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Introduction

- The Minnesota Multiphasic Personality Inventory-2 Restructured Form[1] is a self-report personality and psychopathology inventory widely used in clinical and forensic settings.
- Unscorable responding occurs when the test-taker responds either both True *and* False or leaves an item unanswered and is denoted by the Cannot Say (CNS) score[2].
- Previous research determined that examiners should be cautious when ≥10% of items on a scale are unscorable, as this may artificially lower scores[1].
- Computer-generated unscorable responses were inserted in place of actual responses in increments of 10%, ranging from 10% to 90%[3].
- Computer-generated simulation data have proven useful by demonstrating interpretive problems that occur in the presence of unscorable responding[3].
- However, there is a gap in literature examining the frequency of unscorable responding across all validity and substantive scales in real-world settings.

Aims & Hypotheses

We examined the frequency of unscorable responding in a forensic inpatient setting.

Hypotheses

1. Items requiring greater reading comprehension would have the highest unscorable rates.
2. Items related to suicidality, violence toward others, and substance use/illegal behaviors would have relatively high unscorable rates because disclosing this information may come with negative consequences.
3. The shortest scales (10 or fewer items) would most often reach the ≥10% threshold because skipping only one item reaches the threshold.

Method

- We used a deidentified archival dataset of 1,110 state hospital inpatients (73% male) forensically committed as incompetent to stand trial (23%), not guilty by reason of insanity (47%), mentally disordered offender (20%), mentally disordered sex offender (2%), prison transfer (4%), or for another reason (3%).
- Patients completed the MMPI-2 or MMPI-2-RF as part of clinical or forensic evaluations.
- MMPI-2 results were rescored into MMPI-2-RF scale scores[4].

Figure 1: Unscorable (✗) and Scorable (✓) Item Responses

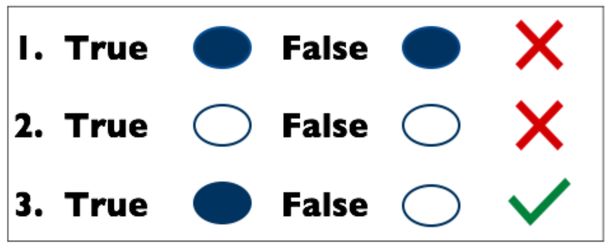

Table 1: Most Frequently Unscorable Items & Associated Reading Levels

#	*n* (%)	Item Appears on:	Flesch-Kincaid Reading Level
279	32 (2.9)	RCd: Demoralization	4
34	30 (2.7)	RC6: Ideas of Persecution PSYC-r: Psychoticism-Revised	3
19	29 (2.6)	RC4: Antisocial Behavior FML: Family Problems	8
304	29 (2.6)	RC3: Cynicism	6
326	29 (2.6)	RC3: Cynicism	6
324	27 (2.4)	NFC: Inefficacy	10
334	26 (2.3)	SUI: Suicidal/Death Ideation	3
336	26 (2.3)	HLP: Helplessness/Hopelessness	5
197	25 (2.3)	AGGR-r: Aggressiveness-Revised IPP: Interpersonal Passivity	7
282	25 (2.3)	EID: Emotional/Internalizing Dysfunction RC2: Low Positive Emotions HLP: Helplessness/Hopelessness	1
303	25 (2.3)	RC7: Dysfunctional Negative Emotions ANP: Anger Proneness	8

Note. Flesch-Kincaid reading scores are from Ben-Porath & Tellegen (2008/2011).

Table 2: Frequency of Scales with ≥10% Unscorable Items

Scale Name	# of Items	*n* (%)
Validity Scales		
VRIN-r: Variable Response Inconsistency	(53 Pairs)	22 (2.0)
TRIN-r: True Response Inconsistency	(26 Pairs)	23 (2.1)
F-r: Infrequent Responses	(32)	22 (2.0)
Fp-r: Infrequent Psychopathology Responses	(21)	23 (2.1)
Fs: Infrequent Somatic Responses	(16)	4 (0.4)
FBS-r: Symptom Validity	(30)	26 (2.3)
RBS: Response Bias Scale	(28)	2 (0.2)
L-r: Uncommon Virtues	(14)	7 (0.6)
K-r: Adjustment Validity	(14)	6 (0.5)
Higher Order (H-O) Scales		
EID: Emotional/Internalizing Dysfunction	(41)	22 (2.0)
THD: Thought Dysfunction	(26)	24 (2.2)
BXD: Behavioral/Externalizing Dysfunction	(23)	24 (2.2)
Restructured Clinical (RC) Scales		
RCd: Demoralization	(24)	23 (2.1)
RC1: Somatic Complaints	(27)	3 (0.3)
RC2: Low Positive Emotions	(17)	29 (2.6)
RC3: Cynicism	***(15)***	***37 (3.3)***
RC4: Antisocial Behavior	(22)	24 (2.2)
RC6: Ideas of Persecution	(17)	27 (2.4)
RC7: Dysfunctional Negative Emotions	(24)	23 (2.1)
RC8: Aberrant Experiences	(18)	26 (2.3)
RC9: Hypomanic Activation	(28)	25 (2.3)
Specific Problems (SP) Scales		
MLS: Malaise	(8)	17 (1.5)
GIC: Gastrointestinal Complaints	(5)	7 (0.6)
HPC: Head Pain Complaints	(6)	31 (2.8)
NUC: Neurological Complaints	(10)	14 (1.3)
COG: Cognitive Complaints	***(10)***	***34 (3.1)***
SUI: Suicidal/Death Ideation	(5)	29 (2.6)
HLP: Helplessness/Hopelessness	***(5)***	***33 (3.0)***
SFD: Self-Doubt	(4)	27 (2.4)
NFC: Inefficacy	***(9)***	***46 (4.1)***
STW: Stress/Worry	(7)	31 (2.8)
AXY: Anxiety	(5)	30 (2.7)
ANP: Anger Proneness	***(7)***	***33 (3.0)***
BRF: Behavior-Restricting Fears	(9)	31 (2.8)
MSF: Mulitpule Specific Fears	***(9)***	***36 (3.2)***
JCP: Juvenile Conduct Problems	(6)	25 (2.3)
SUB: Substance Abuse	(7)	29 (2.6)
AGG: Aggression	***(9)***	***34 (3.1)***
ACT: Activation	***(8)***	***35 (3.2)***
FML: Family Problems	***(10)***	***54 (4.9)***
IPP: Interpersonal Passivity	***(10)***	***48 (4.3)***
SAV: Social Avoidance	(10)	17 (1.5)
SHY: Shyness	(7)	11 (1.0)
DSF: Disaffiliativeness	(6)	32 (2.9)
AES: Aesthetic-Literary Interests	(7)	16 (1.4)
MEC: Mechanical-Physical Interests	***(9)***	***37 (3.3)***
Personality Psychopathology Five (PSY-5) Scales		
AGGR-r: Aggressiveness-Revised	(18)	28 (2.5)
PSYC-r: Psychoticism-Revised	(26)	24 (2.2)
DISC-r: Disconstraint-Revised	(20)	27 (2.4)
NEGE-r: Negative Emotionality/Neuroticism-Revised	(20)	26 (2.3)
INTR-r: Introversion/Low Positive Emotionality-Revised	(20)	11 (1.0)

Note. Bold italicized scales indicate greater than 3% of people reached the threshold

Results & Discussion

- All items were skipped by less than 3% of the total sample.
- Contrary to our hypotheses, the most skipped items did not require especially high reading comprehension, nor was content related to suicidality or illegal behavior.
- We found content on several of the most commonly skipped items related to marriage and family problems, possibly due to patients having limited contact with family in the forensic hospital setting.
- The scales most likely to reach the 10% unscorable threshold were the shortest Specific Problems scales, with several reaching that threshold in 3-5% of the sample.
- One limitation of this study is the limited definition of reading difficulty. Future research should code for complex sentence structure (qualifiers, compound sentences, presence of negative phrases) in items.
- Future research should also examine the average item readability by scale to determine whether scales that require higher reading comprehension across items are more likely to reach a 10% skipped threshold.

References

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[5]Tellegen, A., & Ben-Porath, Y. S. (2008/2011). *MMPI-2-RF (Minnesota Multiphasic Personality Inventory-2 Restructured Form) technical manual.* Minneapolis. University of Minnesota Press.

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