

PERSONALITY CHARACTERISTICS OF MALE JUVENILE OFFENDERS BY ADJUDICATED OFFENSES AS INDICATED BY THE MMPI-A

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The current investigation was designed to identify the Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A) scales that discriminate between three general types of criminal offenses among male juvenile offenders and the degree to which selected scales discriminate. Seventy-two male juvenile offenders were classified according to type of offense: crime against person, crime against property, or drug/alcohol offense. Selected scales were examined as discriminant predictors of offense pattern in a descriptive discriminant analysis as well as a classification analysis. Two significant linear discriminant functions emerged. Classification analysis also demonstrated the utility of the MMPI-A in differentiating between type of juvenile offense by correctly classifying 79.2% of the cases. Implications for the use of the MMPI-A with male juvenile offenders are discussed.

The Minnesota Multiphasic Personality Inventory—Adolescent (MMPI-A) (Butcher et al., 1992) has been widely adopted in clinical settings for the purposes of evaluating the personality and psychopathology of adolescents. The MMPI-A has become more commonly used as the disadvantages of using adult versions of personality assessment measures with adolescents are continually recognized (Archer, Maruish, Imof, & Piotrowski, 1991). Only recently has

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the MMPI–A been studied among adolescent delinquent populations. Much of the research literature that involves male juvenile offenders and the MMPI–A has focused on the basic differences with nonoffending males (Peña, Megargee, & Brody, 1996).

Of course, not all male juvenile offenders are alike in regard to personality characteristics. Juvenile offenders also differ in offense in which some offenses are obviously more severe or violent than others. The Office of Juvenile Justice and Delinquency Prevention (OJJDP) (Stahl, 1999) has organized offenses in terms of categories of degree of violence and severity (e.g., person, property, status, and drug/alcohol). Researchers such as Bagley and Pritchard (1998) and Sankey and Huon (1999) have also used such an approach. In particular, Sankey and Huon (1999) found a ranking system to be helpful in differentiating serious offenses from nonserious offenses, whereas OJJDP (Stahl, 1999) continues to use an organized hierarchy of offenses, in terms of seriousness, to report national statistics. Typically, among research in the area of juvenile offenders, classification of offenses has been generalized to crimes against people, property crimes, drug/alcohol-related crimes, and status offenses (in descending order of seriousness).

In terms of clinical assessment, we were interested in whether subcategories of male juvenile offenders by offense type were different in other ways; namely, personality characteristics as measured by the MMPI–A. The existing literature provides limited understanding of the pathology underlying separate subcategories of offense severity in juveniles. In terms of how the MMPI–A may be useful in understanding juvenile offenders, much less direction is provided by the current literature.

The psychometric study of personality characteristics of male juvenile offenders, classified by type of offense, has been of interest particularly in forensic settings (Losada-Paisey, 1998). The study of personality characteristics by offender type appear useful for identifying adolescents who may be at risk for committing particular crimes and understanding the dynamics of offending. Such information may also be useful for the development of treatment programs. For instance, personality by offender type information would be useful in deciding whether it is appropriate to include all juvenile offenders, regardless of offense type, in group or psychoeducational interventions.

It has long been recognized that personality traits may differ among particular subgroups of juvenile offenders (Hare, 1981). However, few investigations have involved empirical scrutiny of theory of criminology among adolescents. Few investigations have used the MMPI-A to focus more directly on the differences within male juvenile offenders. Most MMPI-A findings in this area have tended to generate general descriptive data regarding juvenile offenders (e.g., Peña et al., 1996), or established convergent and discriminant validity. Cashel, Rogers, Sewell, and Holliman (1998) cross-validated the MMPI-A with the Schedule of Affective Disorders and Schizophrenia for School-Age Children-III-Revised (K-SADS-III-R) (Ambrosini, Metz, Prabucki, & Lee, 1989) and found several significant correlates with MMPI-A scales for delinquent males. Furthermore, concurrent validity of the MMPI-A was also provided by a descriptive study by Toyer and Weed (1998) that found highest mean elevations on the MacAndrew Alcoholism Scale-Revised, Adolescent-conduct problems, Adolescent-school problems, Scale 4 (Psychopathic Deviate), and Immaturity scales among adjudicated adolescents.

Hume, Kennedy, Patrick, and Partyka (1996) found that the MMPI-A correctly classified 78% of male juvenile offenders into psychopathic and nonpsychopathic groups. In addition, it was found that Scale 4 and Scale 9 (Mania) were less important than Scale 1 (Hypochondriasis) and Scale 8 (Schizophrenia) in contributing to a single linear discriminant function (LDF). Studying patterns of substance abuse, Gallucci (1997) reported that seven selected MMPI-A scales contributed to correctly classifying 79.4% of the cases involving three degrees of behavioral control. In another study, reported by Losada-Paisey (1998), it was found that Scale 4 and Scale 8 contributed most to a single LDF that identified juvenile sex offenders, whereas Scale 3 (Hysteria) and Scale 7 (Psychasthenia) contributed most to identifying nonsex offenders. Differences between male delinquents with and without a history of setting fires have also been examined (Moore, Thompson-Pope, & Whited, 1996).

These investigations have served as preliminary demonstrations of the richness of information that the MMPI-A may provide as well as the utility to differentiate between the presence or absence of criminal behaviors. Recent empirical results that have challenged more common hypotheses about the personality characteristics of young violent

offenders (Katz & Marquette, 1996) have prompted more interest in studying differences within the juvenile offender population.

The MMPI-A contains several scales that differentiate between offending and nonoffending male adolescents (Peña et al., 1996). Rather than simply differentiating between offending and nonoffending male adolescents, the current study extends the literature by detecting clinically meaningful information about male juvenile offenders who were adjudicated for person, property, or drug offenses. The current investigation was also designed to identify the degree to which selected MMPI-A scales discriminate between three patterns of general criminal offenses.

In an effort to further understand what separates juveniles who commit person, property, or drug offenses, MMPI-A subscales that discriminate among the three offense patterns and the degree to which they discriminate were examined. Discriminant function analysis, in addition to between-group analysis, allows for a more conservative test of how male juvenile offenders' personality patterns differ with respect to their adjudicated offenses.

The number of potential predictions derived from the literature is limited. Thus, the present study is strictly exploratory. Because profiles, especially for males, tend to appear more pathological on the MMPI-2 than the MMPI-A (Archer, 1992; Gumbiner, 1997; Peña et al., 1996), we chose not to extrapolate previous findings of the MMPI-2 among adult criminal offenders and integrate them into specific working hypotheses for juveniles. However, due to the richness of information the MMPI-A has previously provided, we were confident that (a) two significant LDFs would emerge (because the number of possible LDFs equals the lesser of either the number of groups involved minus one, or the number of predictor variables) and (b) linear classification function (LCF) analysis of selected MMPI-A scales could be used to correctly classify types of offenses at a rate greater than expected by chance.

Particular MMPI-A scales were selected to closely examine three groups of male juvenile offenders. Scales were selected for a discriminant function analysis on the basis of a statistically founded screening procedure recommended by Huberty (1994). Thus, each scale was first subjected to an analysis of variance (ANOVA) across

the specified levels of adjudicated offenses. Scales that reached an F value of 1.50 or greater were selected for the discriminant function analysis of three groups of male juvenile offenders by adjudicated offense. Such approaches provide detailed information about categorical dependent variables and allow for the examination of the contribution of each variable in differentiating between the groups in the context of all other predictor variables included in the analysis.

METHOD

PARTICIPANTS

A total of 83 male juvenile offenders participated in the study. Each participant's MMPI-A profile was examined for validity. Of the 83 original participants, data from 11 participants were discarded because of possible invalidity. Eight participant's data were eliminated from analysis because of a Lie (L) Scale T -score > 70 ; two were eliminated due to an Infrequency (F) Scale T -score > 90 ; and one was eliminated due to a Defensiveness (K) Scale T -score > 70 . Williams and Butcher's (1989a, 1989b) recommendations were used to guide the elimination of data.¹ Thus, for the current study, the sample was composed of 72 male juveniles between 13 and 17 years of age ($M = 15.27$, $SD = .93$). The racial distribution of the sample was 59.3% African American, 36.3% White, and 4.4% Hispanic American. All participants were detained in a juvenile detention center. While awaiting placement, they were referred for psychological evaluation by the juvenile court system.

PROCEDURE

Each participant was referred for psychological evaluation directly from a juvenile court and was assessed within a week of being adjudicated. Because offenses were clearly recorded in participant files, court records were consulted to obtain offense information. OJJDP's extensive hierarchy of offense seriousness (Stahl, 1999) was used to determine the placement of cases into three offense categories. Partic-

ipants were classified into one of the following categories: person offenders, property offenders, or drug/alcohol offenders. Examples of person offenses include, but are not limited to, sexual assault, murder, attempted murder, aggravated assault, and battery. Examples of property offenses include, but are not limited to, theft, arson, breaking and entering, and vandalism. Examples of drug/alcohol offenses include, but are not limited to, possession, consumption, and/or distribution of controlled substances and/or alcohol. Participants were classified before MMPI–A data were examined. Standard clinical administration of the MMPI–A, a measure of intellectual functioning, and a structured clinical interview were all completed as part of a psychological evaluation. Before giving their informed consent, all participants and their legal guardians were informed that the results of the individual evaluation would be used for generating appropriate treatment recommendations and research purposes.

ANALYSES

The primary objective of the current study was to identify differences among three groups of juvenile offenders in terms of personality characteristics. This can be done using common between-group statistical analyses, such as analysis of variance. However, stopping at between-group differences does not provide a statistical evaluation of which differences are most pertinent to differentiating the groups. The degree to which the MMPI–A discriminates among the aforementioned offense categories and the categorization of the scales that contribute to the discrimination can be accomplished through discriminant analysis procedures (Betz, 1987). This approach aids in determining the essential differences between the groups by controlling for multiple variables. Thus, descriptive discriminant analysis (DDA) and predictive discriminant analysis (PDA), otherwise known as classification analysis (Huberty, 1984), were employed.

Before selecting predictor variables and employing the DDA and PDA, we first inquired about the degree of correspondence the current study sample had with the clinical characteristics of previous findings. Clinical scale means from the present study were compared with the

clinical scale means of a previous study (Peña et al., 1996). This was done by using a Pearson product-moment correlation between the two clinical scale profile sets to examine the mean scale score difference. Because differences among ethnic groups have been found across MMPI—A scales (Cashel et al., 1998), chi-square analyses were used to determine whether there was proportionate representation of ethnic groups across offense categories.

The Clinical scales of the MMPI—A are designed to measure primary domains of personality and psychopathology in adolescents. The Harris Lingoes and Si, Content, and Supplementary subscales add significantly to the interpretation of the Clinical scales. Although each scale provides an important piece of information about an adolescent, it would be an extremely liberal statistical test to include each of these scales as predictor variables of adjudicated offenses. Thus, we first determined which of the MMPI—A scales generally differentiated between the three adjudicated offenses without statistically controlling for each potential predictor. We first employed four multivariate analysis of variance (MANOVA) tests (one for each of the Clinical, Harris Lingoes and Si, Content, and Supplementary subscales, by offense type) to account for the family-wise error rate. Subsequently, a one-way ANOVA was computed for each subscale of the MMPI—A across juvenile delinquent offense. Huberty (1994) recommends using variables that reach an F value greater than 1.00 in an ANOVA rather than using p values as a screening criteria for discriminant predictor variables. We chose to use a slightly more conservative F value (greater than 1.50) to aid in the initial screening of variables.

To eliminate undue redundancy among discriminant predictors, we eliminated from the predictor pool Clinical scales that reached the F value criterion but overlapped selected Harris-Lingoes and Si subscales in their item content. This approach results in providing more specific information that discriminates between the three offenses as well as a more conservative statistical analysis. Finally, after conducting a DDA and a PDA, we employed a number of recommended follow-up analyses (Huberty, 1994) to determine if classification results exceeded chance probabilities.

RESULTS

PRELIMINARY ANALYSES

The Clinical scale descriptives of the total sample are displayed in Table 1. A Pearson product-moment correlation revealed a remarkable correspondence between the Clinical scale means of the current study sample and the Clinical scale means of the Peña et al. (1996) sample, $r = .87, p < .01$. Furthermore, the current sample's mean Clinical scales score ($M = 52.57, SD = 4.69$) was not significantly different from the mean clinical scales score of the Peña et al. (1996) sample ($M = 51.99, SD = 5.49$), $t(18) = .25, p = .80$. Chi-square analyses did not suggest disproportionate frequencies among race $\chi^2(6, N = 72) = 6.63, p = .085$, for the three types of offenses. However, the notion that subsequent discriminant function analysis results may generalize across race is extremely preliminary and should be interpreted with caution. Initially, between-group differences were not suggestive as indicated by MANOVA results where the four sets of MMPI-A subscales were the dependent variables and offense type was the independent variable: Clinical—Wilks's Lambda = .628, $F(20, 120) = 1.57, p < .08, \eta^2 = .21$; Harris Lingoes and Si—Wilks's Lambda = .224, $F(62, 78) = 1.04, p < .08, \eta^2 = .53$; Content—Wilks's Lambda = .445, $F(30, 110) = 1.83, p < .01, \eta^2 = .33$; and Supplementary—Wilks's Lambda = .791, $F(12, 128) = 1.33, p < .21, \eta^2 = .11$. Three of four MANOVAs were not statistically significant at the .05 level of significance. However, the near significant results were reason to believe that particular between-group differences existed among MMPI-A scales. Furthermore, because Huberty (1994) recommends using variables that reach an F value greater than 1.00 in a one-way ANOVA, rather than p values, results from univariate ANOVAs were still of interest.

The results of the univariate ANOVAs revealed that 13 scales met the first criterion of an F value greater than 1.50. Only six scales reached an F value at the .05 level of significance. See Table 2 for a summary of these results as well as group means and standard deviations. Two scales, Scale 2 (Depression) and Scale 0 (Social Introversion) also met the first criterion. Tukey's Honestly Significant Differ-

TABLE 1: Mean T-Scores and Standard Deviations Obtained for Male Juvenile Offenders on Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A) Validity and Clinical Scales for Current and Peña, Megargee, & Brody (1996) Samples

MMPI-A Scale	Current Sample ^a		Peña et al. (1996) Sample ^b	
	M	SD	M	SD
F (Infrequency)	53.83	10.56	54.99	8.93
L (Lie)	53.46	9.11	51.87	7.54
K (Correction)	51.18	9.28	48.13	8.10
1-Hs (Hypochondriasis)	51.42	10.79	50.78	8.28
2-D (Depression)	55.96	8.73	50.16	8.90
3-Hy (Hysteria)	49.85	8.79	48.48	8.36
4-Pd (Psychopathic Deviate)	59.94	9.75	58.20	9.47
5-Mf (Masculinity-Femininity)	43.86	8.59	42.60	8.12
6-Pa (Paranoia)	55.83	13.76	55.18	10.35
7-Pt (Psychasthenia)	51.24	11.59	53.23	9.91
8-Sc (Schizophrenia)	52.75	12.77	53.40	10.01
9-Ma (Hypomania)	56.63	10.22	61.27	12.51
0-Si (Social Introversion)	48.25	9.24	46.68	8.25

a. $N = 72$.b. $N = 162$.

ence tests revealed that on Scale 2, the Person offense group ($M = 51.80$, $SD = 6.10$) scored significantly lower than the Property offense group ($M = 59.15$, $SD = 9.75$) but not the Drug offense group ($M = 56.56$, $SD = 8.67$). The same pattern was revealed on Scale 0, in which the Person offense group ($M = 45.00$, $SD = 9.64$) scored significantly lower than the Property offense group ($M = 52.20$, $SD = 9.15$) but not the Drug offense group ($M = 47.81$, $SD = 8.39$). No significant differences were found between Property and Drug offenses on these two scales.

Huberty (1994) recommended the elimination of redundancy of predictor variables when employing discriminant function analyses (Huberty, 1994). Scale 2 and Scale 0 were both excluded from the DDA and PDA because of the overlap that they have with Scale D-2 (Psychomotor Retardation) and Scale Si-2 (Social Avoidance). This consideration resulted in a much more conservative test of the formulated hypotheses.

TABLE 2: Mean T-Scores and Standard Deviations Obtained for Male Juvenile Offenders by Adjudicated Offense on Minnesota Multiphasic Personality Inventory–Adolescent (MMPI–A) Scales Selected for DDA and PDA and Results of Comparisons

<i>MMPI–A Scale</i>	<i>Person</i> <i>n = 20</i>		<i>Property</i> <i>n = 20</i>		<i>Drug</i> <i>n = 32</i>		<i>F(2, 69)</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
1-Hs (Hypochondriasis)	46.05 _a	7.71	56.30 _b	13.71	51.71	8.99	5.06	<.01
D-2 (Psychomotor Retardation)	48.85 _a	9.13	52.75	5.45	56.00 _b	7.85	5.38	<.01
Hy-4 (Somatic Complaints)	46.05	7.26	52.00	11.70	52.38	10.11	2.82	.066
Ma-1 (Amorality)	58.25	11.11	53.15	9.28	55.78	7.59	1.56	.218
Si-2 (Social Avoidance)	47.60 _a	9.17	56.35 _b	11.44	50.94	8.66	4.23	.019
A-anx (Adolescent-anxiety)	50.50	8.43	57.25	14.36	54.47	11.96	1.64	.201
A-hea (Adolescent-health concerns)	49.15	8.84	56.45	13.54	52.00	8.82	2.54	.086
A-sod (Adolescent-social discomfort)	46.30	11.54	52.25	10.14	49.09	7.54	1.96	.149
A-sch (Adolescent-school problems)	52.70	10.13	51.15	9.87	58.81	14.14	2.99	.057
ACK (Alcohol/Drug Problem Acknowledgment)	54.95	10.70	50.90	9.34	57.50	10.44	2.57	.084
PRO (Alcohol/Drug Problem Proneness)	56.55 _a	8.27	48.60 _b	9.99	57.03 _a	11.89	4.48	.015
IMM (Immaturity)	49.15	10.12	46.85	9.71	51.81	10.74	1.51	.229

NOTE: DDA = descriptive discriminant analysis. PDA = predictive discriminant analysis. Means in the same row with different subscripts are significantly different at $p < .05$ in the Tukey honestly significant difference comparison.

DESCRIPTIVE DISCRIMINANT ANALYSIS OF MMPI-A SUBSCALES

To test whether two LDFs would emerge to discriminate between the three offenses, 12 selected scales of the MMPI-A (see Table 2 for a list) were subjected to a DDA. Two significant LDFs emerged: Function 1, Wilks's Lambda = .406, $\chi^2(24) = 57.27$, $p < .001$, eigenvalue = .72, canonical correlation = .65; Function 2, Wilks's Lambda = .437, $\chi^2(11) = 23.03$, $p = .018$, eigenvalue = .44, canonical correlation = .55.

Taken collectively, salient (i.e., $\geq |.30|$) loadings for Function 1 indicated Alcohol/Drug Problem Proneness, Social Avoidance, Hypochondriasis, and Adolescent-Health Concern dimensions, whereas Function 2 indicated Psychomotor Retardation, Somatic Complaint, and Adolescent-school problem dimensions that differentiated between the three delinquent offenses (see Table 3). The group centroids of the two functions were $-.69, -.89; 1.32, -.15$; and $-.39, .66$ for the three offenses (Person, Property, and Drug, respectively). These centroids are also displayed in graphic form in Figure 1. Examining Figure 1, the first function maximally differentiated Property offenses from Person and Drug offenses. Function 2 maximally differentiated Drug offenses from Person offenses.

CLASSIFICATION OF CASES WITH THE MMPI-A SUBSCALES

Using classification analysis, also referred to as PDA, we were able to test whether offenses could be classified into offense group at a rate greater than that expected by chance. It was found that 79.2% of the cases were correctly classified in terms of type of offense as a function of the selected MMPI-A scales (see Table 4). Cohen's kappa coefficient between the predicted and actual group membership was .68, $p < .001$. Four standard normal statistics (Huberty, 1994) were also computed to answer the question of whether the observed classification accuracy was better than what may be expected by chance for each group and the entire sample. These statistics are calculated using estimated prior probabilities, group participant sizes, and observed frequencies. The prior probability of the Person offenses was .28, and the percentage of Person offenses correctly classified was 75%, $z = 5.98$, $p < .001$. For Property offenses, the prior probability was also .28, whereas the percentage of Property offenses correctly classified was

TABLE 3: Correlation of Minnesota Multiphasic Personality Inventory–Adolescent (MMPI–A) Predictor Variables With Discriminant Functions and Standardized Discriminant Function Coefficients

<i>Predictor Variable</i>	<i>Correlation With Discriminant Functions</i>		<i>Standardized Discriminant Function Coefficients</i>	
	<i>Function 1</i>	<i>Function 2</i>	<i>Function 1</i>	<i>Function 2</i>
1-Hs (Hypochondriasis)	.395	.283	1.23	.702
D-2 (Psychomotor Retardation)	.034	.596	.004	.708
Hy-4 (Somatic Complaints)	.158	.382	-.818	1.11
Ma-1 (Amorality)	-.230	-.131	-.065	.103
Si-2 (Social Avoidance)	.397	.148	.508	.210
A-anx (Adolescent- anxiety)	.219	.174	.424	.223
A-hea (Adolescent-health concerns)	.307	.119	.434	-1.64
A-sod (Adolescent-social discomfort)	.260	.140	-.014	-.202
A-sch (Adolescent-school problems)	-.205	.348	.060	-.546
ACK (Alcohol/Drug Problem Acknowledgment)	-.276	.214	-.294	.363
PRO (Alcohol/Drug Problem Proneness)	-.418	.109	.266	-.102
IMM (Immaturity)	-.186	.203	-1.18	.012

85%, $z = 6.46$, $p < .001$. The prior probability of the Drug offenses was .44, and the percentage of Drug offenses correctly classified was 78.1%, $z = 5.16$, $p < .001$. For the entire sample, 79.2% of the cases were correctly classified, $z = 9.74$, $p < .001$. These findings suggest that the obtained classification results greatly exceeded chance probability.

DISCUSSION

By preselecting MMPI–A scales and subjecting them to a discriminant function analysis strategy, this study identified that male juveniles who committed criminal offenses (person, property, or drug) varied as a function of specific personality characteristics. The current study also demonstrates the ability of the MMPI–A to discriminate

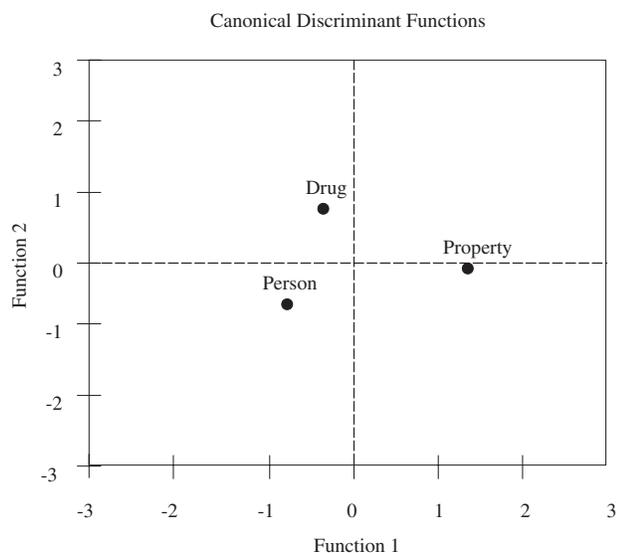


Figure 1: Group Centroids Plot From Unstandardized Canonical Discriminant Function Analysis.

TABLE 4: Classification Analysis for Male Juvenile Offense

Actual Cluster Group Membership	n	Predicted Offense		
		Person	Property	Drug
Person	20			
<i>n</i>		15	2	3
%		75.0	10.0	15.0
Property	20			
<i>n</i>		2	17	1
%		10.0	85.0	5.0
Drug	32			
<i>n</i>		2	5	25
%		6.3	15.6	78.1

NOTE: Overall percentage of correctly classified cases = 79.2%.

between the three offense types. In addition, the scales used to compose the LDFs contain fewer items than previous investigations using similar methodology (Hume et al., 1996; Losada-Paisey, 1998; Moore et al., 1996). For example, Scale 1 is among the smallest of the clinical

scales, in terms of the number of items, and the use of subscales greatly reduced the information needed to adequately discriminate between the offenses.

Results show that the percentage of correctly classified cases of offenses (79.2%) greatly exceeds that which was expected by chance. More specifically, both univariate and discriminant findings suggest that juvenile offenders who have higher degrees of concern with health, illness, and bodily functioning (Hypochondriasis), actively avoid getting involved with other people (Social Avoidance), have an unlikely chance of developing alcohol or drug problems, and are more likely to engage in property offenses. Relatively higher scores on the A-hea scale (Adolescent-health concerns) was also characteristic of juveniles adjudicated for property offenses. This particular finding, along with their relatively higher Scale 2 mean, may be more indicative of an avoidance of engaging in drug offenses to avoid undesirable consequences, often associated with drug use, that are also dissonant with physiological concerns. Another speculation is that the personality pattern associated with property offenders is indicative of avoiding the commission of person offenses due to preoccupations with worry, guilt, and fear that are often characteristic of adolescent health concerns (Butcher & Williams, 1992; Williams, Butcher, Ben-Porath, & Graham, 1992).

Both univariate and discriminant findings also suggest that male juvenile offenders who have higher degrees of Psychomotor Retardation (feeling immobilized and withdrawn, lacking energy to cope, and lacking hostile or aggressive impulses), and relatively more serious Adolescent-school problems, are more likely to engage in drug offenses. Examination of group means also indicate a potentially greater interest in manipulative and self-oriented behavior (Amorality) and a greater proneness for developing alcohol and drug problems associated with person and drug offenders. Furthermore, an examination of Table 4 and Figure 1 indicate the ability of selected MMPI-A scales to identify property offenses more adequately than person and drug offenses.

Discriminant function analysis allows for a deeper understanding of how juvenile offenders differ with respect to their adjudicated offense by providing a meaningful piece to the clinical picture of each juvenile offense category. The results of this study are particularly

noteworthy because there are a number of factors that are believed to influence criminal offenses (Hare, 1981). Although the MMPI-A does include some scales that indicate more salient concerns, such as family, school, or interpersonal relationship problems, the clinical picture may be improved by considering specific demographic, familial, other behavioral information, and clearer indicators of physical or sexual abuse in future investigations. Although the Adolescent-Negative Treatment Indicators scale did not reveal any differences among the offenses, investigation of resistance or compliance with treatment may add to the practical significance of similar investigations (Rice, Harris, & Cormier, 1992).

Furthermore, these findings of distinct groups support current differential treatment approaches based on offense type. Information about personality characteristics may be particularly helpful to clinicians concerned with interventions designed for juvenile offenders. Because personality characteristics are often more stable and resistant to treatment interventions, clinicians may use information from the current study to design more appropriate treatment programs. Due to the preliminary nature of the data, it is our position that specific recommendations as to how interventions may be designed in light of the findings would serve as hasty speculations. Subsequent investigations, with larger samples, are certainly warranted.

It has been recognized that the ratio of the number of participants to the number of predictor variables was not ideal. Thus, one limitation of the study involves the sample size. On the other hand, the current study sample was remarkably similar to the Peña et al. (1996) study as indicated by a high degree of correspondence between clinical scale profiles. The sample size was not considered ideal to test related hypotheses, and, thus, general study findings should be treated with caution in regard to race.

Although a small sample is studied here, the results are important in extending the current literature. To find whether the lack of statistical significance among particular MMPI-A scales was due to "true" relationships or insufficient power, a power analysis procedure was conducted. An a priori power analysis indicated that with a total of 159 participants, a medium effect size ($f = .25$) (Cohen, 1969) could be detected in a one-way ANOVA with 156 degrees of freedom, $\alpha = .05$,

and $\beta = .20$ (power = .80). A post hoc power analysis revealed that with only 72 participants and three groups, power was restricted to .44. Thus, in regards to the lack of significance, it appears that the latter explanation (insufficient power) may be more likely. The power analysis results are especially encouraging in that they suggest that the MMPI-A may be more capable of demonstrating discrimination of the three offense categories, given sufficient power.

The current report represents one of the first investigations that used MMPI-A subscales as an independent measure to predict male juvenile offenses. In this regard, the MMPI-A appears useful in discriminating between general criminal offenses. On the other hand, the lack of "clinically significant elevation" on all examined scales appears at first glance to provide minimal practical relevance. Similar to a purpose of the Peña et al. (1996) study, the critical question of the current study involved the degree to which MMPI-A scales could differentiate between the three types of juvenile offenses rather than to indicate the magnitude of psychopathy or elevation of the MMPI-A profiles. Results of the current study, as well as those of the Peña et al. (1996) study, suggest that male juvenile offenders tend to attain "flat" profiles on the MMPI-A. Thus, the issue of how high a scale score needs to be before considering it as clinically significant is still debatable. However, a lack of elevated profiles should not prompt too much concern as some researchers have suggested (Hume et al., 1996). Clinical relevance according to Greene (1987), which was defined as a between-group *T*-score difference of at least 5, was met on all but one of the scales (Immaturity) involved in the discriminant function analysis. Furthermore, Archer (1992) warned against underestimating adolescent psychopathology when encountering modest profiles within clinical samples. Archer's notion is supported by the general finding that the current study profiles, by offense category, were relatively modest; however, 12 scales were still capable of adequately discriminating between the three offenses.

Similar to a criticism of a study by Katz and Marquette (1996), another limitation of the current study findings is that the MMPI-As were administered after adjudicated offenses. Therefore, the potential effect of any time incarcerated or spent in rehabilitation was not con-

trolled. Although the validity and stability of the MMPI-A has been proven adequate among adolescents in general (Arita & Baer, 1998; Stein, McClinton, & Graham, 1998), more investigation within the juvenile offender population is certainly warranted before such encouraging results are generalized.

GENERAL CONCLUSIONS

The multidimensional perspective of personality characteristics, as measured by the MMPI-A, helps capture the differences between three general offenses among male juvenile offenders. These results may naturally lead to the investigation of potential empirically derived subtypes of personality characteristics by type of offense. It is noted that other information may be helpful in this domain. However, the MMPI-A does indicate an impressive degree of accuracy in predicting juvenile offenses as a function of 12 predictor variables identified in the present study. Other than predicting the type of offense among male juvenile offenders, this study also provides valuable information in regard to the personality differences between three different degrees of offense seriousness. Such information may prove to be important for clinicians working with male juvenile offenders. Finally, the current study may serve as an initial screening for important indicators of adolescent offenses that may be more directly targeted in future investigations.

NOTE

1. Williams and Butcher (1989a, 1989b) excluded any MMPI-A protocol with a Cannot Say (CS) raw score > 10, a Lie (L) Scale *T*-score > 70, an Infrequency (F) Scale *T*-score > 90, or a Defensiveness (K) Scale *T*-score > 70. Because of a lack of empirical evidence that suggests their validity (Graham, 1993), the new MMPI-A validity scales (Variable Response Inconsistency [VRIN] and the True Response Inconsistency [TRIN]) were not used. However, all participants' VRIN and TRIN scores were below 75 as has been suggested for validity (Butcher & Williams, 1992).

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