



MMPI-2-RF VRIN-r and TRIN-r Utility: Does Detected Invalid Responding Impact Substantive Scale Criterion Validity?

Danielle Burchett¹, Coraima Enriquez¹, Kayla Marshall¹, Brittany Smith¹, Stella Ornelas¹, Jaime Anderson², & David M. Glassmire³
¹California State University, Monterey Bay, ²Sam Houston State University, ³Patton State Hospital

INTRODUCTION

Few studies have examined the utility of the MMPI-2-RF non-content-based invalid (NCBI) responding validity indicators, Variable Response Inconsistency (VRIN-r; designed to detect variable responding) and True Response Inconsistency (TRIN-r; designed to detect fixed acquiescent or counteracquiescent responding).

- Handel, Ben-Porath, Tellegen, & Archer (2010) found VRIN-r and TRIN-r were sensitive to computer-generated NCBI responding.
- Burchett et al. (2015) found that utilizing VRIN-r and TRIN-r dramatically decreased interpretive errors in the presence of computer-generated NCBI responding.
- Mason et al. (2013) demonstrated the utility of VRIN-r and TRIN-r to detect random protocols in a simulation study.

This study aims to examine the validity of VRIN-r and TRIN-r in a real-world forensic inpatient sample, where actual invalid responding rates are unknown—but where it can be reasonably assumed that substantive scales *should* better distinguish between subgroups with and without relevant diagnoses in (a) a valid sample than in (b) a sample consisting of invalid fixed and/or variable responses.

HYPOTHESIS

We hypothesized Hedges' *g* values distinguishing those with and without relevant diagnoses would be larger for valid samples than for samples identified as non-content-based invalid by VRIN-r/TRIN-r elevations. Such results would support the utility of VRIN-r and TRIN-r to identify NCBI responding.

METHOD

- We used VRIN-r and TRIN-r to identify 184 forensic inpatients with NCBI protocols and compared them to 641 forensic inpatients with valid protocols.
- We used uncontaminated diagnoses from the date of testing to identify whether patients did or did not experience (1) internalizing dysfunction, (2) thought dysfunction, and (3) externalizing dysfunction disorders.
- Independent samples *t*-tests and Hedges' *g* values were examined to compare mean differences for valid and invalid groups on relevant MMPI-2-RF substantive scales.

Table 1. MMPI-2-RF Internalizing Dysfunction Scale Mean Scores for Subsamples with Valid and Non-Content-Based Invalid Protocols

| | Valid Sample | | | | <i>g</i> ₁ | Invalid Sample | | | | <i>g</i> ₂ |
|-------------------------------------------------------|--------------------------------------------|-----------|-----------------------------------------|-----------|-----------------------|--------------------------------------------|-----------|----------------------------------------|-----------|-----------------------|
| | No Internalizing Dysfunction Dx. (n = 321) | | Internalizing Dysfunction Dx. (n = 320) | | | No Internalizing Dysfunction Dx. (n = 103) | | Internalizing Dysfunction Dx. (n = 81) | | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| EID Emotional/Internalizing Dysfunction | 49 | 11 | 54 | 13 | .39* | 60 | 9 | 61 | 9 | .12 |
| RCd Demoralization | 52 | 11 | 56 | 12 | .35* | 63 | 11 | 64 | 11 | .13 |
| RC2 Low Positive Emotions | 51 | 12 | 54 | 14 | .22* | 57 | 15 | 54 | 13 | -.19 |
| RC7 Dysfunctional Negative Emotions | 47 | 11 | 52 | 11 | .37* | 61 | 14 | 64 | 14 | .23 |
| SUI Suicidal/Death Ideation | 50 | 11 | 54 | 15 | .30* | 65 | 20 | 68 | 20 | .16 |
| HLP Helplessness/Hopelessness | 49 | 11 | 53 | 14 | .25* | 60 | 13 | 60 | 14 | .02 |
| SFD Self-Doubt | 50 | 10 | 53 | 12 | .33* | 58 | 11 | 59 | 11 | .09 |
| NFC Inefficacy | 51 | 11 | 53 | 11 | .25* | 58 | 11 | 61 | 11 | .26 |
| STW Stress/Worry | 48 | 10 | 51 | 11 | .33* | 55 | 9 | 57 | 9 | .23 |
| AXY Anxiety | 52 | 13 | 56 | 14 | .25* | 67 | 17 | 72 | 18 | .28 |
| ANP Anger Proneness | 47 | 9 | 51 | 10 | .35* | 56 | 9 | 59 | 10 | .36* |
| BRF Behavior-Restricting Fears | 52 | 12 | 56 | 14 | .26* | 71 | 17 | 72 | 18 | .10 |
| MSF Multiple Specific Fears | 49 | 9 | 52 | 9 | .28* | 53 | 8 | 54 | 9 | .15 |
| NEGE-r Negative Emotionality/Neuroticism-Revised | 48 | 10 | 53 | 11 | .40* | 58 | 11 | 62 | 11 | .35* |
| INTR-r Introversion/Low Positive Emotionality-Revised | 51 | 12 | 52 | 12 | .06 | 54 | 14 | 52 | 12 | -.17 |

Table 2. MMPI-2-RF Thought Dysfunction Scale Mean Scores for Subsamples with Valid and Non-Content-Based Invalid Protocols

| | Valid Sample | | | | <i>g</i> ₁ | Invalid Sample | | | | <i>g</i> ₂ |
|-----------------------------|-------------------------------------|-----------|-----------------------------------|-----------|-----------------------|-------------------------------------|-----------|-----------------------------------|-----------|-----------------------|
| | No Thought Dysfunction Dx. (n = 69) | | Thought Dysfunction Dx. (n = 572) | | | No Thought Dysfunction Dx. (n = 17) | | Thought Dysfunction Dx. (n = 167) | | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| THD Thought Dysfunction | 54 | 14 | 58 | 15 | .27* | 75 | 17 | 79 | 18 | .24 |
| RC6 Ideas of Persecution | 61 | 16 | 62 | 16 | .07 | 80 | 15 | 81 | 18 | .05 |
| RC8 Aberrant Experiences | 52 | 12 | 55 | 13 | .23 | 69 | 15 | 72 | 17 | .18 |
| PSYC-r Psychoticism-Revised | 53 | 14 | 56 | 15 | .22 | 73 | 16 | 78 | 20 | .27 |

Table 3. MMPI-2-RF Externalizing Dysfunction Scale Mean Scores for Subsamples with Valid and Non-Content-Based Invalid Protocols

| | Valid Sample | | | | <i>g</i> ₁ | Invalid Sample | | | | <i>g</i> ₂ |
|------------------------------------------|--------------------------------------------|-----------|-----------------------------------------|-----------|-----------------------|-------------------------------------------|-----------|-----------------------------------------|-----------|-----------------------|
| | No Externalizing Dysfunction Dx. (n = 172) | | Externalizing Dysfunction Dx. (n = 469) | | | No Externalizing Dysfunction Dx. (n = 45) | | Externalizing Dysfunction Dx. (n = 139) | | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| BXD Behavioral/Externalizing Dysfunction | 54 | 10 | 59 | 11 | .46* | 58 | 13 | 66 | 12 | .64* |
| RC4 Antisocial Behavior | 56 | 11 | 62 | 11 | .48* | 61 | 12 | 68 | 10 | .62* |
| RC9 Hypomanic Behavior | 47 | 11 | 48 | 11 | .10 | 50 | 15 | 58 | 13 | .57* |
| JCP Juvenile Conduct Problems | 56 | 13 | 61 | 13 | .44* | 61 | 14 | 67 | 12 | .51* |
| SUB Substance Abuse | 51 | 10 | 57 | 10 | .65* | 56 | 12 | 61 | 12 | .39* |
| AGG Aggression | 48 | 10 | 50 | 11 | .15 | 54 | 14 | 61 | 13 | .49* |
| ACT Activation | 46 | 12 | 47 | 12 | .11 | 51 | 13 | 56 | 13 | .40* |
| AGGR-r Aggressiveness-Revised | 51 | 10 | 52 | 10 | .03 | 51 | 11 | 55 | 11 | .42* |
| DISC-r Disconstraint-Revised | 53 | 10 | 57 | 10 | .43* | 56 | 11 | 62 | 11 | .50* |

Note for Tables 1-3. Valid sample descriptive results were originally reported in Romero et al. (2016). **p* < .05. Hedges' *g* values (Hedges & Olkin, 1985) are in bold (small: |.20+|; medium: |.50+|; large: |.80+|).

RESULTS

- Most **internalizing dysfunction** results were in the anticipated direction, with larger differences in the valid than the invalid group.
- Thought dysfunction** results were also in the anticipated direction, although *g* values were only somewhat smaller for the invalid group, as compared to the valid group.
- Few **externalizing dysfunction** scale results were in the anticipated direction, with most evidencing larger effects for the invalid group.

DISCUSSION

- The pattern of results from internalizing—and to a lesser degree, thought dysfunction—scales is consistent with the idea that VRIN-r and TRIN-r are able to separate valid and invalid groups.
- Notably, thought dysfunction mean scores were quite high in the invalid subsample, which may have been due to NCBI endorsement of these rarely endorsed items.
- The pattern within the externalizing scales was surprising, and suggests future studies should explore the possibility of mixed responding (e.g., partially random; partially exaggerated responding) on MMPI-2-RF scale scores.
- A post-hoc examination of results suggests our hypotheses may have been too simple. It may be more appropriate to expect NCBI responding to lead to a pattern of results that are *less consistent* with theory (i.e., a mix of larger, smaller, negative effects in a NCBI group) rather than *smaller* effects in particular.

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