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Selected MMPI-2 Scores of Forensic Offenders in a Community Setting

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MMPI-2 clinical, validity, restructured clinical, content, selected supplemental, and PSY-5 scale data from convicted offenders who were incarcerated and referred by community criminal courts were analyzed. Descriptive statistics, including frequency data for high points and well-defined two-point code types were provided. Compared to state and federal inmates, significantly more individuals from the local community produced invalid MMPI-2 profiles. Consistent with reported trends toward the increased incarceration of the mentally ill, there were indications that comparatively more of this population demonstrated greater psychopathology than that typically reported from the general prison inmate population. Implications for practice are addressed.

KEYWORDS MMPI-2, forensic assessment, offenders, inmates, corrections

Data regarding the MMPI-2 (Butcher et al., 2001) are available for general inmate populations at the state and federal levels (Black et al., 2004; Graham, Ben-Porath, & Stafford, 1995; Megargee, Mercer, & Carbonell, 1999) but are generally lacking representative samples for clinical populations, particularly at the city and county levels. For example, Black et al. (2004) reported that in a state correctional sample (*N* = 41,159), 66% and 70% of incarcerated men and women, respectively, obtained at least one elevated MMPI-2 clinical scale (T > 64) and that scales 4, 9, and 6 were the

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three most frequently elevated scales. Similarly, Megargee et al. (1999) found 60.5% of profiles for state and federal inmates were elevated on at least one scale (T > 64) and that scale 4 was the most frequently elevated scale. In these general inmate populations, 21% of the Black et al. (2004) sample and 15% of the Megargee et al. (1999) sample were excluded using traditional profile invalidity criteria (Butcher et al. 2001).

Conversely, Wright, Nussbaum, Lynett, and Buis (1997) described a forensic inpatient sample using the MMPI-2 and obtained "a typical or "modal" forensic profile with elevated F (Infrequency), and 6 (Paranoia), 7 (Psychasthenia), and 8 (Schizophrenia) scales, irrespective of gender and psychiatric diagnosis" (p. 19). Not only was scale 4 absent from their typical profile, but 20% to 40% of their sample would have been excluded, depending on the invalidity criteria used. Thus, as one might expect, more pathological forensic samples tend to produce more clinical elevations and higher proportions of MMPI-2 profiles that are technically invalid when compared to the general inmate population. However, additional MMPI-2 data with inmates from local samples, held within the general population but referred for pre-sentence evaluations, are lacking.

There is currently a trend toward the incarceration of the mentally ill. It is hypothesized that as metropolitan community jails become the largest providers of mental health care and many of the severely mentally ill become incarcerated (Faust, 2003), MMPI-2 profiles obtained at the local level (i.e., city and county jails) may manifest more severe psychopathology, compared to general inmate populations. In fact, it is likely that court-ordered referrals in particular would provide test results that differ from the general inmate population, simply by virtue of the fact that they have been identified by the court system as those who might benefit from a psychological evaluation. Thus, descriptive data obtained from general inmate populations at the state and federal levels may not generalize to community offenders referred for evaluation.

Having access to local normative data can aid psychologists in comparing a given individual in a particular forensic or correctional setting to the general inmate populations described earlier. For example, if local inmate demographics or referral patterns differ from those under which the normative data were obtained, one might expect different typical profiles. Similarly, it is not always clear, particularly in pre-sentence evaluations, which normative group (community vs. state or federal inmates) is the most appropriate comparison group. This is particularly important as local jails contain ever-increasing rates of the mentally ill, thereby changing the base rates of psychopathology. In fact, it is possible that these local offenders may be more like psychiatric inpatient groups rather than the more traditional state and federal inmate populations. In this case, for example, clinicians could interpret an elevated F differently as compared to a non-psychiatric forensic sample. Similarly, there is little descriptive data in the MMPI-2 literature on criminal

offenders referred for evaluation that report the results of the RC or PSY-5 scales. As these scales are comparatively recent developments, providing data obtained from local forensic contexts may aid examiner's by providing additional base rate data, and hence aid in refining the interpretation of test results.

The present study was conducted to provide descriptive data on the Validity, Clinical, Restructured Clinical (RC), Content, (selected) Supplemental, and PSY-5 scales on inmates from a county jail referred for a pre-sentencing evaluation by the county criminal courts. Based on the increasing rates of mentally ill offenders comprising the local jail populations, it was hypothesized that this clinically representative forensic sample would produce more pathological and more technically invalid test results, similar to psychiatric inpatients, compared to the MMPI-2 normative and general inmate populations (Black et al., 2004; Graham et al., 1995; Megargee et al., 1999) Similarly, it was expected that this sample would contain higher base rates of psychopathology as compared to the general inmate populations of state and federal correctional settings, as measured by the MMPI-2 scales (e.g., profile validity, high points, code types).

METHOD

The data for this study were drawn from 233 consecutive pre-sentence evaluations referred for psychological assessments by county criminal courts prior to sentencing in a metropolitan area of southeastern United States. Each individual was given a screening battery of objective paper-and-pencil tests that included the MMPI-2 (Butcher et al., 2001). MMPI-2 profiles were screened for validity using traditional indices (L, K, VRIN or TRIN $\geq$ 80 or F, FB or F(p) $\geq$ 100) and profiles were coded for high-point and well-defined two-point code types if one or two of the clinical scales T scores were $\geq$ 65 and there was a five-point T score difference between two T scores, both $\geq$ 65.

RESULTS

Sample Characteristics

Two-hundred thirty-three convicted offenders completed the MMPI-2 and, of these, 116 (50%) produced invalid MMPI-2 results and were excluded from subsequent analyses based on the traditional validity scale cutoff scores enumerated previously. The remainder of the sample (n = 117) may be described as predominantly African-American (72%) males (n = 88; 70%) with an average age of 32.35 years (range, 18–54) and an average education of 11.40 years (standard deviation [SD] = 2.27). There were no significant differences between those who produced valid and invalid profiles

based on age (t (231) = .63; p > .05), education (t (229) = 1.74; p > .05), or gender ($\chi 2$ (1) = 0.22; p > .05). Average estimated IQ based on the Shipley Institute of Living Scale (Zachary, 2000) was 89.49 (SD = 14.35). These defendants were referred for evaluation by the presiding judge, but the request had often been initiated by the individual's attorney.

Eighty-five of the individuals with valid profiles also had documented offense history data available provided in the pre-sentence reports. Of these, there were a total of 190 current criminal offenses (M = 2.21; SD = 2.28) and 776 prior offenses (M = 9.13; SD = 10.64). Of the prior offenses, 237 were against property (M = 2.79; SD = 8.78), 131 were against people (M = 1.54; SD = 5.53), and 71 involved alcohol or drugs (M = .84; SD = 1.50). A review of the final reports (completed by three licensed doctoral level psychologists) revealed that 80% of the sample received an Axis I diagnosis (e.g., 31%, Substance Abuse; 24%, Mood Disorder; 16% Serious and Persistent Mental Illness). Sixty percent of the sample received an Axis II diagnosis, most frequently Personality Disorder, NOS (61%) and 5% were diagnosed with Antisocial Personality Disorder.

Invalid MMPI-2 Profiles

Compared to the Megargee et al. (1999) and Black et al. (2004) samples, significantly more of this clinically representative sample was excluded from profile analyses ($\chi 2$ (1) = 27.92; p < .001); $\chi 2$ (1) = 18.36; p < .001 respectively). The percent of individuals who exceeded each validity scale cut off was L = 5%, F = 28%, K = 0%, TRIN = 8%, VRIN = 13%, FB = 27%, and Fp = 18%. The relatively high percentages of protocols excluded based on F and FB indicates that infrequently endorsed items were commonly reported by this group. It should be noted, however, that of the 28% of profiles eliminated due to F > 100, 32% obtained Fp < 100, suggesting that these patients were likely experiencing gross psychopathology. Nonetheless, these data were first analyzed utilizing traditional invalidity criteria in an effort to provide examiners with traditional comparative benchmarks.

Petrosky, Ben-Porath, and Stafford (2003) studied the PSY-5 scales of forensic examinee profiles of offenders referred for evaluation and used the invalidity scale criteria: VRIN, TRIN and L, T > 79; F raw > 29, Fp T > 99. When these criteria were applied to the current sample, 46% (n = 108) of the current profiles were classified as invalid as opposed to 50% (n = 116) using traditional criteria. It should be noted that this F cut score is consistent with the study by Graham, Watts, and Timbrook (1991), which found that a raw F > 29 accurately identified 90% or more of psychiatric patients "faking bad." When these more liberal F criteria were used in the present study, 22% (n = 51) of these offenders exceeded F raw ≥ 29 but, of these, only 29% (n = 15) obtained Fp's ≥ 100. Even with these more liberal criteria, however, when the other traditional validity indicators were added, significantly more of this

sample was eliminated due to the invalidity criteria compared to the Megargee ($\chi 2$ (1) = 22.67; $p < .001$) and Black samples ($\chi 2$ (1) = 14.03; $p < .001$). The resulting differences between the two sets of validity exclusion criteria were also significant ($\chi 2$ *McNemar* = 6.13; $p < .001$). Furthermore, when the exclusion criteria were lessened even further so that only those with F > 29 and Fp $\geq$ 100 were eliminated, only 29% ($n = 68$)) were excluded, significantly less than the more liberal criteria cited earlier ($\chi 2$ (1) = 13.89; $p > .0002$). For the remainder of the analyses, however, it seemed most appropriate that subjects surviving the standards set forth by Petrosky et al. (2003) and Graham, Watts, and Timbrook (1991) be included as the final sample ($n = 125$).

MMPI-2 Elevations and Code Types

Table 1 shows the MMPI-2 means; SDs and effect size (ES) equivalent T scores[1] for the standard Validity, Clinical, RC, Content, PSY-5; and other selected scales. Of the 125 subjects, 113 (90%) of the sample produced at least one clinically elevated scale, defined as T > 64. Pd was the most frequently ($n = 33$; 26%) elevated clinical scale, followed by Pa ($n = 24$; 21%) and Sc ($n = 13$; 12%). Compared to the Megargee et al. (1999) and Black et al. (2004) samples, significantly more of the present sample produced elevated clinical profiles ($\chi 2$ (1) = 6.95, $p < .01$ and $\chi 2$ (1) = 14.59; $p < .0001$). The average number of elevated clinical scales per profile was 4.12 (SD = 2.35). Six individuals (5%) produced within normal limits profiles (T = 41–64; Graham, Ben-Porath, & McNulty, 1997) and six (5%) were classified as low profiles (one clinical scale T < 41).

Table 2 shows that compared to the Megargee et al. (1999) and Black et al. (2004) data, higher proportions of this sample produced elevations on all of the clinical scales except Ma. Table 3 demonstrates that 44 (33%) individuals produced well-defined two-point code types, excluding scales 5 and 0. Code types 6–8 (27%) and 4–6 (11%) were the most frequent well-defined code types.

DISCUSSION

Sample Comparisons

Compared to the Megargee et al. (1999) and Black et al. (2004) samples, significantly more of the local sample elevated at least one clinical scale, whereas proportionately more of this sample also elevated each of the clinical scales except Ma. These findings provide support for the hypothesis

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[1]Effect size estimates (ES) were based on SD units. With $M = 50$ and $SD = 10$, 2 T score points = small ES, 4 = medium ES, and 8 = large ES, according to Cohen, 1988. To aid the reader, ES was reported based on the more commonly understood MMPI convention of T scores.

TABLE 1 MMPI-2 Validity, Clinical, RC, Supplemental, Selected Content and PSY-5 Scales

Scale	Mean T score	SD	ES[a]	Scale	Mean T score	SD	ES
L	58.93	10.45	.89	RCD	57.95	11.56	.79
F	56.93	14.14	.68	RC1	60.80	14.07	1.06
K	52.06	10.52	.21	RC2	53.12	11.87	.31
TRIN[b]	58.49	7.90	.86	RC3	55.11	13.32	.50
VRIN	53.87	10.11	.39	RC4	56.13	11.74	.61
FB	57.90	14.26	.77	RC6	57.91	11.25	.79
FP	58.30	14.39	.81	RC7	57.09	13.14	.70
S	50.68	10.29	.07	RC8	52.19	12.58	.22
				RC9	50.85	11.13	.09
HS	60.66	13.85	1.05				
D	59.69	13.20	.95	ANX	53.80	11.05	.38
HY	58.88	14.43	.87	FRS	53.42	11.01	.34
PD	64.99	12.91	1.48	OBS	51.40	11.48	.14
MF[c]	51.93	11.55	.19	DEP	55.60	10.90	.56
PA	58.32	14.07	.81	HEA	59.78	13.40	.96
PT	58.19	12.41	.81	BIZ	55.86	12.18	.58
SC	59.84	13.55	.97	ANG	49.05	11.04	−.09
MA	55.46	11.30	.54	CYN	53.25	11.74	.32
SI	53.16	10.47	.32	ASP	54.68	10.22	.47
				TPA	48.57	10.94	−.14
AAS	58.21	11.45	.82	LSE	50.31	9.82	.03
APS	48.30	11.26	−.17	SOD	50.03	10.28	.00
AGGR	49.32	9.67	−.07	FAM	51.36	10.11	.14
PSYC	54.96	11.97	.49	WRK	52.02	11.22	.20
DISC	52.37	10.12	.24	TRT	52.91	11.33	.29
NEGE	53.11	10.20	.31				
INTR	52.23	10.54	.22	HO	52.68	10.98	.27
				O-H	57.83	11.61	.78
				MAC-R	60.09	9.55	1.01

[a]ES = (Score1 - Score2)/SD; for MMPI t scores, T > 52 = small effect size (ES); T > 55 = medium ES; T ≥ 58 = large ES, according to Cohen's (1988) criteria.
[b]Based on raw scores.
[c]Males only.

TABLE 2 Percent of Clinical Scale Elevations (T > 64)

Scale	Current study	Megargee et al. (1999)	Black et al. (2004)
HS	51%	20%*	15%*
D	38%	19%*	15%*
HY	40%	16%*	10%*
PD	63%	41%*	2%*
PA	49%	27%*	20%*
PT	44%	20%*	16%*
SC	57%	23%*	19%*
MA	30%	24%	27%

*Chi sq., $p.$ < .005 compared to local sample.

TABLE 3 Well-Defined Code Type Percentages

Code type	Percent	Code type	Percent
1–2	2	2–8	2
1–3	7	3–4	5
1–4	7	4–6	11
1–6	2	4–7	2
1–8	2	4–8	5
1–9	2	4–9	2
2–3	2	6–8	27
2–6	5	6–9	2
2–7	9	7–8	5

that more of this clinically representative population manifested pathological test results as compared to the general inmate population. The fact that the most frequent well-defined two-point code type in this sample was 6–8 is also consistent with these findings. The moderate to large ES statistics on 48 of 57 scales also suggests tendencies to report a wide range of problems by those deemed to have provided valid profiles.

When the large number of profiles classified as invalid were re-analyzed using the more liberal F and Fp criteria, it seems clear that these profile exclusions primarily reflect a greater likelihood of over-reporting, perhaps of legitimate psychopathology. Indeed, it has previously been demonstrated that Axis II disorders, diagnosed in 60% of this sample, are significantly related to elevations on MMPI-2 profile validity scales (Wise, 2002). Additionally, pre-sentence defendants may be inclined to over-report legitimate psychological problems in an attempt to obtain less severe consequences. It seems likely, however, that the exclusion of 46% of the entire sample systematically eliminated the more pathological profiles, which subsequently attenuated these findings.

Rates of Invalidity

The exclusion of 46% and 50% of the sample referred for evaluations using traditional invalidity criteria represents significantly higher proportions than those found in studies using samples obtained from the general inmate population and is more similar to those found in inpatient forensic settings (e.g., Wright et al, 1997). With the trends toward the incarceration of more severely mentally ill offenders at the local level, such high rates of exclusion make it impractical and costly to use the MMPI-2 if these profiles cannot be used. Arbisi and Ben-Porath (1995) reported that in populations with high base rates of psychopathology, the confounding of F and FB with faking and psychopathology resulted in large numbers of profiles being erroneously classified. Subsequently, Arbisi and Ben-Porath demonstrated the incremental validity of Fp as compared to F and FB in identifying invalid profiles, due to

Fp's lower sensitivity to psychopathology. It seems clear, on the basis of MMPI-2 profiles obtained from this sample, that they are more similar to psychiatric, as opposed to offender, populations. As such, the findings of the current study further indicate that relying on traditional validity indicators such as F and FB to make determinations of profile invalidity will likely result in high rates of erroneous classifications.

In such forensic settings, with increasingly higher base rates of psychopathology, including Axis II disorders, traditional cut scores for F and FB are not likely to be helpful if used in isolation. Indeed, even when F raw > 29 was used, 22% of profiles were eliminated. These findings are consistent with Megargee's (2004) work, which found that inmates tended to frequently endorse items on scales F, Fb, and Fp as a result of the unique experiences associated with incarceration, as opposed to malingering or careless responding. These findings also lend support to others (Kucharski & Duncan, 2007; Rogers, Sewell, Martin, & Vitacco, 2003; Strong, Glassmire, Grederick, & Greene, 2006) who have recommended the use of Fp as the more robust scale for the assessment of feigning and/or over-reporting with psychiatric forensic examinees. In fact, of the protocols with F ≥ 100 (28%) eliminated, only 37% also had Fp ≥ 100, suggesting that the remaining 63% were likely suffering from significant psychopathology. Conversely, significantly fewer protocols were eliminated when F raw > 29 was used, as only 29% would have been eliminated due to Fp > 100. In the present study, if Fp (T ≥ 100) were the only infrequency scale used, 18% of the sample would have been excluded, in contrast to the 46% and 50% excluded when all of the traditional validity indicators were used. In this population, it appears that using F raw > 29 and Fp > 100 would be reasonable cut offs for these scales to determine profile invalidity, keeping in mind that no cut off should be the sole criterion used for this purpose. Then, these profiles should be further evaluated by a review of the remaining validity scales, critical items, presence of personality disorders, follow up interviews, etc, which could further clarify what additional assessment tools would be necessary to determine whether these profiles were indeed invalid, over-reported, pathological, or malingered.

In practice, additional testing and collateral information are obtained to further aid in the interpretation of the MMPI-2 test results, including validity scales. Discarding large proportions of profiles as invalid on the basis of cut scores in isolation results in many mentally ill offenders potentially being denied test results that could be helpful in triaging them to appropriate service settings. Psychologists cannot simply rely on cut scores to determine profile validity but must rely on an integrated assessment of all information to aid the courts in considering psychological factors relevant with respect to appropriate placement and sentencing. Erroneous reports of "faking bad" can have significant adverse effects in these settings and should be reported only with corroboration from multiple data sources.

Clinical Interpretation

The findings in this study are consistent with previous reports indicating that Pd is the most frequently elevated scale in correctional settings. The MMPI-2 demonstrated large ES's ($T \geq 58$) between the MMPI-2 normative population and this group of convicted offenders on Validity, Clinical, RC, Content, and selected Supplemental scales. It is notable that the only scales that did not show at least a moderate ES were K, S, MA, ANG, TPA, APS and AGGR, and DISC. It seems reasonable to surmise that these offenders were minimizing or denying the existence of these characteristics, which are often associated with antisocial behaviors, including anger, impatience, addiction, aggression and impulsivity.

The large ES of RCd ($T = 64$) and NEGE ($T = 58$) suggests that emotional demoralization and negativity may be significant contributors to the number and magnitude of clinical scale elevations in this population. The extraction of demoralization appears to have attenuated the effects of scales D, Pd, Pa, and Sc but nonetheless confirm that the clinical problems measured by these scales remain significantly elevated. For example, Sc obtained a very large ES ($T = 70$) whereas RC8 evidenced a large ES ($T = 59$). Interestingly, however, 62% of the entire sample ($N = 233$) produced $T \geq 65$ on Sc, whereas only 34% elevated RC8. Of the sample that survived the traditional validity cutoff scores, 36% had elevated Sc, and 14% elevated RC8. After the extraction of demoralization, these findings suggest that the psychotic symptoms often associated with Scale 8 are characteristic of a smaller portion of the sample than Sc would suggest. This would be consistent with PSYC ($T = 64$), which has been demonstrated by Petroskey et al. (2003) to be associated with an unstable work history, unemployment, and suicide attempts, rather than psychoticism per se. Similarly, 49% and 23% of those who produced valid test profiles produced $T \geq 65$ on Pd and RC4, respectively, whereas the comparable percentages for the entire sample were 61% and 39%, respectively. Again, after the extraction of demoralization, the antisocial features associated with Pd were applicable to a narrower range of the sample. In fact, when Pd was further analyzed by subscales, Pd2 and Pd3 were elevated by 30% and 7% of the sample, whereas Pd1, Pd4, and Pd 5 were elevated by 17%, 28% and 45%, indicating that self and social alienation and family discord were more frequently reported than authority problems and social imperturbability. Similarly, Pd and RC4 obtained large ESs, but Tellegen et al. (2003) and Sellbom, Ben-Porath, Baum, Erez, and Gregory (2008) reported that RC4 is a more robust measure of antisocial behavior, whereas Pd tends to be saturated with demoralization. This suggests that the individuals referred for evaluation, while engaging in antisocial acts, were also likely to be reporting significant emotional discomfort and/or turmoil. These appear to be examples in which the relatively new RC and PSY-5 scales have enhanced the interpretation of the traditional clinical scales.

Comparison of the clinical and RC scales demonstrates the utility of the RC scales in formulating hypotheses regarding the presence and severity of various clinical symptom constellations, without the confounding overlap of demoralization found with the clinical scales (Tellegen et al., 2003).

Limitations and Conclusions

Limitations of this study include the small number of females (n = 37), which precluded data analyses by gender and limits the generalizability of these findings. A second limitation was the absence of systematically coding extra-test data; such as psychiatric history, substance abuse, and collateral information, which could be helpful in examining how clinicians use such data with respect to issues such as profile invalidity. Similarly, it would have been helpful to analyze Megargee's (2004) new Fc scale. However, at the time these data were collected, their primary purpose was clinical and this research project had not been conceived. Additionally, a cohort of incompetent and insane defendants from the same setting would have been helpful for additional comparisons.

   This report is based on a selected, referred sample. It is also, however, a clinically representative sample, reflecting consecutive referrals of patients identified by the courts as in need of a psychological evaluation. Subsequently, though these findings may apply only to individuals similarly identified and referred, it would seem that this is a population of significant interest to examiners. The findings of this study suggest that it would be helpful to develop a larger MMPI-2 database of criminal offenders similarly referred for examination at the community level, in an effort to develop base rate data (e.g., profile validity, high points, code types) for this specific population. It would also be helpful to study the clinical practices of how psychologists actually interpret and utilize MMPI-2 invalidity scales in relation to other clinical variables of interest, such as past psychiatric history, personality disorders, substance abuse and other psychological test results.

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