The Predictive Validity of MACI Derived Clusters for Juvenile Sex Offenders

by

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Abstract

The Millon Adolescent Clinical Inventory scores from 648 juvenile sex offenders aged 12 - 19 (M = 15.88, SD = 1.43) were examined using cluster analysis in order to replicate five personality-based clusters identified in a previous study (Loper 2008). However, only three of the five clusters were able to be replicated in the population. The current cluster analysis identified the following five clusters: the Anxious/Submissive/Passive cluster, the Disorganized Disturbed cluster, the Dysthymic/Shame-Based/Negative Self-Image cluster, the Narcissistic/Delinquent cluster, and the Situational Offender cluster. Significant differences were observed between the clusters regarding history of sexual abuse, history of physical abuse, history of neglect, history of trauma, mental health treatment, previous and current psychotropic medication, the gender of the victim in the index offense, the victim's age relative to the offender's age in the index offense, and the age of the first victim. Cluster membership was unrelated to the perpetrator's relationship with the victim in the index offense, physical intrusiveness involved in the index offense, use of restraints in the index offense, age of the juvenile sex offender, juvenile sex offender's age at first sexual abuse and physical abuse, and the number of victims. The recidivism data were collected from between 1 to 10.5 years (M = 4.55, SD = 2.77). However, no significant differences were found between the Kaplan-Meier survival curve estimates for non-violent, violent, or sexual re-arrest.

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Table of Contents

List of Tables

List of Figures

Introduction

Prior to the 1980s, systematic research focusing on juvenile sex offenders was sparse, perhaps due to the belief that these acts were the result of sexual curiosity and experimentation (Becker, 1990; Ryan, Lane, Davis, & Isaac, 1987). The minimization of juvenile sex offenses led to most research, at that time and since, focusing on adult sex offenders leaving many questions regarding juvenile sex offenders unanswered (Becker & Abel, 1985; Davis & Leitenberg, 1987; Lightfoot & Evans, 2000). However, recently, considerable research has been directed toward juvenile sex offenders. One of the core research questions has focused on characteristics that describe or define offenders. This research has concluded, essentially, that these adolescents are a heterogeneous group that differs regarding family background, education, psychopathology, characteristics of the offense and victim, relationship problems, and abuse history (Knight & Prentky, 1993). Thus, to help understand the variability among juvenile sex offenders, the field has attempted to develop typologies to categorize them into clinically meaningful groups.

Classification System

The field of psychology has tended to classify sex offenders by the type of sex offense (e.g. rape, sexual abuse, indecent exposure) committed as the basis for creating distinctive subtypes of offenders. This provides a description of the sexual act, but fails to provide a psychological understanding of the offender. Rather than narrowing the focus tightly on the offense, the argument offered in this paper is that a broader discussion of the psychological aspects of offending is necessary. The broad heterogeneity within juvenile sex offenders brings greater need for the development of a classification system (Prentky & Burgess, 2000). Distinctive and well-defined groups facilitate research development and provide input for

treatment specifications for offenders. Treatment providers, thus, would be able to cater to the specific needs of the individual rather than provide the same treatment for all. In addition, without meaningful groups, treatment providers would be unable to identify groups more at risk for re-offending. Furthermore, generic predictions made without meaningful distinctions among groups might obscure group differences in outcomes. The identification of distinct groups enables greater understanding of the developmental factors that are present in the creation of juvenile sex offenders. Without distinct groups, researchers often are unable to address the specific areas and differences in understanding etiology, prognosis or treatment (Prentky & Burgess, 2000). Thus, the challenge is to identify a system of classification that "carves nature at her joints" and, thereby, creates meaningful distinctions within the population. A good classification system should have the following three criteria: it should be reliable, it should be practical and straightforward, and it must be valid. Unfortunately, most classification systems do not meet all three criteria (Grubin, 1991).

Psychiatric Classification

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (APA, 1952, 1968, 1980, 1987, 1994, 2000) has included pedophilia under the category of Sexual Deviation since it was originally published in 1952. Although pedophilia was included in the DSM and DSM-II, there were no specific criteria for classifying it or additional Sexual Deviations until the DSM-III published criteria for pedophilia. The current DSM-IV-TR defines pedophilia as "recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activity with a pubescent child or children (generally age 13 years or younger) over a period of 6 months. The individual has acted on these sexual urges, or the sexual urges or fantasies cause marked distress or interpersonal difficulty. Also, the individual is at least 16 years old and at least 5 years older

than the child or children" (American Psychological Association, 2000, p.572). However, if the individual is in late adolescence and is involved in an ongoing sexual relationship with a 12 or 13 year old, they do not meet criteria. Treatment providers must also specify if the individual is sexually attracted to males, females, or both, and if the individual has only engaged in incest. Lastly, treatment providers are asked to specify if the individual is exclusive type (attracted only to children) or nonexclusive type (attracted to both).

While the DSM-IV-TR provides criteria for mental health professionals to diagnose pedophilia, they are left with a single diagnosis for individuals who engage in sexual activity with children. The question becomes whether this one diagnosis captures a pure type among the wide variety of individuals sexually involved with children. In this case, the inability to make distinctions and define different types of child sex offenders is a clear limitation. In defense of the DSM, it has been argued that it was never intended to classify criminal behavior, including sexual offenders and, thus, the DSM has not been helpful in understanding juvenile or adult sex offenders (Prentky & Burgess, 2000).

Single Dimension Typologies

To date, juvenile sex offender classification research focuses on offenders that victimize children (e.g., child molester) as opposed to those that victimize peers or adults (e.g., rapist) in keeping with adult sex offender research (Knight, Carter, & Prentky, 1989; Knight & Prentky, 1990; Prentky, Knight, Rosenberg, & Lee, 1989). The distinction is primarily based on the age difference between the victim and the offender, and not on the sexual acts committed in the offense (e.g., forced sexual intercourse or fondling a prepubescent child) (Hunter, Figuerdo, Malamuth & Becker, 2003).

The following distinctions exist between adolescent child molesters and adolescent rapists. Research has shown that 50% of adolescent child molesters have a female victim, 20% to 33% of adolescent child molesters have a male victim, and the rest have victims of both genders (Cooper, Murphy, & Haynes, 1996; Matthews, Hunter, & Vuz, 1997). The offenders typically have familial relationships with their victims. About 50% to 60% are related to the victim (i.e., a sibling or another relative), 35% to 40% are acquaintances, and relatively few of the victims are strangers (generally fewer than 10%) (Matthews et al., 1997). In terms of crime location, child molesters rarely commit an offense in public places and primarily engage in sexual activity or contact with their victim during play (Hunter, Hazelwood, & Slesinger, 2000).

Offenders with child victims also exhibited larger deficits in psychosocial functioning. This finding coincides with previous research suggesting that a lack of social confidence, concomitant depression, anxiety, and pessimism, are characteristic of this group. They view themselves as socially inept and assume they will be subject to peer ridicule and rejection. Due to perceived peer rejection, they have a sense of social alienation along with feelings of sadness and loneliness, dependence on adults, and a preference for socializing with younger children (Hunter, Figuerdo, Malamuth & Becker, 2003).

In comparison, adolescent rapists engage in sexual activity with strangers or acquaintances (Carpenter, Peed, & Eastman, 1995). While child victims vary, adolescent rapists typically have older female victims (Hunter, Hazelwood, & Slesinger, 2000; Stermac & Mathews, 1987; Worling, 1995). The sexual offenses committed by adolescents occur in association with another criminal act (e.g., burglary) and are less likely to occur alone. They also tend to have more extensive criminal records than child molesters (Richardson, Kelly, Bhate, & Graham, 1997). For the most part, the sex offenses tend to occur in public locals. Nearly a third

of offenses occurred outdoors or in locations frequented by the general public. During the course of the offenses, most adolescent rapists catch the victim off guard or cause physical injury (Hunter, Hazelwood, & Slesinger, 2000). Their actions may be precipitated by illegal drug use. Substance abuse has been reported as a comorbid condition in adolescent rapists and child molesters; however, its incidence has been variable (3.4% to 72%) (Lightfoot & Barbaree, 1993).

These studies provide insight into a few characteristics associated with one or two dimensions of juvenile sex offenders, but fail to form homogenous groups (Hunter et al., 2000). Researchers have suggested there are few differences between adolescent rapists and adolescent child molesters (Hagan & Cho, 1996). Therefore, the rapist and child molester dichotomy is not useful for treatment providers due to the lack of offender characteristics and risk factors (Rasmussen, 2004). In the following section, offense driven classifications will be discussed.

Offense-Driven Classification Systems

Prentky, Harris, Frizzell, and Righthand (2000) developed a typology to validate an actuarial risk assessment protocol, Juvenile Sex Offender Assessment Protocol (J-SOAP), based on findings from 96 male juvenile sex offenders. They created the following six rationally derived categories: Child Molester, Rapists, Sexually Reactive Child, Fondler, Paraphilic Offender, and Unclassified Offenders. Child molesters had victims 11 years of age or younger and were at least 5 years older than the oldest victim (69%). The victims of Rapists were 12 years old or older and the age difference between the offender and the youngest victim was less than 5 years (12.5%). Sexually Reactive Children referred to offenders and victims under 11 years old (6.25%). Fondlers had the same age criteria as Rapists, but their sexual activity was restricted to fondling, caressing, or frottage (3%). Paraphilic offenders had no physical contact with the victim and included one exhibitionist and two obscene phone callers (3%). Lastly, the

Unclassifiable Offenders comprised 6.25% of the sample. Overall, the typology was useful to categorize offenders, but requires further research to validate it. Furthermore, it was noted that the sample size was small and the classification system was designed to aid a risk assessment measure for re-offense rather than apply to a broader arena.

Hunter, Figuerdo, Malamuth, and Becker (2003) developed an empirical typology based on the age of the victim. The sample consisted of 157 male juvenile sex offenders with male or female victims under the age of 12, and 25 male juvenile sex offenders with female victims 12 years old or older. The results indicated that juveniles with pubescent victims were family members and the offense occurred in the victim's home, or the offender's residence. They also had a previous arrest for a nonsexual offense. The offenses with pubescent females were more likely to have increased use of force, use a weapon, and alcohol consumption during the commission of the offense. One limitation of the study was the lack of diversity in the type of sexual offenses committed by the juvenile sex offenders. The sample consisted of only juvenile sex offenders with hands-on sex offenses who volunteered to participate, which resulted in a small sample size. Along with the limited sample size, the self-report measures used were developed for adults and lacked norms for juveniles.

Butz and Spaccarelli (1999) created a typology based on the juvenile sex offender's threat of force or use of physical force during the sex offense. The sample consisted of 101 male juvenile sex offenders between the ages of 12 to 19 years old. Seventy percent of the juveniles reported using physical force during the rape, while 30% of the juveniles denied committing a rape, but did report that they used physical force. The males that accepted responsibility for their offense reported they had a higher frequency of rape fantasies and more interest in children than the deniers and non-rapists. One limitation of the study was the small sample size. In addition,

Butz and Spaccarelli did not consider what precipitated violent offenses or if other variables caused problems (e.g., impulsivity, lack of empathy, parental deviance, and exposure to domestic violence). However, the results suggest that aggression and physical force can further distinguish juvenile sex offenders.

Burton (2000) divided 243 adjudicated male juvenile sex offenders into three categories based on the age of onset and whether their behavior was chronic versus limited to a few incidents of sexual offending behavior. The offenders were assigned to one of the following groups: "early offenders," "teen offenders," or "continuous offenders." The "early offenders" engaged in sex offenses prior to the age of 12, "teen offenders" engaged in sex offending behaviors after 12 years old, and "continuous offenders" engaged in sex offending behaviors both before and after the age of 12. The "continuous offenders" reported noncontact offenses, contact offenses, and penetrative acts at significantly higher rates than the other two groups. Their offense behaviors may be influenced by their history of physical and emotional abuse, which should be considered in the treatment formulation. Due to the indiscriminant offense patterns and the severe nature of the sex offenses, Burton concluded that continuous juvenile sex offenders were at an increased risk for committing additional sexually aggressive acts through adulthood. However, the study had some flaws. It was suggested that the early offender group was not forthcoming due to concern they would be reported to the authorities. Also, the study used a nonrandom sample, relied on retrospective data, and was unable to conduct multivariate regression analysis to examine interaction effects due to the small sample size.

Clinically-Derived Multidimensional Classification Systems

One of the earliest typologies of juvenile sex offenders was created by O'Brien and Bera (1986) based on their clinical experience. They identified the following six typologies: Naïve

Experimenter (young, lack social skills and sexual knowledge, offenses are situational), Undersocialized Child Exploiter (socially isolated, no history of antisocial behavior, dysfunctional family, insecure, negative self-image), Sexual Aggressive (offense likely included force and violence, abused peers or adults, history of antisocial behavior, substance abuse history, impulsivity, dysfunctional/violent household), Sexual Compulsive (deviant sexual fantasies, quiet, anxious, potential to display paraphilic behavior, strict household), Disturbed Impulsive (impulsive, psychological disorders), Group Influenced (commit offenses to impress peers), and Pseudo Socialized (narcissistic, lack intimacy, superficial relationships with peers, intelligent). While this taxonomy is intuitively attractive and face valid, it lacks empirical investigation of its reliability or validity (Witt, Bosley, & Hiscox, 2002).

Empirically-Derived Multidimensional Classification Systems

Research suggests that identifying specific personality variables amongst juvenile sex offenders is a more effective approach to predicting recidivism (Steiner, Cauffman, & Duxbury, 1999; Stefurak, Calhoun, & Glaser, 2004). It was also noted that matching interventions with personality characteristics may provide a more effective way of rehabilitating offenders (Worling, 2001; Goldstein & McGinnis 1997). Several researchers have attempted to form personality-based typologies of juvenile sex offenders using standardized psychometric measures. Smith, Monastersky, and Deisher (1987) conducted a cluster analysis based on the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943) protocols of 262 outpatient male juvenile sex offenders aged 12 to 18. Cluster analysis explores the "natural" grouping of observations or participants. The clusters are developed by calculating the distance between each participant and then grouping participants into homogenous clusters based on the computed distances. There are a myriad of ways to decide the distances between

observations when conducting a cluster analysis (e.g., squared Euclidean distance), and there are algorithms used to develop the resulting clusters (e.g., Ward's method) (Hair & Black, 2000). Using the Ward's method, Smith et al. (1987) created four groups which accounted for 80% of the common variance of the 13 clinical scales. Group I accounted for about half of the variance and had profiles in the normal range. They were impulsive, introverted, shy, had few friends, were worriers, overcontrolled, and presented as highly moral. Group II had the most disturbed profile. They were demanding, narcissistic, feigned illness for attention, argumentative, insecure, and relied on fantasy to solve problems. Group III had a profile in the normal range. They were honest, had a realistic description of themselves, were socially outgoing, tended to be emotionally overcontrolled, displayed normal range of affect, and their judgment was not impaired. Group IV had profiles in the abnormal range. They tended to be impulsive, displayed poor self-control and poor judgment, and were distrustful and alienated. At times, Group IV felt vulnerable to perceived threat and, therefore, they tended to lash out at others in anticipation of an attack.

Further analyses were conducted to examine the role of victim characteristics. However, the analyses showed that group membership was not associated with victim age or gender. Similarly, there was little variation between the groups regarding index offense characteristics, clinical presentation, and offender history. It was suggested that differences between the groups were not found because the MMPI's adolescent norms underestimated psychopathology, therefore, it may not have been suitable for this sample (Smith, Monastersky, & Deisher, 1987). Furthermore, Smith et al. (1987) included 'Fake Good' and 'Fake Bad' profiles in the analyses instead of removing them and 84 participants were not classified. The sample in the study failed to generalize to incarcerated juvenile sex offenders since it was largely an outpatient sample,

which suggests less aggression. Lastly, another limitation was the use of one type of distance measure and algorithm to form the groups because it is recommended that several distance measures and algorithms be evaluated before forming the final set of clusters (Hair & Black, 2000). Even with the limitations, the study did indicate the presence of personality-based subgroups of juvenile sex offenders regardless of victim characteristics.

In a replication of the Smith et al. (1987) study, Worling (2001) developed a typology based on male juvenile sex offenders who completed the California Psychological Inventory (CPI) (Gough, 1987). The 97 participants ranged in age from 12 to 19 years old (M = 15.59, SD = 1.46). The CPI is a personality measure for individuals 12 years old and older to assess 20 variables for interpersonal and intrapersonal functioning. It has acceptable levels of internal consistency, test-retest reliability, as well as factorial and concurrent validity (Gough, 1987).

A cluster analysis of personality variables from the CPI were evaluated with three cluster analysis procedures: Ward's method using squared Euclidean distances, Within-groups linkages using squared Euclidean distances, and Between-groups linkages using cosine of vectors values. Discriminant analyses were conducted on CPI factor scores to determine the best group membership based on the three cluster techniques. The results of the discriminant analyses indicated the Between-groups-cosine procedure was the best option. The cluster analysis resulted in the following four-group typology of male juvenile sexual offenders: Antisocial/Impulsive, Unusual/Isolated, Overcontrolled/Reserved, and Confident/Aggressive (Worling, 2001).

The Antisocial/Impulsive category was the largest group with about half of the participants. This group had criminal charges for index sexual assaults and was most likely to have high sexual and nonsexual recidivism rates. In terms of offense characteristics, they tended

to be more aggressive and have older victims. Their interactions with others included aggression and manipulative tactics. They also exhibited psychopathology by engaging in externalizing behaviors. Their criminal behavior was exacerbated by poor academic performance, association with negative peers, engagement in early substance use and abuse, physical and emotional abuse by a parent, and time spent in a residential setting (Worling, 2001).

The Unusual/Isolated group captured individuals who were odd, confused, and interpersonally disengaged and isolated. They displayed high levels of psychopathology due to internalizing behaviors. They had difficulty maintaining healthy age appropriate romantic relationships due to their disturbed interpersonal and cognitive limitations. Their problematic interaction styles may place them at a higher likelihood for sexual and nonsexual recidivism rates compared to the previous two groups (Worling, 2001).

The Overcontrolled/Reserved group exhibited lower levels of psychopathology. They had appropriate interpersonal attitudes, but had difficulty expressing emotion due to being timid. It was suggested that their timidity around same aged peers might be their reason for offending. Their rate of recidivism is predicted to be low (Worling, 2001).

The Confident/Aggressive group displayed lower levels of psychopathology. They presented as friendly, confident, and sociable, along with some narcissism. Their narcissism increases the likelihood they will engage in an offense due to their selfishness and lack of empathy. This group's recidivism rate was predicted to be low (Worling, 2001).

In comparison to a study conducted by Smith et al. (1987), Worling (2001) noted some commonalities. For instance, there were two healthy personality-based groups which were the emotionally controlled and socially reserved group (Smith et al.'s Group I and Worling's Overcontrolled/Reserved group), and a group of truthful and social offenders who engaged in

aggressive acts against others (Smith et al.'s Group III and Worling's Confident/Aggressive Group). In addition, two pathological groups were found in both studies: the antisocial and impulsive adolescent group (Smith et al.'s Group IV and Worling's Antisocial/Impulsive Group), and a group of emotionally disturbed and insecure offenders (Smith et al.'s Group II and Worling's Unusual/Isolated Group). Furthermore, neither of the studies found an association with victim age or gender to group membership. The similarity between Worling's (2001) study and Smith et al.'s (1987) study suggests four personality-based subgroups of juvenile sex offenders and is indicative of different etiological pathways as well as treatment needs.

A limitation of Worling's (2001) study was the lack of generalizability. The results of the study may not generalize due to the restricted use of cluster analysis techniques. The final cluster solution relied on the distance measure selected, the algorithms used to create the clusters, the variables included in the analyses, the multi-collinearity of the variables, and the method used to decide the amount of clusters. Furthermore, although the results were similar to Smith's study, Worling's study needs to be replicated. In addition, the group sizes in the study were small, which further limited its generalizability.

Richardson, Kelly, Graham, and Bhate (2004) developed personality derived subgroups of juvenile sex offenders based on the Millon Adolescent Clinical Inventory (MACI) (Millon 1993). They administered the MACI, a personality measure, as part of the assessment procedure at an outpatient adolescent mental health facility. The sample included 112 male juvenile sex offenders ranged in age from 13 to 18.50 years old (M = 15.36, SD = 1.40). The completed MACI's were analyzed using Ward's method. The aim of the study was to investigate the relationship between personality based subgroups on the MACI and victim characteristics.

The findings suggested the following five profile prototypes: Normal prototype, Antisocial prototype, Submissive prototype, Dysthymic/Inhibited prototype, and Dysthymic/Negativistic prototype. The Normal prototype group represented 25% of the sample. This group exhibited minimal personality difficulties compared to the other groups. However, this may be reflection of their lack of transparency as suggested by a low base rate score on the Disclosure (X) scale. The Antisocial prototype group represented 11% of the sample. This group did not experience significant psychopathology or mental health problems. They were similar to conduct disordered adolescents as evidenced by high elevations on the Clinical Syndromes scales associated with conduct disorder. They had a negative view of their home life as a result of parental alienation and conflict. In addition, they tended to be indifferent to the feelings and welfare of others. As a result of their lack of concern for others, these adolescents disregard social rules, the rights of others, and the consequences of their actions. They were also impulsive, self-indulgent, and emotionally expressive. The Submissive prototype consisted of 10% of the sample. They were passive and dependent on others, compliant, adhere to authority, and put the needs of others before themselves. They also experienced high levels of social or general anxiety. The Dysthymic/Inhibited prototype consisted of 35% of the sample. This adolescent was socially withdrawn and a loner because he lacked interest or motivation to interact with peers. Due to his lack of relationships, he felt a sense of failure, lacked self-confidence, and was socially anxious. His isolation was further exacerbated by moderate to severe symptoms of depression. The Dysthymic/Negativistic prototype comprised 20% of the sample. This prototype exhibited a severe level of psychopathology and a dysthymic mood, which may be chronic and incapacitating. In his relationships, he used intimidation to get what he wanted and felt resentful when others attempted to restrict his behavior. While he presented

as strong, he actually had a negative view of himself and low self-esteem. His home life was chaotic which led to stress. In order to deal with his stress, he used alcohol and/or illicit substances (Graham et al., 2004).

Three prototypes appear to be similar to those presented by Worling (2001) and Smith et al. (1987). First, the Submissive prototype is similar to the immature group described by Smith et al. (1987) and the Overcontrolled/Reserved group described by Worling (2001). Second, the Dysthymic/Inhibited prototype is similar to Smith et al.'s conduct disordered and Worling's Unusual/Isolated group. Third, the Antisocial prototype resembles Smith et al.'s socialized delinquents and Worling's Confident/Aggressive group (Graham et al., 2004).

However, the study was limited by its dependence on a self-report measure. The use of a psychometric assessment approach prevented the inclusion of clinical diagnosis in the analysis, but the researchers explained this was not an aim of the study. It was also mentioned that the self-report measure may be inaccurate and distorted due to defensiveness, participants presenting themselves favorably, exaggerated response set, poor insight into problems, and biased perceptions of self and others. Also, responses may have been influenced by specific life circumstances and stressors instead of personality traits. Future research should include case history, other psychometric test scores, clinical judgments, and diagnosis to evaluate its association with MACI prototypes (Graham et al., 2004).

Following Graham et al.'s study, Oxnam and Vess (2006) identified a typology of male juvenile sex offenders based on the MACI. The New Zealand sample consisted of 25 male juvenile sex offenders, who ranged from the age 13 to 17 (M = 15.4), being treated in a community-based sex offender program. Oxnam and Vess used a hierarchical cluster analysis (Ward's method) with 12 personality pattern scales and chose a three group cluster solution.

Oxnam and Vess identified three personality based groups which were the Antisocial group, Inadequate group, and the Normal group. The Antisocial group displayed unpredictable sexual and physical aggression. In their interactions with others, they tended to dominate and abuse the rights of others due to their failure to understand social rules and their lack of concern about how others perceive them. These adolescents ignored others' well-being to acquire what they wanted. They had problems with social awareness and lacked insight, which suggests difficulty with victim empathy. They also tended to engage in high levels of substance abuse. It was noted that the Antisocial group shared features with Worling's (2001) Antisocial/Impulsive and Confident/Aggressive groups due to displaying delinquent traits and not following social norms. The Antisocial group also endorsed problems with family similar to Worling's Antisocial/Impulsive group, which reported a dysfunctional family background as well. Furthermore, the Antisocial group and Smith et al.'s (1987) impulsive acting out group reported a lack of self-control, impulsivity, feelings of distrust, and acting out.

The Inadequate group was insecure and tended to avoid interpersonal contact. They approached life with pessimism and gloom, viewed themselves as worthless, and did not trust others due to fear of rejection. Although they would prefer to have friends, their difficulty engaging with others emotionally leads to isolation, loneliness, and pessimism about the future. These individuals internalized distress and experienced intense feelings of guilt, despair, and worthlessness. They had low self-esteem and do not find anything admirable about themselves. Their negative view of themselves potentially stems from physical, sexual, or verbal abuse committed by family members (Oxnam & Vess, 2006). The Inadequate group shared features with types of juvenile sex offenders found in previous research. In comparison to Worling's (2001) study, the Inadequate group was similar to the Unusual/Isolated offender due to their odd

presentation and awkward personality features. Worling (2001) suggested that they offended because they were timid, had a rigid interpersonal style, and lacked interpersonal relationships. Smith et al.'s (1987) controlled offender and the Inadequate group were also similar due to being socially depressed and having a low self-worth. Also, O'Brien and Bera's (1986) Unsocialized Child Exploiter expressed a need to offend as a way to increase feelings of self-importance and intimacy, which is a feature associated with the Inadequate offender.

The Normal range group behaved in a prosocial manner. It was the least pathological of the groups and did not have any scales in the clinical concern range. However, this group experienced anxiety and sexual discomfort which suggests discomfort with their offending and feelings of guilt, remorse, or embarrassment for their actions (Oxnam & Vess, 2006). Therefore, they were more likely to commit hands-off and non-penetrative offenses. Their offenses were probably committed due to curiosity and confusion rather than antisocial or psychopathological factors (O'Brien & Bera, 1986).

An advantage of this study was the inclusion of a cluster analysis approach to develop a typology for juvenile sex offenders using the MACI. However, the small sample size limited generalizability. In addition, the study did not provide information about the juvenile sex offenders' offense behaviors and victim information (Oxnam & Vess, 2006).

A follow-up study by Oxnam and Vess (2008) compared group membership to the offender's background information, offense behavior, and victim characteristics. The sample consisted of 82 male juvenile sex offenders participating in a community treatment program in New Zealand. The mean age was 15.2 years old (*SD* = 1.59) with a range of 13 to19. The Ward method was used to identify the following four groups: Inadequate, Antisocial, Conforming, and Passive Aggressive. A series of chi-square analyses found relationships between group

membership, and offender and victim characteristics. For instance, adolescents with a history of physical abuse were significantly different across the groups. Specifically, 72% of the offenders in the Inadequate group reported a history of physical abuse compared to 37% for the remaining three groups. In regard to the relationship between the offender and the victim, there were no significant differences between the four groups. Most offenders (80%) had a victim aged 12 or under. There were no significant differences between the groups based on the gender of the victim. However, most of the victims were female (82%), but 48% reported a male victim. It was noted that adolescents with a history of sexual abuse were significantly more likely to have at least one male victim.

Overall, the findings of the study did not support a dichotomy between adolescent rapists and adolescent child molesters due to the lack of association between personality group membership and victim selection characteristics, which is in agreement with previous research (Richardson et al., 2004; Smith et al., 1987; Worling, 2001). Instead, the findings suggest that juvenile sexual offending is more fluid, and that victim characteristics indicate the offender's stage of psychosexual development, and not the formation of fixed sexual preferences (Richardson et al., 2004; Smith et al., 1987; Worling, 2001).

A Cluster-Analytically Derived Typology of Juvenile Sex Offenders

A study by Loper (2008) continued the scientific effort to form clinically meaningful typologies of male juvenile sex offenders. Loper's study focused on forming an empirically-derived typology using cluster analytic techniques on the MACI, a measure of personality and psychopathology. The clusters were validated with clinical interview variables, rating scales (e.g., Hare Psychopathy Checklist: Youth Version, Juvenile Sex Offender Assessment Protocol), self-report measures (e.g., Inventory of Parent and Peer Attachment, Jesness Inventory, Millon

Adolescent Clinical Inventory, Multiphasic Sex Inventory, Reynolds Adolescent Depression Scale, Substance Abuse Subtle Screening Inventory), and records. The sample consisted of 648 adjudicated male juvenile sex offenders serving time in an Alabama Department of Youth Services (DYS) facility. Through the use of a hierarchical cluster analysis (Ward's Method, squared Euclidean distance) with the MACI, there were five cluster solutions of male juvenile sex offenders. The five clusters were the Broadly Disturbed cluster, Anxious/Submissive/Passive cluster, Dysthymic/Shame-Based/Negative Self-Image cluster, Narcissistic/Delinquent cluster, and the Distressed/Delinquent cluster.

Cluster 1: Broadly Disturbed

The Broadly Disturbed cluster (10%) consisted of individuals with severe psychopathology, personality deficits, and areas of concern about life. This cluster had elevations on the Depressive Affect scale, Self-Devaluation scale, Introversive scale, and the Oppositional scale (Loper, 2008). Adolescents in this cluster suffered from sadness and dysphoria (McCann, 1999). In social situations, they were withdrawn, appeared apathetic, and were prone to worry. Due to their difficulty relating to others, they had few close relationships. A central feature of this cluster was low self-esteem and self-criticism (Loper, 2008). Feeding into their low self-esteem was a feeling of incompetence and inadequacy which made it difficult for them to engage in challenging tasks due to fear of failure (McCann, 1999). Furthermore, they were passive-aggressive and had a negative personality (McCann, 1999). Due to their personality, they felt resentment, experienced chronic irritability, had short tempers, and felt others did not understand them (Loper, 2008).

There were four expressed concerns scales with clinical range elevations. The four scales were the Family Discord scale, Childhood Abuse scale, Peer Insecurity scale, and the Identity

Diffusion scale. Adolescents in the Broadly Disturbed cluster complained about their life and reported many problems. One area of concern was their chaotic family environment which included family rejection and a lack of family support. Along with their family problems, these adolescents reported a history of child abuse, which may explain their doubts about their ability to form peer relationships and their fear of rejection. They also reported poor identity formation and an inability to envision the future (Loper, 2008).

Additional clinical scale elevations were noted on the Substance Abuse Proneness and Suicidal Tendency scales. Adolescents in the Broadly Disturbed cluster engaged in alcohol and/or drug use and are at risk for committing suicide, which is very concerning. It was noted these adolescents were contemplating suicide and might be in the planning stage (Loper, 2008).

Seven scales were in the 60 to 74 score range, which indicated moderate evidence of traits on the Inhibited scale, Self-Demeaning scale, Unruly scale, Impulsive Propensity scale, Social Insensitivity scale, Borderline Tendency scale, and the Body Disapproval scale (Loper, 2008). The adolescents were uncomfortable in social situations and feared rejection. They also displayed behavior problems and did not follow directions. They had difficulty managing their sexual and behavioral impulses, failed to consider the consequences of their actions, and were considered cold and callous. The adolescents experienced emotional distress and vacillating emotions due to their negative view of themselves and low self-confidence. Their intense emotions led to angry outbursts, suicidal behaviors or gestures, and/or aggressive behaviors. As a result of being overwhelmed by their emotions, they had difficulty problem solving. They also worried about growth, maturation, and their physical appearance (McCann, 1999).

In summary, the juveniles in the Broadly Disturbed cluster were described as depressed adolescents, with low self-esteem who isolated themselves from others and were unable to form

peer relationships. They came from an unhealthy home environment and reported a history of physical, sexual, and/or emotional abuse. In addition, they had problem-solving deficits which interfered with their ability to consider the consequences of their actions. Not surprisingly, they tended to engage in impulsive behavior, substance abuse, or withdraw in times of emotional distress (Loper, 2008).

Cluster 2: Anxious/Submissive/Passive

The Anxious/Submissive/Passive cluster (39%) had clinically significant range elevations on the Anxious Feeling scale and Submissive scale. The elevations portrayed the adolescent as anxious, worried, and tense (Loper, 2008). They had concentration problems due to rumination and difficulty remaining calm in social situations (McCann, 1999). They typically worried about the future; for instance, placement in a residential treatment program or court placements (McCann, 1999). In their relationships, they were passive and did not initiate social interactions. However, when they did have relationships, they tended to be clingy due to fear of abandonment (McCann, 1999). They also reported feelings of inadequacy and low self-confidence (Loper, 2008).

Three additional MACI scales were slightly elevated, which suggested that juveniles in this cluster had some evidence of the traits associated with the Dramatizing scale, Conforming scale, and the Sexual Discomfort scale (Loper, 2008). The adolescents sought social activity and friendships, but the relationships were superficial (McCann, 1999). In order to connect with others, the adolescents were compliant, tried to fit in with others, and presented themselves in a positive light. In regard to their burgeoning sexuality, the adolescents were confused and/or experienced discomfort associated with sexual thoughts and feelings (McCann, 1999).

The MACI scale elevations indicated that adolescents in the Anxious/Submissive/Passive cluster reported significantly high levels of anxiety and sexual discomfort/confusion. They wanted to be accepted by others and were willing to conform. However, their relationships lacked depth. Interestingly, in comparison to the other clusters, these adolescents had less psychiatric impairment (Loper, 2008).

Cluster 3: Dysthymic/Shame-Based/Negative Self-Image

The Dysthymic/Shame-Based/Negative Self-Image cluster (21%) typically endorsed internalizing symptoms on the MACI. They endorsed a significant level of symptoms from the following scales: the Depressive Affect scale and the Inhibited Personality scale (Loper, 2008). The Dysthymic/Shame-Based/Negative Self-Image cluster reported symptoms of depression, specifically, apathy, guilt, low self-confidence, poor problem-solving skills, and hopelessness (McCann, 1999). They appear to be shy and withdrawn due to their fear of rejection and embarrassment. Elevations also showed evidence of low self-esteem and neediness in relationships (McCann, 1999).

Seven scales were in the 60 to 74 range, which indicated they approached clinical significance on the following scales: Doleful scale, Self-Devaluation scale, Introversive scale, Sexual Discomfort scale, Oppositional scale, Peer Insecurity, and the Anxious Feeling scale (Loper, 2008). The adolescents reported feeling depressed, pessimistic, and difficulty enjoying aspects of their life. They reported feeling unimportant due to actual or perceived abandonment from central attachment figures (McCann, 1999). Their fear of abandonment may interfere with their peer relationships and, as a result, they may appear detached and withdrawn in order to prevent rejection. They perceived themselves as a disappointment and inadequate (McCann, 1999). They also reported feeling anxious and worried about the future. In regard to their

sexuality, they endorsed feeling resentment, irritability, and ambivalence as well as concern and discomfort (Loper, 2008).

In summary, the Dysthymic/Shame-Based/Negative Self-Image cluster had adolescents with clinically significant levels of depression and anxiety. They displayed discomfort in their peer relationships due to rejection by important attachment figures. In addition, they reported some sexual anxiety. They were also hampered by low self-esteem and loneliness. This cluster is best described as neurotic because of their high number of internalizing symptoms and characteristics (Loper, 2008).

Cluster 4: Narcissistic/Delinquent

The Narcissistic/Delinquent cluster (19%) exhibited delinquent and antisocial behaviors as indicated by the elevations on the Delinquent Predisposition scale, Egotistical scale, Dramatizing scale, Unruly scale, Social Insensitivity scale, and the Family Discord scale (Loper, 2008). These adolescents tended to violate the rights of others, failed to conform to societal rules, and were defiant (McCann, 1999). Features of Conduct Disorder may be exhibited, for instance, lying, stealing, and verbal threats (McCann, 1999). In relationships with others, they tended to be hostile and intimidating. In certain situations, they took advantage of others. They also lied to avoid punishment and failed to learn from their mistakes (Loper, 2008).

Additional descriptors of this cluster were increased self-confidence, self-centeredness, and arrogance (McCann, 1999). They felt entitled and expected others to provide praise and respect them. If the adolescent perceived they were slighted by others, they responded with anger or indifference. The adolescents also exhibited limited empathy or a lack of empathy. Although they lacked empathy, they enjoyed socializing with others and having a large group of friends (McCann, 1999). They tended to take risks and engage in sensation-seeking behaviors.

They also came from families that functioned poorly and have experienced parental rejection (Loper, 2008).

In summary, the Narcissistic/Delinquent cluster portrayed the juveniles as delinquents who expressed a sense of entitlement that might lead to aggressive behaviors if challenged. They failed to show concern for others and came from dysfunctional families. Their behavior met criteria for Conduct Disorder (Loper, 2008)

Cluster 5: Distressed/Delinquent

The Distressed/Delinquent cluster (11%) had elevations on the Doleful, Unruly, and Oppositional personality pattern scales (Loper, 2008). They reported chronic symptoms of depression and joylessness (McCann, 1999). These adolescents felt incompetent as a result of perceived abandonment by caregivers and others. They exhibited conduct-disordered behavior due to rejection of behavioral and societal norms making them behave in uncooperative, oppositional and hostile ways (McCann, 1999). They feigned cooperation with authority, but continued to associate with peers who participated in illegal and rebellious activities (Loper, 2008).

The clinical elevation on the Family Discord scale suggested that the adolescents come from difficult families that lacked support (McCann, 1999). Their home life is chaotic and punitive. In addition, there were clinical range elevations on several clinical syndrome scales: Delinquent Predisposition scale, Impulsive Propensity scale, and the Depressive Affect scale (Loper, 2008). They engaged in conduct-disordered behaviors that were harmful to others (McCann, 1999). In addition, they had problems controlling behavior and engagement in risk-taking behaviors without much thought about consequences (McCann, 1999). They also had clinically significant depressive symptomatology (Loper, 2008).

Their score on the Substance Abuse Proneness scale indicated that these adolescents used drugs and/or alcohol which created problems in their lives. They also came from homes with substance abuse problems (Loper, 2008).

Several MACI scales suggested the presence of traits on the Social Insensitivity scale, Introversive scale, Self-Demeaning scale, Borderline scale, Identity Diffusion scale, and the Self-Devaluation scale (Loper, 2008). They had little regard for others' emotions and well-being (McCann, 1999). They did not experience pleasure in activities and were socially withdrawn. They perceived themselves as unworthy due to childhood abuse (McCann, 1999). In addition, they were emotionally unstable, had a poor sense of self, and lacked direction in life (Loper, 2008).

In summary, the Distressed/Delinquent adolescents were delinquents who acted out due to being disturbed. In comparison to the Narcissistic/Delinquent cluster, the Distressed/Delinquent adolescent was in emotional distress and had delinquent traits. The adolescents were chronically sad and had low self-esteem. In times of emotional distress, these adolescents lacked problem solving skills, which led them to respond impulsively, take part in illegal activity, and use alcohol and/or drugs (Loper, 2008).

Clinical Interview Variables and Cluster Membership

The variables addressing victimization, psychological treatment, sex offending, and demographics from the pre-treatment clinical interview data were compared to the cluster solution to validate the clusters. A comparison of the clusters to the clinical interview variables indicated that adolescents in the Anxious/Submissive/Passive cluster and Dysthymic/Shame-Based/Negative Self-Image cluster were more likely to have experienced sexual abuse. The clusters also differed according to history of psychological treatment. The

Anxious/Submissive/Passive juveniles were more likely to have a history of psychological treatment, while juveniles in the Broadly Disturbed cluster and Distressed/Delinquent cluster were least likely to have a history of psychological treatment. Similarly, at the beginning of treatment, adolescents in the Anxious/Submissive/Passive cluster, Dysthymic/Shame-Based/Negative Self-Image cluster and the Narcissistic/Delinquent cluster were more likely to be taking psychotropic medication, while juveniles in the Broadly Disturbed cluster and the Distressed/Delinquent cluster were least likely to be taking psychotropic medication. In summary, the Broadly Disturbed cluster and Distressed/Delinquent cluster were the most distressed, which highlights their need for psychological/psychiatric treatment. Only history of sexual abuse and history of psychological treatment variables differed significantly across clusters (Loper, 2008).

Psychopathy and Cluster Membership

After examining the pre-treatment clinical variables, the clusters were compared to the Hare Psychopathy Checklist-Revised (PCL:YV; Forth, Kosson, & Hare, 2003), a measure of psychopathy. Significant differences were found across clusters for the Hare Total score, Hare Factor 1 score (Selfish, Callous, and Remorseless Use of Others), and the Hare Factor 2 score (Chronically Unstable and Antisocial Lifestyle Factor). The Hare Total scores for adolescents in the Anxious/Submissive/Passive cluster and the Dysthymic/Shame-Based/Negative Self-Image cluster were in the low range of psychopathy. Factor 1 scores (Selfish, Callous, and Remorseless Use of Others) measuring interpersonal and affective psychopathic traits were lower in the Dysthymic/Shame-Based/Negative Self-Image cluster and the Anxious/Submissive/Passive cluster in comparison to the Broadly Disturbed cluster, Narcissistic/Delinquent cluster, and the Distressed/Delinquent cluster. Similarly, Factor 2 scores (Chronically Unstable and Antisocial

Lifestyle) examining irresponsibility and impulsivity were lower in the Anxious/Submissive/Passive cluster and the Dysthymic/Shame-Based/Negative Self-Image cluster in comparison to the Broadly Disturbed cluster, Narcissistic/Delinquent cluster, and the Distressed/Delinquent cluster (Loper, 2008).

Attachment and Cluster Membership

The juvenile sex offenders' attachment to parents and peers was measured by the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). The Parent Trust Total and Parent Communication Total indicated that the Broadly Disturbed cluster reported they trusted and communicated with their caregivers the least, whereas the Anxious/Submissive/Passive cluster and the Narcissistic/Delinquent cluster reported they trusted and communicated with their caregivers the most. The Parental Alienation Total indicated that the Broadly Disturbed cluster and the Distressed/Delinquent cluster reported higher levels of perceived alienation and distance from their caregivers, but adolescents in the Anxious/Submissive/Passive cluster reported the least amount of alienation from caregivers (Loper, 2008).

J-SOAP Scores and Cluster Membership

The Juvenile Sex Offender Assessment Protocol I and II, a measure of risk factors common in sexual and criminal reoffending, had areas that differed across the clusters (J-SOAP; Prentky et al., 2000; Righthand et al., 2005). No significant differences were found on the Factor 1 pre-treatment score (Sexual Drive/Sexual Preoccupation) for the J-SOAP I and II. However, there was a significant difference on the Factor 2 pre-treatment score (Impulsive, Antisocial Behavior). The results from the J-SOAP I indicated that adolescents in the Anxious/Submissive/Passive cluster had the lowest scores, while adolescents in the Broadly

Disturbed cluster and Distressed/Delinquent cluster had the highest Factor 2 scores. In comparison, on the J-SOAP II, adolescents in the Anxious/Submissive/Passive cluster had the lowest scores on Factor 2 (Impulsive, Antisocial Behavior), while adolescents in the Narcissistic/Delinquent cluster had the highest Factor 2 score (Loper, 2008).

The J-SOAP I and II post-treatment Factor 3 Scores (Clinical Intervention) did not have any significant differences across clusters. While the J-SOAP I post-treatment Factor 4 Score (Community Stability) was not significantly different across clusters, there was a significant difference across clusters on the J-SOAP II Factor 4 scores. On the Factor 4 scores, the Anxious/Submissive/Passive cluster had the lowest score and the Distressed/Delinquent cluster had the highest score (Loper, 2008).

After examining the pre-treatment and post-treatment scores, Loper (2008) examined the pre-post treatment change in Factor 3 (Clinical Intervention) and Factor 4 (Community Stability) scores, which should respond to treatment. The Factor 3 and Factor 4 scores were used to create a dynamic risk change score. However, the change score was not significantly different across clusters (Loper, 2008).

Global Trauma and Cluster Membership

The global trauma score assessed various types of abuse (sexual abuse, physical abuse, neglect), as to whether or not there was a history of trauma, and the total number of stressors reported. The adolescents were divided into three groups, based on the total number of traumas, stressors, and victimizations (none/one to three incidents, four to seven incidents). The global trauma score was compared across clusters and a significant difference was found. The Narcissistic/Delinquent adolescents were more likely to have between one and three incidents,

and the Dysthymic/Shame-Based/Negative Self-Image adolescents were more likely to have both one to three incidents, and four and seven incidents (Loper, 2008).

Internalizing Symptoms and Cluster Membership

An internalizing symptoms factor was created using factor analysis with variables examining internalizing symptomatology. The internalizing symptoms factor significantly differed across clusters. The Anxious/Submissive/Passive cluster and the Narcissistic/Delinquent cluster endorsed the least internalizing symptoms and adolescents in the Broadly Disturbed cluster endorsed the most internalizing symptoms. The finding of more internalizing symptoms in the Broadly Disturbed cluster and fewer internalizing symptoms in the Anxious/Submissive/Passive cluster and the Narcissistic/Delinquent cluster was consistent with MACI scale score elevations (Loper, 2008).

Externalizing Symptoms and Cluster Membership

An externalizing symptoms factor was formed using factor analysis on several measures of externalizing symptomatology. The Anxious/Submissive/Passive adolescents had the lowest reported externalizing symptoms, and the Distressed/Delinquent adolescents reported the most externalizing symptoms. This finding was consistent with the MACI scale score elevations. It indicated that oppositionality, inattentiveness/hyperactivity, impulsivity, and conduct-disordered traits provided useful personality differences across clusters. It also suggested that the Narcissistic/Delinquent cluster had personality characteristics more consistent with psychopathy, as opposed to a behavior disorder (Loper, 2008).

Psychosexual Characteristics and Cluster Membership

The Multiphasic Sex Inventory (MSI; Nichols & Molinder, 1984, 2001) is designed to measure the sexual characteristics of male juveniles alleged to have committed a sex offense.

The results indicated there were differences across the clusters. The Broadly Disturbed and the Distressed Delinquent adolescents endorsed cognitive distortions and justifications for their sexual offending behaviors. However, the Broadly Disturbed adolescents exhibited the most sexually deviant (child molestation, rape, exhibitionism) and atypical sexual behaviors (fetishism, voyeurism, obscene phone calls, bondage and discipline, sado-masochism). Furthermore, the Broadly Disturbed adolescents endorsed more sexual dysfunction compared to the other clusters. In summary, these adolescents were oversexualized and at a high risk for re-offending (Loper, 2008).

The Anxious/Submissive/Passive adolescents scored in the low range, which indicated low levels of sexual deviance and minimal engagement in atypical sexual behaviors. However, the validity scales suggested these adolescents responded defensively, therefore, the true nature of their sexual behaviors cannot be determined. Similarly, the Narcissistic/Delinquent adolescents did not respond honestly, as the validity scales indicated a tendency to minimize psychosexual deviance. The only cluster to endorse authentically low levels of psychosexual concerns was the Dysthymic/Shame-Based/Negative Self-Image cluster (Loper, 2008).

Overall, the juveniles in the Anxious/Submissive/Passive cluster, Dysthymic/Shame-Based/Negative Self-Image cluster, and the Narcissistic/Delinquent cluster had the fewest psychosexual concerns, while adolescents in the Broadly Disturbed cluster and the Distressed/Delinquent cluster evidenced more sexual concerns and discomfort (Loper, 2008).

Substance Abuse and Cluster Membership

The two versions of the Substance Abuse Subtle Screening Inventory (SASSI; Miller, 1994 and SASSI-A2; Miller, Renn, & Lazowski, 2001) were administered as a measure of substance abuse and dependence. On both measures, the Broadly Disturbed cluster had the

highest levels of alcohol and drug abuse. This adds further credence to the notion that these adolescents relied on substances as a coping strategy, which gradually developed into a serious problem (Loper, 2008).

Juvenile Sex Offenders Recidivism Rates

Juvenile sex offenders committed over one-quarter (25.8%) of all sex offenses and more than one-third (35.6%) of sex offenses against juvenile victims (Finkelhor, Ormrod, & Chaffin, 2009). Ageton (1983) estimated about 2 to 4% of adolescent males have engaged in a sex offense. Additionally, it should be noted that juvenile sex offenders do not comprise a substantial portion of juvenile offenders. Juvenile sex offenders only account for 3.1% of all juvenile offenders and 7.4% of all violent juvenile offenders. Although federal databases have reliable rates on juvenile sex offending (Bureau of Justice Statistics, 1998; Federal Bureau of Investigation, U.S. Department of Justice, 1987; Johnston, Bachman, & O'Malley, 1996; National Center for Juvenile Justice, 1998), the actual rates are assumed to be significantly higher due to unreported or unknown sex offenses (Barbaree, Hudson, & Seto, 1993; Weinrott, 1996). This conclusion is in agreement with studies of adult sex offenders of whom approximately 50% revealed that their first sex offense occurred when they were adolescents or younger (Abel, Mittelman, & Becker, 1985; Becker & Abel, 1985).

Trivits and Repucci (2002) addressed the misperception by the general public and policy makers that juvenile sex offenders pose a high risk of sexually reoffending and, therefore, should be subject to stringent sentencing guidelines and public notification laws. There is some evidence to support these perceptions among certain types of adult sex offenders, such as child molesters and rapists, who have re-arrest rates of 52% and 39%, respectively, over 25 years (Prentky, Lee, Knight, & Cerce, 1997). However, this perception is particularly troublesome

when applied to all adolescents who commit a sexual offense. It ignores developmental psychology related to adolescent sexual development and behavior, which supports adolescent characterological malleability. In addition, it ignores the assertions of experts in the field. For instance, Prentky and Righthand (2003, p.4) state, "Unlike adults, adolescents are still very much in flux." As such, more outcome studies on juvenile sexual offenders are needed to determine rates of sexual recidivism, as well as risk factors for re-offending to inform both treatment and public policy.

In 1982, there were only 20 juvenile sex offender treatment programs in the United States (National adolescent Perpetrator Network [NAPN], 1998). By 2002, there were 1,347 programs for adolescent offenders (McGrath, Cumming, & Burchard, 2003). With the expansion of services and concerns for public safety came a number of evaluation studies to determine the effectiveness of treatment on various outcomes, particularly recidivism.

Smith and Monastersky (1986) examined 112 adolescent male sex offenders in the University of Washington Juvenile Sexual Offenders Program. The adolescents were followed up 17 to 49 months after they completed treatment, were in the community, and reached their eighteenth birthday. The majority of adolescents were referred to the treatment facility due to rape, indecent exposure, and hands-off offenses. Based on the juvenile system records, Smith and Monastersky found that 14% of the adolescents committed a sexual re-offense during the follow-up period. Offenders with previous offenses of indecent exposure, hands-off offenses, offenses committed with strangers, and sexual offenses involving male victims were more likely to commit additional sex offenses.

Kahn and Chambers (1991) examined 221 male juvenile sex offenders who completed treatment programs from March 1, 1984 to October 31, 1984. The age range of the participants

was between 8 and 18. The juvenile sex offenders were released for an average of 20 months before follow-up. The offenses ranged from involving one victim (73%), two victims (27%), and three or more victims (8%). The behaviors in the offenses involved genital touching (57%) and vaginal penetration (33%). The recidivism data indicated that 44.8% were convicted of one or more subsequent criminal offenses. The new convictions included violent crimes (6.6%) and sexual crimes (7.5%). Kahn and Chambers found that almost half of the offenders committed new misdemeanors and non-violent felonies, but sexual re-offenses were relatively rare.

Although treatment placement was not significantly related to recidivism, it was suggested that adolescents in institutional programs were slightly more likely to re-offend criminally than adolescents in community programs. However, it was noted that two specific functional deficits, sexual knowledge and social skills, were inversely related to criminal re-offending. Offenders with low levels of sexual knowledge and weak social skills were significantly less likely to re-offend criminally than other offenders. This relationship was not present with sexual re-offending, however, this makes sense because juveniles who are socially isolated and withdrawn have few friends and are not exposed to delinquent peer influences (Kahn & Chambers, 1991).

Additionally, the age of the offender was relevant because the younger the offender was at the time of their first sexual offense, the greater the likelihood they would engage in a subsequent criminal offense. Along with age, the adolescent's school behavior problems and school truancy were significantly related to criminal re-offense, but were not related to sexual re-offense. Adolescents with a history of sexual abuse and/or siblings with a sexual abuse history were significantly more likely to re-offend criminally than those without such histories (Kahn & Chamber, 1991).

Kahn and Chambers (1991) were able to identify a few variables significantly related to sexual re-offending. The juveniles who used verbal threats tended to re-offend sexually at higher rates than those who did not threaten their victims. The juvenile sex offenders who blamed the victim for their crimes tended to re-offended sexually at a significantly higher rate than those who did not. However, Kahn and Chambers (1991) did report outpatient treatment may serve as a protective factor due to adolescents in treatment being less likely to engage in additional sex offenses.

Sipe, Jensen, and Everett (1998) examined the recidivism rates of 124 juvenile sex offenders and 132 juvenile nonsexual offenders in Idaho after they were released for an average of 6 years (ranged between 1 to 14 years). The juvenile sex offenders had a 9.7% sexual re-offense rate in adulthood in comparison to 3% for the juvenile nonsexual offenders who sexually re-offended in adulthood. It was noted that the juvenile nonsexual offenders had a higher likelihood of being arrested for nonsexual offenses in adulthood. Also, juvenile nonsexual offenders were significantly more likely to be arrested for property offenses (32.6% vs. 16.1%). However, there were no differences between the groups in relation to violent offending.

Sipe, Jensen, and Everett's (1998) study suggests that juvenile offenders may exhibit a criminal offense trajectory which is in agreement with Moffitt's theory. Based on Moffitt's developmental theory of crime, there are signs of persistent antisocial behavior that can be detected early in life and extends the idea that adolescent deviant behavior is greatly influenced by the behavior of peer groups. The theory states that two groups of antisocial youths can be distinguished based on their ages of onset and trajectories of conduct problems. The two groups are the life-course-persistent offenders and the adolescent-limited offenders, which can be useful in understanding the different paths of trajectory (Moffitt, 1993). They concluded juvenile sex

offenders and nonsexual juvenile offenders follow an adolescent-limited offender pattern. While there has been recent discussion of applying Moffitt's theory of criminal trajectory to adolescent offenders, it has been problematic due to the short follow-up in previous studies.

Rasmussen (1999) examined the recidivism rates of 170 male juvenile sex offenders over a 5 year period. In this study, recidivism was defined as the number of days from the date of conviction to the re-offense date. The study also considered other factors relevant to re-offense, such as the offense characteristics, history of child abuse, and clinical intervention. All of the participants took part in community based treatment (e.g., residential treatment, hospital treatment, secure facility treatment, or group home placement). However, not all of the participants completed the treatment program. Failure to participant in treatment, inability to complete treatment, or transfer to a more secure placement was deemed to be treatment failure. The results indicated 58.8% of the participants had a new criminal re-offense. Of those who committed an offense, 14.1% (N = 24) committed a sexual re-offense. In addition to the sexual re-offenses, there were 54.1% (N = 92) nonsexual re-offenses committed. Also, the impact on the amount of time between previous conviction and date of re-offense was examined. It was found that over half of the juvenile sex offenders re-offended within 25 months of the initial sex offense conviction. Overall, Rasmussen concluded that juvenile sex offenders were more likely to recidivate if they had a previous nonsexual offense, a sex offense with an older victim, their parents divorced or separated, and they failed to complete treatment.

A study conducted by Hendriks and Bijleveld (2004) included 114 male adolescent sex offenders discharged from treatment after receiving group therapy (relapse prevention model), individual therapy, and social skills training. In addition, some of the adolescents received aggression-regulation therapy, creative therapy or musical therapy. The results indicated that for

sexual recidivism, there were thirteen juvenile sex offenders (11%) who re-offended after discharge. Eleven of the re-offenders were child abusers, who were classified as obsessive, two were classified as opportunistic, and all had abused peers. Following one year of release, 30% of those that re-offended had already committed an offense. After two years, 50% had re-offended and after three years, 70% had re-offended. One sex offender re-offended after almost 15 years. The findings suggest that with the passage of time there is an increased risk of re-offense. The studies lack of a comparison group made it difficult to determine if the treatment program might reduce recidivism.

Worling, Litteljohn, and Bookalam (2010) examined the effectiveness of specialized sex offender treatment for adolescents. The study had 148 adolescents (139 males and 9 females) who were convicted of and/or acknowledged a sexual offense in Canada. The adolescents were initially assessed at the SAFE-T Program from October 1987 to October 1995. At the time of the assessment, they were between the ages of 12 and 19. Their victims were intrafamilial (28%), extrafamilial (55%), or both (17%); female (61%), male (16%), or both (23%); children (55%), peer/adults (35%), or both (10%). A majority of the adolescents (98%) had hands-on offenses with victims, but there were three adolescents who engaged in exhibitionism. The two groups consisted of juvenile sex offenders who completed treatment and those who did not. The treatment group included 58 adolescents (53 males and 5 females) who completed about 10 months of treatment at the SAFE-T program. There were 18 adolescents who withdrew from treatment after 12 months, but they were included in the treatment group. The comparison group consisted of 90 adolescents (86 males and 4 females) who dropped out prior to 10 months of treatment or after the assessment (n = 46) at the SAFE-T Program and had not participated in treatment.

Over the 20-year follow-up period for the treatment and comparison group, the overall rate for any re-offense was 49.32%, non-violent re-offense rate was 42.57%, nonsexual violent re-offense rate was 32.4%, and the sexual re-offense rate was 49.32%. There were differences found between the treatment group and comparison group during the 20-year follow-up. Notably, the treatment group was significantly less likely to be charged with a sexual re-offense, a nonsexual violent re-offense, a non-violent re-offense, or any criminal offense than the comparison group (Worling, Litteljohn, & Bookalam, 2010).

Additional focus was spent on the participants who reoffended in adulthood. In adulthood, only 11.49% (17 of 148) were charged with a sex offense as an adult. In comparison to adult re-offenses, there were 29.17% of sexual re-offenses committed by adolescents (Worling, Litteljohn, & Bookalam, 2010).

Overall, the results of the study indicated that specialized treatment for adolescent sex offenders significantly decreased the occurrence of sexual and nonsexual re-offenses during the 20-year follow-up. Therefore, the quality of juvenile sex offender treatment can play a role in lowering recidivism. Currently, public policy in the United States assumes that adolescent sex offenders will continue to engage in sexual offending behavior into adulthood (Zimring, Piquero, & Jennings, 2007), but these findings suggest otherwise.

The findings of the study are promising given there was a 20 year follow-up period, which is a great improvement over the average five year follow-up period. However, it was noted that the study relied on the national registry rather state/provincial or local records, which is typically done. Lastly, the study used criminal charges as the criterion for recidivism instead of a more conservative estimate based on convictions.

In a meta-analysis by Caldwell (2002), the results of 12 recidivism studies of juvenile sex offenders were analyzed with reconviction serving as the criterion. The studies included 46 to 350 juvenile sex offenders with a follow-up time ranging from 24 to 120 months. The sexual recidivism rates were between 1.7% and 19.6%, however, the overall percentage of juvenile sex offenders who committed an additional sex offense was 11%. Caldwell concluded there is not enough research addressing the origins and the continuation of sexually deviant behavior among adolescents, and this lack of knowledge has made it difficult to predict recidivism in juvenile sex offenders. Losel and Schmucker (2005) stated that in order to evaluate the effectiveness of sex offender treatment programs, there needs to be treatment evaluations of specific groups to create differential treatment programs. In agreement with Losel and Schmucker (2005), Caldwell (2002) stated that juvenile sex offender typologies could be helpful to predict recidivism by separating them into clinically meaningful groups.

To date, only Worling's (2001) study has addressed the relationship between personality-based typologies and sexual and nonsexual recidivism. Worling identified the following four typologies: Antisocial/Impulsive, Unusual/Isolated, Overcontrolled/Reserved, and the Confident/Aggressive. The Overcontrolled/Reserved and Confident/Aggressive groups had only 33% of the offenders incur additional criminal charges following a six year period and were considered the healthier groups. In comparison, 55% (32/58) of the juvenile sex offenders in the Antisocial/Impulsive and Unusual/Isolated groups incurred more charges. The Antisocial/Impulsive and Unusual/Isolated groups were significantly more likely (40%) to have violent offenses with sexual acts, nonsexual acts, or both in comparison to the other healthier groups (15%). Overall, it was found that 11% of the juvenile sex offenders had more sexual offense charges and there were no significant differences between the groups in terms of sexual

offenses. Additional studies of this nature have been supported by the Association for the Treatment of Sexual Abusers, which encourages "research efforts directed at creating a juvenile sex offender typology and linking offender classification with risk assessment" (1997, p.3).

Current Investigation

This study will address two vital questions related to the treatment and recidivism of juvenile sex offenders. The first aim of the study is to replicate the original five cluster solution in Loper's study in order to demonstrate their stability by identifying them in the sample. Additionally, the study will examine the recidivism of juvenile sex offenders in the five MACI derived clusters. It will add to current literature by considering the validity of using standard assessment measures to monitor treatment outcomes. The sample includes juvenile sex offenders released from the Department of Youth Services. Although the juvenile sex offenders were released into the community at variable time frames, it will enable analysis of the immediate and long-term concerns in association with post-release risk, as well as focus on how treatment reduces recidivism.

Recidivism in the current study will refer to re-arrest rates following release, which is the more conservative measure of recidivism. It does not include a criminal conviction of a charge, which indicates that the juveniles arrest does not necessarily equate to a charge or conviction of the crime for which they were arrested. Also, reliance on arrest rates excludes criminal activity, which is unknown to law enforcement. The type of recidivism in this study is divided into three categories: non-violent recidivism, violent recidivism, and sexual recidivism. Non-violent recidivism includes all types of re-offenses that do not involve the use of any force or injury to another person. Most non-violent recidivism involves property crimes (e.g., Theft) and drug and alcohol-related crimes. Violent recidivism includes re-offenses that involve the use of force or

injury to the body of another person. This type of recidivism tends to include Assault, Battery, Homicide, Domestic Violence, and Robbery. Sexual recidivism is defined as any re-offense that is sexual in nature. For instance, sexual recidivism included the following charges: Sexual Abuse, 1st Degree; Rape, 1st Degree; Rape, 2nd Degree; Sodomy; and Sexual Misconduct.

Hypotheses

Based on the research on juvenile sex offenders and typology formation, as well as re-arrest rates, the following hypotheses are offered:

1. A typology of juvenile sex offenders comprised of five clusters will be formed with the MACI using cluster-analytic techniques. The 7 Clinical Scales, 12 Personality Pattern scales, and 8 Expressed Concerns scales of the MACI will be used on a sample of 648 juvenile sex offenders.
2. The five cluster solution from the full sample (N = 648) will be identified in a new sample consisting of additional juvenile sex offenders (N = 221).
3. The five cluster solution from the full sample (N = 648) will be similar to Loper's (2008) original five cluster solution.
4. Following the identification of the five cluster solution in the full sample, clinical interview variables regarding history of abuse, mental health history, and sex offense characteristics will be significantly different across the five clusters as examined by one-way ANOVAs and chi-square analyses.
5. The five clusters will have significantly different re-arrest rates for non-violent offenses, violent offenses, and sexual offenses as examined by chi-square analyses.

6. The clusters with elevations on MACI scales related to Conduct Disorder will have a significantly shorter period of time to the first re-arrest for a non-violent offense, violent offense, and sexual offense.

Method

In 1999, the state of Alabama passed legislature, which mandated treatment for juvenile sex offenders in the state due to the lack of quality treatment available. In order to implement the new legislature, the Department of Youth Services (DYS) sought agencies willing to provide psychological services to juvenile sex offenders. The Department of Psychology at Auburn University and the School of Social Work at the University of Alabama joined the effort to provide comprehensive treatment to juvenile sex offenders (Burkhart, Peaton, & Sumrall, 2009) by developing the Accountability Based Sex Offender Program (ABSOP). Over time, the program has evolved and is currently referred to as the ABSOP-II.

The main goal of the ABSOP-II treatment program is to conduct comprehensive assessment and treatment for each juvenile sex offender. Assessment is an essential feature of the program since it informs the juvenile sex offender's treatment goals and needs. The identification of the juvenile's strengths and weaknesses following assessment enables therapists to tailor the treatment to address specific areas of concern and highlight positives. Furthermore, the collection of assessment data provides an opportunity to conduct research to evaluate the effectiveness of the treatment program based on the gains made by the juvenile by the end of treatment.

Participants

This study included 648 male juvenile sexual offenders in the Alabama Department of Youth Services (DYS) facility. The mean age of participants in the study was 15.88 (*SD* = 1.43)

with a range between 12.42 and 19.25 years of age. At the time of the pre-treatment assessment, the participants average grade level was 8.74 (*SD* = 1.75) with a range between the 5th grade and high school graduate or GED completion.

In terms of intelligence testing, the juvenile sex offenders were assessed for intellectual functioning. The mean Full Scale IQ score was 86.02 (*SD* = 13.75), the mean verbal score was 84.89 (*SD* = 13.74), and the mean performance score was 89.41 (*SD* = 15.06). The ethnicity of the juveniles ranged from Caucasian (56%), African-American (40%), Bi-Racial (2%), Hispanic (1%), and Other (1%). In regard to the juveniles' home environment prior to treatment, 54% of the juveniles reported their parents were married at one time and 43% reported their parents were never married. However, 38% of the juveniles with married parents during their lifetime reported their parents were divorced. At the time of their current sexual offense, 32% lived with their biological mother, 7% lived with their father, 10% lived with both parents, 19% lived with their biological mother and step-father, 8% lived with their biological father and step-mother, 4% lived with their adoptive parents, 11% lived with their grandparents, 5% lived with their biological relatives, 2% lived with their non-relatives, and 2% lived with other's. In terms of the juveniles education, 70% of the juveniles reported they repeated a grade between 1st grade and 12th grade, 53% required special education services, and 88% reported they were suspended from school one or more times. Also, 64% of juveniles engaged in one or more fights with peers in the year prior to their arrest (*M* = 7.49, *SD* = 26.94).

In order to assess history of abuse, the juveniles were asked about childhood sexual abuse, physical abuse, and neglect. Thirty-two percent of juveniles reported sexual abuse, 35% reported physical abuse, and 16% reported neglect. In regard to previous psychiatric or psychological treatment, 66% of juvenile sex offenders endorsed a history of psychological

and/or psychiatric treatment. In addition, 28% of juvenile sex offenders reported a minimum of one psychiatric hospitalization. As part of their psychological treatment, 24% of juvenile sex offenders reported they were currently using psychotropic medication, and 56% of juvenile sex offenders reported they were previously prescribed psychotropic medication. In regard to arrest history, 55% of juvenile sex offenders reported the current incarceration was their first, and 41% of juveniles reported the current sex offense led to their first arrest.

Measures

Clinical Interview. The clinical interview is a semi-structured interview, which includes a series of questions addressing the juvenile sex offenders' demographics, home environment, education history, criminal history, medical history, substance abuse history, mental health history, history of physical and sexual abuse, and history of sexual behavior.

Millon Adolescent Clinical Inventory. The Millon Adolescent Clinical Inventory is a 160 item self-administered measure used to assess personality and psychopathology in individuals aged 13 to 18 years old. The MACI includes of the following 31 scales: 12 Personality Patterns scales (Introversion, Inhibited, Doleful, Submissive, Dramatizing, Egotistic, Unruly, Forceful, Conforming, Oppositional, Self-Demeaning, Borderline Tendency), 8 Expressed Concerns scales (Identity Diffusion, Self-Devaluation, Body Disapproval, Sexual Discomfort, Peer Insecurity, Social Insensitivity, Family Discord, Childhood Abuse), 7 Clinical Syndrome scales (Eating Dysfunctions, Substance-Abuse Proneness, Delinquent Predisposition, Impulsive Propensity, Anxious Feelings, Depressive Affect, Suicidal Tendency), and 4 Modifying Indices (Disclosure, Desirability, Debasement, Reliability). The raw scores are converted into base rate scores that range from 0 to 115 for all of the scales. Base rate scores were used in this current study. Base rates below 60 suggests there are no significant problems, scores between 60 and 74 suggests

little evidence of the trait if it is closer to 60 or some aspects of the trait if it is closer to 74, scores between 75 and 84 suggests clinically significant presence of the trait, and scores between 85 and 115 suggests the trait is clinically prominent. The scales are presented in Table 1.

A good measure is able to demonstrate evidence of validity and reliability. The MACI has good internal consistency and test-retest reliability (Millon, 1993). The alpha coefficients for the Validity scales ranged from .73 to .87, the Personality Patterns scales ranged from .74 to .90, the Clinical Syndromes scales ranged from .75 to .89, and the Expressed Concerns scales ranged from .73 to .91. Previous studies have suggested that the MACI has concurrent validity and predictive validity in non-forensic samples (e.g., Hart, 1993; Hiatt & Corness, 1999; Millon, 1993; Millon, Green, & Meagher, 1982).

Procedure

The data for the study was gathered from the Mt. Meigs juvenile detention complex, which houses a state-funded research program (The Accountability Based Juvenile Sexual Offender Assessment and Treatment Program - ABSOP). It is a residential Department of Youth Services (DYS) facility in Alabama. The project staff includes licensed clinical psychologists, clinical psychology graduate students, licensed social workers and social work graduate students, along with administrators and employees of the Alabama DYS. The study participants originated from various counties in the state of Alabama, who were adjudicated delinquent by Alabama county courts and committed to Mt. Meigs as part of their sentence.

After the participants were adjudicated for their sex offense, they were transferred to the Mt. Meigs campus and housed in dormitories. All juveniles were required to complete the pre-treatment evaluation prior to treatment. At the beginning of the pre-treatment evaluation, the juveniles were provided an assent form which described the nature and purpose of the testing

process. The juveniles were informed their confidentiality was protected by providing them with identification numbers and placing all assessment materials in a secure storage location. The participants were also informed they could withdraw from the study at any time during the pre-treatment evaluation and not incur any consequences for withdrawing. Additionally, the juveniles were encouraged to respond in an open and honest manner during the course of the pre-treatment evaluation.

Advanced clinical psychology graduate students conducted the pre-treatment clinical interviews and administered the objective non-self-report measures. Undergraduate research assistants administered and scored the self-report instruments. The pre-treatment evaluation includes the following measures: a clinical interview; a review of previous psychological evaluations, education records, medical records, and criminal records; two rating scales (Hare Psychopathy Checklist: Youth Version PCL: YV; Juvenile Sex Offender Assessment Protocol J-SOAP); a diagnostic interview (Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version KSADS); intelligence testing; academic achievement testing; executive functioning evaluation; and nine self-report clinical measures (Adolescent Cognitions Scale ACS; Inventory of Parent and Peer Attachment IPPA; Jesness Inventory JI; Millon Adolescent Clinical Inventory MACI; Multiphasic Sex Inventory MSI; Parental Bonding Inventory PBI; Reynolds Adolescent Depression Scale RADS; Screen for Adolescent Violence Exposure SAVE; Substance Abuse Subtle Screening Inventory-Adolescent Version SASSI-A2). The interview and instruments were selected based on current empirical literature regarding the assessment and treatment of juvenile sexual offenders.

The graduate student clinicians received comprehensive training in administering self-report measures before working with the juvenile sex offenders. Specifically, they were trained

how to build rapport with the juveniles, how to identify reading and/or learning disabilities, and how to assist juveniles unable to understand questions. In addition, they were trained how to score the self-report measures. After administering the Millon Adolescent Clinical Inventory (MACI; Millon, 1993), it was computer scored. The remaining self-report measures were scored manually.

Before entering the data into the database, the graduate clinicians coded interview-based variables and test scores on a variable coding sheet. Regular audits were conducted to check the accuracy of the coding and data entering of the interview information and the test protocols into the database to guarantee reliability.

The recidivism rates consisted of re-arrest data from all juvenile sex offenders who participated in the sex offender treatment program. The Alabama Crime Information Center (ACIC) collected the arrest information recorded by the National Crime Information Center (NCIC) and the Automation Fingerprint Identification System (AFIS).

Cluster Analysis

Cluster analysis is a group of multivariate techniques used to group objects based on their characteristics. The techniques classify objects based on the similarity to other objects in the cluster in association with a predetermined selection criterion. The final clusters should have high internal (within-cluster) homogeneity and high external (between-cluster) heterogeneity. Cluster analysis is also known as Q analysis, typology construction, classification analysis, and numerical taxonomy. The variety of names is due to the fact that clustering methods are used in psychology, biology, sociology, economics, engineering, and business (Hair & Black, 2000). They all aim to classify according to natural relationships (Aldenderfer & Blashfield, 1984;

Anderberg, 1973; Bailey, 1994; Green & Carroll, 1978; Punj & Stewart, 1983; Sneath & Sokal, 1973).

Cluster analysis can be applied to a variety of situations. For instance, it is useful when researchers want to reduce the data from a population or sample to information about specific, smaller subgroups. Furthermore, it may be used to develop hypotheses in association with the nature of the data or to examine previous hypotheses (Hair & Black, 2000). However, along with its benefits, this procedure comes with some limitations. Specifically, it has been characterized as descriptive, atheoretical, and noninferential. Also, it lacks a "statistical basis on which to draw statistical inferences from a sample to a population, and it is used primarily as an exploratory technique" (Hair & Black, 2000, p.149). The solutions are not distinct because cluster membership depends on various elements of the procedure. Different solutions can be obtained by varying one or more elements. Cluster analysis produces clusters regardless of the "true" existence of structure in the data (Hair & Black, 2000, p.149). Finally, the cluster solution depends on the variables utilized to measure similarity. The resulting solution can be greatly influenced by the addition or deletion of relevant variables (Hair & Black, 2000).

For the current studies cluster analysis, Hair and Black's (2000) six-stage model-building approach was implemented. In the first stage, the homogenous groups were formed by simplifying the data to only include juvenile sex offenders who were released from the treatment program and had valid MACI profiles. The second stage addressed the design of the study. In this stage, the data was examined for outliers. No significant outliers were found. In the next step, the MACI scale scores were all converted to standard scores (i.e., z scores) in order to remove the effects due to scale differences both across variables and for the same variable. Once the MACI scale scores were standardized, the Euclidean distance measure was selected as the

measure of interobject similarity because it is typically used with the Ward's method. The squared Euclidean distance is the squared difference between two vectors. In the third stage, it was assumed that the sample was representative of the population and that multi-collinearity did not interfere with the results. In the fourth stage, five clusters were formed and the overall fit of the cluster solution was evaluated. After a satisfactory cluster solution was selected, it was assessed for dissimilarity between clusters. This was accomplished by selecting the Ward's method as the cluster method and the squared Euclidean distance was the interval of measurement. The five clusters were interpreted, named, and described in the fifth stage. The five cluster solutions were validated and profiled in the sixth stage. The clusters were validated by comparing the five clusters from the new sample (N = 221) to the five clusters from the full sample (N = 648).

Survival Analysis

A statistical technique for estimating recidivism rates is survival analysis, which allows researchers to simultaneously examine whether offenders re-offended and when they were most at risk for re-offending (Singer & Willett, 1991). The goal of survival analysis is to estimate the amount of time between two events (e.g., release from treatment facility and date of recidivism), calculate the rate at which a certain event occurs (e.g., rate of recidivism), and compare the rates at which the event occurs between groups. At the conclusion of the follow-up period, not all offenders have committed a re-offense. Therefore, the case will be censored (McLean & Butler, 2008).

The two methods of continuous time survival analysis are the Cox proportional hazard survival analyses and the Kaplan-Meier survival analysis. Ideally, the Cox Regression survival analysis should be used when at least one or more control variables (i.e., covariates) have to be in

the model. This technique allows the researcher to test the effects of multiple variables at the same time. Also, the data are smoothed so that a baseline hazard function is formed. Then, the effect of every variable is estimated in association with the baseline reference function (McClean & Butler, 2008).

The Kaplan-Meier technique is suggested when there are comparisons between groups of two or more. The recidivism events are graphed without trying to smooth the data. Then, a statistical test examines if the curve from group one differs from the curve in group two. A limitation is that it can only test a single critical variable at a time. Therefore, the researcher cannot test the difference in recidivism rates between the two groups after controlling for other variables (i.e., covariates). The Kaplan-Meier method does not include covariates in the model so their effects can be estimated. If the researcher assumes that the two groups are similar due to these other characteristics, then the Kaplan-Meier technique is appropriate. If, on the other hand, many other "control variables" need to be included in the model, then another approach is necessary (McLean & Butler, 2008). The Kaplan-Meier technique was used in this study.

Results

The results are presented in order from Hypothesis 1 through Hypothesis 6. Analyses included cluster analysis, chi-square analysis, one-way analyses of variance (ANOVA), Tukey post hoc *t* tests, and survival analysis.

The Full Sample Five Cluster Solution

In order to identify the original five clusters from the previous study in the current sample, a five cluster solution was formed using the hierarchical cluster analysis with a sample of 648 juvenile sex offenders. The Ward's method was selected as the clustering method and the squared Euclidean served as the distance measure. All of the scores were standardized to z

scores. The MACI mean scale scores, standard deviations, and ANOVAs for the five groups using hierarchical cluster analysis are presented in Table 2. The five groups had significantly different MACI scale scores.

Cluster 1 included 100 juvenile sex offenders and is characterized by symptoms of depression. In this cluster, the Depressive Affect scale was the prominent trait. In addition, the following scales had mean MACI scale scores in the clinically significant range: Doleful, Oppositional, Self-Devaluation, Family Discord, and Impulsive Propensity. The mean MACI scores for the following scales indicate that some of the trait was present in this cluster: Suicidal Tendency, Delinquent Predisposition, Childhood Abuse, Social Insensitivity, Peer Insecurity, Identity Diffusion, Borderline Tendency, Self-Demeaning, Unruly, Inhibited, and Introversive. It should be noted that the following scales had scores between 70 and 74, which suggests the scale was approaching clinical significance: Introversion, Unruly, Identity Diffusion, Peer Insecurity, and Childhood Abuse.

Cluster 2 included 65 juveniles and is characterized by symptoms of anxiety. The Anxious Feelings scale was in the prominent trait range. The following scales were in the clinically significant range: Submissive and Sexual Discomfort. The mean scores for the following scales indicate some of the trait was present: Inhibited, Conforming, Peer Insecurity, and Depressive Affect.

Cluster 3 included 156 juveniles and is characterized by depressive symptoms and suicidality. There were no scales in the prominent trait range. However, the following scales were in the clinically significant range: Depressive Affect and Suicidal Tendency. Additionally, the following scales indicate that some of the trait was present: Introversive, Inhibited, Doleful, Submissive, Oppositional, Self-Demeaning, Self-Devaluation, Sexual Discomfort, and Peer

Insecurity. It should be noted that the following scales were in the 70 to 74 range, which suggests the trait was approaching clinical significance: Inhibited, Submissive, Self-Devaluation, and Peer Insecurity.

Cluster 4 included 99 juvenile sex offenders and is characterized by delinquency. There was one scale in the prominent range, which was the Delinquent Predisposition scale. The following scale scores were in the clinically significant range: Unruly, Social Insensitivity, Family Discord, and Impulsive Propensity. The following scale scores indicate that some of the trait was present: Dramatizing, Egotistic, and Oppositional.

Cluster 5 included 228 juveniles and is characterized by lack of assertiveness, a tendency to conform, anxiety, confusion about sexuality, emotionally expressive, self-centered, disregard for others, and delinquency. There were no scale scores in the prominent range or the clinically significant range for these juveniles. The following scales were in the some of the trait range: Submissive, Dramatizing, Egotistic, Conforming, Sexual Discomfort, Social Insensitivity, Delinquent Predisposition, and Anxious Feelings.

Overall, the hierarchical cluster analysis was able to create a typology of five clusters, which confirms the first hypothesis of this study. Furthermore, the five clusters demonstrated within cluster homogeneity and between cluster heterogeneity, and appear to be clinically meaningful.

Comparison between the Full Sample Clusters and the New Sample Clusters

A hierarchical cluster analysis (Ward's method, squared Euclidean distance) with the new sample was used to create five clusters. This step was taken to determine the similarity across clusters by comparing the mean MACI scores of the full sample and the new sample. Table 3

presents the mean MACI scale scores, standard deviations, and ANOVAs for the five groups from the new sample.

The full sample cluster solution and the new sample cluster solution are presented in Tables 4 to 8. A comparison of Cluster 1 of the full sample and Cluster 2 of the new sample indicated that the following scale scores were in the same range of significance: Delinquent Predisposition, Identity Diffusion, Inhibited, Introversive, Social Insensitivity, Unruly, Family Discord, Impulsive Propensity, Oppositional, Self-Devaluation, Borderline Tendency, and Depressive Affect. Also, the following scales were significant at different levels between the two samples: Doleful, Childhood Abuse, and Substance Abuse. The following mean MACI scores were elevated in the full sample, but were not elevated in the new sample: Self-Demeaning and Suicidal Tendency.

Based on the mean MACI scale scores, Cluster 2 of the full sample and Cluster 5 of the new sample were deemed similar. Both clusters included the following scales at the same level of significance: Conforming and Anxious Feelings. The Sexual Discomfort and the Submissive scales were significant at different levels between the two samples. Additionally, the following scales were elevated at the clinically significant range for the new sample, but in the some of the trait range for the full sample: Depressive Affect, Inhibited, and Peer Insecurity. Furthermore, the Dramatizing scale was elevated in the full sample, but not elevated in the new sample.

Cluster 3 of the full sample and Cluster 1 of the new sample were compared to each other due to similarity of the MACI mean scale scores. Cluster 3 of the full sample and the Cluster 1 of the new sample contained the following scales at the same level of significance: Doleful, Oppositional, Self-Demeaning, Submissive, Sexual Discomfort, Introversive, Inhibited, Self-

Devaluation, and Depressive Affect. The Anxious Submissive scale was significant at different levels of the two samples.

Cluster 4 of the full sample and the Cluster 4 of the new sample were compared. The following scale scores were at the same level of significance: Dramatizing, Egotistic, Oppositional, Impulsive Propensity, Family Discord, Social Insensitivity, Unruly, and Delinquent Predisposition. The following scales were at different levels of significance: Substance Abuse. In addition, the Forceful scale was present at the some of the trait level for the new sample, but was not significant for the full sample.

Cluster 5 of the full sample and Cluster 3 of the new sample were compared. The two clusters were at the same levels of significance for the following scales: Dramatizing, Egotistic, Submissive, Sexual Discomfort, Delinquent Predisposition, Social Insensitivity, Anxious Feelings, and Conforming. Overall, the five clusters were relatively stable across the full and new sample, providing partial confirmation for Hypothesis 2.

Replication of the Original Clusters

The original five clusters were replicated using the original data in order to compare the MACI mean scale scores to the full sample five clusters. Table 9 presents the MACI mean scale scores, standard deviations, and one-way ANOVAs for the original five clusters.

Based on MACI mean scale scores, Cluster 1 of the full sample and the Broadly Disturbed cluster were compared. They agreed in terms of the level of clinical significance for the following scales: Inhibited, Unruly, Oppositional, Self-Demeaning, Borderline Tendency, Social Insensitivity, Family Discord, and Depressive Affect. The following scales were significant at different levels across samples: Introversive, Doleful, Identity Diffusion, Self-Devaluation, Peer Insecurity, Childhood Abuse, Impulsive Propensity, and Suicidal Tendency.

The following scale scores were significant in only one sample: Forceful, Body Disapproval, Substance Abuse Proneness, and Delinquent Predisposition. Following a comparison of the mean scale scores, it was concluded that Cluster 1 of the full sample was not a replication of the Broadly Disturbed cluster. Therefore, this cluster will be referred to as the Disorganized Disturbed cluster.

After examining the remaining clusters, Cluster 2 of the full sample and the Distressed/Delinquent cluster were compared to each other. There were no scales at the same level of significance across samples. However, the Depressive Affect scale differed in terms of the level of significance across the clusters. Specifically, the Depressive Affect scale was in the clinically significant range for the Distressed/Delinquent cluster and at the some of the trait range for Cluster 2 of the full sample. The following scales were significant in the Distressed/Delinquent cluster, but were not elevated in Cluster 2 of the full sample: Introversive, Doleful, Unruly, Oppositional, Self-Demeaning, Borderline Tendency, Identity Diffusion, Self-Devaluation, Social Insensitivity, Family Discord, Substance Abuse Proneness, Delinquent Predisposition, and Impulsive Propensity. The following scales were significant in Cluster 2 of the full sample, but not for the Distressed/Delinquent cluster: Inhibited, Submissive, Conforming, Sexual Discomfort, Peer Insecurity, and Anxious Feelings. Based on the comparison of the clusters, it was concluded that the Distressed/Delinquent cluster was not replicated. Therefore, Cluster 2 of the full sample will be referred to as the Situational Offender cluster.

Cluster 3 of the full sample and the Dysthymic/Shame-Based/Negative Self-Image cluster were compared to each other. The following scales were elevated at the some of the trait range for both clusters: Introversive, Doleful, Submissive, Oppositional, Self-Demeaning, Self-

Devaluation, Sexual Discomfort, and Peer Insecurity. In addition, the following scales were elevated at different levels of significance: Inhibited, Anxious Feelings, and Depressive Affect. It was concluded Cluster 3 was a replication of the Dysthymic/Shame-Based/Negative Self-Image cluster based on the similarity of the MACI mean scale scores.

Cluster 4 of the full sample and the Narcissistic/Delinquent cluster were compared to each other based on their similar MACI scale scores. They both had mean scale scores at the same level of significance for Dramatizing and Egotistic. In addition, there were scale scores above 60, but they were at different levels of significance across the samples. Specifically, the following scale scores were at a lower level of significance in the Narcissistic/Delinquent cluster in comparison to Cluster 4: Unruly, Social Insensitivity, Family Discord, Delinquent Predisposition, and Impulsive Propensity. In addition, the Oppositional scale was significant for some of the trait in Cluster 4, but was not elevated in the Narcissistic/Delinquent cluster. Based on a comparison of the two clusters, it is concluded there was sufficient similarity in the scale elevations to state that Cluster 4 from the full sample was a replication of the Narcissistic/Delinquent cluster.

Cluster 5 of the full sample and the Anxious/Submissive/Passive cluster were considered to be similar. A comparison of the scales indicated the following scales had the same level of significance across samples: Submissive, Dramatizing, Conforming, and Sexual Discomfort. The Anxious Feelings scale was clinically significant for the Anxious/Submissive/Passive cluster and at the some of the trait level for Cluster 5 of the full sample. Lastly, the following mean scale scores were at a non-significant level for the Anxious/Submissive/Passive cluster and at the some of the trait level for Cluster 5 of the full sample: Social Insensitivity, Delinquent

Predisposition, and Egotistic. It was concluded Cluster 5 of the full sample was a replication of the Anxious/Submissive/Passive cluster.

In summary, the Dysthymic/Shame-Based/Negative Self-Image cluster, Narcissistic/Delinquent cluster, and the Anxious/Submissive/Passive cluster were able to be replicated. However, the Distressed/Delinquent cluster and the Broadly Disturbed cluster were unable to be replicated in the new sample. Therefore, the two new clusters will be referred to as the Situational Offender cluster and the Disorganized Disturbed cluster. The results were a partial confirmation of Hypothesis 3. A presentation of the comparison of the MACI mean scale score elevations for the full sample and original sample are presented in Tables 10 to 14.

The Five Cluster Solutions and the Clinical Variables

A series of parametric chi-square analyses were conducted to compare the five clusters and clinical interview variables. In regard to history of sexual abuse, there was a significant difference between the five clusters and sexual abuse history, $\chi^2(4, N = 648) = 24.74$, $p = .001$. The Dysthymic/Shame-Based/Negative Self-Image cluster ($P = .29$) was more likely to report a history of sexual abuse in comparison to the other clusters. Additionally, the relationship between cluster membership and a history of physical abuse was assessed. The results revealed that the proportion of juvenile sex offenders reporting a history of physical abuse was significantly different across the five clusters, $\chi^2(2, N = 648) = 10.52$, $p = .032$. The Situational Offender ($P = .28$) and the Dysthymic/Shame-Based Negative Self-Image ($P = .26$) clusters were more likely to endorse a history of physical abuse. Furthermore, there was a significant difference between juveniles who reported a history of neglect and cluster membership, $\chi^2(4, N = 648) = 9.85$, $p = .043$. The highest proportion of juveniles who reported a history of neglect was in the Dysthymic/Shame-Based/Negative Self-Image cluster ($P = .33$) and the Situational

Offender cluster (P = .26). In regard to history of trauma, there was no statistically significant group difference found, $\chi^2(4, N = 648) = 9.07$, p = .059. See Table 15 and 16.

Mental Health History

Chi-square analyses were conducted in order to examine the mental health history of the juvenile sex offenders. In regard to history of psychological treatment, there was a relationship between history of psychological treatment and cluster membership, $\chi^2(4, N = 648) = 19.48$, p = .001. The Situational Offender (P = .30) and the Dysthymic/Shame-Based/Negative Self-Image (P = .25) clusters had the highest proportion of juveniles with previous psychological treatment in comparison to the other clusters. For the juvenile sex offenders with previous psychological treatment, an analysis of relationship between history of taking psychotropic medication and cluster membership was conducted. The results revealed that the Situational Offender cluster (P = .29) and the Dysthymic/Shame-Based/Negative Self-Image cluster (P = .24) were more likely to have a history of taking psychotropic medication than the other clusters, $\chi^2(4, N = 648) = 23.96$, p = .001. An analysis was conducted to evaluate if currently taking medication was associated with cluster membership. It was found that the Dysthymic/Shame-Based/Negative Self-Image cluster (P = .30) and the Disorganized Disturbed cluster (P = .26) were more likely to report currently taking psychotropic medication, $\chi^2(4, N = 648) = 38.40$, p = .001. See Table 17.

Sex Offense Characteristics

The following analyses examined the relationship between sex offense characteristics and cluster membership. There was a significant difference in regard to the victim's age relative to the juvenile sex offender (e.g., victim younger by four years or more, peer age or older victim, or mixed pattern) and cluster membership, $\chi^2(8, N = 640) = 22.83$, p = .004. It was found that juveniles in the Situational Offender cluster had victim's younger by four years or more (P =

.33), had peer age or older victims (P = .42), and had mixed pattern aged victims (P = .31). However, no significant differences based on victim gender selection (e.g., male only, female only, or both genders) were found across the five clusters, $\chi^2(8, N = 638) = 13.71$, p = .09. See Table 18.

Index Sex Offense Characteristics

The following analyses examined the characteristics of index sex offense and cluster membership. In regard to the age of the victim relative to the age of the juvenile sex offender (victim younger by four years or more, or peer age or older) in the index offense, there were no significant group differences found, $\chi^2(4, N = 639) = 9.27$, p = .056. In regard to the type of physical intrusiveness (e.g., no touch, fondling, penetration, oral sex, two types, three or more types) in the index sex offense, no significant group differences in type of physical intrusiveness were found, $\chi^2(20, N = 644) = 17.31$, p = .633. In regard to the gender of the victim (e.g., male or female) in the index offense, there was a relationship between cluster membership and gender of the victim, $\chi^2(4, N = 640) = 11.85$, p = .018. The Situational Offender cluster was more likely to report male (P = .26) and female (P = .38) victims in their instant offense. An analysis was conducted to evaluate the association between the victim's relationship (e.g., sibling, relative, peer, girlfriend, or stranger) with the juvenile sex offender in the index offense and cluster membership. No statistically significant relationship between juveniles previous relationship with the victim and cluster membership was found, $\chi^2(16, N = 634) = 15.09$, p = .518. Additionally, there was no statistically significant relationship between the use of restraints in the index offense and cluster membership, $\chi^2(4, N = 591) = 3.00$, p = .557. See Tables 18 and 19.

Relationship between Cluster Membership and Juvenile Age, Abuse History, and Number of Victims

In regard to the age of the juveniles across the clusters, there was no significant difference across the clusters, $F(4, 643) = 2.28$, $p = .06$. Also, there was no significant difference between the clusters and the age of the juvenile when they were first sexually abused, $F(4, 195) = .84$, $p = .50$. In regard to the age of the juvenile at first sexual victimization, no significant difference was found, $F(4, 215) = .87$, $p = .49$. There was also no significant difference found between age of first physical abuse victimization and cluster membership, $F(4, 628) = 1.51$, $p = .20$. Lastly, there was no significant difference between the number of victims and cluster membership, $F(4, 637) = 2.31$, $p = .06$. Overall, there was a partial confirmation of Hypothesis 5. See Table 20.

Cluster Membership and Recidivism

The follow-up period ranged from a minimum of 1 year post initial contact to a maximum of 10.5 years ($M = 4.55$, $SD = 2.77$). The average period of incarceration for juvenile sex offenders was 16.46 months ($SD = 8.82$). After 648 juvenile sex offenders completed sex offender treatment and were released, 224 (34.6%) were re-arrested for an offense. Of the 648 juvenile sex offenders, 28 (4.3%) were re-arrested for a sex offense. A chi-square analysis indicated no significant difference between the sexual offense re-arrest rates and cluster membership, $\chi^2(4, N = 648) = 1.52$, $p = .823$. In regard to the non-violent recidivism, 195 (30%) of the 648 juvenile sex offenders committed a subsequent non-violent offense. A chi-square analysis indicated no significant difference between the non-violent offense re-arrest rates and cluster membership, $\chi^2(4, N = 648) = 8.92$, $p = .063$. In addition, there were 105 (16.2%) of the 648 juvenile sex offender who committed a subsequent violent offense. A chi-square analysis revealed there was a relationship between violent offense re-arrest rates and cluster membership, $\chi^2(4, N = 648) = 23.19$, $p = .000$. The Situational Offender cluster and the

Narcissistic/Delinquent cluster were most likely to be re-arrested for a violent offense, while the Anxious/Submissive/Passive cluster was least likely to be re-arrested for a violent offense. See Table 21. The results were a partial confirmation of Hypothesis 6.

Cluster Membership and Time of Re-Arrest

The date of the juveniles' release from treatment and the date of subsequent criminal charges were available, which allowed for a comparison of re-arrest rates using the Kaplan-Meier nonparametric estimates of the survival functions (Kaplan & Meier, 1958). Tests for differences between survival functions are reported as chi-square values based on the Log Rank statistic. This form of chi-square analysis is both more meaningful and efficient than the more common chi-square comparison of simple proportions.

Kaplan-Meier survival functions were used to estimate true difference in probability of sexual offense re-arrest, violent offense re-arrest, and non-violent offense re-arrest between the clusters. The outcome for survival function analysis refers to the time at risk in the community to re-arrest or to end of the follow-up. In order to compare the clusters, they were placed in one of two groups, which were developed to differentiate between the clusters at greater or less risk for recidivism. The juveniles with elevations on scales (e.g., Unruly scale, Impulsive Propensity scale, Delinquent Predisposition scale, Oppositional scale, Social Insensitivity scale) assessing for conduct disordered behavior and attitudes were included in the delinquent group. The delinquent group consisted of the Narcissistic/Delinquent cluster, the Disorganized Delinquent cluster, and the Situational Offender cluster. In comparison, the non-delinquent group included the Anxious/Submissive/Passive cluster and the Dysthymic/Shame-Based/Negative Self-Image cluster.

In regard to non-violent re-arrest, there was no significant difference in the Kaplan-Meier survival function across the groups, log rank $\chi^2 = .075$, $df = 1$, $p = .784$. One-hundred and forty-two (33.3%) of the 427 juveniles in the delinquent group were arrested for a non-violent offense, while 53 (24%) of the 221 juveniles in the non-delinquent group were arrested for a non-violent offense. See Table 22 and Figure 1.

In regard to the violent re-arrest, 89 (20.8%) of the 427 juveniles in the delinquent group were re-arrested for a violent offense, while 16 (7.2%) of the 221 juveniles in the non-delinquent group were re-arrested for a violent offense. There was no significant difference in the Kaplan-Meier survival function for violent re-arrests and group membership, log rank $\chi^2 = .303$, $df = 1$, $p = .582$. See Table 23 and Figure 2.

In regard to sexual re-arrest, 20 (4.7%) of the 427 juveniles in the delinquent group were re-arrested for a sexual offense, while 8 (3.6%) of the 221 juveniles in the non-delinquent group were re-arrested for a sexual offense. However, there was no significant difference in the Kaplan-Meier survival function sexual re-arrests and group membership, log rank $\chi^2 = .245$, $df = 1$, $p = .621$. The results do not confirm Hypothesis 6. See Table 24 and Figure 3.

Discussion

In the current investigation, the first aim was to replicate the clusters from Loper's (2008) study using a new sample. The ability to replicate the original clusters in a new sample would add to juvenile sex offender research and potentially inform future clinical treatment. The second aim was to examine the rates of recidivism based on cluster membership.

The Five-Cluster Solution

The following cluster descriptions were based on McCann's (1999) system of MACI mean scale interpretation.

Cluster 1: Disorganized Disturbed

The Disorganized Disturbed juveniles (N = 100) exhibit a range of psychopathology. Notably, the central feature of juveniles classified as being Disorganized Disturbed is that of depressive affect. They endorse significant dysphoria and sadness (McCann, 1999). Additionally, the Disorganized Disturbed juveniles endorse hopelessness and guilt, low self-esteem, decreased interest in pleasurable activities, and trouble solving problems. They feel a sense of incompetence and inadequacy. Due to their feelings of inadequacy, they avoid failure by not engaging in challenging tasks, which inhibits their ability to experience personal success (McCann, 1999). Furthermore, the Disorganized Disturbed juveniles withdraw from social activity and spend time worrying. They have chosen to isolate themselves in an effort to avoid being rejected by their peers.

The Disorganized Disturbed juveniles display a variety of behavior problems. They have difficulty controlling sexual and behavioral impulses and do not consider the consequences of their behavior (McCann, 1999). Due to their impulsivity, they are at risk for engaging in drug and/or alcohol use as well as suicidal behavior and gestures.

In summary, the Disturbed Disorganized juveniles are depressed and have low-self-esteem. They originate from dysfunctional families and tend to isolate themselves rather than socialize. In addition, they have difficulty solving problems due to their inability to consider the ramifications of their actions, which can lead to impulsive behaviors (e.g, substance abuse).

Cluster 2: Anxious/Submissive/Passive

The Anxious/Submissive/Passive juveniles (N = 65) are characterized by symptoms of anxiety which interfere with their ability concentrate or maintain calm in social situations. Their anxiety may be a reflection of their current situation or indicate the presence of a mental illness.

For instance, one explanation is that the juveniles may have been anxious due to beginning the sex offender treatment program (McCann, 1999). On the other hand, the elevation may indicate the presence of clinically significant symptoms that meet the criteria for a diagnosis of anxiety disorder or an adjustment disorder with anxiety. Along with the anxiety, these juveniles endorse feelings of inadequacy and low self-esteem.

In relationships, the Anxious/Submissive/Passive juveniles are passive and can become clingy (McCann, 1999), which makes it difficult for them to end relationships that provide reassurance and acceptance as well as unhealthy and destructive relationships. Additionally, they may fear being abandoned, rejected, and embarrassed. Due to their fears, they have difficulty being assertive in social settings and in completing projects (McCann, 1999). They feel lonely and on the surface appear withdrawn and shy. They endorse confusion and/or discomfort regarding sexual thoughts and feelings (McCann, 1999). Also, they tend to have heightened anxiety and fear about sexual impulses, expressions of sexuality, and sexual identity (McCann, 1999).

Overall, it appears these juveniles experience a significant level of anxiety and feelings of sexual discomfort and confusion. In their relationships, they tend to be passive due to their strong need to conform and fit in with others.

Cluster 3: Dysthymic/Shame-Based/Negative Self-Image

The Dysthymic/Shame-Based/Negative Self-Image juveniles (N = 156) are described as anxious and depressed. It appears they exhibit more internalized feelings. These juveniles are sensitive to rejection and embarrassment, which interferes with their ability to enjoy everyday activities and life (McCann, 1999). These juveniles engage in activities alone and avoid

situations in which social interaction is required. Due to their tendency to be concerned about rejection, these juveniles are passive in relationships (McCann, 1999).

Furthermore, the Dysthymic/Shame-Based/Negative Self-Image juveniles had feelings of unimportance due to perceived or real abandonment by important attachment figures. They are unhappy with their self-image, have feelings of inadequacy, and some sexual concerns (McCann, 1999).

In sum, these juveniles experience clinical level symptoms of depression and anxiety. They tend to be uncomfortable around fellow peers due to previous rejection from attachment figures. Furthermore, they experience feelings of anxiety in relation to sexuality. In connection with their depression, they experience low self-esteem and prefer to be alone. A review of the scale elevations indicates that these juveniles tend to be more neurotic due to an endorsement of more internalizing symptoms and characteristics.

Cluster 4: Narcissistic/Delinquent

The Narcissistic/Delinquent juveniles (N = 99) are primarily known for their delinquent and antisocial tendencies. These juveniles engage in behaviors that violate the rights of others, may not conform to rules in society, are likely to break rules, and are defiant (McCann, 1999). Many traits associated with Conduct Disorder may be present, such as lying, threatening others, theft, and no empathy for others (McCann, 1999). In relationships, they are hostile and intimidating. They lie to evade punishment without learning from mistakes. They take advantage of others and are unconcerned about others and their feelings. Although they tend to mistreat others, they enjoy interacting with others and have many friends.

Due to their poor behavioral control, they engage in risk-taking behavior (e.g., substance abuse) without much thought about the consequences. They have heightened self-confidence,

self-centeredness, and arrogance (McCann, 1999). In addition, they feel a sense of entitlement and may expect praise and respect from others. However, when they are criticized, they can become angry or indifferent.

In summary, these juveniles tend to engage in delinquent behaviors due to their belief that they are entitled. As a result of their delinquent behavior, they may exhibit aggressive behavior and engaging in sensation seeking behaviors. It was noted that mental health professionals were likely to diagnose these juveniles with Conduct Disorder. Lastly, in regard to their interpersonal style, they tend to not show concern for others, which may be a repercussion of coming from a dysfunctional family.

Cluster 5: Situational Offender

The Situational Offender juveniles (N = 228) had a large number of scales in the low trait range indicating less psychopathology. They endorse some anxiety and discomfort regarding sexual thoughts and feelings. They tend to be passive in relationships, but they want to be social and have friendships. Typically, their friendships are superficial due to behaving in a socially desirable manner (McCann, 1999).

In addition, they have features of some traits that place them in jeopardy. For instance, they may have engaged in behaviors that violated the rights of others (McCann, 1999). Juveniles in this cluster take advantage of others, and lack concern for others and their feelings.

In summary, these juveniles endorsed the least amount of psychopathology in comparison to the other clusters. It was noted that none of the elevations were in the clinically significant range or prominent range. Overall, these juveniles are pretty well-adjusted. They exhibit a normal level of anxiety and concern about sexual topics/concerns. In addition, they may exhibit some conformity, at times, but for the most part feel confident. At the same time, it appears that

under the certain circumstances they can engage in delinquent behavior due to a potential to focus on their own desires rather than consider the impact of their actions on others.

Hypothesis 1 was confirmed as predicted due to the creation of five clusters, which are meaningful and distinct in nature. Additionally, the comparison of the MACI means scale scores were consistent across the new sample and the full sample which provided support for Hypothesis 2.

Challenges to Replicating the Original Clusters

Although Hypothesis 3 predicted that all five of the original clusters would be identified in the population, the Anxious/Submissive/Passive cluster, Dysthymic/Shame-Based/Negative Self-Image cluster, and the Narcissistic/Delinquent cluster were able to be identified in the population, but not the Broadly Disturbed and Distressed/Delinquent clusters. The replication of the three clusters adds further evidence of their reliability. However, the Distressed/Delinquent cluster and Broadly Disturbed cluster were unable to be replicated due to cluster instability.

Ideally, cluster analysis is able to infer the nature of distinct underlying populations within a heterogeneous domain. The term "population recovery" is the term used to refer to the ability of clustering methods to segregate sample observations according to true differences in the underlying population memberships. In order to have good population recovery, it is essential to determine the correct number of clusters, and be able to establish agreement between cluster and population memberships for the given number of clusters. However, the empirical work evaluating the population recovery capabilities of cluster analysis procedures has assumed that the correct number of clusters is known (Blashfield, 1976; Milligan, 1980, 1981). A serious problem in cluster analysis methodology is the lack of criteria for determining the number of clusters (Milligan & Cooper, 1985). It has been suggested numerous replications using random

samples of the data can help to address this problem. Loper's (2008) study included one random sample as part of the replication. An examination of the random sample and full sample comparison suggested the Distressed/Delinquent and the Broadly Disturbed clusters were unstable due to the higher number of discrepancies between the MACI mean scale scores. The previous investigation did not have sufficient replication of the clusters. The lack of sufficient replication increased the likelihood that clusters were found by chance within the sample, which appears to be the likely culprit in this case (Overall & Magee, 1992). Additional replications with smaller subsets of the data may have provided further evidence that the Broadly Disturbed and the Distressed/Delinquent clusters were not stable.

Relationship between Clinical Variables and Cluster Membership

A series of variables addressing the juveniles' victimization, previous mental health treatment, sex offense characteristics, and demographic information from the clinical interview were compared with the five clusters. The first area of interest was the juveniles' history of sexual abuse. The results revealed a significant difference across the clusters. Specifically, the males in the Dysthymic/Shame-Based/Negative Self-Image cluster and the Situational Offender cluster were more likely to report sexual abuse. This finding is similar to Loper's (2008) study, which also found that the males in the Dysthymic/Shame-Based/Negative Self-Image cluster were more likely to report sexual abuse. However, in the current clusters, the males in the Anxious/Submissive/Passive cluster were least likely to report sexual abuse, which differs from Loper's (2008) finding that the males in the Anxious/Submissive/Passive cluster were more likely to report sexual abuse. This is an indication that the males in the original Anxious/Submissive/Passive cluster with a history of sexual abuse have joined the males in the Situational Offender cluster, which explains the elevated report of sexual abuse. In regard to the

age that the sexual abuse began, no significant differences were found across the clusters in this sample and Loper's study (2008) as well.

Examining the juveniles' history of physical abuse also provided insight into the clusters. The results indicated that the Situational Offender adolescents and the Dysthymic/Shame-Based/Negative Self-Image juveniles were more likely to endorse a history of physical abuse, while the Anxious/Submissive/Passive juveniles were least likely to endorse a history of physical abuse. This is a change from Loper's (2008) study, which did not find a significant difference across clusters. However, there were no significant differences in juvenile age when first physically abused across the clusters, which was also found in Loper's (2008) study. In regard to history of neglect and trauma, the current study found significant differences across clusters. The Situational Offender juveniles and the Dysthymic/Shame-Based/Negative Self-Image juveniles were most likely to report neglect and trauma, while the Anxious/Submissive/Passive juveniles and the Narcissistic/Delinquent juveniles were least likely to report neglect and trauma. The results pertaining to abuse history clearly shows the Situational Offender juveniles and the Dysthymic/Negative Self-Image juveniles experienced a range of abuse and trauma. In comparison, Loper's (2008) study did not find any differences in history of neglect or trauma.

In regard to history of psychological treatment, there were significant differences found. The Situational Offender juveniles and the Dysthymic/Shame-Based/Negative Self-Image juveniles were more likely to report a history of mental health treatment. In the current investigation, the Situational Offender juveniles and the Dysthymic/Shame-Based/Negative Self-Image juveniles reported a higher proportion of abuse, neglect, and trauma and, therefore, were more likely to receive mental health treatment. In contrast, the Anxious/Submissive/Passive juveniles were least likely to report mental health treatment due to their lack of abuse, neglect,

and trauma history. This finding is the opposite of Loper's (2008) study, which found that the Anxious/Submissive/Passive juveniles were more likely to report a history of psychological treatment. This is further evidence that in the current investigation, the Anxious/Submissive/Passive juveniles did not present with the previous abuse and trauma history.

However, in agreement with Loper's (2008) study, it appears that the clusters with a history of abuse, neglect, and trauma were more likely to report a previous prescription for psychotropic medication. In the current investigation, the Situational Offender juveniles and the Dysthymic/Shame-Based/Negative Self-Image juveniles were more likely to endorse taking psychotropic medication in the past, while the Anxious/Submissive/Passive juveniles, Disorganized Disturbed juveniles, and the Narcissistic/Delinquent juveniles were least likely to report a history of psychotropic medication. In regard to current prescription for psychotropic medication, the Dysthymic/Shame-Based/Negative Self-Image juveniles and Disorganized Disturbed juveniles were more likely to report currently taking psychotropic medication, while the Anxious/Submissive/Passive juveniles were least likely to report currently taking psychotropic medication. However, it appears that the juveniles with the most need for psychological/psychiatric treatment were the Dysthymic/Shame-Based/Negative Self-Image juveniles and the Situational Offender juveniles due to their previous history of abuse and trauma. In Loper's study, the Broadly Disturbed juveniles and the Distressed/Delinquent juveniles were highlighted as benefiting from mental health treatment, but they were unable to be compared to the current clusters due to not being replicated.

Next, the juvenile sex offending variables were compared across the clusters. In contrast to Loper's (2008) study, the victim's age relative to juvenile sex offender's age was significantly

different across the clusters. Specifically, the males in the Situational Offender cluster and the Dysthymic/Shame/Based/Negative Self-Image cluster were more likely to report younger victims, peer victims and a mixed pattern of victims.

In regard to the index offense, the offender/victim age discrepancy was significantly different across the clusters. The Situational Offender juveniles and the Dysthymic/Shame-Based/Negative Self-Image juveniles were more likely to report having a younger victim and a peer victim. An examination of the victim's gender for the index offense indicated that the Situational Offender juveniles and the Dysthymic/Shame-Based/Negative Self-Image juveniles were more likely to report male and female victims. However, no significant differences were found across the clusters in the present study and Loper's (2008) study in regard to the victim's gender for all sex offenses committed, the juveniles' relationship to victim, the number of victims, the use of restraints during the index offense, and the type of physical intrusiveness during the index offense.

In terms of the age of the first victim, there were significant differences across the clusters. Notably, the Narcissistic/Delinquent juveniles tended to select slightly older victims, while the Dysthymic/Shame-Based/Negative Self-Image juveniles selected younger victims. In contrast, Loper's (2008) study did not find a significant difference between the clusters and the age of the first victim.

In summary, the five clusters significantly differed in regard to history of abuse and neglect variables, as well as history of mental health treatment variables. Furthermore, the index offense variables indicated that the victims tended to be young and female for all the clusters. Additionally, in regard to all sex offenses committed, the victims also tended to be younger than the offender. Analyses pertaining to the age of the juvenile did reveal slight differences in age

preferences for the victim. However, additional analyses that considered differences based on juvenile age were not able to provide useful information pertaining to the clusters. In conclusion, there was some support for Hypothesis 4.

Previous studies have found a relationship between juvenile sex offending, childhood sexual abuse (Burton, 2000; Fehrenbach et al., 1986; Kahn & Chambers, 1991; Kobayashi et al., 1995), and childhood physical abuse (Kobayashi et al., 1995; Righthand et al., 2001; Ryan et al., 1996). In the current study, 31.7% of the juveniles endorsed a history of sexual abuse during the pre-treatment evaluation, which is lower than the 40% to 80% reported in other studies (Becker & Hunter, 1997). The lower report of sexual abuse may indicate that the juveniles were not forthcoming. Based on the juveniles who endorsed a history of sexual abuse, it appears that the Situational Offender juveniles and the Dysthymic/Shame-Based/Negative Self-Image juveniles would benefit from treatment for sexual abuse victims.

In addition to reporting sexual abuse, 34.6% of the juveniles also endorsed a history of physical abuse, which is in agreement with previous literature suggesting a range between 25% to 50% (Becker & Hunter, 1997). In the current study, the juveniles in the Situational Offender cluster and the Dysthymic/Shame-Based/Negative Self-Image cluster were more likely to report physical abuse. Previously, it was suggested that juveniles with a history of physical abuse were more likely to commit a sexual offense. However, at this time, additional research is needed to fully understand the relationship between child maltreatment and etiology of sex offending (Prentky et al., 2000).

Previous research has shown that residential samples of juvenile sex offenders tend to report higher levels of mental health problems (Righthand & Welch, 2004), which was consistent with the current study. In the current investigation, the Situational Offender juveniles were

more likely to report mental health treatment and a previous prescription for psychotropic medication. It appears that these juveniles have benefitted from the mental health treatment and, therefore, report a lower level of psychopathology. In comparison, the Dysthymic/Shame-Based/Negative Self-Image juveniles and Disorganized Disturbed juveniles were more likely to be currently taking psychotropic medication, which appears to be an indication that they require ongoing psychological treatment due to their high level of psychopathology. Their participation in the juvenile sex offender treatment program provided consistent psychological treatment enabling them to achieve stable mental health.

Research pertaining to sex offending variables suggests there are differences between the juveniles based on the types of offenses ranging from non-sexual contact to penetrative acts (Righthand, Hennings, & Wigley, 1989; Righthand et al., 2001), but the current investigation did not support this finding. In regard to victim characteristics, previous research has shown differences between juveniles who offend against siblings in comparison to non-relatives (Kaufman et al, 1996), but no significant differences were found in the current investigation. In addition, literature has discussed the role of victim's gender and age relative to the perpetrator in order to differentiate between types of juvenile sex offenders (Hunter, Hazelwood, & Slesinger, 2000; Richardson, Kelly, & Graham, 1997). In the current study, the Situational Offender juveniles were more likely to report a female victim, which indicates their ability to seek out their preferred gender for sexual activity. In contrast, the males in the Dysthymic/Shame-Based/Negative Self-Image cluster were more likely to have a male victim, which may be a reflection of opportunity rather than sexual preference. Furthermore, in regard to the age of the victim relative to the juvenile in the instant offense, the Situational Offender juveniles were more

likely to report a younger or peer victim. This is an indication that the juveniles in the Situational Offender cluster did not have a specific age preference for their victims.

Analysis of Clusters Based on Validation Variables

The Disorganized Disturbed juveniles exhibited a wide array of psychopathology and internalizing symptoms. However, in comparison to the other clusters, these juveniles were not likely to endorse a history of sexual abuse, mental health treatment, or previous prescription for psychotropic medication. This is further indication that they lacked adequate mental health treatment prior to participating in the treatment program. Fortunately, as a result of participating in the treatment program, they were more likely to be currently prescribed medication, which helped to stabilize their mental health symptoms. In terms of the victim characteristics, they were more likely to have younger female victims.

Based on previous research, the males in the Disorganized Disturbed cluster are similar to Smith and colleagues (1987) Group I, although the cluster in the present study endorsed more psychopathology and dysfunction. A comparison with Worling's (2001) study and Oxnam and Vess's (2006) study revealed that the Disorganized Disturbed juveniles share features with the Unusual/Isolated group and the Inadequate group. For instance, the Disorganized Disturbed juveniles and the Unusual/Isolated group have interpersonal problems and elevated internalizing symptoms. In addition, the Inadequate group and the Disorganized Disturbed juveniles share elevated psychopathology, low self-esteem, and a negative outlook on life.

The Anxious/Submissive/Passive juveniles appear to have stable mental health in comparison to the other juveniles, as evidenced by their lack of abuse history, lack of previous mental health treatment, and no history of taking psychotropic medication. This group endorsed less psychiatric impairment similar to Group I in Smith et al.'s study (1987), the

Overcontrolled/Reserved group in Worling's study (2001), and the normal group in Oxnam and Vess's study (2006). The juveniles in the Anxious/Submissive/Passive cluster are not plagued by significant psychopathology, and thus, may respond to treatment better than juveniles in other groups. In regard to the juveniles' victim characteristics, their victims tended to be younger females.

The juveniles in the Dysthymic/Shame-Based/Negative Self-Image cluster reported a higher occurrence of sexual and physical abuse. Not surprisingly, due to their history of abuse they reported higher levels of mental health treatment, previous psychotropic medication, and current prescription for psychotropic medication. In terms of the victim characteristics, the average age of their victims tended to be younger in comparison to the other clusters. In addition, these juveniles were noted to have victims of various ages. Although, the majority of their victims were female, it was highlighted that this cluster is more likely to have a male victim than the other clusters. However, previous research has not identified a cluster that reflects the Dysthymic/Shame-Based/Negative Self-Image juveniles (Oxnam & Vess, 2006; Smith et al., 1987; Worling, 2001). Although research has yet to identify a similar cluster, it is concluded that these juveniles are unique given their level of trauma reported in the original sample and the current sample.

According to the validation measures, the Narcissistic/Delinquent juveniles were less likely to report a history of abuse, neglect or trauma. In addition, they did not have previous mental health treatment or a prescription for psychotropic medication. Overall, the variables pertaining to their background did not reveal any problematic or concerning results. However, the analyses addressing their sexual offenses provided interesting information. For instance, the Narcissistic/Delinquent juveniles had older victims than the other clusters. This may be due to

their tendency to be more impulsive and willingness to take a chance in selecting an older victim. Based on earlier research, the Narcissistic/Delinquent juveniles resemble Worling's Antisocial/Impulsive Group, which reported family dysfunction, impulsivity, substance abuse, and tendency to disregard the feelings of others for their own desires.

The Situational Offender cluster endorsed a history of abuse and previous mental health treatment similar to the Dysthymic/Shame-Based/Negative Self-Image juveniles. The two clusters differ in that the Situational Offender juveniles denied taking psychotropic medication at the beginning of treatment. This provides further evidence that the Situational Offender juveniles were able to address their abuse history and, as a result, do not exhibit the same level of psychopathology as the Dysthymic/Shame-Based/Negative Self-Image juveniles. In terms of victim characteristics, the victims' ages were mixed. However, it was noted that most of their victims tended to be younger females.

In terms of previous studies, the Situational Offender juveniles share features with Worling's Confident/Aggressive Group due to their lower levels of psychopathology. On the surface, they both interact with others and appear to be socially adjusted. However, their narcissism places them in jeopardy of engaging in sexual offenses by focusing on their own desires and not being concerned about others around them.

Recidivism Rates and the Cluster Solution

This study offered important findings in regard to the rates of recidivism, based on re-arrests for non-violent offenses, violent offenses, and sexual offenses among the five personality-based clusters. The current investigation examined three types of offenses to reflect a clear picture of the criminal behavior juvenile sex offenders committed after release. Beginning with non-violent offense re-arrests, 30% of the juvenile sex offenders were re-arrest for a non-violent

offense, which is in agreement with Worling's (2001) study (32.4%). However, no significant differences were found between cluster membership and non-violent offense re-arrest.
In regard to violent offense re-arrest, 16.2% of the juveniles engaged in a violent offense following treatment, which is considerably lower than the 32.6% violent offense re-arrest rate reported by Worling, (2010). Additional analysis indicated that the males in the Situational Offender cluster and the Narcissistic/Delinquent cluster were more likely to be re-arrested for a violent offense.

However, the findings for sexual offense re-arrest rates were not as fruitful due to the low base rate. Overall, 4.3% of juvenile sex offenders were re-arrested for a sexual offense. The rate of sexual offense re-arrest in this sample is lower than the 11% reported in other studies (Caldwell, 2002; Worling, 2001). Admittedly, the low occurrence of sexual offense re-arrest made it difficult to find differences between the clusters. Additional analyses taking into account the period of time between release from treatment to re-arrest indicated there were no differences between the clusters. Overall, the present study suggests that personality factors may not predict risk of non-violent recidivism, violent recidivism, and sexual recidivism for juvenile sex offenders.

Limitations

A review of the current investigation indicated a few limitations. For instance, the generalizability of the investigation was hampered due to the sample originating from the state of Alabama. Instead, a sample collected from various locations around the country would have presented a more representative sample in order to make generalizations. In addition, the sample consisted of juvenile sex offenders in in-patient treatment, but did not include juvenile sex offenders in outpatient treatment. Therefore, future research would benefit by conducting a

cluster analysis with another sample of juvenile sex offenders in order to determine if the clusters are identified in those samples as well.

Additionally, in the current investigation, the data was primarily based on self-report from the juvenile sex offenders, which can be problematic. Although the data was able to be verified by file information in some cases, this was not possible for every piece of data. It was assumed that the juveniles were honest in their responses, but it is feasible that the juveniles may not have been forthcoming due to defensiveness and anxiety at the beginning of the treatment program.

In regard to the limitations in association with the recidivism data, the main issues surround the use of re-arrest data. Although recidivism was measured in terms of re-arrest rates in this study and others, conviction rates may provide a more definitive representation of criminal activity since arrests do not equate to a conviction. For instance, a juvenile may be arrested for an offense, but is actually convicted with a less severe charge as part of a plea bargain. Furthermore, juvenile sex offenders are typically known by police due to their sex offense history and, as a result, may be unfairly targeted by police leading to more arrests. Lastly, the re-arrest rates were based on the Alabama database rather than a nationwide database of arrest rates, which would have produced comprehensive recidivism rates.

Future Directions

First, future studies should replicate the five clusters in order to determine if the current five cluster solution is stable. It would be advisable to implement the repeated replication procedure in order to ensure that the clusters are more likely to be stable from one sample to the next. Second, the cluster analysis in the current investigation relied on the pre-treatment MACI, but future research should examine the post-treatment MACI in order to determine if there is a

change between the pre-treatment MACI and the post-treatment MACI. Once the comparison between the pre-treatment and post-treatment MACI has been evaluated, there should be an investigation examining the association between the post-treatment MACI and the recidivism rates. Additionally, future investigators should gather information pertaining to the sexual re-offense characteristics in order to determine if they differ based on cluster membership.

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Table 1

Millon Adolescent Clinical Inventory (MACI) Scales

Personality Patterns Scales
Introversive
Inhibited
Doleful
Submissive
Dramatizing
Egotistic
Unruly
Forceful
Conforming
Oppositional
Self-Demeaning
Borderline Tendency
Expressed Concerns Scales
Identity Diffusion
Self-Devaluation
Body Disapproval
Sexual Discomfort
Peer Insecurity
Social Insensitivity
Family Discord
Childhood Abuse
Clinical Syndromes Scales
Eating Dysfunctions
Substance Abuse
Delinquency Predisposition
Impulsive Propensity
Anxious Feelings
Depressive Affect
Suicidal Tendency
Validity Scales
Disclosure
Desirability
Debasement
Reliability Scale
Reliability

Table 2

Full Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	*F (4, 643)*	*p*
Introversive (SD)	70.17[c] (12.42)	55.57[b] (13.74)	68.45[c] (16.28)	43.24[a] (17.13)	44.36[a] (13.77)	104.03	<.001
Inhibited (*SD*)	66.92[c] (11.67)	65.58[c] (14.66)	73.77[d] (13.44)	32.00[a] (15.61)	41.83[b] (13.24)	227.17	<.001
Doleful (*SD*)	75.17[d] (9.15)	34.42[a] (16.65)	68.07[c] (16.16)	59.11[b] (22.32)	33.57[a] (14.69)	192.16	<.001
Submissive (*SD*)	47.07[a] (10.88)	76.74[d] (10.07)	70.41[c] (10.66)	45.47[a] (11.42)	66.00[b] (11.12)	163.89	<.001
Dramatizing (*SD*)	37.77[a] (13.72)	50.77[b] (12.29)	40.93[a] (13.86)	66.15[c] (12.77)	65.47[c] (11.38)	152.75	<.001
Egotistic (*SD*)	36.54[a] (13.75)	46.85[b] (10.50)	36.68[a] (14.62)	60.63[c] (10.02)	61.54[c] (10.49)	150.93	<.001
Unruly (*SD*)	70.80[c] (11.70)	34.74[a] (11.16)	48.65[b] (14.90)	82.11[d] (11.13)	51.97[b] (14.69)	178.87	<.001
Forceful (*SD*)	56.11[c] (18.77)	12.35[a] (8.19)	23.51[b] (16.88)	56.57[c] (20.86)	23.47[b] (12.11)	172.26	<.001

Table 2 (Continued)

Full Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	*F (4,643)*	*p*
Conforming	33.31[a]	65.85[d]	51.78[c]	46.08[b]	66.78[d]	184.95	<.001
(*SD*)	(11.56)	(10.46)	(8.09)	(9.04)	(14.06)		
Oppositional	76.14[d]	39.00[a]	65.35[b]	67.69[b]	42.91[a]	226.61	<.001
(*SD*)	(6.51)	(14.77)	(9.34)	(11.49)	(13.95)		
Self-Demeaning	67.83[d]	28.17[a]	61.54[c]	43.45[b]	25.51[a]	272.43	<.001
(*SD*)	(11.63)	(12.75)	(16.13)	(16.42)	(10.89)		
Borderline Tendency	64.35[d]	17.18[a]	47.64[c]	47.54[c]	22.80[b]	195.22	<.001
(*SD*)	(13.74)	(11.81)	(18.69)	(17.82)	(11.52)		
Identity Diffusion	70.30[d]	34.08[a]	54.74[c]	48.35[b]	32.98[a]	145.10	<.001
(*SD*)	(16.39)	(12.76)	(17.66)	(15.60)	(10.04)		
Self-Devaluation	79.34[c]	45.37[b]	74.03[c]	39.90[b]	26.94[a]	311.81	<.001
(*SD*)	(19.06)	(13.62)	(19.12)	(16.92)	(10.83)		
Body Disapproval	44.28[c]	29.32[b]	49.67[c]	16.28[a]	14.99[a]	98.59	<.001
(*SD*)	(25.94)	(18.84)	(26.81)	(11.86)	(11.68)		
Sexual Discomfort	44.74[a]	81.05[c]	59.76[b]	43.31[a]	62.79[b]	100.22	<.001
(*SD*)	(12.31)	(24.48)	(12.90)	(11.63)	(12.35)		

Table 2 (Continued)

Full Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	*F (4, 643)*	*p*
Peer Insecurity	72.61[b]	66.66[b]	71.17[b]	34.72[a]	41.55[a]	117.92	<.001
(*SD*)	(19.52)	(20.84)	(21.98)	(19.46)	(13.95)		
Social Insensitivity	62.20[b]	44.95[a]	42.09[a]	78.61[c]	59.75[b]	149.54	<.001
(*SD*)	(13.87)	(10.00)	(13.48)	(15.32)	(10.54)		
Family Discord	76.60[c]	36.65[a]	53.67[b]	79.13[c]	53.66[b]	119.83	<.001
(*SD*)	(11.97)	(17.53)	(17.93)	(13.15)	(15.27)		
Childhood Abuse	70.68[d]	42.02[b]	55.92[c]	42.55[b]	25.20[a]	85.63	<.001
(*SD*)	(24.63)	(27.37)	(24.79)	(22.14)	(18.31)		
Eating Dysfunctions	39.06[b]	17.20[a]	35.48[b]	15.82[a]	11.60[a]	84.11	<.001
(*SD*)	(24.58)	(10.94)	(19.95)	(12.79)	(9.63)		
Substance Abuse	76.77[d]	18.40[a]	38.23[c]	73.87[d]	28.07[b]	198.31	<.001
(*SD*)	(24.87)	(11.81)	(18.40)	(24.32)	(16.75)		
Delinquent Predisp.	65.82[b]	45.89[a]	46.58[a]	85.44[c]	61.42[b]	162.41	<.001
(*SD*)	(14.18)	(9.97)	(13.01)	(14.70)	(12.22)		
Impulsive Propensity	76.51[d]	26.00[a]	48.53[c]	79.23[d]	40.15[b]	191.72	<.001
(*SD*)	(12.44)	(12.76)	(19.34)	(15.56)	(17.52)		

Table 2 (Continued)

Full Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	*F (4, 643)*	*p*
Anxious Feelings	52.82[b]	90.49[e]	76.98[d]	41.76[a]	69.29[c]	133.39	<.001
(*SD*)	(12.16)	(17.38)	(19.78)	(13.94)	(14.82)		
Depressive Affect	89.28[d]	67.74[c]	84.31[d]	52.21[b]	39.77[a]	253.92	<.001
(*SD*)	(10.92)	(14.86)	(14.37)	(21.53)	(17.73)		
Suicidal Tendency	61.69[d]	21.86[a]	44.98[c]	29.52[b]	16.56[a]	162.60	<.001
(*SD*)	(22.28)	(12.22)	(22.41)	(15.98)	(7.27)		

Note. Mean cluster scores that share a common superscript in each row indicate differences were not significant at the p<.05 level on Tukey post hoc *t* tests.

Table 3

New Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=48)	Two (*N*=35)	Three (*N*=61)	Four (*N*=45)	Five (*N*=32)	*F (4, 216)*	*p*
Introversive (*SD*)	71.98 (19.35)	69.63 (11.74)	44.89 (12.21)	43.62 (17.65)	51.28 (7.36)	39.16	<.001
Inhibited (*SD*)	74.50 (12.36)	69.31 (14.49)	41.92 (12.11)	29.04 (14.96)	55.78 (13.19)	91.55	<.001
Doleful (*SD*)	61.13 (20.40)	76.34 (9.94)	38.30 (18.79)	57.80 (22.64)	33.84 (17.00)	34.41	<.001
Submissive (*SD*)	76.10 (11.91)	53.14 (11.36)	64.72 (10.36)	42.91 (11.13)	76.78 (9.24)	76.06	<.001
Dramatizing (*SD*)	37.23 (13.19)	38.40 (14.26)	63.39 (9.18)	68.67 (13.49)	59.59 (9.35)	66.61	<.001
Egotistic (*SD*)	33.25 (10.70)	34.34 (13.97)	60.87 (9.20)	61.20 (10.82)	55.66 (10.75)	75.10	<.001
Unruly (SD)	39.33 (11.82)	69.23 (12.65)	57.79 (9.60)	84.13 (11.33)	38.28 (8.33)	137.17	<.001
Forceful (SD)	17.48 (11.43)	47.29 (18.02)	26.28 (11.99)	59.87 (22.42)	15.03 (7.33)	69.98	<.001
Conforming (*SD*)	55.27 (7.04)	36.71 (11.57)	64.82 (12.15)	44.82 (10.93)	71.56 (14.30)	61.30	<.001
Oppositional (*SD*)	56.94 (15.13)	74.74 (6.83)	46.44 (13.61)	67.98 (12.58)	38.25 (14.35)	50.49	<.001

Table 3 (Continued)

New Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=48)	Two (*N*=35)	Three (*N*=61)	Four (*N*=45)	Five (*N*=32)	*F (4, 216)*	*p*
Self-Demeaning (*SD*)	53.75 (22.48)	72.63 (9.82)	26.85 (12.29)	45.20 (15.95)	23.50 (8.70)	70.25	<.001
Borderline Tendency (*SD*)	41.21 (20.30)	67.91 (13.03)	24.66 (13.25)	47.76 (16.77)	17.53 (11.88)	62.06	<.001
Identity Diffusion (*SD*)	54.88 (17.77)	67.66 (14.08)	36.28 (11.25)	51.13 (15.94)	29.41 (9.65)	44.43	<.001
Self-Devaluation (*SD*)	71.83 (19.78)	79.06 (19.13)	30.52 (12.44)	38.76 (17.32)	33.56 (14.03)	81.63	<.001
Body Disapproval (SD)	46.75 (26.53)	45.06 (30.76)	17.15 (11.25)	14.44 (10.95)	24.78 (16.72)	26.62	<.001
Sexual Discomfort (SD)	62.46 (15.55)	51.00 (11.52)	60.90 (8.27)	41.38 (9.96)	89.88 (22.44)	64.00	<.001
Peer Insecurity (SD)	77.35 (20.75)	69.91 (20.74)	43.41 (15.54)	33.67 (18.88)	49.78 (13.74)	46.51	<.001
Social Insensitivity (SD)	40.27 (11.69)	55.26 (16.01)	64.28 (10.64)	83.51 (15.55)	50.66 (7.49)	75.90	<.001
Family Discord (SD)	42.65 (19.80)	78.17 (11.72)	58.25 (14.44)	82.09 (12.76)	41.94 (10.36)	68.57	<.001
Childhood Abuse (*SD*)	47.75 (26.40)	76.26 (27.12)	25.79 (16.60)	43.29 (24.67)	42.38 (26.19)	25.33	<.001

Table 3 (Continued)

New Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=48)	Two (*N*=35)	Three (*N*=61)	Four (*N*=45)	Five (*N*=32)	*F (4, 216)*	*p*
Eating Dysfunctions (*SD*)	29.79 (20.16)	33.91 (25.92)	12.79 (10.81)	13.47 (13.10)	16.44 (11.35)	15.02	<.001
Substance Abuse (*SD*)	26.92 (12.94)	69.51 (26.59)	31.66 (12.24)	76.00 (27.30)	16.25 (9.92)	82.15	<.001
Delinquent Predisp. (*SD*)	42.58 (11.59)	62.17 (12.37)	65.69 (9.14)	87.78 (14.58)	51.00 (6.68)	104.25	<.001
Impulsive Propensity (*SD*)	36.94 (16.97)	77.89 (13.65)	45.69 (15.74)	82.51 (15.20)	28.72 (12.29)	103.67	<.001
Anxious Feelings (*SD*)	85.46 (19.21)	55.60 (14.17)	65.80 (12.09)	38.98 (15.20)	84.69 (14.70)	71.52	<.001
Depressive Affect (SD)	83.35 (14.32)	87.03 (12.57)	41.69 (20.47)	48.71 (21.35)	51.63 (17.96)	61.57	<.001
Suicidal Tendency (SD)	38.69 (20.92)	58.80 (22.77)	18.28 (7.52)	29.80 (16.99)	18.66 (9.63)	42.17	<.001

Table 4

Comparison between the Full Sample and New Sample:

	Cluster 1	
	Full Sample (Cluster 1; N=100)	New Sample (Cluster 2; N=35)
Same Level of Trait		
Borderline Tendency	64*	64*
Delinquent Predisposition	66*	62*
Identity Diffusion	70*	68*
Inhibited	67*	70*
Introversive	70*	70*
Social Insensitivity	62*	74*
Unruly	71*	69*
Family Discord	77**	78**
Impulsive Propensity	77**	78**
Oppositional	76**	75**
Self-Devaluation	79**	79**
Depressive Affect	89***	87***
Different Level of Trait		
Peer Insecurity	73*	70*
Self-Demeaning	68*	57
Childhood Abuse	71*	76**
Suicidal Tendency	62*	42
Doleful	75**	76*
Substance Abuse	77**	70*

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 5

Comparison between the Full Sample and New Sample:

	Cluster 2	
	Full Sample (Cluster 2; N=65)	New Sample (Cluster 5; N=32)
Same Level of Trait		
Conforming	66*	72*
Anxious Feelings	90***	85***
Different Level of Trait		
Dramatizing	51	60*
Depressive Affect	68*	52
Inhibited	66*	56
Peer Insecurity	67*	50
Sexual Discomfort	81**	90***
Submissive	77**	77*

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 6

Comparison between the Full Sample and New Sample:

	Cluster 3	
	Full Sample (Cluster 3; N=156)	New Sample (Cluster 1; N=48)
Same Level of Trait		
Doleful	68*	61*
Oppositional	65*	57
Self-Demeaning	62*	54
Submissive	70*	76**
Sexual Discomfort	60*	63*
Introversive	68*	72*
Inhibited	74*	75*
Self-Devaluation	74*	72*
Depressive Affect	84**	83**
Different Level of Trait		
Anxious Feelings	77**	85***

Note. *60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 7

Comparison between the Full Sample and New Sample:

	Cluster 4	
	Full Sample (Cluster 4; N= 99)	New Sample (Cluster 4; N=45)
Same Level of Trait		
Egotistic	61*	61*
Dramatizing	66*	69*
Oppositional	68*	68*
Impulsive Propensity	79**	83**
Family Discord	79**	82**
Social Insensitivity	79**	84**
Unruly	82**	84**
Delinquent Predisposition	85***	88***
Different Level of Trait		
Forceful	57	60*
Substance Abuse	74*	76**

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 8

Comparison between the Full Sample and New Sample:

	Cluster 5	
	Full Sample (Cluster 5; N= 228)	New Sample (Cluster 3; N=61)
Same Level of Trait		
Dramatizing	65*	65*
Egotistic	62*	62*
Submissive	66*	65*
Sexual Discomfort	63*	61*
Delinquent Predisposition	61*	66*
Social Insensitivity	60*	64*
Anxious Feelings	69*	66*
Conforming	67*	65*

Note. *60–74 (some of trait).
**75–84 (clinically significant trait).
***85 + (prominent).

Table 9

Original Sample Cluster MACI Base Rate Means

One Two Three Four Five MACI Scale	(*N*=42)	(*N*=171)	(*N*=94)	(*N*=83)	(*N*=50)	*F (4, 435)*	*p*
Introversive (SD)	74.79 (12.88)	49.56 (14.65)	67.03 (14.93)	37.08 (15.76)	62.68 (11.38)	77.52	<.001
Inhibited (SD)	66.48 (11.10)	50.99 (15.93)	76.45 (13.14)	31.72 (13.17)	56.70 (16.62)	114.19	<.001
Doleful (SD)	70.79 (5.72)	36.22 (15.54)	70.09 (15.37)	41.00 (22.57)	76.80 (11.67)	124.26	<.001
Submissive (SD)	45.14 (13.04)	70.63 (11.16)	68.06 (10.52)	52.59 (9.68)	49.06 (12.04)	89.56	<.001
Dramatizing (SD)	28.98 (13.22)	59.88 (13.15)	41.71 (13.11)	69.89 (12.65)	50.44 (8.76)	106.47	<.001
Egotistic (SD)	27.45 (13.01)	56.78 (12.84)	37.81 (14.29)	62.86 (9.35)	48.40 (9.66)	94.37	<.001
Unruly (SD)	68.19 (9.95)	42.35 (13.32)	49.60 (13.43)	74.08 (12.60)	78.30 (10.88)	146.27	<.001
Forceful (SD)	59.36 (18.49)	18.36 (12.09)	24.57 (18.90)	39.90 (17.81)	58.40 (19.14)	101.61	<.001
Conforming (SD)	27.21 (9.42)	67.18 (13.95)	52.37 (7.20)	54.75 (7.71)	37.82 (7.33)	162.11	<.001
Oppositional (SD)	77.64 (6.71)	42.23 (14.82)	66.07 (8.95)	55.94 (14.75)	74.94 (6.39)	129.43	<.001

Table 9 (Continued)

Original Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=42)	Two (*N*=171)	Three (*N*=94)	Four (*N*=83)	Five (*N*=50)	*F (4, 435)*	*p*
Self-Demeaning (SD)	66.86 (12.95)	29.58 (13.09)	61.67 (15.31)	29.43 (13.69)	63.26 (14.14)	161.17	<.001
Borderline Tendency (SD)	63.95 (12.79)	21.11 (11.20)	46.72 (15.67)	32.64 (14.93)	67.40 (14.33)	178.26	<.001
Identity Diffusion (SD)	79.07 (16.12)	33.31 (10.68)	53.31 (16.92)	37.49 (13.24)	62.24 (11.72)	136.66	<.001
Self-Devaluation (SD)	92.69 (13.41)	33.95 (15.45)	72.62 (18.06)	29.88 (13.54)	64.32 (18.99)	208.23	<.001
Body Disapproval (*SD*)	63.00 (24.16)	19.54 (15.65)	48.06 (26.13)	14.05 (10.60)	27.80 (18.11)	82.02	<.001
Sexual Discomfort (*SD*)	42.33[a] (13.15)	67.72[d] (15.27)	60.66[c] (13.18)	49.43[b] (11.98)	42.68[a] (11.11)	60.42	<.001
Peer Insecurity (*SD*)	82.26[d] (13.94)	50.26[b] (18.14)	71.16[c] (22.83)	33.70[a] (17.09)	55.14[b] (23.54)	64.77	<.001
Social Insensitivity (*SD*)	59.64[c] (14.26)	52.33[b] (11.18)	41.81[a] (13.62)	70.83[d] (11.24)	68.58[d] (14.95)	76.55	<.001
Family Discord (*SD*)	75.33[c] (11.93)	46.11[a] (16.22)	54.45[b] (18.34)	72.39[c] (11.97)	75.06[c] (13.59)	73.48	<.001

Table 9 (Continued)

Original Sample Cluster MACI Base Rate Means

MACI Scale	One (*N*=42)	Two (*N*=171)	Three (*N*=94)	Four (*N*=83)	Five (*N*=50)	*F (4, 435)*	*p*
Childhood Abuse (*SD*)	77.95[c] (22.27)	32.11[a] (23.29)	58.80[b] (22.28)	26.63[a] (16.94)	55.48[b] (22.74)	65.40	<.001
Eating Dysfunctions (*SD*)	52.57[d] (22.51)	13.99[a] (10.49)	36.69[c] (19.55)	12.57[a] (10.94)	27.24[b] (17.52)	84.81	<.001
Substance Abuse (*SD*)	83.83[e] (23.91)	22.90[a] (15.80)	41.62[b] (18.49)	56.87[c] (21.87)	70.44[d] (25.66)	123.36	<.001
Delinquent Predisp. (*SD*)	59.19[c] (12.03)	53.09[b] (12.15)	46.52[a] (12.68)	78.69[d] (14.09)	76.00[d] (15.29)	98.86	<.001
Impulsive Propensity (*SD*)	74.29[d] (11.38)	33.33[a] (15.42)	46.60[b] (17.66)	64.64[c] (17.24)	82.10[e] (12.08)	144.98	<.001
Anxious Feelings (*SD*)	57.07[a] (13.50)	78.97[b] (18.24)	73.76[b] (19.58)	50.76[a] (12.57)	49.56[a] (13.60)	62.57	<.001
Depressive Affect (*SD*)	97.79[d] (7.74)	52.06[b] (21.29)	84.63[c] (12.16)	39.81[a] (19.87)	77.88[c] (13.22)	138.17	<.001
Suicidal Tendency (*SD*)	74.55[c] (18.54)	19.75[a] (10.10)	45.89[b] (22.78)	20.08[a] (11.85)	44.68[b] (18.43)	135.82	<.001

Table 10

Comparison between the Full Sample and Original Sample:

	Cluster 1	
	Full Sample (Cluster 1; N=100)	Broadly Disturbed Cluster (N=42)
Same Level of Trait		
Borderline Tendency	64*	64*
Inhibited	67*	66*
Introversive	70*	75*
Self-Demeaning	68*	67*
Social Insensitivity	62*	60*
Unruly	71*	68*
Family Discord	77**	75**
Oppositional	76**	78**
Substance Abuse	77**	84**
Depressive Affect	89***	98***
Different Level of Trait		
Body Disapproval	44	63*
Forceful	56	60*
Childhood Abuse	71*	78**
Delinquent Predisposition	66*	59
Identity Diffusion	70*	79**
Peer Insecurity	73*	82**
Suicidal Tendency	62*	75**
Impulsive Propensity	77**	74*
Self-Devaluation	79**	93***
Doleful	75**	71*

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 11

Comparison between the Full Sample and Original Sample:

	Cluster 2	
	Full Sample (Cluster 2; N= 65)	Anxious/Submissive/Passive (N=171)
Same Level of Trait		
Conforming	66*	67*
Different Level of Trait		
Dramatizing	51	60*
Depressive Affect	68*	52
Inhibited	66*	51
Peer Insecurity	67*	50
Sexual Discomfort	81**	68*
Submissive	78**	71*
Anxious Feelings	90***	79**

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 12

Comparison between the Full Sample and Original Sample:

	Cluster 3	
	Full Sample (Cluster 3; N=156)	Dysthymic/Shame-Based (N=94)
Same Level of Trait		
Doleful	68*	71*
Introversive	68*	67*
Oppositional	65*	66*
Peer Insecurity	71*	71*
Self-Demeaning	62*	67*
Sexual Discomfort	60*	61*
Submissive	70*	68*
Different Level of Trait		
Identity Diffusion	55	61*
Inhibited	74*	76**
Self-Devaluation	74*	80**
Depressive Affect	84**	85***
Anxious Feelings	77**	74*

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 13

Comparison between the Full Sample and Original Sample:

	Cluster 4	
	Full Sample (Cluster 4; N= 99)	Narcissistic/Delinquent (N=83)
Same Level of Trait		
Egotistic	61*	63*
Dramatizing	66*	70*
Different Level of Trait		
Forceful	57	62*
Oppositional	68*	56
Unruly	82**	87***
Social Insensitivity	79**	71*
Family Discord	79**	72*
Impulsive Propensity	79**	65*
Delinquent Predisposition	85***	79**

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 14

Comparison between the Full Sample and Original Sample:

	Cluster 5	
	Full Sample (Cluster 5; N=228)	Distressed/Delinquent (N=50)
Same Level of Trait		
Social Insensitivity	60*	69*
Different Level of Trait		
Borderline Tendency	23	67*
Doleful	34	77**
Family Discord	54	75**
Identity Diffusion	33	62*
Impulsive Propensity	40	82**
Introversive	44	63*
Oppositional	43	75**
Self-Demeaning	26	63*
Self-Devaluation	27	64*
Substance Abuse	17	70*
Unruly	52	78**
Depressive Affect	40	78**
Dramatizing	65*	50
Egotistic	62*	48
Conforming	67*	38
Submissive	66*	49
Sexual Discomfort	63*	43
Anxious Feelings	69*	50
Delinquent Predisposition	61*	76**

Note. * 60-74 (some of trait).
** 75-84 (clinically significant trait).
*** 85 + (prominent trait).

Table 15

Chi-Square Analyses with Clinical Interview Variables: Victimization

Variable	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	Total *(%)*	χ^2	*p*
SA Victimization								
Yes (%)	43 (6.6)	27 (4.2)	59 (9.1)	29 (4.5)	47 (7.3)	31.6	24.74	.001
No (%)	57 (8.8)	38 (5.9)	97 (15)	70 (10.8)	181 (27.9)	68.4	(4, N = 648)	
PA Victimization								
Yes (%)	43 (6.6)	21 (3.2)	59 (9.1)	39 (6)	62 (9.6)	34.6	10.52	.032
No (%)	57 (8.8)	44 (6.8)	97 (15)	60 (9.3)	166 (25.6)	65.4	(4, N = 648)	

Table 16

Chi-Square Analyses with Clinical Interview Variables: Neglect and Trauma

Variable	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	Total *(%)*	χ^2	*p*
Neglect History								
Yes (%)	19 (2.9)	7 (1.1)	35(5.4)	18 (2.8)	27 (4.2)	16.4	9.85	.043
No (%)	81 (12.5)	58 (9)	121 (18.7)	81 (12.5)	201 (31)	83.6	(4, N = 648)	
Trauma History								
Yes (%)	48 (7.4)	17 (2.6)	69 (10.6)	43 (6.6)	103 (15.9)	43.2	9.07	.059
No (%)	52 (8)	48 (7.4)	87 (13.4)	56 (8.6)	125 (19.3)	56.8	(4, N = 648)	

Table 17

Chi-Square Analyses with Clinical Interview Variables: Treatment History

Variable	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	Total *(%)*	χ^2	*p*
History of Psychological Treatment								
Yes (%)	76 (11.7)	40 (6.2)	105 (16.2)	77 (11.9)	130 (20.1)	66	19.48	.001
No (%)	24 (3.7)	25 (3.9)	51 (7.9)	22 (3.4)	98 (15.1)	34	(4, N = 648)	
Ever Prescribed Psychotropic Medication								
Yes (%)	69 (10.6)	34 (5.2)	86 (13.3)	69 (10.6)	105 (16.2)	56	23.96	.001
No (%)	31 (4.8)	31 (4.8)	70 (10.8)	30 (4.6)	123 (19)	44	(4, N = 648)	
Currently Prescribed Psychotropic Medication								
Yes (%)	41 (6.3)	15 (2.3)	47 (7.3)	29 (4.5)	27 (4.2)	24.5	38.40	.001
No (%)	59 (9.1)	50 (7.7)	109 (16.8)	70 (10.8)	201 (31)	75.5	(4, N = 648)	

Table 18

Chi-Square Analyses with Clinical Interview Variables: Juvenile Sex Offending and Index Sex Offense

Variable	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	Total *(%)*	χ^2	*p*
Victim Age Relative to Offender Age								
Younger (%)	55 (8.6)	54 (8.4)	102 (15.9)	58 (9.1)	132 (20.6)	62.6	22.83	.004
Peer (%)	31 (4.8)	11 (1.7)	33 (5.2)	25 (3.9)	72 (11.3)	26.9	(8, N = 640)	
Mixed (%)	14 (2.2)	0 (0)	19 (3)	13 (2)	21 (3.3)	10.5		
Victim Gender								
Female (%)	64 (10)	37 (5.8)	96 (15)	62 (9.7)	169 (26.5)	67	13.71	.090
Male (%)	24 (3.8)	20 (3.1)	35 (5.5)	22 (3.4)	34 (5.3)	21.2	(8, N = 638)	
Mixed (%)	10 (1.6)	8 (1.3)	23 (3.6)	12 (1.9)	22 (3.4)	11.8		
Index Offense Victim Age Relative to Offender								
Younger (%)	64 (10)	54 (8.5)	113 (17.7)	66 (10.3)	148 (23.2)	69.6	9.20	.056
Peer (%)	35 (5.5)	11 (1.7)	41 (6.4)	31 (4.9)	76 (11.9)	30.4	(4, N = 639)	
Index Offense Physical Intrusiveness								
No Touch (%)	6 (0.9)	2 (0.3)	14 (2.2)	6 (0.9)	22 (3.4)	7.8	17.31	.633
Fondling (%)	25 (3.9)	21 (3.3)	45 (7)	27 (4.2)	50 (7.8)	26.1	(20, N = 644)	
Penetrat. (%)	18 (2.8)	7 (1.1)	24 (3.7)	19 (3)	40 (6.2)	16.8		
Oral Sex (%)	7 (1.1)	9 (1.4)	14 (2.2)	11 (1.7)	17 (2.6)	9		
2 Types (%)	31 (4.8)	17 (2.6)	38 (5.9)	24 (3.7)	75 (11.6)	28.7		
3 + Types (%)	12 (1.9)	9 (1.4)	21 (3.3)	11 (1.7)	22 (3.4)	11.6		

Table 19

Chi-Square Analyses with Clinical Interview Variables: Index Sex Offense

Variable	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	Total *(%)*	χ^2	*p*
Index Offense Victim Gender								
Male (%)	29 (4.5)	25 (3.9)	48 (7.5)	24 (3.8)	45 (7)	26.7	11.85	.018
Female (%)	70 (10.9)	40 (6.3)	106 (16.6)	73 (11.4)	180 (28.1)	73.3	(4, N = 640)	
Index Offense Relationship to Victim								
Sibling (%)	22 (3.5)	17 (2.7)	47 (7.4)	29 (4.6)	49 (7.7)	25.9	15.09	.518
Relative (%)	26 (4.1)	22 (3.5)	42 (6.6)	19 (3)	61 (9.6)	26.8	(16, N = 634)	
Peer (%)	43 (6.8)	20 (3.2)	54 (8.5)	38 (6)	96 (15.1)	39.6		
Girlfriend (%)	4 (0.6)	4 (0.6)	4 (0.6)	7 (1.1)	9 (1.4)	4.4		
Stranger (%)	2 (0.3)	1 (0.2)	5 (0.8)	4 (0.6)	9 (1.4)	3.3		
Index Offense Use of Restraints								
Yes (%)	6 (1.0)	3 (0.5)	14 (2.4)	4 (0.7)	16 (2.7)	7.3	3.00	.557
No (%)	88 (14.9)	61 (10.3)	129 (21.8)	81 (13.7)	189 (32)	92.7	(4, N = 591)	

Table 20

One-Way ANOVAs with Clinical Interview Variables

Variable	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	*F*	*p*
Age (*SD*)	15.67[a] (1.48)	16.26[b] (1.49)	15.79[ab] (1.45)	15.76[ab] (1.38)	15.97[ab] (1.39)	(4, 648) = 2.28	.060
Age 1st SA Victim (*SD*)	8.27[a] (3.66)	7.07[a] (3.58)	7.75[a] (3.85)	7.86[a] (3.87)	8.65[a] (4.13)	(4, 195) = .84	.502
Age 1st PA Victim (SD)	8.30[a] (3.43)	8.00[a] (5.31)	7.84[a] (3.84)	9.37[a] (3.89)	8.49[a] (4.35)	(4, 215) = .87	.485
# Victims (SD)	1.71[a] (1.16)	1.47[a] (.87)	1.82[a] (1.55)	1.48[a] (.93)	1.61[a] (1.39)	(4, 628) = 1.51	.199
1st Victim Age (SD)	9.47[a] (4.39)	8.45[a] (4.23)	8.67[a] (4.20)	10.61[a] (10.08)	9.91[a] (5.91)	(4, 637) = 2.31	.056

Note. Mean cluster scores that share a common superscript in each row indicate differences were not significant at the p<.05 level on Tukey post hoc t tests.
SA = Sexual Abuse. PA=Physical Abuse.

Table 21

Chi-Square Analyses with Re-Arrest Rates

Variable	One (*N*= 100)	Two (*N*=65)	Three (*N*=156)	Four (*N*=99)	Five (*N*=228)	Total (%)	χ^2	*p*
Non-Violent Re-Arrest								
No	66 (10.2)	54 (8.3)	114(17.6)	63 (9.7)	156 (24.1)	453 (69.9)	8.92	.063
Yes	34 (5.2)	11 (1.7)	42 (6.5)	36 (5.6)	72 (11.1)	195 (30.1)	(4, N = 648)	
Violent Re-Arrest								
No	77 (11.9)	63 (9.7)	142 (21.9)	75 (11.6)	186 (28.7)	543 (83.8)	23.19	.000
Yes	23 (3.5)	2 (0.3)	14 (2.2)	24 (3.7)	42 (6.5)	105 (16.2)	(4, N = 648)	
Sexual Re-Arrest								
No	96 (14.8)	64 (9.9)	149 (23)	94 (14.5)	217 (33.5)	620 (95.7)	1.52	.823
Yes	4 (0.6)	1 (0.2)	7 (1.1)	5 (0.8)	11 (1.7)	28 (4.3)	(4, N = 648)	

Table 22

Comparison of Two Groups Non-violent Offense Re-Arrest Survival Times

Cluster	No. of events	Mean survival time (months)	95% CI
Delinquent Group	142	31.39	27.98, 34.80
Non-Delinquent Group	53	33.92	29.05, 38.74

Note. CI = confidence interval. For the log rank significance test, the value was .075 (*df* = 1), *p* = .784.

Table 23

Comparison of Two Groups Violent Offense Re-Arrest Survival Times

Cluster	No. of events	Mean survival time (months)	95% CI
Delinquent Group	89	32.43	27.39, 37.46
Non-Delinquent Group	16	30.31	19.56, 41.06

Note. CI = confidence interval. For the log rank significance test, the value was .303 (*df* = 1), *p* = .582.

Table 24

Comparison of Two Groups Sexual Offense Re-Arrest Survival Times

Cluster	No. of events	Mean survival time (months)	95% CI
Delinquent Group	20	35.85	22.37, 49.33
Non-Delinquent Group	8	33.38	20.32, 46.43

Note. CI = confidence interval. For the log rank significance test, the value was .245 (*df* = 1), *p* = .621.

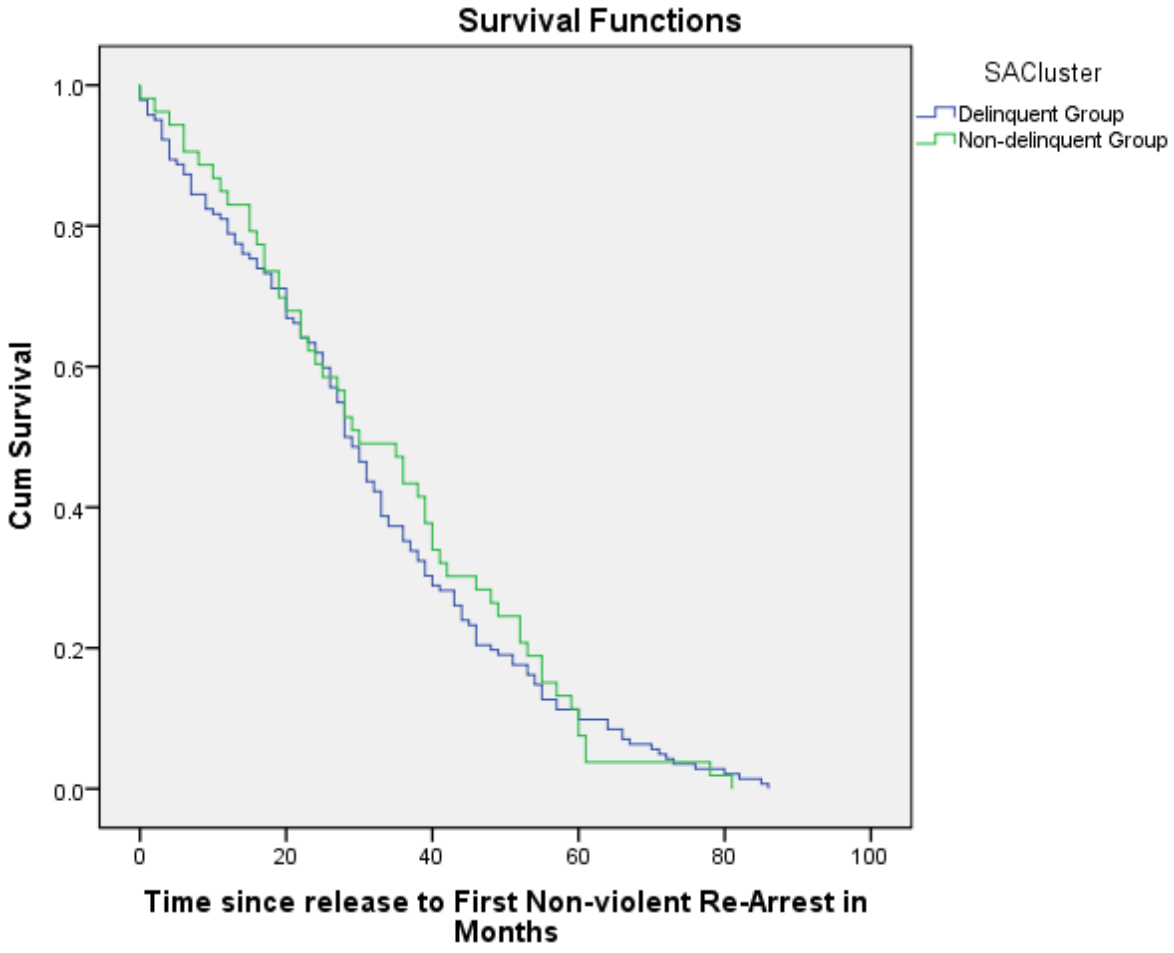

Figure 1. Kaplan-Meier survival curve estimates for first non-violent re-arrest in months

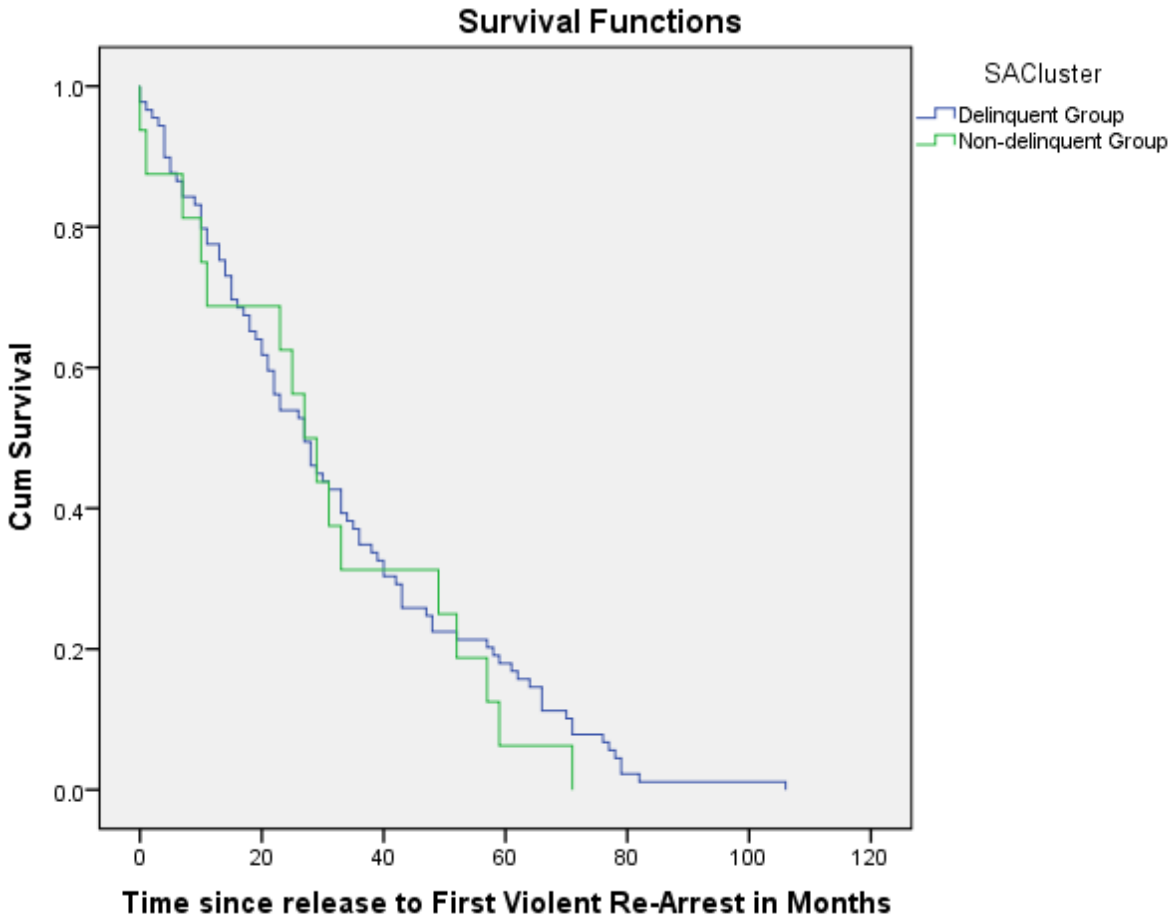

Figure 2. Kaplan-Meier survival curve estimates for first violent re-arrest in months

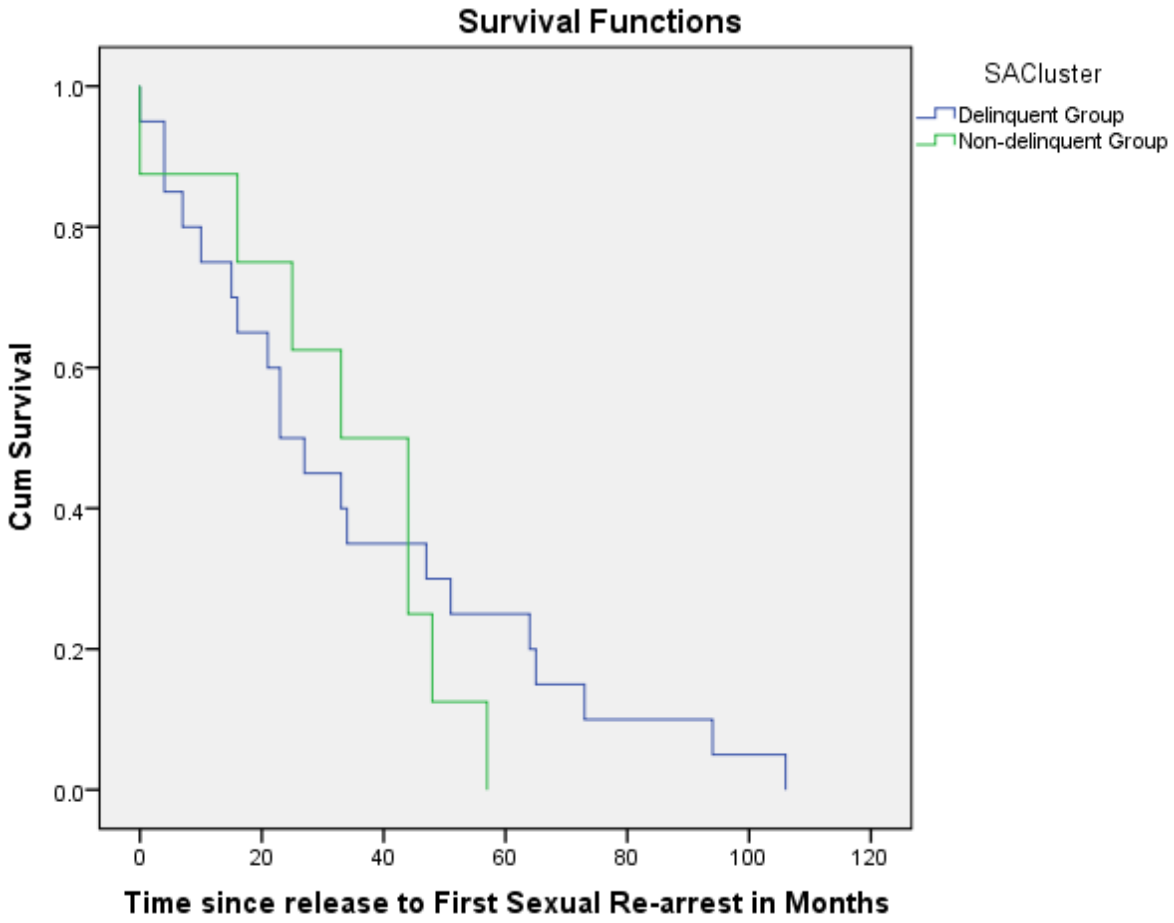

Figure 3. Kaplan-Meier survival curve estimates for first sexual re-arrest in months