



DOWNLOAD THIS POSTER

# The MMPI-2-RF over-reporting scales in clinical practice: A meta-analysis of criterion-based classification



Paul B. Ingram<sup>IV 1</sup>, Thomas J. Parkman<sup>1</sup>, Baron Staggs<sup>1</sup>, & Michael Ternes<sup>2</sup>

<sup>1</sup>Texas Tech University, Department of Psychological Sciences

<sup>2</sup>University of Kansas, Educational Psychology

## Introduction

The MMPI-2-RF is a popular personality assessment tool with an amassed literature base suggesting it is a useful and valid measure of clinical symptom sets and response styles. It also includes several validity scales measuring content-based invalid responding of over-reporting. Most of these scales were revised versions of scales already included in the MMPI-2 (i.e., F-r, Fp-r, and FBS-r). However, the RBS (Gervais et al., 2007) and Fs (Wygant, Ben-Porath, & Arbsi, 2004) scales were introduced to either strengthen under-assessed areas of over-reporting (somatic complaints in Fs) or to provide an alternative approach to identifying malingerers (excessive failure of external validity tests in RBS).

Given that a bedrock of utility for personality assessment measures is that they can effectively discriminate between patterns of valid and invalid responding, two meta-analyses have evaluated the effectiveness of these over-reporting scales. Ingram and Ternes (2016) used a random-effects meta-analysis model with both simulation and clinically-derived studies. They found support for the efficacy of the over-reporting scale and numerous moderators which influenced the effectiveness for those scales (e.g., presenting diagnosis, comparison group, simulation or clinically drawn study, etc.). Sharf, Rogers, Williams, and Henry (2017) used a fixed meta-analytic approach to examine the over-reporting scales, also in both simulation and clinically-drawn samples. Sharf and colleagues reported mean scores and effect sizes for identified diagnoses and feigned symptom groups (feigned mental disorders, cognitive disorders, and medical complaints).

Random-effect models generate the most accurate meta-analytic estimates (Borenstein et al., 2009) while fixed-effect models are likely biased and unreliable in their approximation. Thus, results from each of these two meta-analyses are limited in their utility. Ingram and Ternes (2016) did not offer comparative means for groups to ease clinical use of the MMPI-2-RF and also combined simulation and clinical samples. Sharf and colleagues (2017) used an inappropriate meta-analytic assumption while also combining simulation and criterion-based studies (as well as a non-feigning study).

## Methods

### Literature Search and Coding

This study searched the Social Sciences database via the ProQuest on September 14<sup>th</sup>, 2017 using the keyword *MMPI-2\** and each of the following terms: feign\*, malinge\*, detect\*, over-report\*, fake-bad. As an update to the previous meta-analytic searches, all sources since 2015 were requested. All studies cited by the previous meta-analyses were also included. The University of Minnesota Press' Test Division (2017) website, which catalogs all publications on the MMPI-2-RF, was reviewed. A forward and backward search (i.e., reviewing all articles citing, or cited by, an article) for each identified article was conducted. During each step, titles and abstracts of each article were reviewed to identify studies which met the research goals of this study. Those studies meeting the research goals were then subjected to a comprehensive review and subsequent coding (if inclusion was met). Two independent coders were used to identify and code studies. A third coder (PI) examined studies in the case of a disagreement between the primary coders.

### Inclusion/Exclusion Criteria

1. T-scores were reported for any validity scales across at least two groups
2. Groups utilized in the study were drawn from non-simulation samples
3. Probable feigning groups were excluded (only honest or definite feigners were included)
4. Articles were written in English and used English speaking populations.

## Discussion

The MMPI-2-RF effectively distinguishes between honest and feigned over-reporting in many cases. However, there are several important caveats to this finding.

1. A medium effect (i.e., a classification involving group difference effects between 1.25 and 2.69; Ferguson, 2009) is believed the most apt label for the between group differences seen within this meta-analysis. While the effects (i.e., score differences) are notable in magnitude, the mean and distribution of the feigning group tends to fall under the scale scores traditional and conservative recommended scores to identify feigners. Group comparison effect size guidelines are frequently substantially higher and are likely to result in decreased identification with cut-scores. The difference between the groups is also smaller than desired when standard deviations of each group (feigning and honest) are considered.
2. The discriminative capacity of the over-reporting scales are likely to misclassify many feigning individuals (false negative) because of low mean scores. Use of non-standard interpretive means such as those reported here or by Sharf and colleagues (2017) would likely lead to higher false positive misclassification due to the highly standard deviations. Those exceeding traditional cut-score recommendations are likely to be positively identified.
3. Performance on validity scales and, subsequently, the effectiveness of those scales, will vary according to different clinical contexts.
4. Effectiveness of the over-reporting scales relies primarily on disability and litigant samples, which means that the assessment of over-reported psychopathology (i.e., Fp-r) is not adequately assessed in this (or other) meta-analyses of the MMPI-2-RF.
5. There are few unpublished studies which limits assessment of publication bias
6. Use of groups where the certainty about feigning was high best captures the maximal response differences between feigning and non-feigning individuals

### Weighted Means and Standard Deviations

Scale / Moderator	Subgroup	k	Honest		Feign		ES
			W*M	W*SD	W*M	W*SD	
<b>F-r</b>	-	<b>19</b>	<b>74.2</b>	<b>20.8</b>	<b>94.5</b>	<b>23.8</b>	<b>0.9</b>
Clinical Concern	Somatic	5	70.8	19.5	86.4	22.7	0.7
	Neurological	3	69.3	19.0	84.3	23.7	0.7
	Mixed diagnosis	11	76.2	23.1	103.0	24.8	1.3
Setting Type	Disability Evaluation	10	74.1	21.7	93.6	23.7	1.9
	Forensic	3	72.8	23.6	117.6	20.2	1.7
<b>Fp-r</b>	-	<b>16</b>	<b>54.6</b>	<b>13.6</b>	<b>67.0</b>	<b>18.4</b>	<b>0.8</b>
Clinical Concern	Somatic	4	54.4	12.7	61.3	16.7	0.7
	Mixed diagnosis	10	57.8	14.4	72.3	20.0	1.1
Setting Type	Disability Evaluation	10	55.5	12.8	63.7	12.8	0.9
	Forensic	3	66.7	20.6	105.2	21.1	1.7
	Medical	1	64.2	18.0	75.0	18.0	0.4
<b>Fs</b>	-	<b>18</b>	<b>62.7</b>	<b>16.6</b>	<b>73.0</b>	<b>19.9</b>	<b>0.6</b>
Clinical Concern	Somatic	4	63.7	17.8	81.8	22.4	1.0
	Neurological	3	64.5	18.7	76.6	24.0	0.6
	Mixed diagnosis	10	66.9	20.4	86.0	22.8	1.1
Setting Type	Disability Evaluation	10	66.5	19.8	84.6	22.8	1.1
<b>FBS-r</b>	-	<b>19</b>	<b>74.9</b>	<b>16.3</b>	<b>84.3</b>	<b>13.4</b>	<b>0.6</b>
Clinical Concern	Mixed diagnosis	12	72.2	16.1	85.8	13.0	1.0
	Setting Type	Disability Evaluation	11	77.0	19.4	85.3	13.0
	Medical	5	70.9	14.3	80.4	15.5	0.6

Note. Weighted means are presented for homogeneous subclasses. K = number of included studies.

W\*M = Weighted Mean, W\*SD = Weighted SD, ES = Hedge's G effect size

### Study Coding Information

Article	Published Non-Con		Moderator Grouping			Scales Reported Within Article				
			Clinical Concern	Group Type	Education	F-r	Fp-r	FBS-r	Fs	RBS
Anderson (2011)	No	No	Somatic Issues	Disability	No HS	Yes	Yes	Yes	Yes	Yes
Chmielewski et al (2017)	Yes	Yes	Multiple Diagnoses	Disability	-	Yes	Yes	Yes	Yes	-
Gervais et al (2010)	Yes	Yes	Somatic Issues	Disability	HS Grad	Yes	Yes	Yes	-	Yes
Gervais et al (2011)	Yes	Yes	Somatic Issues	Disability	-	Yes	Yes	Yes	Yes	-
Green (2013)	No	Yes	Multiple Diagnoses	Medical	HS Grad	Yes	Yes	Yes	-	-
Grossi et al (2017)	Yes	Yes	Multiple Diagnoses	Forensic	No HS	Yes	Yes	Yes	Yes	Yes
Martin et al (2015)	Yes	Yes	Multiple Diagnoses	Medical	HS Grad	-	-	Yes	-	Yes
Nguyen et al (2015) Medical sample	Yes	Yes	Somatic Issues	Medical	HS Grad	Yes	-	Yes	Yes	Yes
Nguyen et al (2015) Neurological sample	Yes	Yes	Neurological Concerns	Medical	HS Grad	Yes	-	Yes	Yes	Yes
Nguyen et al (2015) Psychiatric sample	Yes	Yes	Multiple Diagnoses	Medical	HS Grad	Yes	-	Yes	Yes	Yes
Rogers et al (2011) Cognitive sample	Yes	No	Multiple Diagnoses	Disability	No HS	Yes	Yes	Yes	Yes	Yes
Rogers et al (2011) Mental Disorder sample	Yes	No	Multiple Diagnoses	Disability	No HS	Yes	Yes	Yes	-	Yes
Schroeder et al (2012)	Yes	Yes	Neurological Concerns	Disability	HS Grad	Yes	Yes	Yes	Yes	Yes
Selbom et al (2010)	Yes	Yes	Multiple Diagnoses	Forensic	No HS	Yes	-	Yes	Yes	-
Sullivan et al (2013)	Yes	Yes	Multiple Diagnoses	Medical	No HS	-	-	-	-	Yes
Tarescavage et al (2013)	Yes	Yes	Multiple Diagnoses	Disability	No HS	Yes	Yes	Yes	Yes	Yes
Wygant et al (2009)	Yes	No	Somatic Issues	Disability	HS Grad	Yes	Yes	-	Yes	-
Wygant et al (2011)	Yes	Yes	Multiple Diagnoses	Disability	No HS	-	-	Yes	Yes	Yes
Wygant et al (2010) Disability sample	Yes	Yes	Multiple Diagnoses	Disability	HS Grad	Yes	-	Yes	Yes	Yes
Wygant et al (2010) Forensic sample	Yes	Yes	Multiple Diagnoses	Forensic	No HS	Yes	-	Yes	Yes	Yes
Youngjohn et al (2011)	Yes	No	Neurological Concerns	Litigant	HS Grad	Yes	Yes	Yes	-	-
Young et al (2011)	Yes	Yes	Multiple Diagnoses	Veteran	HS Grad	-	-	-	-	Yes