

Spring 4-2007

Using Selected Scales of the MMPI-A to Differentiate Adjudicated From Nonadjudicated Adolescent Females.

Brandon M. Robbins

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Using Selected Scales of the MMPI-A to Differentiate Adjudicated
From Nonadjudicated Adolescent Females.

by

Brandon M. Robbins

Presented to the Faculty of the
Graduate School of Clinical Psychology
George Fox University
in partial fulfillment
of the requirements for the degree of
Doctor of Psychology
In Clinical Psychology

Newberg, Oregon

April, 2007

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has been approved

at the

Graduate School of Clinical Psychology

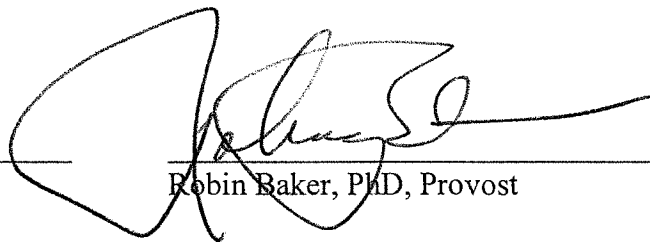
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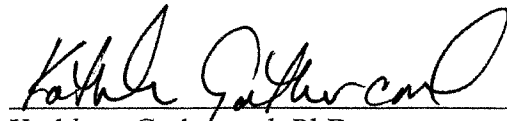


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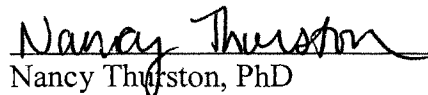


Robin Baker, PhD, Provost

Members:



Kathleen Gathercoal, PhD



Nancy Thurston, PhD

Date: 4.30.07

Using Selected Scales of the MMPI-A to Differentiate Adjudicated
From Nonadjudicated Adolescent Females

Brandon M. Robbins

Graduate Student of Clinical Psychology at

George Fox University

Newberg, Oregon

Abstract

Juvenile crime has become an increasingly notable problem in society. Historically, a large portion of research on juvenile offenders centers on the psychological diagnosis of conduct disorder. Juveniles diagnosed with Conduct Disorder often possess other high-risk factors that further complicate their problematic behaviors. For example, deviant peer groups reinforce such behaviors as do home environments where parents exhibit antisocial behaviors and substance abuse (Kronenberger & Meyer, 2001). Female offenders constitute a small but important part of the population of adolescents who become involved in the legal system, yet they have been the subject of minimal research. Although only 7-27% of juvenile offenders are female, incarceration rates for females are the fastest growing rates of any inmate population (Leve & Chamberlain, 2004; Moses, 2001; Schrum & Salekin, 2006).

Psychological assessment plays a significant role in the rehabilitative treatment planning that occurs in forensic settings. More specifically, the Minnesota Multiphasic Personality

Inventory – Adolescent (MMPI-A) has a long history of being used to facilitate assessment and treatment with adjudicated minors. Previous research by Morton, Farris, and Brenowitz (2002) has found significantly higher scores on the clinical scales, specifically Scales 6 – Paranoia (Pa) and 4 – Psychopathic Deviate (Pd). In this study, 33 nonadjudicated adolescent females and 42 adjudicated adolescent females were given the MMPI-A. Three scales of the MMPI-A (Clinical Scale 4 Pd, Content Scale – Adolescent-Conduct Problems (A-Con) and Content Scale Adolescent-Cynicism (A-Cyn)) were used during this assessment. It was hypothesized that the adjudicated sample would score significantly higher on all 3 scales. An independent sample t-test was used and significant results were found on scales 4 Pd and A-Con, while no significance was found on A-Cyn. These findings parallel previous research and speak to the possible utility of the MMPI-A in the assessment of adjudicated female minors. Also, significant differences were found by age group within the adjudicated sample, while no differences were found by age group within the nonadjudicated sample. This finding could reflect the late-adolescence influences of a deviant peer group or support a delayed-onset model for criminogenic behavior in adolescent females (Silverthorn and Frick 1999).

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Chapter 1

Introduction

Juvenile Crime

The societal problems created by juvenile crime have received increasing attention in professional literature of the social sciences, including psychology, social work, and criminal justice. This heightened concern may be a result of the type and cost as well as the etiological complexity of crimes committed by juveniles. To a greater extent than that of adults, juvenile crimes involve direct harm to another individual. One fourth of all crimes committed by juveniles are considered to be violent crimes by the U.S. Department of Justice ([USDJ], 2001). The monetary cost of crime is astronomical, exemplified not only by the USDJ's (2004) budget of over \$22 million but also by the continued escalation of property damage, costs of law enforcement and adjudication, as well as efforts toward intervention and rehabilitation. Taken altogether these costs create an increased financial burden on taxpayers across the United States. Furthermore, juvenile crime is on the rise with an 88% increase between 1989 and 1998. In response to the rising incidence and increased costs of juvenile crime, many governmental and public agencies devote more and more time and financial resources to the problem. (USDJ, 2001).

A related problem area is the increasing number of juveniles released annually from the prison system, which has risen 300% in the last two decades (USDJ, 2000). Just as this increase is troublesome, the rate at which juveniles are likely to reoffend and become reincarcerated is

also a concern. A longitudinal study conducted by the Justice Department found that the average number of previous arrests before entering prison is 8.4, while over 63% of the released prisoners were rearrested within three years. Perhaps more worrisome, the group with the highest recidivism rate was comprised of those under the age of seventeen (USDJ, 1997).

Conduct Disorder: An Established Subset of Juvenile Offenders

Understanding juvenile crime and antisocial behavior requires an understanding and awareness of adolescents diagnosed with conduct disorder. In fact, a large portion of research on juvenile offenders focuses on the adolescents who have received a psychological diagnosis of conduct disorder. This diagnosis has been identified as a predictor and, in some research, has been implicated as a causal factor of criminal behavior. Antisocial behavior is simply behavior that is disruptive and harmful to society (Reber & Reber, 2001). In contrast, conduct disorder involves a long standing pattern of an individual's behavior which is characterized by "a consistent pattern of rebellion and violation of social norms" (Kronenberger & Meyer, 2001, p. 88).

Juveniles diagnosed with conduct disorder often present a complex picture of biological, social and familial risk factors that further complicate their problematic behaviors. Biologically, these adolescents may require higher levels of stimulation to evoke a learned response than adolescents without a diagnosis of a behavior disorder. Socially, for the purposes of this research, the influence of a deviant peer group is particularly relevant because the deviant peer group has an important and formative role in the development of identity for adolescents diagnosed with conduct disorder. It provides social modeling and reinforcement of high-risk behaviors (Dishion, McCord, & Poulin, 1999). Familial risk factors are found in family environments where parents engage in antisocial behaviors, substance abuse, and who reinforce aggressive responses. Taken together the biological, social and familial influences interact to

create, then reinforce high-risk behaviors and responses. An awareness of this complex and multi-determined behavior may help in the assessment and treatment of high-risk children and adolescents.

In an effort to explain some of the etiological complexity, Moffitt (1993) differentiated between those who have a life-long pattern of antisocial behavior and those who participate in time-limited antisocial behavior. Moffitt's conceptualization suggests that caution should be used with the conduct disorder diagnosis, particularly if the adolescent's participation in those negative behaviors is time-limited. Even more applicable to the topic of juvenile crime, Moffitt's differentiation between the two groups (childhood-onset versus adolescent-onset) has been used to predict long-standing juvenile criminal behavior. Moffitt's classification appears to be used in hindsight by labeling individuals perhaps after they have continued or discontinued the antisocial behaviors. Moffitt contributes to the field by suggesting that, in the area of conduct disorder and criminogenic behavior, research needs to encompass a larger developmental time period, beginning in early childhood. The author points out that by limiting the study to adolescent behavior, we restrict the field and only see current behaviors rather than the developmental trajectory that led to the identified behaviors. Moffitt suggests that the study of children who have problematic behaviors may provide a richer source of research and data within this particular area of interest when coordinated with the current adolescent literature. Understanding the developmental trajectory and qualities of adolescents diagnosed with conduct disorder can aid us in understanding differences between adjudicated and nonadjudicated adolescents.

Female Offenders: An Emerging Subset of Juvenile Offenders

Female offenders constitute a small but important part of the population of adolescents who become involved in the legal system, yet they have been the subject of minimal research. Although only 7-27% of juvenile offenders are female, incarceration rates for females are the

fastest growing rates of any inmate population (Moses, 2001; Leve & Chamberlain, 2004; Schrum & Salekin, 2006). Although the prevalence of female offenders is on the rise, very little research exists which aims to differentiate the gender differences in the development of antisocial behavior (Silverthorn & Frick, 1999). Females with a diagnosis of a conduct disorder present a different set of symptomatic behaviors than males, and they often display higher rates of relational aggression, prostitution, truancy, involvement in violent romantic relationships, and higher risks of developing major psychiatric disorders than males (Burnette & Newman, 2005). The etiology and characteristics of early female conduct disorder behavior is important as it correlates with an increase in mental health and physical health risks (Leve & Chamberlain, 2004). Research indicates familial dysfunction, sexual abuse, and parental criminality to be significant factors in the development of antisocial behaviors, specifically, in females (Leve & Chamberlain, 2004; Rosenbaum, 1989). Moffitt's two-trajectory model (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996) has been questioned as a valid model for females. Silverthorn and Frick (1999) propose that a delayed-onset model is more appropriate for female offenders. For instance, the authors contend antisocial females rarely exhibit a behavioral history synonymous with the early-childhood onset model; rather, females with an adolescent-onset of criminogenic behavior are very similar to males with an early-childhood onset. Protective factors (e.g., puberty differences, socialization process of gender stereotyping, etc.) are proposed as reasons why females are more delayed in exhibiting problematic or antisocial behaviors (Silverthorn & Frick, 1999). As the previous research suggests, assessment of at-risk adolescent females may be a difficult challenge. Furthermore, common practices and trends within the legal system may have historically reduced the number of females referred for assessment (Miller & Trapani, 1995). A limited understanding of female offenders has likely played a role in the lack of female-specific treatment interventions.

Current Interventions for Juvenile Offenders

Currently, a wide variety of interventions are used with the hope of interrupting the trajectory of juvenile crime. Adjudicated adolescents have a differential response to treatment interventions with some adolescents showing a stable, recurring pattern of criminogenic behavior; whereas, other adolescents have shown a positive response to intervention and do not reenter the juvenile justice system. The burden on public funds of high financial costs may be offset by appropriate treatment-matching for juvenile offenders. Therefore, a sound assessment of juvenile offenders is of interest to a wide range of professional disciplines because it can provide information related to stable patterns of criminogenic behavior and may help to understand the differential response to rehabilitation interventions (Quist, Matshazi, & Dumiso, 2000).

Assessment

Psychological assessment is used in a wide variety of areas to “answer specific questions and aid in making relevant decisions” (Groth-Marnat, 1999, p. 3). Psychological assessment has been very involved in corrections and is primarily known as *forensic assessment*. The role of forensic assessment is typically relevant to court proceedings, yet the assessment conducted within this study will not be relevant for judicial use. The assessment of individuals within the legal system can be done for a variety of reasons, including the identification of psychosocial risk factors and coping skills and the level of insight or psychopathology that may influence the rehabilitation plan for the adjudicated adolescent. The challenge within psychological assessment is the determination of which tools are most helpful for understanding the multiple social and psychological risk factors of the incarcerated youth. Assessment is essential with this population as it enables providers to match appropriate treatment interventions with specific social and psychological conditions.

As previous research suggests, a large number of varied predictors contribute to determining the likelihood that a juvenile will commit crimes. Psychological assessment provides a medium to identify and measure the varied predictors. The field of juvenile assessment of criminogenic behavior is largely rooted in the assessment of social and functional risk factors. The Child and Adolescent Functional Assessment Scale (CAFAS) assesses the impact of psychosocial factors on the individuals daily functioning (Hodges & Kim, 2000). The assessment has become increasingly popular, in part because it takes approximately 10 minutes to complete; in fact, the CAFAS is the most widely used assessment instrument in the adolescent criminogenic population. However, within professional literature there is apparent concern about problems with the psychometric properties present within the CAFAS (Bates, 2001).

The standardized psychological test, the Minnesota Multiphasic Personality Inventory (MMPI), has been used with delinquent adolescents for over 50 years (Pena, Megargee, & Brody, 1996) and provides a comprehensive look into the psychological state of the examinee. The MMPI was restandardized in 1992 for specific use with adolescents (Archer, Handel, & Lynch, 2001). The Minnesota Multiphasic Personality Inventory – Adolescents (MMPI-A) is a self-administered assessment that may be computer scored, enabling easy scoring with minimal administrative errors. Archer et al. note the importance of being able to assess personality characteristics and the historical role of the MMPI to do so. According to Archer & Newsom (2000), the MMPI-A is the most popular assessment tool clinicians use with adolescents. Its popularity, history, and validity measures all contribute to the appropriateness of its selection within this study. Pena, et al. (1996) found the Clinical Scales 4 – Psychopathic Deviate (Pd), 6 – Paranoia (Pa), and 9 – Hypomania to be the most frequent elevations within the population of male juvenile delinquents. Clinical Scale 4 – Pd has been suggested to be the only MMPI-A scale that discriminates between adjudicated and nonadjudicated groups with the majority of its

items (Archer et al., 2001). More recent research by Morton et al. (2002) found Scales 6 – Pa and 4 – Pd, within the clinical scales, to be significantly higher when comparing adjudicated males and nonadjudicated males.

The content scales have drawn particular attention because they are face valid and easily understood by the adolescent. New content scales were developed for the MMPI-A due to adolescent-sensitive items being integrated into the MMPI-A. Adolescent Conduct Problems (A-Con) replaced the ASP (Antisocial Practices) content scale from the MMPI-2 and has been shown to be the most frequent elevation with juvenile delinquents, in one study, 62% scored over a T score of 59 (Pena et al., 1996; Williams, Butcher, BenPorath, & Graham, J. R., 1992;). The content scales may provide information relevant to rehabilitation that may not be captured in the clinical scales. For instance, Forbey and Ben-Porath (2003) found selected MMPI-A Content Scales incrementally valid in assessing behavioral and personality characteristics of a residential sample.

The problem of juvenile crime has been a popular topic within correctional settings, educational systems, and clinical psychology. The ability to identify dynamic factors that contribute to criminal behavior within the juvenile population is important in identifying appropriate steps toward rehabilitation. This research proposes to extend the current research question related to the utility of the MMPI-A in a forensic setting. Specifically, this research asked whether the scores on three specific scales, hypothesized to be sensitive to criminogenic behavior, were significantly different between a population of adjudicated adolescents when compared to the scores of nonadjudicated adolescents. The Clinical Scale 4 – Pd and Content Scale A-Con were selected because of previous research where they were found to be significantly higher in adjudicated samples. The Content Scale A-Cyn was also selected because

of the scale's sensitivity to themes of distrust and misanthropic attitudes (Butcher & Williams, 1992). The following hypotheses were tested:

Hypothesis 1: Adjudicated sample will score significantly higher on Clinical Scale 4 – Pd than the nonadjudicated sample.

Hypothesis 2: Adjudicated sample will score significantly higher on Content Scale A-Con. than the nonadjudicated sample.

Hypothesis 3: Adjudicated sample will score significantly higher on Content Scale A-Cyn than the nonadjudicated sample.

Chapter 2

Method

Participants

The nonadjudicated sample consisted of 34 female participants who ranged in age from 13 to 17 years, with a mean age of 15.0 and a standard deviation of 0.8; 91% were Caucasian and 9% were Hispanic. Individuals participated as part of a fundraiser for an athletic team. Inclusion criteria were: no history of adjudicated behavior, no current diagnosis of a learning disorder, and between the ages of 13 and 17. One individual was excluded when behavioral observations suggested she was not a true representative of the nonadjudicated sample. Behavioral observations included: comments about items of the MMPI-A that pertain to sexual behaviors, verbal altercation with her mother, and numerous inappropriate jokes.

The adjudicated sample consisted of 42 female participants who ranged in age from 13 to 17 years, with a mean age of 15.1 and a standard deviation of 1.3; 52% were Caucasian, 31% were Native American, and 17% were Hispanic. Archival data was used from rural Nebraska. Inclusion criteria were: history of adjudicated behavior and between the ages of 13 and 17.

Materials

Participants were given the MMPI-A version, an empirically based assessment tool that assesses for psychopathology. The MMPI-A inherited strong psychometric properties from its predecessor the MMPI-2. The manual for the MMPI-A shows test-retest correlations within the clinical scales ranges from .65 to .84 (Butcher & Williams, 1992). The content scales

demonstrate internal consistencies ranging from .55 to .89. The standard error of measurement ranges from four to six T-points within the basic scales. The administration time ranges between 45 and 60 minutes. Clinical Scale 4 – Pd consists of 49 items sensitive to behaviors characterized by legal problems, poor familial relationships, and difficulty with impulsivity (Butcher & Williams, 1992). The content scale A-Con consists of 23 items and often picks up antisocial attitudes, defiance, and the likelihood of a deviant peer group. Within female samples, empirical evidence suggests the scale is specifically sensitive to truancy, running away from home, and unpredictable behavioral patterns (Archer & Krishnamurthy, 2002; Burnette & Newman, 2005; Butcher & Williams, 1992). The Content Scale A-Cyn consists of 22 items sensitive to distrust and misanthropic attitudes (Butcher & Williams, 1992).

The nonadjudicated sample was given a demographic questionnaire. The demographic questionnaire (Appendix A) required less than five minutes of the participant's time, and was used to assess demographic variables and the presence of a learning disorder.

Procedure

Before the assessments were conducted, the prospective participants were given information regarding the approximate time involved in their participation. Consent was obtained from the athletic coaches prior to beginning the study. Since all participants were juveniles, parent/guardian consents were obtained. The informed consent from the parent/guardian was obtained before the participant-informed assent was obtained. The informed consent for the parent (Appendix B), the informed assent for the adolescents (Appendix C), and the informed consent for the coaches (Appendix D) adhered to the Ethical Principles of Psychologists (APA, 2002). Following the informed consent, the examiner reviewed the informed assent with the adolescents, gave them an opportunity to ask additional questions and ensured their voluntary participation in the study.

Following the assent, the researcher passed out the demographic questionnaire and the MMPI-A along with a writing utensil. Administration of the MMPI-A followed the standardized testing instructions as outlined in the assessment manual (Butcher & Williams, 1992). After completing the assessment, the protocols were collected. The athletic team was given \$10 per participant. The answer sheets were scored using Q-LOCAL scoring software, which produced raw scores and T-scores on all of the MMPI-A scales. Data from the MMPI-A profiles and demographic questionnaires were entered into SPSS for statistical analysis.

Chapter 3

Results

All statistical analyses were done with SPSS Version 11, Standard Version. Table 1 shows the means and standard deviations of the three MMPI-A scales for the nonadjudicated and adjudicated groups. All MMPI-A profiles were deemed valid based on the validity scales. An independent sample t-test was used to determine which MMPI-A scales differentiated between adjudicated and nonadjudicated groups. Table 1 shows the t-values. Significant differences in means were found in Pd, $t(73) = 6.90$, $p < .001$ and in A-Con, $t(73) = 3.96$, $p < .001$.

Table 1

Mean Scores of Nonadjudicated and Adjudicated Groups

MMPI-A Scales	Group	N	M	SD	t
Pd	Nonadjudicated Group	33	45.03	6.53	6.90*
	Adjudicated Group	42	62.24	13.11	--
A-Con	Nonadjudicated Group	33	47.18	7.25	3.96*
	Adjudicated Group	42	56.12	11.25	--
A-Cyn	Nonadjudicated Group	33	51.82	9.72	1.04
	Adjudicated Group	42	54.55	12.36	--

Note. $Df = 73$. * $p < .01$. N = Number of Participants; M = Mean; SD = Standard Deviation;

t = t-test.

Further analysis of the adjudicated group data was done by looking at mean score differences by age group (Table 2). The adjudicated group was divided into two age groups: early (ages 13-14) and middle (ages 15-17). An independent sample t-test was used to determine whether the older adjudicated group endorsed greater levels of pathology than the younger adjudicated group. Table 3 shows the t-values. Significant differences in means were found in Pd, $t(40) = -2.70$, $p < .01$, in A-Con, $t(40) = -3.47$, $p < .001$, and in A-Cyn $t(40) = 3.96$, $p < .05$. Table 4 shows that no significant age differences were found when looking at the nonadjudicated group.

Table 2

Mean Scores of Adjudicated Groups by Age

MMPI-A Scale	Age	N	M	SD
Clinical Scale 4 – Pd	13	4	57.25	9.22
	14	12	55.25	9.47
	15	12	58.00	13.58
	16	5	64.20	8.61
	17	9	78.33	5.29
Content Scale – A-Con	13	4	43.00	6.27
	14	12	51.42	12.78
	15	12	57.42	7.38
	16	5	59.20	7.19
	17	9	64.78	9.80
Content Scale – A-Cyn	13	4	50.00	12.91
	14	12	49.42	11.20
	15	12	55.08	12.61
	16	5	50.20	6.22
	17	9	65.11	11.07

Note. N = Number of Participants; M = Mean; SD = Standard Deviation;

Table 3

Mean Scores of Adjudicated Groups

MMPI-A Scales	Group	N	M	SD	t
Pd	Early Group	28	56.71	11.09	-4.78**
	Middle Group	14	73.29	9.46	--
A-Con	Early Group	28	52.79	10.85	-2.96***
	Middle Group	14	62.79	9.09	--
A-Cyn	Early Group	28	51.93	11.92	-2.01*
	Middle Group	14	59.79	11.93	--

Note. $Df = 40$. *** $p < .001$, ** $p < .01$, * $p = .05$. Early Group defined ages 13-15. Middle Group defined ages 16-17. N = Number of Participants; M = Mean; SD = Standard Deviation; t = t-test.

Table 4

Mean Scores of Nonadjudicated Groups

MMPI-A Scales	Group	N	M	SD	t
PD	Early Group	23	45.48	6.84	.592
	Middle Group	10	44.00	5.94	--
A-Con	Early Group	23	45.96	6.75	-1.50
	Middle Group	10	50.00	7.93	--
A-Cyn	Early Group	23	52.43	8.71	.546
	Middle Group	10	50.40	12.14	--

Early Group defined ages 13-15. Middle Group defined ages 16-17). N = Number of Participants; M = Mean; SD = Standard Deviation; t = t-test.

Chapter 4

Discussion

Discussion of the Results

The goal of this study was to examine whether scores on three specific scales of the MMPI-A, (Clinical Scale 4 – Pd, Content Scale A-Con, and Content Scale A-Cyn) were able to differentiate adjudicated from nonadjudicated female adolescents. Hypotheses 1 and 2 were supported by the results which showed a significant difference between mean scores on Clinical Scale 4 – Pd and Content Scale A-Con at $p < .001$. These results are consistent with prior research including the work of Pena et al. (1996), who found A-Con and Pd to be elevated in the majority of criminogenic adolescents and the results of Archer et al. (2001) who found significant elevations on Pd. Hypothesis 3, which predicted significant mean differences between adjudicated and nonadjudicated adolescents on the A-Cyn Content Scale, was not supported.

The significant findings may be a result of a couple of factors. First, Clinical Scale 4 – Pd and Content Scale A-Con are composed of many items that ask about the individual's history of lying, stealing, gambling, and involvement with law enforcement; while, A-Cyn is more sensitive to negative attitudes and previous sexual abuse (Archer & Krishnamurthy, 2002). An important note here is that Pd and A-Con could possibly reflect behavioral (external) manifestations of psychological problems, while A-Cyn reflects more emotional (internal) manifestations. Thus, the MMPI-A scales may be more sensitive to external factors, which could make determining a significant difference between the groups on A-Cyn more difficult.

A second construct impacting the results could be that the Pd and A-Con scales include items that reflect more stable factors rather than the dynamic factors which are reflected in the A-Cyn items. Stable factors are revealed in questions with answers that will not change over time (e.g., have you been arrested, skipped school, stayed out all night, etc.) as opposed to dynamic factors that are revealed in questions with answers that are susceptible to change (e.g., do you swear often, others take advantage of me, etc.). Further examination of the scales is required to determine the portion of the scales composed of dynamic versus stable factors, and further study is necessary to reveal how the item content may impact results.

When examining the impact of demographic variables, no significant difference was found with regard to ethnicity. Age was found to significantly impact scores within the adjudicated sample on all three MMPI-A scales. To examine the impact of age on the MMPI-A scores, adjudicated and nonadjudicated participants were divided into two groups: early adolescents (ages 13-15) and middle adolescents (ages 16-17). The rationale for the bi-modal division was that adolescents and their peers often experience increased independence and reduced supervision at age sixteen. The middle adolescent group scored significantly higher on all three scales than the early adolescents.

Kronenberger and Meyer (2001) highlight the importance of deviant peer groups with adjudicated adolescents, and it is likely that the significantly different results between early and middle adolescents is due to the influence of a deviant peer group. An adolescent will attempt to identify with a peer group, and identification with a deviant peer group would likely produce more criminogenic behavior. Silverthorn and Frick's (1999) research on the delayed-onset model for female adolescent offenders gives credence to the idea of criminal behavior escalating throughout late adolescence. According to their research, it is rare to find a history of childhood criminogenic behavior, even in adult females with a diagnosis of antisocial personality disorder.

Thus, criminogenic behaviors are likely to be multi-determined and increase with age, which could explain the significantly higher scores for the older females in the adjudicated sample.

Clinical Implications

MMPI-2 interpretive guidelines typically suggest using t-score elevations > 70 when interpreting profiles, yet the mean t-scores advised for the MMPI-A are > 65 (Archer & Krishnamurthy, 2002). The adjudicated groups within this research on Pd and A-Con both fell below this mark (Pd = 62.24, A-Con = 56.12). However, when the adjudicated group was divided into age groups, the means for the group of older adolescents exceeded or came closer to the t-score of 65 (Pd = 73.29, A-Con = 62.79). Clinicians performing adolescent personality assessments may benefit by not underestimating the significance of MMPI-A scales which fall short of the 65 t-score. Furthermore, the importance of early interventions in clinical settings appears paramount since psychopathology, as measured by the MMPI-A, significantly increases with age in a criminogenic female population.

The increase in MMPI-A scores with age may be a result of more independence and less supervision (e.g., obtaining a driver's license), increased opportunity for life events to influence endorsement of static answers to questions on Pd and A-Con scales (e.g., arrest history, drug and alcohol history, etc.), more time and the consequent experiences that define identity by conduct disorder-like behaviors, and involvement in a deviant peer group. Previous studies have shown that reinforcement from a deviant peer group can have a powerful effect on adolescent behavior. The results showing age-related differences may be further evidence of the formative dynamic of peer deviancy training.

Multiple individuals from the non-adjudicated sample approached the test administrator during the assessment asking about items on the MMPI-A. A reevaluation of the assessment's

vocabulary may be helpful, to assess whether the vocabulary is easily understood by the intended audience. The experience of the test administrator suggested some items may be outdated.

Study Limitations

An important limitation of the current study involves the use of limited archival data. The lack of data available about the adjudicated group is a part of this limitation. It is unclear how the severity of the individuals' crimes may correlate with their MMPI-A scores and may have provided the researcher with richer data were that information available. Another restriction is the limited scales of the MMPI-A available from the adjudicated group. Other scales on the MMPI-A may have proven to be more sensitive to group membership or may have provided the researcher with the ability to do an item analysis on the scales which were used.

A further limitation of the study is the sample size. Greater access to criminogenic female adolescents may have produced a study yielding stronger statistical findings. Since females represent a minority of adolescent offenders, it will likely continue to be more difficult to obtain access to females within this population than to their counterparts. Nonetheless, the growth of this population suggests that the information gathered from research in this area is well worth the greater efforts which it requires.

Implications for Future Research

Future research should examine whether the age group findings within this study are replicated in other samples. Larger sample sizes which replicate these findings would hold powerful implications for either the need of early intervention or the validity of the delayed-onset model proposed by Silverthorn and Frick (1999). Secondly, future researchers may want to examine the impact of dynamic and stable questions on adjudicated female MMPI-A profiles. It is unclear to what extent this issue impacts the three scales in this study, and clinicians and theorists would both benefit from the findings of this potential research. In addition, future

research needs to include a more ethnically diverse sample of the population. This study included a predominantly Caucasian sample within both groups. Future research would need to be done before generalizing these findings to different ethnic groups. Does institutional racism or acculturation affect the trajectory of the three MMPI-A scales over time? Does the racial composition of the environment in which an ethnically diverse adolescent is raised impact MMPI-A scores for a adjudicated population? Future research within these areas may prove significant in determining appropriate treatment interventions.

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Appendix A

Demographic Questionnaire

Appendix B

Parental Consent

Personality Research Study

Dear Parent/Legal Guardian:

We are studying how personality characteristics affect adolescent behavior. As part of this study, we are planning to provide an assessment called the Minnesota Multiphasic Personality Inventory – Adolescent Version (MMPI-A) to adolescents who have volunteered for the assessment. The assessment was designed to help mental health professionals better understand psychological conditions, behavioral problems and personality characteristics of adolescents from different settings.

The assessment consists of 478 items that require a true/false answer. The amount of time estimated to complete the MMPI-A ranges from forty-five to sixty minutes. During this time the adolescent will be supervised by the principal researcher, Brandon Robbins M.A., and will be able to opt out of the study at any point.

You and your child are welcome to ask any questions and discuss your reactions with our staff. We will be pleased to respond to any questions that you may have and to share information with you about the study. The confidentiality of the information your child provides will be closely guarded. No one at your adolescent’s school or elsewhere outside of the research offices will have access to this information; nor will any of this information be placed in his or her school records. The information gathered will be kept in a locked file cabinet at George Fox University that will only be accessed by our research staff. All information gathered will be only used for research. As soon as data is entered it will no longer be able to be traced to any individual. The coach has filled out a brief questionnaire about the youth on the team which will help with this study.

If you and/or your adolescent should decide not to participate in this research, this will in no way affect your child on the team. Also, if you and your child consent to participate in the research, this will not prevent later withdrawal from the research if you or your child should wish to do so. We do believe the risk potential of participation in this study is mild, as the MMPI-A may cause volunteers to think about topics which may be troublesome. Potential benefits include having the knowledge that you have participated in a research study that could increase our understanding of how to help children succeed in the future. This program will not involve any costs to you, and the program does not pose risks or likelihood of injury.

If you have any questions, please contact us by email or telephone. If you have questions or concerns about your rights as a research participant, please email us or telephone the psychology department at (503) 554-2761. Thank you very much for your interest and cooperation.

Sincerely,

Brandon Robbins, M.A.
brrobbin@georgefox.edu

Mary Peterson, Ph.D.
mpeterson@georgefox.edu

I have had an opportunity to ask any questions I had about this study.

_____ I agree to have my child participate in this research.

_____ I choose for my child not to participate in this research.

Parent’s signature

Date

Print Name

Appendix C
Adolescent Consent

Personality Research Study

Dear Adolescent:

We are studying how personality characteristics affect adolescent behavior. As part of this study, we are planning to provide an assessment called the Minnesota Multiphasic Personality Inventory – Adolescent Version (MMPI-A) to adolescents who have volunteered for the assessment. The assessment was designed to help mental health professionals better understand psychological conditions, behavioral problems and personality characteristics of adolescents from different settings. The assessment consists of 478 items that require a true/false answer. The amount of time estimated to complete the MMPI-A ranges from forty-five to sixty minutes. During this time you will be supervised by the principal researcher, Brandon Robbins M.A., and will be able to opt out of the study at any point.

There are two important things to remember. First, you are a **volunteer**. That means you are helping us, but you do not have to unless you want to. You can also ask us questions about the study. You can let us know if you no longer want to be part of the study. If you agree to be in the study now but decide later that you do not want to, you can simply ask to quit. Second, all of the information about your participation in the program will be **private**. All of the information that we get will be used in research, but your name and other information that would let people know it is about you will not be used. None of this information will be available to anyone at your school. The information gathered will be kept in a locked file cabinet at George Fox University that will only be accessed by our research staff. All information gathered will be only used for research. As soon as data is entered it will no longer be able to be traced to any individual. No information will be reported to your parents and/or legal guardians.

We do believe the risk potential of you participating in this study is mild, as the MMPI-A may cause volunteers to think about topics which may be troublesome. One possible benefit is having the knowledge that you have been in a research study that could increase our knowledge about how to help adolescents in the future.

Now that I have finished explaining the study to you, do you have any questions? If you choose to participate in our study, I would like you to sign this sheet of paper that states that I explained the study to you. If you have any general questions about the study, you can email us or call the psychology department at (503) 554-2761.

Thank you very much for your interest.

Brandon Robbins, M.A.
brrobbin@georgefox.edu

Mary Peterson, Ph.D.
mpeterson@georgefox.edu

I have had an opportunity to ask any questions I had about this study.

_____ I agree to participate in this research.

_____ I choose not to participate in this research.

Adolescent's signature

Date

Print Name

Appendix D
Coach Consent

Personality Research Study

Dear Coach:

We are studying how personality characteristics affect adolescent behavior. As part of this study, we are planning to provide an assessment called the Minnesota Multiphasic Personality Inventory – Adolescent Version (MMPI-A) to adolescents who have volunteered for the assessment. The assessment was designed to help mental health professionals better understand psychological conditions, behavioral problems and personality characteristics of adolescents from different settings.

The assessment consists of 478 items that require a true/false answer. The amount of time estimated to complete the MMPI-A ranges from forty-five to sixty minutes. During this time the adolescent will be supervised by the principal researcher, Brandon Robbins M.A., and will be able to opt out of the study at any point. You will be asked to fill out a brief questionnaire about the behavior of adolescents who have joined the study. Only adolescents who have returned both consent forms will be included in the list of individuals for whom you fill out a brief questionnaire.

You and your staff are welcome to ask any questions and discuss your reactions with our staff. We will be pleased to respond to any questions that you may have and to share information with you about the study. The confidentiality of the information the participants provide will be closely guarded. No one within your organization or elsewhere outside of the research offices will have access to this information. The information gathered will be kept in a locked file cabinet at George Fox University that will only be accessed by our research staff. All information gathered will be only used for research. As soon as data is entered it will no longer be able to be traced to any individual.

We do believe the risk potential of participation in this study is mild, as the MMPI-A may cause volunteers to think about topics which may be troublesome. If any youth have questions after the study about mental health issues, a list of resources will be made available. Potential benefits include having the knowledge that you have participated in a research study that could increase our understanding of how to help children succeed in the future. This program will not involve any costs to you, and the program does not pose risks or likelihood of injury.

If you have any questions, please contact us by email or telephone. If you have questions or concerns about your rights as a research participant, please email us or telephone the psychology department at (503) 554-2761. Thank you very much for your interest and cooperation.

Sincerely,

Brandon Robbins, M.A.
brrobbin@georgefox.edu

Mary Peterson, Ph.D.
mpeterson@georgefox.edu

I have had an opportunity to ask any questions I had about this study.

_____ I agree to have my team participate in this research.

_____ I choose for my team not to participate in this research.

Coach's signature

Date

Print Name