>8</sup> for comprehensive reviews.

### Procedure

- ▶ Of the 931 patients who completed the MMPI-2, 138 were excluded due to non-content-based invalid MMPI-2 protocols (CNS ≥ 30, VRIN ≥ 80T, and/or TRIN ≥ 80T).
- ▶ After rescoring MMPI-2 items into MMPI-2-RF items, an additional 77 patients were excluded due to non-content-based invalid MMPI-2-RF protocols (CNS ≥ 18, VRIN-r ≥ 80T, and/or TRIN-r ≥ 80T).
- ▶ Uncontaminated diagnoses of record on the date of MMPI-2 administration were used to determine two criterion groups:
  - ▶ **Malingering**: Forensic inpatients with malingering V Codes (*n* = 17)
  - ▶ **Non-Malingering**: Forensic inpatients without malingering V Codes (*n* = 699)

## TABLE 1. COMPARISON OF VALIDITY SCALE SCORES FOR MALINGERING AND NON-MALINGERING PATIENT GROUPS

	Malingering ( <i>n</i> = 17)		Non-Malingering ( <i>n</i> = 699)		Hedges' <i>g</i> Effect Size	ROC AUC Value	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		AUC	95% CI
<b>MMPI-2 Validity Scales</b>							
F: Infrequency	94.35	24.75	66.89	23.27	<b>1.18*</b>	.78	.67 .90
F <sub>B</sub> : Back Infrequency	85.06	28.70	64.33	19.07	<b>1.07*</b>	.82	.73 .90
F <sub>p</sub> : Infrequency Psychopathology	96.88	24.84	66.18	23.87	<b>1.28*</b>	.71	.56 .86
FBS: Fake-Bad Scale	70.47	20.28	57.48	13.47	<b>0.95*</b>	.69	.55 .83
<b>MMPI-2-RF Validity Scales</b>							
F-r: Infrequent Responses	98.71	26.63	67.01	24.81	<b>1.27*</b>	.80	.69 .91
Fp-r: Infrequent Psychopathology Responses	87.88	27.82	62.30	21.60	<b>1.17*</b>	.76	.63 .90
Fs: Infrequent Somatic Responses	80.53	23.62	59.62	19.38	<b>1.07*</b>	.79	.71 .87
FBS-r: Symptom Validity	69.24	19.27	56.06	13.84	<b>0.94*</b>	.71	.58 .84
RBS: Response Bias Scale	81.76	23.78	60.96	18.38	<b>1.12*</b>	.76	.65 .88

▶ *Note.* Results are presented as Linear T Scores. \*statistically significant *t*-test; *p* < .05. Large (|.80+|) Hedges' *g* values are **bolded**. ROC = Receiver Operating Characteristic. AUC = Area Under the Curve. Broad AUC interpretive benchmarks are: .60-.69 (modest discrimination), .70-.79 (acceptable discrimination), .80-.89 (excellent discrimination), and .90+ (outstanding discrimination). AUC values with 95% CIs that fall completely in the modest to excellent range are **bolded**.

## RESULTS & DISCUSSION

- ▶ All MMPI-2 and MMPI-2-RF scales evidenced statistically and practically significant mean score differences across malingering and non-malingering patient groups in the expected direction.
- ▶ MMPI-2 Hedges' *g* values ranged from 0.95 (FBS) to 1.28 (F<sub>p</sub>).
- ▶ MMPI-2-RF Hedges' *g* values ranged from 0.94 (FBS-r) to 1.27 (F-r).
- ▶ MMPI-2 F<sub>p</sub>, F, and F<sub>B</sub> and MMPI-2-RF F-r, Fp-r and RBS demonstrated the largest effects.
- ▶ The ROC AUC values demonstrated a similar pattern, with the MMPI-2 F<sub>B</sub> and MMPI-2-RF F-r scales best discriminating between the malingering and non-malingering groups.
- ▶ Results were generally consistent with our hypothesis, with largest effects observed for scales designed to detect psychopathology overreporting.
  - ▶ Of note, MMPI-2-RF Fs and RBS were also strong, perhaps demonstrating there are also incentives to overreport cognitive and somatic problems in this setting (e.g., to be prescribed pain medication)—or that those exaggerating symptoms severe enough to be documented in records *before* testing are especially likely to exaggerate symptoms across multiple domains.
- ▶ Limitations of this study included a small sample of documented malingering patients and limited access to the evidence that supported assigning a malingering V Code.
- ▶ Despite these limitations, this study provides support for the construct validity of the MMPI-2 and the MMPI-2-RF overreporting Validity Scales.

## REFERENCES

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