

Sexual and Non-Sexual Juvenile Offenders: Developmental Antecedents and Behavioral
Outcomes

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ABSTRACT

Sexual and Non-Sexual Juvenile Offenders: Developmental Antecedents and Behavioral Outcomes

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The three papers included in this dissertation are based on data from a larger cross-sectional survey study which explores the causes and patterns of sexual aggression by adolescent males incarcerated in residential treatment. The sample of interest included 504 male adolescents who were adjudicated delinquent and sanctioned to residential treatment for the commission of sexual and non-sexual crimes. Paper 1 includes a descriptive snapshot of the individual and family characteristics, childhood experiences, child maltreatment histories, childhood exposure to nudity and sexual activity, sexual crime characteristics, as well as non-sexual crime characteristics of juvenile sex offenders in residential treatment. Paper 2 focuses on the family characteristics and childhood experiences that predict group membership in juvenile sex offender and juvenile delinquent groups. Finally, paper 3 explores those factors associated with the severity of sexual crime as well as the frequency of general delinquency among juvenile sex offenders in residential treatment.

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Dissertation Introduction

More than 1 million adolescents are processed by juvenile courts annually (Henggeler & Schoenwald, 2011). Of those youth, 160,000 are sent to residential placements, which are the most serious and costly outcome of court referral (Justice Policy Institute, 2009; Puzzanchera & Kang, 2010). While criteria differ across jurisdictions, residential placements are often mandated for youth deemed unsafe to remain in the community with their families; they tend to be the most severe offenders, with numerous offenses and victims, compared to those mandated to community supervision and outpatient mental health programs. Youth in residential treatment often report severe histories of child maltreatment and trauma as well as dysfunctional family environments (Hunter, Figuerdo, Malamuth, & Becker, 2003; Murphy, DiLillo, Haynes, & Steere, 2001; Zakireh, Ronis, & Knight, 2008). Residential treatment programs are often paid for by the state, accruing large costs (Justice Policy Institute, 2009). The goals of residential treatment facilities within the juvenile justice system include the rehabilitation of young offenders while holding them accountable, assisting children to develop skills to be productive and succeed, and the protection of community safety (Listenbee, Torre, Boyle, Cooper, Deer, Durfee, James, Lieberman, Macy, Marans, McDonnell, Mendoza, & Taguba, 2012).

Unfortunately, only 5%, or 15,000 annually, of eligible high-risk offenders, or those incarcerated in residential treatment facilities, have the opportunity to benefit from programs with proven effectiveness (Greenwood, 2008). The majority of current treatment services and programs for incarcerated youth have not shown to be effective or have not been evaluated. Despite great need, treatment services are deficient in residential treatment facilities (Sedlak & McPherson, 2010). Unfortunately, the unintended consequence of current practice is that it may be increasing antisocial behavior and criminality (Henggeler et al., 2011). Since JSOs in

residential treatment represent the most severe subpopulation of JSOs, are the most expensive to treat, and often receive inadequate and ineffective treatment, it is essential we more fully understand this population.

In The United States, the Office of Juvenile Justice and Delinquency Prevention estimated roughly 2,200,000 arrests of juveniles in 2006. Not including prostitution, more than 19,500 of those juvenile arrests were for sex-related crimes (Snyder, 2008). Juvenile offenders account for one in every four sexual assaults (LaFond, 2005; U.S. Department of Justice, 2009), creating a serious public health issue (Becker, 1998) and societal concern (Barbaree, Hudson, & Seto, 1993; Barbaree & Marshall, 2006). The 15,000 juveniles arrested for sex crimes each year vary in terms of their sexual offense severity, degree of dysfunction, trauma and abuse history (Bagley & Shewchuk-Dann, 1991; Becker, 1990; Becker, Kaplan, Tenke & Tartaglino, 1991; Knight & Sims-Knight, 2004; Zimring, 2004), and aggressive, antisocial, and general criminal behaviors (Bagley et al., 1991; Becker et al., 1991; CSOM, 1999, Grossman, Martis, & Fichtner, 1999; Knight & Prentky, 1993; Knight & Sims-Knight, 2003).

While these youth may be considered specialized in terms of their offending, they tend to report co-occurrence of non-sexual criminal behaviors or general delinquency as well (Burton, Leibowitz, Eldredge, Ryan, & Compton, 2011; Butler & Seto, 2002; Caldwell, 2002; Elliot, 1995; Spice, Viljoen, Lutzman, Scalora, & Ullman, 2012). Among studies of JSOs, characteristics of the child and family have demonstrated to be important domains in the development of criminal behavior (Barbaree & Langton, 2006; Marshall & Barbaree, 1990; Monastersky & Smith, 1985). In order to successfully understand and provide effective treatment for juvenile sex offenders (JSOs), we must further examine their childhood experiences and family characteristics. Additionally, further description of the characteristics of both sexual

offending and general delinquency is warranted to determine chronic and possibly diverse patterns in their delinquency.

Research Aims

This dissertation includes three distinct research papers. Paper 1 is designed to answer the question: “What are the family, childhood, and crime characteristics of JSOs in residential treatment?” This first paper provides a descriptive snapshot of the individual and family characteristics, childhood experiences, child maltreatment histories, childhood exposure to nudity and sexual activity, sexual crime characteristics, as well as non-sexual crime characteristics of juvenile sex offenders in residential treatment. Paper 2 focuses on the question: “Do family characteristics and childhood experiences predict group membership in juvenile sex offender and juvenile delinquent groups?” Using a social learning theory framework, it is hypothesized that more disruptive family structure, greater levels of family dysfunction, a history of sexual abuse victimization, and childhood exposure to nudity and sexual activity are associated with being in the JSO group. Paper 3 asks, “What factors are associated with the severity of sexual crime as well as the frequency of general delinquency among juvenile sex offenders in residential treatment?” Two hypotheses are tested in this third paper. It is first hypothesized that among JSOs in residential treatment, family structure, family functioning, child maltreatment, childhood exposure to nudity and sexual activity, and a history of sexual abuse victimization are associated with the severity of sexual crime. Secondly, it is hypothesized that among JSOs in residential treatment, family structure, family functioning, child maltreatment, childhood exposure to nudity and sexual activity, and a history of sexual abuse victimization are associated with the frequency of general delinquency.

Overview of the Three Papers

Dataset

The three papers in this dissertation are based on data from a larger cross-sectional survey study which explores the causes and patterns of sexual aggression by adolescent males incarcerated in residential treatment. The sample consists of 504 male adolescents, 333 JSOs and 171 non-sexual offending JDs, who were adjudicated delinquent and incarcerated in six residential treatment facilities for the commission of sexual and non-sexual crimes. The sample was drawn from every state-run residential treatment facility in a Midwestern state.

Theoretical Model

The extant literature suggests that sexually violent behavior in adolescence is learned (Awad & Saunders, 1991; Burton & Meezan, 2004) and that JSOs often reside in environments with high levels of neglect and violence (Rich, 2003). Therefore, social learning theory (Bandura 1969, 1977), or the later social cognitive theory (Bandura, 1986) continues to be the most consistently used explanatory construct in the JSO literature incorporating elements of operant conditioning and social cognition (Burton et al., 2004). The basic premise underlying Social Learning Theory is a process by which people may model or imitate the observed behavior they were exposed to in childhood, creating a behavioral repertoire of their own (Akers, 1985; Bandura, 1969; Stinson, Sales & Becker, 2008). According to this theory, violence is learned and modified through the role models provided in one's family, such as parents, siblings, and other relatives. If a child experiences or witnesses family members responding to stress or conflict with anger and aggression the child is at greater risk for engaging in those same responses (Mihalic & Elliot, 1997). Essentially families can teach children approval for the use of violence as well as how and when to be violent (Gelles, 1972). Additionally, the initial observational

learning of what constitutes "appropriate" interactions within intimate relationships is defined and demonstrated by parents and their significant others (Stinson et al., 2008). Social learning theory suggests that within the family context, behavior can be taught and learned, including sexual and abusive behaviors. We know that not all JSOs have a history of sexual abuse victimization or have families who allow or promote sexual abuse. Also, not all victims of sexual abuse go on to become sex offenders (Finkelhor, 1986; Hunter et al., 2003; Knight et al., 2004). However, among studies of JSOs, characteristics of the child and family have demonstrated to be important domains in the development of criminal behavior (Barbaree et al., 2006; Marshall et al., 1990; Monastersky et al., 1985). Nevertheless, a child's primary context for learning is his family thereby: social learning theory is an appropriate framework within which to explore the links between family characteristics, childhood experiences, and subsequent behavioral and criminogenic outcomes in adolescence. In childhood, the behavior of the family may be the most powerful or the only source of information regarding how to conduct oneself in the world. If a child observes his family behaving in negative, abusive, or deviant ways, then the resulting behavior of that child will likely be the same (Stinson et al., 2008).

Paper #1: Family, Childhood, and Crime Characteristics of Juvenile Sexual Offenders in Residential Treatment

The first paper included in this dissertation is focused on the description of the family, childhood, and crime characteristics of JSOs in residential treatment. The hypotheses were generated based on prior research and the extant literature. The hypotheses for the first paper are:

1. JSO families have family structure characterized by single-parent households, parental absence, frequent changes in who lives at home, changes in where the youth reside, and out of home placement for children into foster care or group homes.

2. The functioning of JSO families is characterized by the presence of family health problems, family criminality, domestic violence, parent substance abuse, frequent moves or homelessness, family mental health problems, parental drug sales, and poverty.
3. JSOs present histories of childhood maltreatment and trauma.
4. JSOs show childhood exposure to nudity and sexual activity.
5. JSOs commit non-sexual crimes including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs.
6. JSOs show variability in sexual crime in terms of the relationship, gender, and age of the victims; the severity of their sexual offending; and the modus operandi or level of force used in their sexual offending

Data from all adjudicated and incarcerated JSOs in every state-run residential treatment facility in a Midwestern state are used in this study. The analysis sample consists of 333 adjudicated JSOs incarcerated in six residential treatment facilities. Descriptive statistics are provided for the JSO sample.

Paper #2: Do Family Characteristics and Childhood Experiences Predict Group Membership into Juvenile Sexual Offender and Juvenile Delinquent Groups?

The purpose of the second paper is to explore various family characteristics and childhood experiences used to predict and distinguish JSO and JD groups. The hypotheses were generated based on prior research and the extant literature. The hypotheses for the second paper are:

1. More disruptive family structure is associated with being in the JSO group.
2. Greater levels of family dysfunction are associated with JSO group membership as indicated by the presence of parent substance abuse, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness.
3. Greater levels of child maltreatment including physical abuse, emotional abuse, physical neglect, and emotional neglect, are associated with being in the JSO group.
4. Youth with a history of sexual abuse victimization are associated with JSO group membership.
5. Youth with childhood exposure to nudity and sexual activity are associated with being in the JSO group.

Data from all adjudicated and incarcerated JSOs and JDs in every state-run residential treatment facility in a Midwestern state are used in this study. The analysis sample consists of 504 adjudicated male youth, 333 JSOs and 171 non-sexual offending JDs, incarcerated in six residential treatment facilities in a Midwestern state. Data analysis includes the use of logistic regression.

Paper #3: Factors Associated with the Severity of Sexual Crime and the Frequency of General Delinquency among Juvenile Sexual Offenders in Residential Treatment

The third paper explores the relationships of various family characteristics and childhood experiences associated with the severity of sexual crime and the frequency of general delinquency for JSOs in residential treatment. The hypotheses were generated based on prior research and the extant literature. The hypotheses for the third paper are:

1. Family structure is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
2. Family functioning, including the presence of parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness, is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
3. Child maltreatment including physical abuse, emotional abuse, physical neglect, and emotional neglect, is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
4. Childhood exposure to nudity and sexual activity is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
5. A history of sexual abuse victimization is associated with the severity of sexual crime as well as the frequency of non-sexual crime.

Data from all adjudicated and incarcerated JSOs in every state-run residential treatment facility in a Midwestern state are used in this study. The sample consists of 333 male adolescents adjudicated delinquent for the commission of sexual offenses incarcerated in six residential treatment facilities. Data analysis includes the use of multiple regression.

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Paper 1: Family, Childhood, and Crime Characteristics of Juvenile Sexual Offenders in Residential Treatment

Introduction

Juvenile delinquency has been described as a social issue of increasing concern by researchers and policy makers alike (Tarolla, Wagner, Rabinowitz, & Tubman, 2002). In The United States, the Office of Juvenile Justice and Delinquency Prevention estimated roughly 2,200,000 arrests of juveniles in 2006. Not including prostitution, more than 19,500 of those juvenile arrests were for sex-related crimes (Snyder, 2008). Juvenile offenders account for one in every four sexual assaults (LaFond, 2005; U.S. Department of Justice, 2009), creating a serious public health issue (Becker, 1998) and societal concern (Barbaree, Hudson, & Seto, 1993; Barbaree & Marshall, 2006). Due to crime being underreported, these figures may only reflect a portion of the actual scope and prevalence of crimes being committed by adolescents (Loeber & Farrington, 1998; Righthand & Welch, 2001). Also underreported and of equal concern, prevalence studies of sexual abuse indicate that half of all females and one fifth of all males in the United States will be sexually abused in their lifetime (Grossman, Martis, & Fichtner, 1999). The National Survey of Children's Exposure to Violence (NatSCEV), found that 1 in 16 children (6.1 percent) were sexually victimized in the past year, and 1 in 10 (9.8 percent) over their lifetimes (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009).

The 15,000 juveniles arrested for sex crimes each year vary in terms of their sexual offense severity, degree of dysfunction, trauma and abuse history (Bagley & Shewchuk-Dann, 1991; Becker, 1990; Becker, Kaplan, Tenke, & Tartaglini, 1991; Knight & Sims-Knight, 2004; Zimring, 2004), and aggressive, antisocial, and general criminal behaviors (Bagley et al., 1991; Becker et al., 1991; CSOM, 1999, Grossman et al., 1999; Knight & Prentky, 1993; Knight &

Sims-Knight, 2003). While these youth may be considered specialized in terms of their offending, they tend to report co-occurrence of non-sexual criminal behaviors or general delinquency as well (Burton, Leibowitz, Eldredge, Ryan, & Compton, 2011; Butler & Seto, 2002; Caldwell, 2002; Elliot, 1995; Spice, Viljoen, Latzman, Scalora, & Ullman, 2012). Among studies of JSOs, characteristics of the child and family have demonstrated to be important domains in the development of criminal behavior (Barbaree & Langton, 2006; Marshall & Barbaree, 1990; Monastersky & Smith, 1985). In order to successfully understand and provide effective treatment for juvenile sex offenders (JSOs), we must further examine their childhood experiences and family characteristics. Additionally, further description of the characteristics of both sexual offending and general delinquency is warranted to determine chronic and possibly diverse patterns in their delinquency.

In terms of treatment, JSOs commonly receive specialized services in juvenile justice and mental health systems, based on the assumption that JSOs present significant individual and family dysfunction, as well as childhood experiences that warrant specialized programs (McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010). These tend to run much longer (i.e., 12-36 months) than those for JDs (Aos, Phipps, Barnoski, & Lieb, 2001; Burton & Smith-Darden, 2001; Elliot, 1998). While criteria differ across jurisdictions, residential placements are often mandated for youth deemed unsafe to remain in the community with their families; they tend to be the most severe offenders, with numerous offenses and victims, compared to those mandated to community supervision and outpatient mental health programs. Youth in residential treatment often report severe histories of child maltreatment and trauma as well as dysfunctional family environments (Hunter, Figuerdo, Malamuth, & Becker, 2003; Murphy, DiLillo, Haynes, & Steere, 2001; Zakireh, Ronis, & Knight, 2008). Residential treatment programs are often paid for

by the state, accruing large costs (Justice Policy Institute, 2009). Since JSOs in residential treatment represent the most severe subpopulation of JSOs and the most expensive to treat, it is essential we more fully understand this population.

This study, using a social learning theory framework, aims to describe the family, childhood, and crime characteristics of a sample of 333 JSOs in residential treatment. To create and provide effective prevention and intervention programming for sexual abuse, an understanding of this subpopulation of the most severe and costly JSOs is needed; therefore, a description of this subpopulation, their family, childhood experiences, and criminal characteristics may be useful in determining chronic and possibly diverse patterns of delinquency in JSOs, beyond sexual offending alone. The research question for this study is: *What are the family, childhood, and crime characteristics of JSOs in residential treatment?* The hypotheses are:

1. JSO families have family structure characterized by single-parent households, parental absence, frequent changes in who lives at home, changes in where the youth reside, and out of home placement for children into foster care or group homes.
2. The functioning of JSO families is characterized by the presence of family health problems, family criminality, domestic violence, parent substance abuse, frequent moves or homelessness, family mental health problems, parental drug sales, and poverty.
3. JSOs present histories of childhood maltreatment and trauma.
4. JSOs show childhood exposure to nudity and sexual activity.
5. JSOs commit non-sexual crimes including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs.

6. JSOs show variability in sexual crime in terms of the relationship, gender, and age of the victims; the severity of their sexual offending; and the modus operandi or level of force used in their sexual offending

Literature Review

Social Learning Theory

The literature suggests that sexually violent behavior in adolescence is learned (Awad & Saunders, 1991; Burton & Meezan, 2004) and that JSOs often reside in environments with high levels of neglect and violence (Rich, 2003). Therefore, social learning theory (Bandura 1969a, 1977), or the later social cognitive theory (Bandura, 1986), continues to be the most consistently used explanatory construct in the JSO literature, incorporating elements of operant conditioning and social cognition (Burton et al., 2004). The basic premise underlying social learning theory shows a process by which people may model or imitate the observed behavior they were exposed to in childhood, creating a behavioral repertoire of their own. This process involves observing the actions of others, as well as the reactions and consequences of such actions; storing this information; and then, in an attempt to achieve the same result (e.g. reward), the individual imitates the behaviors he or she previously observed (Akers, 1985; Bandura, 1969a; Stinson, Sales, & Becker, 2008). According to this theory, violence is learned and modified through the role models provided in one's family such as parents, siblings, and other relatives. Such learning takes place both directly and indirectly while being reinforced in childhood and adolescence. Such violence continues throughout the life course and is reenacted as a method of conflict resolution or it is subsequently utilized as a coping response when experiencing stress (Bandura, 1973; Mihalic & Elliot, 1997; Stinson et al., 2008). If a child experiences or witnesses family members respond to stress or conflict with anger and aggression the child is at greater risk for

engaging in those same responses (Mihalic et al., 1997). Essentially families can teach children approval for the use of violence as well as how and when to be violent (Gelles, 1972).

Additionally, the initial observational learning of what constitutes "appropriate" interactions within intimate relationships is defined and demonstrated by parents and their significant others (Stinson et al., 2008).

Witnessing others' behavior does not ensure the acquisition of such behavior. The internalization and later imitation of a given behavior depends on three factors according to Bandura (1977): the identity of the model, the type of observed behavior, and the observed reactions and consequences. First, models must be trusted and hold a close relationship with the observer, such as parents and caregivers (Bandura, 1969b). These characteristics increase the probability of imitation. Second, the actual observed behavior must be consistent or similar in some way to previously learned behaviors. Moderate behaviors are more likely adopted by the observer than extreme behaviors. Third, the observed reactions and consequences affect the likelihood of later imitation. Immediate positive consequences, or incentives, as well as the simple lack of negative consequences increase the likelihood of internalizing and imitating (Stinson et al., 2008). These basic assumptions suggest that within the family context, behavior can be taught and learned, including sexual and abusive behaviors. Not all JSOs report a history of sexual abuse victimization or come from families who allow or promote sexual abuse. Also, not all victims of sexual abuse go on to become sex offenders (Finkelhor, 1986; Hunter et al., 2003; Knight et al., 2004). However, researchers have demonstrated that important contributory factors in the development of abusive sexual behavior for many JSOs include the family environment, early sexual experiences, and childhood sexual abuse victimization (Barbaree et al., 2006; Burton, 2003; Veneziano, Veneziano, & LeGrand, 2000).

A child's primary context for learning is his family, suggesting social learning theory to be an appropriate framework within which to explore the links between family and childhood experiences, and criminal behaviors in adolescence. In childhood, the behavior of the family may be the most powerful or the only source of information regarding how to conduct oneself in the world. If a child observes his family behaving in negative, abusive, or deviant ways, then the resulting behavior of that child will likely be the same (Stinson et al., 2008).

The Families and Childhood Experiences of Juvenile Sex Offenders

JSOs are a heterogeneous group (Hunter, 2006) in terms of characteristics, experiences, and criminal behavior. JSOs account for one in every four sexual assaults (LaFond, 2005; U.S. Department of Justice, 2009), creating both a serious public health issue (Becker, 1998) and a societal concern (Barbaree et al., 1993; Barbaree et al., 2006). Among studies of JSOs, characteristics of the child and family have demonstrated to be important domains in the development of criminal behavior (Barbaree et al., 2006; Marshall et al., 1990; Monastersky et al., 1985). The 15,000 juveniles arrested for sex crimes each year vary in terms of their sexual offense severity, degree of clinical dysfunction, trauma and abuse history (Bagley et al., 1991; Becker, 1990; Becker et al., 1991; Knight et al., 2004; Zimring, 2004), and aggressive, antisocial, and general criminal behaviors (Bagley et al., 1991; Becker et al., 1991; CSOM, 1999; Grossman et al., 1999; Knight et al., 1993; Knight et al., 2003). Furthermore, families of JSOs also vary in terms of their structure and functioning.

The families of JSOs have been characterized in the literature as having high rates of neglect, violence, family instability, disorganization and inconsistent structure, lack of resources, inadequate parental monitoring of children, and troubled family relationships (Awad et al., 1984; Becker et al., 1986; Deisher, Wenet, Paperny, Clark, & Fehrenbach, 1982; Fehrenbach, Smith,

Monastersky, & Deisher, 1986; Ford & Linney, 1995; Lewis, Shankok, & Pincus, 1979; Loeber & Dishion, 1983; Longo, 1982; Rich, 2003; Smith, 1988; Spaccarelli, Bowden, Coatsworth, & Kim, 1997; Vizard, Monck, & Misch, 1995). Families of JSOs tend toward high levels of parental violence, exposure to substance abuse, early exposure to sexual material and behavior, an environment in which children in the family are at high risk for physical and sexual abuse or sexual exploitation by an adult, exposure to physical abuse of other family members, and a lack of resources to cope with the effects of abuse once disclosed (Awad et al., 1991; Barbaree et al., 2006; Ford et al., 1995; Lightfoot & Barbaree, 1993; Spaccarelli et al., 1997; Vizard et al., 1995).

Regarding childhood maltreatment, the federally funded Center for Sex Offender Management (1999) reported 20-50% of JSOs between 13- 17 years of age report histories of, or exposure to, physical abuse, and 40-80% report sexual abuse histories (Hanson, 1990; Hanson & Slater, 1998; Murphy & Smith, 1996; Ryan, Miyoshi, Metzner, Krugman, & Fryer, 1996; Vizard et al., 1995; Watkins & Bentovim, 1992; Worling, 1995). In their meta-analysis, Seto and Lalumiere (2010) found a higher prevalence of physical abuse among JSOs compared to juvenile delinquents (JDs) and nonoffending adolescents. They also found that JSOs reported a greater prevalence of emotional abuse and/or neglect compared with reports by JDs and nonoffending adolescents (Seto & Lalumiere, 2010). Researchers indicate that abuse and neglect in childhood significantly predicts non-sexual criminal behavior for JSOs (Burton, Leibowitz, Eldredge, Ryan, & Compton, 2011). Incidences of sexual abuse among JSOs exceed estimates in the general child and adolescent population (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009) and in other juvenile delinquent groups (Burton, Miller, & Shill, 2002; Fagen & Wexler, 1988; Fehrenbach et al., 1986; Hastings, Anderson, & Hemphill, 1997; Jonson-Reid & Way, 2001; Milloy, 1994; Seto et al., 2010). Researchers have offered considerable evidence that sexual abuse is a risk factor in

the development of sexually coercive behavior (Knight et al., 2004). With many JSOs reporting histories of child sexual abuse victimization, it is possible that their subsequent abuse perpetration models the behavior they experienced in childhood as victims (Barbaree et al., 2006; Burton, 2003; Veneziano et al., 2000). Knight et al. (2004) tested a predictive model of sexual aggression on JSOs and found three paths leading to sexually coercive behaviors. Each path originated in abuse, two paths starting with physical and verbal abuse, and the third starting with sexual abuse (Knight et al., 2004). Among adult SOs, those who began sexually offending in adolescence had higher frequency and severity of childhood sexual abuse than those who started sexually offending as adults (Burton et al., 2001; DiCenso, 1992). Research demonstrates that maltreatment in childhood correlates with crimes being committed in adolescence and adulthood (Luntz & Widom, 1994; McCord, 1983; Pollock, Briere, Schneider, Knop, Mednick, & Goodwin, 1990; Widom, 1989).

Other characteristics of JSO families include family criminality, parental mental health issues, and separation from parents. Many sexually aggressive youth may have seen crimes committed by those close to them or may have been exposed to the criminality of their family members (parents, siblings, and other relatives) (Bagley & Shewchuk-Dann, 1991; Baker, Tabacoff, Tornusciolo, & Eisenstadt, 2001; Caputo, Frick, & Brodsky, 1999; Morris, Anderson, & Knox, 2002; Wieckowski, Hartsoe, Mayer, & Shortz, 1998; Zgourides, Monto, & Harris, 1994). Parental mental health issues are also correlated with juvenile sexual offending (Awad et al., 1991; Becker et al., 1986). Regarding separation from family, such as out of home placement, studies suggest that many JSOs have experienced separations from parents, both physical and/or emotional (Fehrenbach et al., 1986; Kahn & Chambers, 1991; Smith & Israel, 1987).

To more fully understand the family, childhood, and crime characteristics of JSOs in residential treatment, this study examines domains that have been neglected or not fully examined in the existing literature. Such an examination can allow for more targeted interventions for these youth and aid in creating prevention programs and direction for future research. First and foremost, these youth are viewed within the context of their family, that is the family environment and childhood experiences that occur within the family of these youth. Additionally, JSOs in residential treatment will one day be released back into the community, and often times back into the care of their families. Therefore, discharge planning must consider family and childhood experiences that may continue to play a role in the lives of these youth after discharge. Regarding child maltreatment, this study examines abuse as well as the nature and scope of neglect, both physical and emotional, of JSOs in residential treatment. The term “child maltreatment” has been used in many studies to aggregate several forms of abuse and neglect. This study differentiates neglect from other forms of child maltreatment. Additionally, while there has been a recent focus in the literature on exposure to pornography among JSOs (Burton, Leibowitz, Booxbaum, & Howard, 2011), childhood exposure to nudity and sexual activity, has been largely overlooked. Consistent with social learning theory, which suggests that children learn behaviors from role models and early childhood experiences, a description of JSOs in residential treatment should include childhood exposure to sexuality in all forms. Since the nature of their offending is sexual, such exposure should be included when accounting for sexual experiences and possible influences in the lives of these youth. Furthermore, this study describes the general delinquency of JSOs in residential treatment since many JSOs report co-occurring non-sexual criminal behavior (Burton, Leibowitz, Eldredge et al., 2011; Butler et al., 2002; Caldwell, 2002; Elliot, 1995; Spice et al., 2012), which has gained little attention in previous

studies of these youth. Understanding the general delinquency of JSOs in residential treatment will aid in determining chronic and possibly diverse patterns of offending. Additional limitations in the literature include small sample sizes as well as geographical limitations of the samples. In contrast, a relatively large sample of 333 adjudicated and incarcerated JSOs from every state-run facility in a Midwestern state was used for this study. The sample represents youth from urban, suburban, and rural settings, unlike previous studies with samples from only one facility or treatment program that drew from a more limited geographical area.

Methods

Sample

All adjudicated JSOs in every state-run residential treatment facility in a Midwestern state were included in the study. The analysis sample consists of 333 adjudicated JSOs incarcerated in six residential treatment facilities. In each of the six residential delinquency institutions, administrators, clinicians, and front line staff were asked for approval for each boy's participation in the survey.

Data Collection

In 2004, 333 adjudicated youth with sexual offenses in six residential treatment facilities in a Midwestern state voluntarily completed surveys. After consent was obtained, pencil and paper surveys were administered in a small group (8-12) format. The youth were separated within a classroom setting to ensure they did not view other participants' responses. Pencil and paper survey administration was utilized in an attempt to offer anonymity and minimize underreporting or distress due to stigma or discomfort (e.g., questions about abuse and sexuality). Additionally, staff and trained graduate student research assistants were present to assist youth who had difficulty understanding a particular question, struggled with reading, or

became distressed. No incentives for survey completion were offered, and youth were informed that new disclosures of abuse or perpetration would be reported to the proper authorities.

Measures

This study employed detailed demographic, family, and childhood history forms that had been used in previous studies (Burton, 2003; Burton et al., 2002). The Evaluation Measures (see Appendix) used in this study, are divided into two categories, developmental antecedents and criminal behavior. Below are descriptions of each set of measures.

Developmental antecedents.

Demographics. A demographic form was used to collect information regarding gender, race, the age at first sexual offense, age at last sexual offense, and duration of sexual offending, age at survey completion, and grade of the respondents.

Family characteristics. Questions regarding family structure and functioning were used in this study (see Appendix). Family structure includes variables related to the identification of caregivers; the living situation, including changes in who the youth resides with; and the characteristics of out of home placement of children in group homes, foster homes, or with relatives. Family functioning includes variables related to family health problems, family criminality, domestic violence, parent substance abuse, frequent moves or homelessness, family mental health problems, parent drug sales, and poverty.

Child maltreatment and trauma variables. The Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 1998) is a 34-item scale that screens for traumatic experiences throughout childhood including physical, sexual, and emotional abuse, as well as physical and emotional neglect, retrospectively. It uses a five-point Likert scale from “Never true” (1) to “Very often true” (5). Respondents were asked to rate the frequency and severity of their childhood abuse and

neglect experiences. For all of the abuse scale variables, a higher score indicates more frequent and more severe abuse experiences (see Table B1 in Appendix B).

The Physical Abuse scale represents the sum of five items in the CTQ (see Appendix) with possible scores ranging on the scale from 5 to 25. Cronbach's alpha was calculated for the physical abuse scale at .89, indicating high scale reliability.

The Sexual Abuse scale represents the sum of six items in the CTQ (see Appendix) with possible scores ranging on the scale from 6 to 30. Cronbach's alpha was calculated for the sexual abuse scale at .84, indicating high scale reliability.

The Emotional Abuse scale represents the sum of five items in the CTQ (see Appendix) with possible scores ranging on the scale from 5 to 25. Cronbach's alpha was calculated for the emotional abuse scale at .89, indicating high scale reliability.

The Physical Neglect represents the sum of nine recoded items in the CTQ (see Appendix) with possible scores ranging on the scale from 9 to 45. Cronbach's alpha was calculated for the physical neglect scale at .76, indicating sound scale reliability.

The Emotional Neglect scale represents the sum of nine recoded items in the CTQ (see Appendix) with possible scores ranging on the scale from 9 to 45. Cronbach's alpha was calculated for the emotional neglect scale at .92, indicating very high scale reliability.

Sexual abuse victimization and abuser characteristics. Questions regarding characteristics of sexual abuse victimization and the abuser were used in this study (see Appendix). This domain includes variables related to characteristics of the abuser (i.e., gender of abuser, relationship to abuser, number of abusers), severity of the sexual abuse victimization, as well as modus operandi or the level of force or coercion used by the abuser during the sexual abuse victimization.

Childhood exposure to nudity and sexual activity. The frequency and type of childhood exposure to nudity and sexual activity was assessed by 10 self-report items based on Leguizamo's (2000) interview. Respondents were asked to rate the frequency and type of childhood exposure both before age 10 (5 questions) and after age 10 (5 questions), using a 7 point scale with answer choices: 1(never), 2(1-5 times), 3(6-25 times), 4(26-50 times), 5(51-100 times), 6(101-500 times), 7(over 500 times). Cronbach's alpha was calculated for the before age 10 scale at .78 and for the after age 10 scale at .75, indicating sound scale reliability.

Criminal behavior.

Non-sexual crime. The Self-Report Delinquency Scale (SRD) (Elliot, Huizinga & Ageton, 1985) is a 28-item self-report measure used to assess non-sexual delinquency ranging from drug use to aggression and contains several subscales including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs. The frequency of general delinquency variable represents an overall average score ranging from 1-7. Responses were scaled to indicate frequency of general delinquency crimes in the following manner, 1 = never, 2 = once a month, 3 = once every 2-3 weeks, 4 = once a week, 5 = 2-3 times a week, 6 = once a day, 7 = 2-3 times a day. Higher scores indicate more frequent general delinquency crimes. "Inter-item reliability is sound for most of the subscales with the exception of drug use and public disorderly (Burton, Duty & Leibowitz, 2011). Cronbach's alpha was calculated for the entire measure at .93, indicating very high reliability.

The alcohol use subscale was computed from two recoded items in the SRD. Cronbach's alpha was calculated for the alcohol use subscale at .79, indicating sound scale reliability.

The drug use subscale was computed from four recoded items in the SRD. Cronbach's alpha was calculated for the drug use subscale at .61, indicating sound scale reliability.

The felony assault subscale was computed from two recoded items in the SRD. Cronbach's alpha was calculated for the felony assault subscale at .67, indicating sound scale reliability.

The felony theft subscale was computed from four recoded items in the SRD. Cronbach's alpha was calculated for the felony theft subscale at .89, indicating high scale reliability.

The general delinquency subscale was computed from seven recoded items in the SRD. Cronbach's alpha was calculated for the general delinquency subscale at .68, indicating sound scale reliability.

The property damage subscale was computed from three recoded items in the SRD. Cronbach's alpha was calculated for the property damage subscale at .74, indicating sound scale reliability.

The public disorderly subscale was computed from three recoded items in the SRD. Cronbach's alpha was calculated for the public disorderly subscale at .51, indicating sound scale reliability.

The selling drugs subscale was computed from two recoded items in the SRD. Cronbach's alpha was calculated for the selling drugs subscale at .84, indicating high scale reliability.

The robbery variable is comprised of one item in the SRD. Cronbach's alpha was not calculated.

Sexual crime. The Self-Report Sexual Aggression Scale (SERSAS) used in prior studies (Burton et al., 2002; Burton, 2003; Burton, Leibowitz, Booxbaum et al., 2011) measures sexually aggressive behaviors over the lifespan. Scales that originated from this measure include: a scale of severity of sexual aggression using a 7 point rank order scale which runs from 1=

exhibitionism or voyeurism to 7= penetration, fondling and exhibitionism or voyeurism; number of victims by age, gender, and relationship; and a rank order scale for modus operandi (or level of force used in offenses) which runs from 0= did not use any of the three modus operandi to 7= used all three modus operandi (offered favors, made threats, and used force). Burton et al. (2002) created a more comprehensive measure for severity of sexual crimes using a 15 point scale. The severity of sexual crime variable represents an overall average score ranging from 1-15.

Responses were scaled to indicate severity of sexual crime in the following manner, 1 = exposure, 2 = fondling, 3 = exposure and fondling, 4 = oral sex, 5 = oral sex and exposure, 6 = oral sex and fondling, 7 = oral sex, fondling, and exposure, 8 = penetration with penis, digits, or object, 9 = penetration and exposure, 10 = penetration and fondling, 11 = penetration, exposure, and fondling, 12 = penetration and oral sex, 13 = penetration, oral sex, and exposure, 14 = penetration, oral sex, and fondling, 15 = penetration, oral sex, exposure, and fondling. A higher score indicates more complex and severe sexual abuse experiences. Cronbach's alpha indicated very high reliability, at $\alpha = .87$, for this instrument, with an 8 week test-retest agreement of 96% (Burton, 2000; Burton et al., 2002).

Data Analysis

The sample for these analyses consisted of adjudicated JSOs (n= 333) in residential treatment. SPSS 14 was used for data entry and analysis. Descriptive statistics, including means and frequencies, are provided for the JSO sample.

Results

Results of this study are presented below. Additionally, since data collection for this study was completed in 2004, data from various sources (i.e. Population Reference Bureau, U.S. Census Bureau, U.S. Department of Health and Human Services, Administration for Children

and Families) compiled by several organizations (i.e. Annie E. Casey Foundation (AECF), KIDS COUNT, Children's Defense Fund (CDF), National Child Abuse and Neglect Data System (NCANDS)) are presented from a similar time frame to offer comparisons to the general population of youth from the same Midwestern state.

Sample Characteristics

Demographics. This section presents the sample demographics. The total sample for this study consisted of 333 JSOs incarcerated in six residential facilities in a Midwestern state, representing a state wide sample. The sample contains only male juveniles. Racially, roughly half the sample are identified as Caucasian ($n = 156$), while the other half are identified as "of color" ($n = 158$), which includes Black, Hispanic, Latino, Native American, and other, with a few respondents ($n = 18$) not reporting race. The average age that JSOs started sexually offending was, $M = 12.40$ years, $SD = 3.08$ years, and the average age they stopped sexually offending was, $M = 14.08$ years, $SD = 2.29$ years. On average the duration of their sexual offending was, $M = 3.23$ years, $SD = 2.54$ years. Their average age at time of survey completion was 16.70 years ($SD = 1.64$ years). On average, most JSOs were in the 9th grade ($SD = 1.62$ grades) prior to entering state care.

Family Characteristics

Family structure. Tables 1-6. present the family structure characteristics of the sample. Family structure includes variables related to the identification of caregivers; the living situation, including changes in who the youth resides with; and the characteristics of out of home placement of children in group homes, foster homes, or with relatives. More than 50% of the JSOs were raised in a two parent family, including two biological parents, mother and partner, and father and partner households. In terms of primarily residing with the mother opposed to the

father, roughly one quarter were raised by a single mother, and almost one fifth were raised by their mother and her partner. Additionally, one third of youth reported frequent changes in those who live at home. In assessing other aspects of family structure, more than half of the youth reported having lived with different people at different times, such as various relatives or foster families. Also, the majority of youth reported never having lived in a group or foster home. However, of those JSOs who reported having lived in a group or foster home, when asked about the number of homes they resided in or received services from, almost one third reported one or more group homes, about one third reported one or more foster care homes with strangers, and roughly one quarter reported one or more foster care homes with relatives. In addition, when asked about other children in the family, about one quarter of the youth reported other family children having been placed outside the home.

In terms of comparing these results to those for other children, according to data from the Population Reference Bureau and the U.S. Census Bureau compiled by the National Center for Children in Poverty (AECF, KIDS COUNT, 2007) in 2004 in this same Midwestern state, 67% of children under age 18 were residing in a married couple household, 27% in a mother only household, and 6% in a father only household. Furthermore, in 2004, 33% of children under 18 were residing in single-parent families, including cohabiting couples but not married stepparents. Also, in 2004 in the same Midwestern state, 18,004 children of whom 53% were male were residing in foster care. Of those in foster care in 2004, 61% were residing with a non-relative foster family, 15% with a relative foster family, 14% in a group home, while the remaining 10% were in a pre-adoptive home, a trial visit home, supervised independent living, or had run away (AECF, KIDS COUNT, 2007).

Table 1.

Responses to “Which One Of The Following Best Describes The Family You Were Raised In?” (n=314)

	Number (percentage)
Two parent	102 (32.5%)
Single mother	78 (24.8%)
Mother and partner	56 (17.8%)
Grandparent	25 (8.0%)
Foster home	20 (6.4%)
Single father	12 (3.8%)
Father and partner	11 (3.5%)
Other relative	10 (3.25%)
Total	314 (100.0%)

Note. sorted by percentage

Table 2.

Responses to “When I Was Growing Up, I Lived With Different People At Different Times (Different Relatives Or Foster Families).” (n=323)

	Number (percentage)
Never true	149 (46.1%)
Rarely true	46 (14.2%)
Sometimes true	66 (20.4%)
Often true	22 (6.8%)
Very often true	40 (12.4%)
Total	323 (100.0%)

Table 3.

Responses to “When I Was Growing Up, I Lived In A Group Home Or Foster Home.”(n=323)

	Number (percentage)
Never true	198 (61.3%)
Rarely true	46 (14.2%)
Sometimes true	29 (9.0%)
Often true	13 (4.0%)
Very often true	37 (11.5%)
Total	323 (100.0%)

Table 4.
Responses to “Please Indicate How Many Group Homes You May Have Lived Or Received Services From.” (n=304)

	Number (percentage)
0 homes	217 (71.4%)
1 home	46 (15.1%)
2 homes	22 (7.2%)
3 homes	8 (2.6%)
4 homes	2 (7%)
5 homes	5 (1.6%)
6 homes	2 (.7%)
9 homes	1 (.3%)
13 homes	1 (.3%)
Total	304 (100.0%)

Table 5.
Responses to “Please Indicate How Many Foster Care Homes With Strangers You May Have Lived Or Received Services From.” (n=333)

	Number (percentage)
0 homes	209 (68.3%)
1 home	37 (12.1%)
2 homes	21 (6.9%)
3 homes	14 (4.6%)
4 homes	5 (1.6%)
5 homes	5 (1.6%)
6 homes	3 (1.0%)
7 homes	3 (1.0%)
8 homes	2 (.7%)
12 homes	1 (.3%)
13 homes	1 (.3%)
18 homes	2 (.7%)
23 homes	1 (.3%)
27 homes	1 (.3%)
38 homes	1 (.3%)
Total	306 (100.0%)

Table 6.
Responses to “Please Indicate How Many Foster Care Homes With Relatives You May Have Lived Or Received Services From.” (n=307)

	Number (percentage)
0 homes	247 (80.5%)
1 home	34 (11.1%)
2 homes	11 (3.6%)
3 homes	6 (2.0%)
4 homes	5 (1.6%)
5 homes	1 (.3%)
6 homes	2 (.7%)
20 homes	1 (.3%)
Total	307 (100.0%)

Family functioning. Table 7. includes variables related to family health problems, family criminality, domestic violence, parent substance abuse, frequent moves or homelessness, family mental health problems, parent drug sales, and poverty. Overall, 90% of JSOs indicated some form of family dysfunction in their home. More specifically, when asked to describe their family and home environment, roughly half reported family health problems, family criminality, domestic violence, and parent substance abuse. In addition, approximately 30% reported frequent moves or homelessness and family mental health problems, while roughly one quarter reported their parent sold drugs and their family lived in poverty.

In terms of comparing these results to those for other children, the actual number of children in the same Midwestern state who experienced family health problems, family criminality, parent substance abuse, family mental health problems, or who had a parent who sold drugs is unknown. However there is information on frequent moves, homelessness, and poverty. According to data from the U.S. Census Bureau compiled by the National Center for Children in Poverty (CDF, 2007), in 2007 in the same Midwestern state, 19% of low income families and 8% of families above low-income thresholds moved in the last year. In 2004 in the

same Midwestern state, 463,954 or almost 17% of children were living in families making less than the poverty rate (CDF, 2007).

Table 7.
Responses to “Do These Describe Your Family And/Or Home?”

	N	Yes percentage	No percentage	Don't know percentage
Family health problems	323	55.4%	33.4%	11.1%
Family criminality	324	47.8%	41.7%	10.5%
Domestic violence	329	46.2%	50.8%	3.0%
Parent substance abuse	329	44.7%	51.7%	3.3%
Frequent moves or homelessness	324	39.5%	57.4%	3.1%
Family mental health problems	325	30.5%	55.1%	14.5%
Parent sold drugs	326	21.5%	74.2%	4.3%
Poverty	326	20.2%	75.8%	4.0%

Child Maltreatment

Abuse and neglect. Table 8. presents the child maltreatment history of the sample using the Childhood Trauma Questionnaire (CTQ). Youth in this sample may have experienced more than one type of maltreatment. On average, JSOs in this sample reported severe emotional and physical neglect, moderate to severe sexual and physical abuse, and low to moderate emotional abuse (see Table B1 in Appendix B). For emotional neglect the average score was, $M = 18.87$, $SD = 9.17$, with possible scores ranging on the scale from 9 to 45. A score equal to or greater than 18 indicates a severe to extreme experience of emotional neglect. Additionally, JSOs had an average score of, $M = 17.41$, $SD = 6.50$, for physical neglect, with possible scores ranging on the scale from 9 to 45. A score equal to or greater than 13 indicates a severe to extreme experience of physical neglect. Other types of maltreatment were also common. The average score for sexual abuse victimization was, $M = 12.03$, $SD = 6.54$, with possible scores ranging on the scale from 6 to 30. A score of 8 - 12 indicates a moderate to severe experience of sexual abuse. JSOs reported an average score for physical abuse victimization of, $M = 11.86$, $SD = 6.23$, with

possible scores ranging on the scale from 5 to 25. A score of 10 - 12 indicates a moderate to severe experience of physical abuse. Finally, regarding emotional abuse, the average score for JSOs was, $M = 11.58$, $SD = 6.17$, with possible scores ranging on the scale from 5 to 25. A score of 9 - 12 indicates a low to moderate experience of emotional abuse.

In terms of comparing these results to those for other children, the Administration for Children and Families of the U.S. Department of Health and Human Services reports in 2004 in the same Midwestern state, 39,356 children were confirmed by child protective services (CPS) as victims of child maltreatment (NCANDS, 2000–2010). Of those children with confirmed cases by CPS, 57% experienced neglect, 22% physical abuse, 18% sexual abuse, and 11% emotional abuse (AECF, KIDS COUNT, 2007). In terms of physical neglect, from 2003-2005 almost 13% of households experienced food insecurity in the same Midwestern state (Nord, 2005) which may be considered a form of physical neglect regarding provision of basic needs.

Table 8.
Childhood Trauma Questionnaire Scales (n=325)

Scale*	Mean (SD)
Emotional neglect scale	18.87 (9.17)
Physical neglect scale	17.41 (6.50)
Sexual abuse scale	12.03 (6.54)
Physical abuse scale	11.86 (6.23)
Emotional abuse scale	11.58 (6.17)

*sorted by mean

Sexual abuse victimization and abuser characteristics. Tables 9-14 include variables related to characteristics of the perpetrator, severity of the sexual abuse victimization, as well as modus operandi or the level of force or coercion used by the perpetrator during the sexual abuse victimization. More than half of the JSO sample (54%) reported being sexually abused during childhood. Many youth in this sample experienced sexual abuse victimization more than once and by more than one perpetrator. Overall the youth indicated they were related to or knew their

perpetrators, who were mostly adults and teens. Very few reported being sexually abused by strangers or children. More than 80% of the sexually abused JSOs reported being sexually abused by males, while close to 60% reported being sexually abused by females, and over 30% indicated being sexually abused by both females and males. In terms of the complexity and severity of the sexual abuse victimization, more than 40% experienced a combination of penetration, oral sex, exposure, and fondling. Regarding modus operandi or the level of force or coercion used in their sexual abuse victimization, the majority of JSOs reported their abuser used either games and or threats, yet almost half of the sample experienced some level of force. In terms of comparing these results to those of other children in the same Midwestern state, the specific details of the sexual abuse victimization and abuser characteristics for other children is unknown.

Table 9.
Sexual Abuse Victimization: Responses to “Who Sexually Abused You And How Many Female Sexual Abusers Did You Have?”

Relationship to Abuser*	N	Number (percentage)
Female relative	217	55 (25.3%)
Female teen friend, neighbor	217	32 (14.7%)
Female adult friend, neighbor	217	21 (9.7%)
Female teen stranger	217	14 (6.5%)
Female adult stranger	216	13 (6.0%)
Girlfriend	214	11 (5.1%)

* sorted by percentage

Table 10.
Sexual Abuse Victimization: Responses to “Who Sexually Abused You And How Many Male Sexual Abusers Did You Have?”

Relationship to Abuser*	N	Number (percentage)
Male relative	212	89 (42.0%)
Male teen friend, neighbor	216	45 (20.8%)
Male adult friend, neighbor	215	26 (12.1%)
Male teen stranger	215	23 (10.7%)
Male adult stranger	214	18 (8.4%)
Boyfriend	214	7 (3.3%)

* sorted by percentage

Table 11.
Sexual Abuse Victimization: Responses to “How Many People Sexually Abused You?”

	Children		Teens		Adults	
	N	Number (percentage)	N	Number (percentage)	N	Number (percentage)
Females	282	17 (6.1%)	286	46 (16.0%)	286	36 (12.4%)
Males	285	12 (4.3%)	284	69 (24.4%)	285	86 (30.5%)

Table 12.
Sexual Abuse Victimization: Abuser Gender (n=333)

	Number (percentage)
Any female abusers	195 (58.6%)
Any male abusers	269 (80.8%)
Both female and males abusers	113 (33.9%)

Table 13.
Sexual Abuse Victimization: Complexity and Severity, Responses to “What Did They Do To You?”
 (n=179)

Complexity and Severity	Number (percentage)
Exposure	3 (1.7%)
Fondling	13 (7.3%)
Exposure and fondling	13 (7.3%)
Oral sex	12 (6.7%)
Oral sex and exposure	3 (1.7%)
Oral sex and fondling	6 (3.4%)
Oral sex, fondling, and exposure	14 (7.8%)
Penetration with penis, digits, or objects	10 (5.6%)
Penetration and exposure	0 (0%)
Penetration and fondling	4 (2.2%)
Penetration, exposure, and fondling	10 (5.6%)
Penetration and oral sex	6 (3.4%)
Penetration, oral sex, and exposure	1 (.6%)
Penetration, oral sex, and fondling	9 (5.0%)
Penetration, oral sex, exposure, and fondling	75 (41.9%)
Total	179 (100.0%)

Table 14.
Sexual Abuse Victimization: Modus Operandi Or Level Of Force Experienced, Responses to “How Did They Get You To Do What They Wanted?” (n=174)

Modus Operandi	Number (percentage)
Games	72 (41.4%)
Threats	8 (4.6%)
Games and threats	16 (9.2%)
Force	25 (14.4%)
Force and games	11 (6.3%)
Force and threats	19 (10.9%)
Force, games, and threats	23 (13.2%)
Total	174 (100.0%)

Childhood exposure to nudity and sexual activity. Tables 15 and 16 present the childhood exposure to nudity and sexual activity for the sample. Many JSOs in the sample indicated exposure to nudity and sexual activity in childhood. Before age 10 years old, 60.4% of youth reported observing naked adults and 40.9% reported seeing naked children. After the age of 10 years old, 76.8% of youth reported observing naked adults and 44.5% reported seeing naked children. Similarly, both before and after age of 10 years old, more than half of the JSOs reported observing adults having sex, while almost 20% reported observing children having sex with children. Additionally, both before and after 10 years old, close to 10% of JSOs reported seeing adults force adults to have sex, as well as adults having sex with children. In terms of comparing these results to those of other children, the actual number of children in the same Midwestern state who were exposed to nudity and sexual activity in childhood is unknown.

Table 15.

Exposure to Nudity and Sexual Activity: Responses to “Before The Age Of 10, How Many Times Had You Seen?”

	Naked Adults	Naked Children	Adults having Sex	Adults Forcing Adults to have Sex	Adults having Sex with Children	Children having Sex with Children
	Number (percentage)	Number (percentage)	Number (percentage)	Number (percentage)	Number (percentage)	Number (percentage)
Never	125 (39.7%)	186 (59.0%)	158 (49.8%)	297 (93.4%)	292 (91.8%)	258 (81.4%)
1-5 times	110 (34.9%)	73 (23.2%)	104 (32.8%)	11 (3.5%)	17 (5.3%)	35 (11.0%)
6-25 times	32 (10.2%)	31 (9.8%)	25 (7.9%)	7 (2.2%)	3 (.9%)	11 (3.5%)
26-50 times	22 (7.0%)	9 (2.9%)	10 (3.2%)	1 (.3%)	2 (.6%)	6 (1.9%)
51-100 times	9 (2.9%)	7 (2.2%)	9 (2.8%)	0 (0.0%)	0 (0.0%)	3 (.9%)
101-500 times	8 (2.5%)	2 (.6%)	5 (1.6%)	1 (.3%)	2 (.6%)	2 (.6%)
Over 500 times	9 (2.5%)	7 (2.2%)	6 (1.9%)	1 (.3%)	2 (.6%)	2 (.6%)
Total	315 (100.0%)	315 (100.0%)	317 (100.0%)	318 (100.0%)	318 (100.0%)	317 (100.0%)

Table 16.

Exposure to Nudity and Sexual Activity: Responses to “After The Age Of 10, How Many Times Had You Seen?”

	Naked Adults	Naked Children	Adults having Sex	Adults Forcing Adults to have Sex	Adults having Sex with Children	Children having Sex with Children
	Number (percentage)	Number (percentage)	Number (percentage)	Number (percentage)	Number (percentage)	Number (percentage)
Never	71 (23.2%)	173 (55.4%)	126 (40.5%)	283 (90.4%)	291 (92.7%)	256 (81.8%)
1-5 times	90 (29.4%)	76 (24.4%)	83 (26.7%)	19 (6.1%)	16 (5.1%)	29 (9.3%)
6-25 times	62 (20.3%)	30 (9.6%)	41 (13.2%)	5 (1.6%)	2 (.6%)	14 (4.5%)
26-50 times	31 (10.1%)	17 (5.4%)	20 (6.4%)	1 (.3%)	2 (.6%)	6 (1.9%)
51-100 times	18 (5.9%)	2 (.6%)	13 (4.2%)	3 (1.0%)	1 (.3%)	2 (.6%)
101-500 times	14 (4.6%)	6 (1.9%)	9 (2.9%)	0 (0.0%)	1 (.3%)	2 (.6%)
Over 500 times	20 (6.5%)	8 (2.6%)	19 (6.1%)	2 (.6%)	1 (.3%)	4 (1.3%)
Total	306 (100.0%)	312 (100.0%)	311 (100.0%)	313 (100.0%)	314 (100.0%)	313 (100.0%)

Crime Characteristics

Non-sexual crime characteristics. Table 17 presents the non-sexual crime characteristics, or the general delinquency, for the sample. For JSOs, on the Self-Report Delinquency Scale (SRD) the overall average frequency of non-sexual delinquency was, $M = 6.99$, $SD = 7.06$, with possible scores ranging from 1 (indicating no delinquency) to 7 (the most frequent, at “2-3 times a day”). For felony theft the average frequency score ($M = 5.04$, $SD = 6.55$) most closely corresponds to “2-3 times a week.” The average frequency scores for drug use ($M = 3.41$, $SD = 4.15$), alcohol use ($M = 3.36$, $SD = 3.86$), and property damage ($M = 3.00$, $SD = 4.10$) most closely correspond to “once every 2-3 weeks.” Additionally, the average frequency score for having sold drugs ($M = 2.71$, $SD = 4.18$) most closely corresponds to “once a month.”

Table 17.
Frequency of General Delinquency Prior to Arrest

Scale*	N	Mean (SD)
Overall frequency	286	6.99 (7.06)
Felony theft	292	5.04 (6.55)
Drug use	289	3.41 (4.15)
Alcohol use	294	3.36 (3.86)
Property damage	300	3.00 (4.10)
Sold drugs	294	2.71 (4.18)
Felony assault	297	1.97 (3.11)
Public disorderly	295	1.42 (2.84)
Robbery	297	.82 (1.66)

*sorted by mean

Sexual crime characteristics. Tables 18-23 include variables related to sexual crime characteristics, namely the relationship, gender, and age of the victims; the severity of the sexual offending; and the modus operandi or level of force or coercion used in the sexual offending. Many children report numerous incidents and victims over the course of their offending history. Overall, the youth indicated they were related to or knew their

sexual offense victims, who were mostly children and teens. Very few reported sexually offending strangers or adults. More than 90% of the JSOs indicated offending females, while over half indicated offending males. Regarding total number of sexual offense victims, the JSOs reported an average of, $M = 3.23$ victims, $SD = 8.38$. In terms of the severity of their sexual offending, more than half of the JSOs penetrated their victims, with more than 20% using a combination of penetration, oral sex, exposure, and fondling. Roughly one quarter of the JSOs used oral sex to sexually offend their victims, while close to 20% fondled their victims, and few reported only exposing themselves. Regarding the level of force or coercion used in their sexual offending, more than half of JSOs reported using games with their victims, yet almost one third of the sample used some level of force. The average age that JSOs started sexually offending was, $M = 12.40$ years, $SD = 3.08$, and the average age they stopped sexually offending was, $M = 14.08$ years, $SD = 2.29$. On average the duration of their sexual offending was, $M = 3.23$ years, $SD = 2.54$.

Table 18.
Sexual Offending: Responses to “Who Did You Sexually Abuse And How Many Female Victims Did You Have?”

Relationship to Victim*	N	Number (percentage)
Relative	298	145 (48.6%)
Teen friend, neighbor	300	71 (23.5%)
Girlfriend	302	27 (9.0%)
Teen stranger	303	24 (7.8%)
Adult friend, neighbor	301	13 (4.4%)
Adult stranger	302	10 (3.25%)

* sorted by percentage

Table 19.
Sexual Offending: Responses to “Who Did You Sexually Abuse And How Many Male Victims Did You Have?”

Relationship to Victim*	N	Number (percentage)
Relative	299	98 (32.7%)
Teen friend, neighbor	301	55 (18.3%)
Teen stranger	303	11 (3.6%)
Adult friend, neighbor	302	3 (1.0%)
Boyfriend	303	2 (.6%)
Adult stranger	303	1 (.3%)

* sorted by percentage

Table 20.
Sexual Offending: Responses to “How Many People Have You Sexually Abused?”

	Females		Males	
	N	Number (percentage)	N	Number (percentage)
Children	310	175 (56.4%)	310	130 (41.9%)
Teens	308	78 (25.2%)	307	23 (7.5%)
Adults	308	31 (9.9%)	312	5 (1.6%)

Table 21.
Sexual Offending: Responses to “How Many People Have You Sexually Abused?” (n=313)

Number of Victims	Number (percentage)
0	29 (9.3%)
1	128 (40.9%)
2	53 (16.9%)
3	36 (11.5%)
4	20 (6.4%)
5	12 (3.8%)
6	6 (1.9%)
7	8 (2.6%)
8	3 (1.0%)
9	2 (.6%)
10	2 (.6%)
11	1 (.3%)
12	3 (1.0%)
13	3 (1.0%)
16	1 (.3%)
22	1 (.3%)
24	2 (.6%)
28	1 (.3%)
49	1 (.3%)
129	1 (.3%)
Total	313 (100.0%)

$M = 3.23, SD = 8.38$

Table 22.
Sexual Offending: Severity, Responses to “What Did You Do To Them?”(n=283)

Complexity and Severity	Number (percentage)
Exposure	12 (4.2%)
Fondling	30 (10.6%)
Exposure and fondling	16 (5.7%)
Oral sex	29 (10.2%)
Oral sex and exposure	1 (.4%)
Oral sex and fondling	18 (6.4%)
Oral sex, fondling, and exposure	20 (7.15%)
Penetration with penis, digits, or objects	26 (9.2%)
Penetration and exposure	5 (1.8%)
Penetration and fondling	12 (4.2%)
Penetration, exposure, and fondling	10 (3.5%)
Penetration and oral sex	15 (5.3%)
Penetration, oral sex, and exposure	6 (2.1%)
Penetration, oral sex, and fondling	20 (7.1%)
Penetration, oral sex, exposure, and fondling	63 (22.3%)
Total	283 (100.0%)

Table 23.
Sexual Offending: Modus Operandi Or Level Of Force Used, Responses to “How Did You Get Them To Do What You Wanted?”(n=247)

Modus Operandi	Number (percentage)
Games	153 (61.9%)
Threats	4 (1.6%)
Games and threats	19 (7.7%)
Force	23 (9.3%)
Force and games	20 (8.1%)
Force and threats	3 (1.2%)
Force, games, and threats	25 (10.1%)
Total	174 (100%)

Discussion

The results of this descriptive study confirm all the hypotheses regarding family and childhood characteristics, child maltreatment, childhood exposure to nudity and sexual activity, and crime characteristics of JSOs, with the exception of family structure regarding single parent families. Many results are consistent with both theory and previous empirical data.

Hypothesis 1: JSO families have family structure characterized by single-parent households, parental absence, frequent changes in who lives at home, changes in where the youth reside, and out of home placement for children into foster care or group homes

The first hypothesis held that JSO families have family structure characterized by single-parent households, parental absence, and out of home placement for children. This was not confirmed since more than half of the JSOs in this sample were raised in a two parent family including households with two biological parents, mother and partner, and father and partner. In terms of primarily residing with the mother opposed to the father, roughly one quarter were raised by a single mother, and almost one fifth were raised by their mother and her partner. There is evidence to suggest parental absence, frequent changes in who lives at home, living with different people at different times, and out of home placement for other household children. Changes and instability in the home environment throughout childhood may create further inconsistencies in the care of children, caregivers, and family relationships; household rules, expectations, and boundaries; as well as compromise the consistency of peer relationships, school affiliation, and school attendance. While it is not clear from this study why these changes occurred throughout childhood, it may be due to the discovery of abuse on the part of adults or the youth themselves. Family attempts to end abuse may have resulted in frequent changes in where the family resides as well as who lives in the family home, although frequent changes in the home environment and family structure may have increased the likelihood of experiencing some form of victimization. Other explanations

may include economic and employment instability that results in disruptions of the home environment and family structure.

Hypothesis 2: The functioning of JSO families is characterized by the presence of family health problems, family criminality, domestic violence, parent substance abuse, frequent moves or homelessness, family mental health problems, parental drug sales, and poverty

The second hypothesis stated that JSO families, in terms of family functioning, can be characterized by the presence of family health problems, family criminality, domestic violence, parent substance abuse, frequent moves or homelessness, family mental health problems, parental drug sales, and poverty. With the majority of youth (90%) indicating some form of family dysfunction, the findings confirm these as accurate characterizations of the JSO families in this sample. With youth in this sample indicating high frequency of a broad range of family functioning issues, it suggests that their sexual offending is only one of many difficulties they face. It is possible that the presence of these difficulties in their families provided opportunities for them to learn these behaviors and incorporate them into their own behavioral repertoire, as suggested by social learning theory.

Hypothesis 3: JSOs present histories of childhood maltreatment and trauma

The third hypothesis noted that JSO families have histories of child maltreatment and trauma. The results indicate that the JSOs in this sample have histories of various types of abuse and neglect, including physical and emotional abuse, as well as physical and emotional neglect, often severe to extreme. Regarding sexual abuse victimization and abuser characteristics, the results confirm that more than half the youth experienced

sexual abuse victimization by perpetrators they were related to or knew, and who were mostly adults and teens. At the same time, while more than 80% were sexually abused by men, close to 60% were abused by women, and over 30% had abusers of both genders. More than half experienced some level of force, and most experienced the use of games and or threats during their sexual abuse victimization. These findings indicate that while these youth are adjudicated and sentenced to residential treatment for their sexual offending, we must also be cognizant of their victimization status as well, which must be addressed in treatment. While it is common practice to assess for child maltreatment prior to treatment, these findings also stress the importance of thoroughly assessing emotional neglect. Regarding sexual abuse, with so many of these youth experiencing sexual abuse at the hands of an older male whom they knew or were related to, the male role-models, father figures, and caretakers of their childhood may have also been their abuser since they had an established relationship and access to with these youth . The same may be true for those abused by female perpetrators, who may have been in the role of family member, caretaker, or babysitter. The betrayal of these familial or caretaker relationships most likely has implications for the perceptions and experiences of attachment and relationship building for these youth across the lifespan. As suggested by social learning theory, these relationship patterns and attachment styles may also be learned through this victimization and later incorporated into the youth's conceptualization of familial, caretaker, and sexual relationships. Aside from the trauma of the sexual abuse, most of the youth who were sexually victimized indicated experiencing force during the sexual abuse, further complicating their perceptions and experiences of sexuality and sexual relationships. It is possible that they were sexually abusing others while experiencing

victimization themselves, or their perpetration may have been orchestrated in part by their sexual abuser. Overall, these abusive experiences provide opportunities to learn these behaviors from their abusers and incorporate them into their own perpetration of others, as suggested by social learning theory.

Hypothesis 4: JSOs show childhood exposure to nudity and sexual activity

The fourth hypothesis held that JSO families can be characterized as providing childhood exposure to nudity and sexual activity in person. The results confirm that the youth in this sample were exposed both before and after age 10, to nudity and sexual activity. Many of the youth reported seeing sex between adults and/or children, including forceful sexual acts. With that said, these findings present implications not only for treatment but also for future research. While there has been a recent focus on the effects of pornography exposure for this population, the field has overlooked in person and real time exposure to and observation of sexual acts and abuse. This may further indicate poor boundaries around privacy in the home or may increase the likelihood for sexual victimization of children in the home.

Hypothesis 5: JSOs commit non-sexual crimes including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs

The fifth hypothesis noted that JSOs commit non-sexual crimes including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs. The findings suggest many of these youth present general delinquency histories and indicated involvement in some type of non-sexual delinquency. As stated previously, almost half the sample indicated family criminality

when describing their family. Again, this may have served as a model for these youth as suggested by social learning theory. The overall average frequency score for non-sexual delinquency was high, indicating daily involvement in general delinquency for many youth in the sample. The notion of specialization in sexual offending for the JSOs in this sample may be challenged since these findings present variability in criminal behavior and histories of frequent non-sexual crime for the youth in this sample, which is consistent with results in other studies as well (Burton, Leibowitz, Eldredge et al., 2011; Butler & Seto, 2002; Elliot, 1995).

Hypothesis 6: JSOs show variability in sexual crime in terms of the relationship, gender, and age of the victims; the severity of their sexual offending; and the modus operandi or level of force used in their sexual offending

The sixth hypothesis predicted that JSOs show variability in sexual crime including the relationship, gender, and age of the victims; the severity of their sexual offending; and the modus operandi or level of force used in their sexual offending. The findings confirm this variability, although there are indications of patterns and trends within this sample. Additionally, for JSOs with sexual abuse victimization histories there are similarities between their victimization and sexual offending. These similarities are supported by social learning theory and suggest that sexual offending may have been modeled after sexual abuse victimization experiences (Barbaree et al., 2006; Burton, 2003, 2004; Veneziano et al., 2000). Similar to those JSOs with their own sexual abuse victimization, the majority of youth in this sample overall were related to or knew their victims, who were children and teens. While almost all of the youth (more than 90%) indicated abusing female victims, more than half reported abusing male victims as well.

Regarding severity of their sexual offending, the majority penetrated their victims, and many used a combination of penetration, oral sex, and fondling. Again, this is similar to the report of JSOs with a sexual abuse victimization history. In terms of level of force used or modus operandi, almost one third used some level of force, yet most reported the use of games and/or threats to coerce their victims. This is similar to the report above regarding JSOs with their own sexual abuse victimization. Overall, the average duration of their sexual offending was three years. In that time, 432 victims were reported for the entire sample. In summary, their sexual offenses are extensive and involve victims of both genders, most of whom they are related to or know. Aside from their relationship to the victim, the offending variability may call into question typologies based on victim gender or age, as seen in the adult literature. This variation may be more a function of the fluidity of sexuality in adolescence, changes in access to victims, opportunities to sexually offend, and or impulsiveness, rather than following through on sexual offense plans and preferences. With many of these youth reporting high levels of family dysfunction, child maltreatment histories, and childhood exposure to nudity and sexual activity, the extensiveness and seriousness of their offending is not surprising.

Limitations

There are limitations in this descriptive study of JSOs in residential treatment. Regarding the sample, there are geographical limitations on the state level; however the sample represents youth from urban, suburban, and rural settings within a Midwestern state. This sample differs from those of previous studies that were comprised of JSOs from only one facility or treatment program and drawn from a more limited geographical area. Additionally, the sample contains youth in residential placement only; therefore, it

does not provide information on youth adjudicated and sentenced to probation, who continue to live with their families in the community. Also, entry into the juvenile justice system may vary from jurisdiction to jurisdiction, limiting the ability to generalize from this sample to others. Regarding the data and methods, limitations include the use of self-report measures for data collection that ask questions retrospectively. As with many studies, the sensitivity of the measures may be a limitation. Also, since it is cross-sectional, causality cannot be established. Additionally, there is no means to identify differences between those who completed the survey and those who did not since that information is not included in the data collection for the larger study.

Implications

Research

Several directions for future research are implied by the results in this study. Overall, more data are needed regarding the families of these youth since the effects of the family environment and family history should be further explored considering it may provide important correlates to JSO criminal behavior (Borduin & Shaeffer, 2001; Borduin, Schaeffer, & Heiblum, 2009), as suggested by social learning theory. Additional information regarding family characteristics will also prove useful in terms of assessment, treatment, and discharge planning, discussed in more detail below. Furthermore, future research should include long term recidivism models that test the utility of family treatment with this population. A question that must be raised and researched when considering JSOs relates to those who have histories of sexual abuse victimization is, Are characteristics of their sexual abuse repeated in their sexual offending? In this study there are similarities reported between the two, as seen in other

studies as well (Barbaree et al., 2006; Burton, 2003; Veneziano et al., 2000). Other areas of exploration should include descriptive studies that utilize a sample of JSOs sanctioned to probation and community based treatment to act as a comparison group for residential placement JSOs, similar to the youth in this study. Finally, in person exposure to nudity and sexual activity is a new area to explore with this population. There has been a recent focus on exposure to pornography (Burton, Leibowitz, Booxbaum et al., 2011), but not sexually explicit in-person observations and experiences. While this may be a form of sexual abuse in and of itself, current research does not appear to capture this aspect pertaining to developmental antecedents. There is evidence in this study to suggest that it may be a common experience for these youth, warranting further examination.

Assessment, Treatment, and Discharge Procedures

Several enhancements to current assessment, treatment, and discharge procedures are implied by the results of this study. Clearly, parent, family, and home environment characteristics must be assessed, as implied by the severity and frequency of family problems in this sample. While child maltreatment, including abuse and neglect, are often assessed prior to treatment, it may be necessary to continue to assess for these issues throughout the treatment phase, as youth more clearly understand these concepts and feel more comfortable disclosing such histories to treatment staff. Furthermore, evidence from this study suggests that neglect is common and often severe for the JSOs in this sample, warranting attention throughout assessment and treatment phases. More thorough assessment procedures may reveal that other children in the home or family have experienced similar histories. Attempts should be made to secure early intervention and prevention services for these youth as well.

Regarding treatment, this study notes that JSOs in residential care are a heterogeneous population with a broad range of difficulties and problems, further suggesting treatment should be broad as well, addressing problems specific to each individual as opposed to those generally exhibited by JSOs as a whole. Additionally, it is important to include the parent and family in treatment whenever possible, creating a greater emphasis on family and home environment issues. Currently, the large majority of both residential and community based treatment programs for JSOs provide therapeutic services for the youth but not the family. Survey data suggest a decline in programs addressing family dysfunction that offer treatment services to parents and caregivers (Burton et al., 2001). Modifications to treatment will require an increase in training and education for residential staff on the importance of family history and family therapy for these JSOs. As is often the case with youth in residential treatment, there may be limited access to the family while the youth is in state care. Regardless of a program's access to families, we should address home environment and family related issues with the youth prior to discharge from residential treatment, especially if these JSOs are returning to the care of their family. In terms of discharge, more stringent requirements for the family (i.e. family treatment, parental substance abuse treatment, etc.) prior to returning a youth home to their care may be necessary in order to keep family dynamics from affecting the youth's treatment progress and recidivism. As part of the discharge plan, community based family services or aftercare services such as Multisystemic Therapy (MST), may prove useful once the JSO returns home (see Borduin et al., 2001; Borduin et al., 2009).

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Appendix A

The Evaluation Measures

Developmental Antecedents

A demographic form was used to collect information regarding the gender, race, age at first sexual offense, age at last sexual offense, duration of sexual offending, age at survey completion, and grade of the respondents. In terms of gender, the entire sample was male. Information regarding race and ethnicity was obtained by the following question: *Please choose the ONE race or ethnic group you feel closest to?* Given the small percentage of Asian/Pacific Islanders and Arab Americans, these respondents were collapsed into one group “Other.” Information about age was obtained by the following questions: *When you started and stopped sexually abusing people, how old were you the first time you sexually abused someone? How old were you the last time you sexually abused someone?; How old are you?*

Family Characteristics. Questions regarding family structure (e.g., identification of caregivers, parental absence, out of home placement of children) and family functioning (e.g., parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, frequent moves or homelessness) were used in this study.

Child Maltreatment and Trauma Variables. The Childhood Trauma Questionnaire (CTQ) (Bernstein et al, 1998) is a 34-item scale that screens for traumatic experiences throughout childhood including physical, sexual, and emotional abuse, as well as physical and emotional neglect, retrospectively. It uses a five-point Likert scale from “Never true” (1) to “Very often true” (5). Respondents were asked to rate the

frequency of their childhood abuse experiences with the stem question: *When I was growing up... .*

The Physical Abuse scale was computed from five items in the CTQ: *Someone in my family hit me or beat me; People in my family hit me so hard that it left me with bruises or marks; I was punished with a belt, a board, a cord (or some other hard object); I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor; and I believe I was physically abused.* Cronbach's alpha was calculated for the physical abuse scale at .89.

The Sexual Abuse scale was computed from six items in the CTQ: *I had sex with an adult or with someone who was a lot older than me (someone at least five years older than me); Someone tried to touch me in a sexual way or tried to make me touch them; Someone threatened to hurt me or tell lies about me unless I did something sexual with them; Someone in my family molested me; and I believe I was sexually abused.*

Cronbach's alpha was calculated for the sexual abuse scale at .84. Additionally, a yes/no question: *Were you sexually abused as a child?*, was used in this study. Questions about characteristics of sexual abuse victimization (e.g., gender, age, and relationship to abuser; number of abusers; severity of sexual abuse victimization; and modus operandi or level of force used by abuser) were used in this study (Burton et al., 2002).

The Emotional Abuse scale was computed from five items in the CTQ: *People in my family called me things like "stupid," "lazy," or "ugly"; People in my family said hurtful or insulting things to me; I was frightened of being hurt by someone in my family; Someone in my family hated me; and I believe I was emotionally abused.* Cronbach's alpha was calculated for the emotional abuse scale at .89.

The Physical Neglect scale was computed from nine recoded items in the CTQ: *I didn't have enough to eat; I lived in a group home or foster home; I knew there was someone to take care of me and protect me; I was living on the streets by the time I was a teenager or even younger; My parents were too drunk or high to take care of my family; People in my family got into trouble with the police; I had to wear dirty clothes; I lived with different people at different times (like different relatives and foster families); and I spent time out of the house and no one knew where I was.* Cronbach's alpha was calculated for the physical neglect scale at .76.

The Emotional Neglect scale was computed from nine recoded items in the CTQ: *There was someone in my family who I could talk to about my problems; People in my family showed confidence in me and encouraged me to succeed; There was someone in my family who helped me feel important and special; There was someone in my family who wanted me to be a success; I felt loved; People in my family felt close to each other; People in my family looked out for each other; Someone in my family believed in me; and My family was a source of strength and support.* Cronbach's alpha was calculated for the emotional neglect scale at .92.

Childhood Exposure to Nudity and Sexual Activity. The frequency and type of childhood exposure to nudity and sexual activity was assessed by 12 self-report items based on Leguizamo's (2000) interview, using a 7 point scale with answer choices: 1(never), 2(1-5 times), 3(6-25 times), 4(26-50 times), 5(51-100 times), 6(101-500 times), 7 (over 500 times). Respondents were asked both: *Before the age of 10, how many times had you seen...*, and *After the age of 10, how many times have you seen...*, the following six questions: *Naked adults in person; Naked children in person; Adults having sex in*

person; Adults forcing adults to have sex in person; Adults having sex with children in person; and Children having sex with children in person. Cronbach's alpha was calculated for the before age 10 scale at .78 and for the after age 10 scale at .75.

Criminal Behavior

Non-sexual Crime. The Self-Report Delinquency Scale (SRD) (Elliot, Huizinga & Ageton, 1985) is a 28-item self-report measure used to assess non-sexual delinquency ranging from drug use to aggression and contains several subscales including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs. "Inter-item reliability is sound for most of the subscales with the exception of drug use and public disorderly (Burton, Duty et al., 2011). Cronbach's alpha was calculated for the entire measure at .93.

The alcohol use subscale was computed from two recoded items in the SRD: *Before I was arrested I...Used alcohol or other liquor; and Was drunk in a public place.* Cronbach's alpha was calculated for the alcohol use subscale at .79.

The drug use subscale was computed from four recoded items in the SRD: *Before I was arrested I...Used inhalants such as glue; Used pot, hash, weed, marijuana; Used cocaine, coke, or crack; and Used other types of drugs.* Cronbach's alpha was calculated for the drug use subscale at .61.

The felony assault subscale was computed from two recoded items in the SRD: *Before I was arrested I...Attacked someone with the idea of seriously hurting or killing the person; and Was involved in gang fights.* Cronbach's alpha was calculated for the felony assault subscale at .67.

The felony theft subscale was computed from four recoded items in the SRD: *Before I was arrested I...Stole or tried to steal a motor vehicle such as a car or motorcycle; Stole or tried to steal something worth more than \$100; and Knowingly bought, sold, or held stolen goods (or tried to)*. Cronbach's alpha was calculated for the felony theft subscale at .89.

The general delinquency subscale was computed from seven recoded items in the SRD: *Before I was arrested I...Carried a hidden weapon; Stole or tried to steal things worth \$100 or less; Paid someone to have sexual relations with me; Stole money or other things from my parents or other members of my family, Had or tried to have sexual relations with someone against their will; Hit or threatened to hit one of my parents; and Hit or threatened to hit my supervisor or another employee*. Cronbach's alpha was calculated for the general delinquency subscale at .68.

The property damage subscale was computed from three recoded items in the SRD: *Before I was arrested I...Purposely damaged or destroyed property belonging to my parents or other family members; Purposely damaged or destroyed other property that did not belong to me (not counting family or work property); and Purposely set fire to a building, a car, or other property (or tried to)*. Cronbach's alpha was calculated for the property damage subscale at .74.

The public disorderly subscale was computed from three recoded items in the SRD: *Before I was arrested I...Begged for money or things from strangers; Used or tried to use credit cards without the owner's permission; and Made obscene telephone calls (such as calling someone and saying dirty things)*. Cronbach's alpha was calculated for the public disorderly subscale at .51.

The selling drugs subscale was computed from two recoded items in the SRD: *Before I was arrested I...Sold marijuana, pot, weed, hash; and Sold hard drugs such as heroin, cocaine, and LSD*. Cronbach's alpha was calculated for the selling drugs subscale at .84.

The robbery variable is comprised of one item in the SRD: *Before I was arrested I...Broke or tried to break into a building or vehicle to steal something or just look around*. Cronbach's alpha was not calculated.

Sexual Crime. The Self-Report Sexual Aggression Scale (SERSAS) used in prior studies (Burton et al., 2002; Burton, 2003; Burton, Leibowitz, Booxbaum et al., 2011) measures sexually aggressive behaviors over the lifespan. Scales that originated from this measure include: a scale of severity of sexual aggression using a 7 point rank order scale which runs from 1= exhibitionism or voyeurism to 7= penetration, fondling and exhibitionism or voyeurism; age of starting to abuse others; number of victims by age and gender; and a rank order scale for modus operandi (or level of force used in offenses) which runs from 0= did not use any of the three modus operandi to 7= used all three modus operandi (offered favors, made threats, and used force). Cronbach's alpha indicated good reliability, at $\alpha = .87$, for this entire instrument, with an 8 week test-retest agreement of 96% (Burton, 2000; Burton et al., 2002).

Questions about planning of sexual offenses and number of sexual offense victims were used in this study. Additionally, Burton et al. (2002) created a more comprehensive measure for complexity and severity of sexual crimes using a 15 point scale with 0 = none, 1 = exposure, 2 = fondling, 3 = exposure and fondling, 4 = oral sex, 5 = exposure and oral sex, 6 = oral sex and fondling, 7 = oral sex, exposure, and fondling, 8 =

penetration with penis, digits, or objects, 9 = penetration and exposure, 10 = penetration and fondling, 11 = penetration, exposure, and fondling, 12 = penetration and oral sex, 13 = penetration, exposure, and oral sex, 14 = penetration, exposure, fondling, and oral sex.

Appendix B

Guidelines for Classification of CTQ Scale Total Scores

Table B1. *Guidelines for Classification of CTQ Scale Total Scores* (Bernstein et al., 1998)

Scale	Classification			
	None (or Minimal)	Low (to Moderate)	Moderate (to Severe)	Severe (to Extreme)
Physical abuse	5-7	8-9	10-12	≥13
Sexual abuse	5	6-7	8-12	≥13
Emotional abuse	5-8	9-12	13-15	≥16
Physical neglect	5-7	8-9	10-12	≥13
Emotional neglect	5-9	10-14	15-17	≥18

Paper 2: Do Family Characteristics and Childhood Experiences Predict Group Membership into Juvenile Sexual Offender and Juvenile Delinquent Groups?

Introduction

More than 1 million adolescents are processed by juvenile courts annually (Henggeler & Schoenwald, 2011). Of those youth, 160,000 are sent to residential placements, which are the most serious and costly outcome of court referral (Justice Policy Institute, 2009; Puzzanchera & Kang, 2010). The goals of residential treatment facilities within the juvenile justice system include the rehabilitation of young offenders while holding them accountable, assisting children to develop skills to be productive and succeed, and the protection of community safety (Listenbee, Torre, Boyle, Cooper, Deer, Durfee, James, Lieberman, Macy, Marans, McDonnell, Mendoza, & Taguba, 2012). A relevant debate in the juvenile justice field is whether juveniles who commit sexual offenses (JSOs) exhibit different family characteristics and childhood experiences than juvenile delinquents (JDs) who commit nonsexual crimes. JSOs often receive specialized services in both juvenile justice and mental health systems (McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010), based on the assumption that they differ from JDs and may be specialized in terms of their offending. Unfortunately it remains unclear how JSOs differ, if at all, from JDs since few studies have compared these groups, and many studies have methodological limitations that typically include small sample sizes. Thus, the present study was designed to improve on prior work, and it represents an important step toward empirically answering the question “are JSOs unique?” providing a foundation for effective assessment and intervention.

Social learning theory is the most consistently used explanatory construct in the JSO literature. In its application to families, this theory states that people model the behavior they were exposed to throughout childhood, making examination of the family crucial. Juvenile delinquency has been associated with family structure and functioning variables in previous studies, and sexual offending has been correlated with specific family characteristics. Finally, the only extant evidence based practice models stress the importance of including the family in assessment, treatment, and relapse prevention (Borduin & Shaeffer, 2001; Borduin, Shaeffer, & Heiblum, 2009). These theoretical considerations, previous research, and current treatment modalities suggest there may be limitations to examining only the individual characteristics of these youth. Hence, this study explored the perceptions held by JSOs and JDs of their family environments, a significant context for youth, as well as their childhood experiences. To provide clarity on whether and in what ways these populations differ, this study, using a social learning theory framework, aims to predict group membership (JSO or JD) using family characteristics and childhood experiences from a sample of 504 adjudicated male youth in residential treatment. The research question for this study is: *Do family characteristics and childhood experiences predict group membership in juvenile sex offender and juvenile delinquent groups?* The hypotheses are:

1. More disruptive family structure is associated with being in the JSO group.
2. Greater levels of family dysfunction are associated with JSO group membership as indicated by the presence of parent substance abuse, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness.

3. Greater levels of child maltreatment including physical abuse, emotional abuse, physical neglect, and emotional neglect, are associated with being in the JSO group.
4. Youth with a history of sexual abuse victimization are associated with JSO group membership.
5. Youth with childhood exposure to nudity and sexual activity are associated with being in the JSO group.

Literature Review

Theoretical Considerations

The literature suggests that sexually violent behavior in adolescence is learned (Awad & Saunders, 1991; Burton et al., 2004) and that JSOs often reside in environments with high levels of neglect and violence (Rich, 2003). Therefore, social learning theory (Bandura 1969a, 1977), or the later social cognitive theory (Bandura, 1986) continues to be the most consistently used explanatory construct in the JSO literature incorporating elements of operant conditioning and social cognition (Burton & Meezan, 2004). The basic premise underlying social learning theory is a process by which people may model or imitate the observed behavior they were exposed to in childhood, creating a behavioral repertoire of their own. This process involves observing the actions of others, as well as the reactions and consequences of such actions, storing this information, and then in an attempt to achieve the same result (e.g., reward), the individual imitates the behaviors he had previously observed (Akers, 1985; Bandura, 1969a; Stinson, Sales & Becker, 2008). According to this theory, violence is learned and modified through the role models provided in one's family, such as parents, siblings, and other relatives. Such learning

takes place both directly and indirectly while being reinforced in childhood and adolescence. Such violence may continue throughout the life course and is reenacted as a method of conflict resolution, or it is subsequently utilized as a coping response when experiencing stress (Bandura, 1973; Mihalic et al., 1997; Stinson et al., 2008). If a child experiences or witnesses family members responding to stress or conflict with anger and aggression the child is at greater risk for engaging in those same responses (Mihalic & Elliot, 1997). Essentially families can teach children approval for the use of violence as well as how and when to be violent (Gelles, 1972). Additionally, the initial observational learning of what constitutes "appropriate" interactions within intimate relationships is defined and demonstrated by parents and their significant others (Stinson et al., 2008).

Witnessing others' behavior does not ensure the acquisition of such behavior. The internalization and later imitation of a given behavior depends on 3 factors, according to Bandura (1977). The components that affect the internalization and imitation include the identity of the model, the type of observed behavior, and the observed reactions and consequences. First, models must be trusted and have a close relationship with the observer, such as parents and caregivers (Bandura, 1969b). These characteristics increase the probability of imitation. Second, the actual observed behavior must be consistent or similar in some way to previously learned behaviors. Moderate behaviors are more likely adopted by the observer as opposed to extreme behaviors in either direction. Third, the observed reactions and consequences affect the likelihood of later imitation. Immediate positive consequences or incentives, as well as the simple lack of negative consequences increases the likelihood of internalizing and imitating (Stinson et al., 2008). These basic assumptions suggest that within the family context, behavior can be taught and learned,

including sexual and abusive behaviors. We know that not all JSOs have a history of sexual abuse victimization or have families who allow or promote sexual abuse. Also, not all victims of sexual abuse go on to become sex offenders (Finkelhor, 1986; Hunter, Figueredo, Malamuth, & Becker, 2003; Knight & Sims-Knight, 2004). However, among studies of JSOs, characteristics of the child and family have demonstrated to be important domains in the development of criminal behavior (Barbaree & Langton, 2006; Marshall & Barbaree, 1990; Monastersky & Smith, 1985).

At the same time, it is important to mention other theoretical explanations of juvenile delinquency, including social control theory (Hirschi, 1969), general strain theory (Agnew, 1992; 2001), social development model (Catalano & Hawkins, 1996), and general theory of crime (Gottfredson & Hirschi, 1990). A recent meta-analysis of 17,248 juvenile offenders suggests that a general delinquency explanation, similar to the general theory of crime, is insufficient in understanding JSOs specifically (Seto & Lalumiere, 2010). Additionally there are theories related to crime specialization among juveniles, although such models have not typically been empirically successful (Gottfredson et al., 1990). Many of these theories have focused on factors that are beyond the scope of the present study such as personality traits, peer relationships, and school and community environments, but they may prove useful for future research. Nevertheless, a child's primary context for learning is his family thereby: social learning theory is an appropriate framework within which to explore the links between family characteristics, childhood experiences, and subsequent behavioral and criminogenic outcomes in adolescence. In childhood, the behavior of the family may be the most powerful or the only source of information regarding how to conduct oneself in the

world. If a child observes his family behaving in negative, abusive, or deviant ways, then the resulting behavior of that child will likely be the same (Stinson et al., 2008).

Empirical Considerations

Recent meta-analytic findings of JSOs and JDs (Seto et al., 2010) suggest that differences between JSOs and JDs exist. In their study of 17, 248 delinquent youth, including both JSOs and JDs, Seto et al. (2010) found that JSOs had higher exposure to sexual or nonsexual violence in the family, higher prevalence of physical abuse, and higher prevalence of emotional abuse or neglect compared to JDs. According to Seto et al. (2010), possible risk factors that are statistically insignificant and do not explain group differences include family criminality, which is common to both groups; family problems; and separation from a parent.

Previous comparison studies of JSOs and JDs report inconsistent findings regarding developmental antecedents that predict group membership (Bischof, Stith, & Whitney, 1995; Bischof, Stith, & Wilson, 1992; Blaske, Borduin, Henggeler, & Mann, 1989; Butler & Seto, 2002; Ford & Linney, 1995; Jonson-Reid & Way, 2001; Seto & Lalumiere, 2010; Spaccarelli, Bowden, Coatsworth, & Kim, 1997; van Wijk, Loeber, Verneiren, Pardini, Doreleijers, & Bullens, 2005; van Wijk, Vreugdenhil, & Bullens, 2004). With regard to exposure to family violence, two studies describe a higher frequency of exposure for JSOs compared to low violence JDs (Ford et al, 1995; Spaccarelli et al., 1997); however, no differences in exposure was reported when comparing JSOs to violent JDs (Spaccarelli et al., 1997). Regarding sexual abuse and sexuality, in four studies, JSOs were more likely to report a sexual abuse history compared to JDs (Burton, Miller, & Shill, 2002; Ford et al., 1995; Jonson-Reid & Way,

2001; Veneziano, Veneziano, LeGrand & Richards, 2004). However, two studies reported no differences for sexual abuse history (Spaccarelli et al., 1997; van Wijk, Loeber et al., 2005). Other risk factors include family criminality and family mental health issues; however, no differences were found between JSOs and JDs in the two studies that included these variables (van Wijk, Vreugdenhil, & Bullens, 2004, van Wijk, Loeber et al., 2005). Similarly, spousal violence and child abuse were found to be related to both JSOs and JDs families, with no differences between groups (Bishof, Stith, & Whitney, 1995). The literature from comparison studies does not offer clarity on similarities or differences between JSOs and JDs in terms of the youth's relationship with guardians, parental absence, out of home placement of children, parent substance abuse, parental drug sales, family health problems, poverty, frequent moves or homelessness, and childhood exposure to nudity and sexual activity. With the exception of three studies (see Jonson-Reid et al., 2001; Seto et al., 2010; van Wijk et al., 2005), comparative studies are also limited in their generalizability due to relatively small sample sizes.

Limitations in the literature include the paucity of comparison studies, small sample sizes, and geographical limitations of the samples, all supporting the need for further research to provide insight regarding the ability of family characteristics and childhood experiences to differentiate between these two groups of youth. The present comparative study of JSOs and JDs uses a relatively large sample of 504 adjudicated youth from every state-run facility in a Midwestern state. While there may be geographical limitations on the state level, the sample will represent youth from urban, suburban, and rural settings within a state. This differs from previous studies with samples from only one facility or treatment program, drawing from a more limited

geographical area. Also, while there are a considerable number of studies regarding the influence of family structure on juvenile delinquency in general (Anderson, 2002; Astone & McLanahan, 1991, 1994; Breivik, Olweus, & Endersen, 2009; Demuth & Brown, 2004; Downey & Powell, 1993; Geismar & Wood, 1986; Gove & Crutchfield, 1982; Hoffman & Johnson, 1998; Maginnis, 1997; Mandara & Murray, 2006; Matsueda & Heimer, 1987; Murry, Williams, & Salekin, 2006; Wu, 1996), this has yet to be established as a correlate for JSOs specifically. Additionally, since the literature does not offer clarity on similarities or differences between JSOs and JDs in terms of the youth's relationship with guardians, parental absence, out of home placement of children, parent substance abuse, parental drug sales, family health problems, poverty, frequent moves or homelessness, and childhood exposure to nudity and sexual activity, these variables were explored in the present study. Overall this study explores various family characteristics and childhood experiences used to predict and distinguish JSO and JD groups.

Methods

Sample

The sample was drawn from every state-run residential treatment facility in a Midwestern state. The analysis sample consists of 504 adjudicated male youth, 333 JSOs and 171 non-sexual offending JDs, incarcerated in six residential treatment facilities providing a comparison group and a larger sample overall than in many previous studies. In each of the six residential delinquency institutions, administrators, clinicians, and front line staff were asked for approval for each boy's participation in the survey.

Data Collection

In 2004, 504 adjudicated youth in six residential treatment facilities in a Midwestern state voluntarily completed surveys. After consent was obtained, pencil and paper surveys were administered in a small group (8-12) format. The youth were separated within a classroom setting to ensure they did not view other participants' responses. Pencil and paper survey administration was utilized in an attempt to offer anonymity and minimize underreporting or distress due to stigma or discomfort (e.g., questions about abuse and sexuality). Additionally, staff and trained graduate student research assistants were present to assist youth who had difficulty understanding a particular question, struggled with reading, or became distressed. No incentives for survey completion were offered, and youth were informed that new disclosures of abuse or perpetration would be reported to the proper authorities.

Measures

This study employed detailed demographic, family, and childhood history forms that had been used in previous studies (Burton, 2003; Burton et al., 2002). The Evaluation Measures (see Appendix) used in this study are described below.

Demographics. A demographic form was used to collect information regarding gender, race, age at survey completion, and grade of the respondents. The youth's JSO or JD status was based on the most recent crime and adjudication.

Family characteristics. Questions regarding family structure and functioning were used in this study (see Appendix). Family structure was treated as a rank order variable, ranging from 1-4, with an emphasis on the number of biological parents the child resides with. This rationale is based on research indicating that family structure is

related to juvenile delinquency. More specifically, childhood residence in households with one biological parent only, a single-parent, or a non-intact family, often referred to as a *broken home*, is associated with higher rates of juvenile delinquency and antisocial behavior than are intact homes, usually referring to families with two biological parents (Astone et al., 1991, 1994; Breivik et al., 2009; Demuth et al., 2004; Downey et al., 1993; Geismar et al., 1986; Gove et al., 1982; Hoffman et al., 1998; Maginnis, 1997; Mandara et al., 2006; Murry et al., 2006; Wu, 1996). Family functioning is a composite score that represents the sum, ranging from 0-8, of eight conditions including , parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness. A higher score indicates more dysfunction. Cronbach's alpha was calculated for the family functioning scale at .74, indicating sound scale reliability.

Child maltreatment variables. The Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 1998) is a 34-item scale that screens for traumatic experiences throughout childhood including physical, sexual, and emotional abuse, as well as physical and emotional neglect, retrospectively. It uses a five-point Likert scale from "Never true" (1) to "Very often true" (5). Respondents were asked to rate the frequency and severity of their childhood abuse and neglect experiences. For all of the abuse scale variables, a higher score indicates more frequent and more severe abuse experiences.

The Physical Abuse scale represents the sum of five items in the CTQ (see Appendix) with possible scores ranging on the scale from 5 to 25 (see Table 1). Cronbach's alpha was calculated for the physical abuse scale at .89, indicating high scale reliability.

The Sexual Abuse scale represents the sum of six items in the CTQ (see Appendix) with possible scores ranging on the scale from 6 to 30 (see Table 1). Cronbach's alpha was calculated for the sexual abuse scale at .84, indicating high scale reliability.

The Emotional Abuse scale represents the sum of five items in the CTQ (see Appendix) with possible scores ranging on the scale from 5 to 25 (see Table 1). Cronbach's alpha was calculated for the emotional abuse scale at .89, indicating high scale reliability.

The Physical Neglect represents the sum of nine recoded items in the CTQ (see Appendix) with possible scores ranging on the scale from 9 to 45 (see Table 1). Cronbach's alpha was calculated for the physical neglect scale at .76, indicating sound scale reliability.

The Emotional Neglect scale represents the sum of nine recoded items in the CTQ (see Appendix) with possible scores ranging on the scale from 9 to 45 (see Table 1). Cronbach's alpha was calculated for the emotional neglect scale at .92, indicating very high scale reliability.

Table 1.
Guidelines for Classification of CTQ Scale Total Scores (Bernstein et al., 1998)

Scale	Classification			
	None (or Minimal)	Low (to Moderate)	Moderate (to Severe)	Severe (to Extreme)
Physical Abuse	5-7	8-9	10-12	≥13
Sexual Abuse	5	6-7	8-12	≥13
Emotional Abuse	5-8	9-12	13-15	≥16
Physical Neglect	5-7	8-9	10-12	≥13
Emotional Neglect	5-9	10-14	15-17	≥18

Childhood exposure to nudity and sexual activity. The frequency and type of childhood exposure to nudity and sexual activity was assessed by 10 self-report items based on Leguizamo's (2000) interview. Respondents were asked to rate the frequency and type of childhood exposure both before age 10 (5 questions) and after age 10 (5 questions), using a 7 point scale with answer choices: 1(never), 2(1-5 times), 3(6-25 times), 4(26-50 times), 5(51-100 times), 6(101-500 times), 7(over 500 times). Childhood exposure to nudity and sexual activity before age 10 represents the sum of five items, with possible scores ranging from 5-35. Childhood exposure to nudity and sexual activity after age 10 represents the sum of five items, with possible scores ranging from 5-35. Cronbach's alpha was calculated for the before age 10 scale at .78 and for the after age 10 scale at .75, indicating sound scale reliability.

Data Analysis

The purpose of the present study was to explore various family characteristics and childhood experiences used to predict and distinguish JSO and JD groups. First, simple χ^2 or t-test analysis was used to assess whether the means of the two groups are significantly different from each other in terms of age, grade, race, family structure, family functioning, sexual abuse, physical abuse, emotional abuse, physical neglect, emotional neglect, and childhood exposure to nudity and sexual activity before and after age 10. A t-test was used for all variables except for race which was assessed using cross-tabulation. Next, Pearson correlation matrices were created to determine the linear relationship among the variables. An additional analysis, logistic regression, was employed to identify predictors that would distinguish between JSOs and JDs. Logistic regression was used to assess the fit of predictor variables: age, grade, race, family

structure, family functioning, sexual abuse, physical abuse, emotional abuse, physical neglect, emotional neglect, childhood exposure to nudity and sexual activity before age 10, and childhood exposure to nudity and sexual activity after age 10, on the dependent variable group membership (JSO or JD).

Logistic regression was selected as the most appropriate statistical method for its ability to predict an outcome variable such as group membership when predictor variables are continuous, discrete, dichotomous, or a combination of these (Agresti & Finlay, 2009; Hair, Anderson, Tatham, & Black, 1998; Tabachnick & Fidell, 2007). It was also selected for its usefulness in determining the relative contribution of each independent variable (Agresti et al., 2009; Tabachnick et al., 2007). Instead of ordinary least squares and the usual assumptions (i.e. normality) that are required for this method, logistic regression relies on maximum likelihood estimates which estimate population parameters that create the dependent variable. By calculating the natural log odds of the dependent variable occurring or not occurring, the dependent variable is transformed. In this analysis, this iterative process involves correctly predicting each youth as either a JSO or JD based on family characteristics and childhood experiences. It therefore indicates which predictor variables are different when JSOs and JDs are compared (Agresti et al., 2009). Finally, a Chi- square test was used to indicate how well the logistic regression model fits the data. SPSS 14 was used for data entry and SPSS 18 and 19 for analysis.

Power Analysis

For the purpose of conducting a power analysis, the main outcome is whether a particular juvenile offender commits a sexual crime or not, assigning him to the JSO

group (see Appendix B). For the power analysis, 23 predictors were used in the model, with the main one being whether an offender previously experienced sexual abuse victimization or not. Based on a review of the literature, I assumed that the prevalence of sexual crimes among non-sexually abused offenders ranges from 5-15%. I wished to detect a prevalence of sexual crimes of 40-60% among offenders who have been sexually abused with 80% power using a logistic regression model at a level of significance of $\alpha = .05$. Furthermore, I assumed that the R^2 between sexual abuse victimization and the other predictors in my model ranges from 15-25%, and I also assumed that approximately 50% of the offenders had experienced sexual abuse victimization. Based on these assumptions, there was adequate power for the analysis (Hsieh, Block & Larsen, 1998). The sample size ranging from 115-130 achieves 79% power (see Appendix B). The sample size for the present study is 504 adjudicated youth incarcerated in residential treatment.

Results

Overall the JSOs and JDs differ in statistically significant and clinically meaningful ways. These groups varied significantly in terms of race, family functioning, physical abuse, emotional abuse, physical neglect, emotional neglect, sexual abuse, and childhood exposure to nudity and sexual activity before and after age 10 in the final model, with JSOs indicating a higher frequency of family dysfunction and child maltreatment overall. The two groups did not differ in terms of age, grade, and family structure. The differences between groups are discussed in more detail below.

Differences Between Juvenile Sexual Offenders and Juvenile Delinquents

Demographics. First, a t-test analysis or χ^2 was used to assess whether the means of the two groups are significantly different from each other in terms of age (in years), grade (4 = 9th grade), and race (0= white/Caucasian, 1= of color/non-white). Independent samples t-tests were conducted for age and grade (see Table 2), whereas differences in race were assessed using crosstabulation (see Table 3). On average, the youth were 16 years old with no difference between groups ($t(484) = 1.42, p = .155$) in terms of age. The youth were, on average in the 9th grade prior to entering state care, with no differences between groups ($t(484) = .97, p = .328$). The two groups vary by race ($\chi^2(1, N = 474) = 6.34, p = .012$). JSOs equally selected Caucasian or “of color,” as their race while the majority of the JDs selected “of color” as their race. The race category “of color,” included Black, Hispanic, Latino, Native American, and other.

Table 2.

Demographic Predictor Variable Means for Juvenile Sexual Offenders and Juvenile Delinquents

	Juvenile Sex Offenders		Juvenile Delinquents		<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)		
Age	324	16.70 (1.64)	162	16.49 (1.27)	1.42	.155
Grade	320	4.39 ^a (1.62)	166	4.25 ^a (1.34)	.97	.328

Note. ^aGrade: 4 represents 9th grade, as the last grade completed prior to entering state care, both JSOs and JDs on average completed 9th grade prior to their adjudication.

Table 3.

Crosstabulation of Group Membership and Race (n=474)

	Juvenile Sex Offenders	Juvenile Delinquents
	Frequency (%)	Frequency (%)
White, Caucasian	156 (49.7%)	60 (37.5%)
Of color ^a	158 (50.3%)	100 (62.5%)
Total	314 (100.0%)	160 (100.0%)

Note. ^aOf color included Black, Hispanic, Latino, Native American, and other.
 $\chi^2 = 6.34, p = .012$

Family Characteristics

Family structure and functioning. Next, I describe Table 4 which shows the Means and Standard Deviations for the family predictor variables of both JSOs and JDs. Again, independent samples t-tests were used to assess whether the means of the two groups are significantly different from each other in terms of family structure (1= 2 parent, 2= mother and partner/father and partner, 3= single mother/single father, 4= other relative, grandparent, or foster home and family functioning (a higher score indicates more dysfunction). The family structure variable was treated as a rank order variable, ranging from 1-4, with an emphasis on the number of biological parents the child resides with. Regarding family structure, there were no significant differences between groups ($t(476) = .74, p = .456$). In both groups, the mean answer given most closely corresponds to the answer, “Mother and partner or Father and partner.” This suggests that the youth in this sample may have resided in a two parent family but not with both biological parents. A crosstabulation of group membership and family structure is included below to demonstrate the types of family structure assessed in this study (see Table 5). The family functioning variable is a composite score that represents the sum, ranging from 0-8, of eight conditions including, parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness. The two groups vary significantly in terms of family functioning with the JSO youth, indicating more dysfunction with an average score twice as high as the JD youth ($t(497) = 8.87, p = .000$). The implications of these findings are discussed below.

Table 4.
Family Predictor Variable Means for Juvenile Sexual Offenders and Juvenile Delinquents

	Juvenile Sex Offenders		Juvenile Delinquents		<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)		
Family structure	314	2.31 (1.10)	164	2.39 (1.05)	.74	.456
Family functioning	331	4.49 (3.11)	168	2.00 (2.65)	8.87***	.000

Note. *** = $p < .001$.

Table 5.
Crosstabulation of Group Membership and Family Structure (n=478)

	Juvenile Sex Offenders	Juvenile Delinquents
	Frequency (%)	Frequency (%)
Two parent	102 (32.5%)	48 (29.3%)
Mother/Father and partner	67 (21.3%)	27 (16.5%)
Single Mother/Father	90 (28.7%)	66 (40.2%)
Other ^a	55 (17.5%)	23 (14.0%)
Total	314 (100.0%)	160 (100.0%)

Note. ^aOther included other relative, grandparent, or foster home.

$\chi^2 = 6.88, p = .076$

Child Maltreatment

Abuse and neglect. Next, I describe Table 6 which shows the Means and Standard Deviations for the child maltreatment predictor variables of both JSOs and JDs. Again, independent samples t-tests were used to assess whether the means of the two groups are significantly different from each other in terms of their scores on the five abuse and neglect scales which assessed the type, frequency, and severity of childhood abuse experiences. For all of the abuse scale variables, a higher score indicates more frequent and more severe abuse experiences (see Table 1). As illustrated in Table 5, JSOs reported higher means than the JD youth on all the abuse and neglect scales. The two groups vary significantly in terms of the frequency and severity of sexual abuse with the JSO youth having an average score approximately one and a half times that of the JD youth ($t(477) = 8.87, p = .000$). Similarly for frequency and severity of physical abuse, the JSO youth have an average score roughly one and a half times that of the JD youth (t

(480) = 8.58, $p = .000$). For frequency and severity of emotional abuse, similar results were found, with the JSO youth having a higher average score compared with the JD youth ($t(477) = 9.30, p = .000$). The average score may be higher for the JSO youth regarding frequency and severity of physical neglect. However, in the logistic regression when considering all the variables, it predicts being a member of the JD group ($t(480) = 4.88, p = .000$) and negatively correlates to being in the JSO group, as will be discussed below. Lastly, for frequency and severity of emotional neglect, the JSO youth had a slightly higher average score than the JD youth ($t(479) = 2.91, p = .004$). The implications of these findings are discussed below.

Table 6.

Child Maltreatment Scale Means for Juvenile Sexual Offenders and Juvenile Delinquents

	Juvenile Sex Offenders		Juvenile Delinquents		<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)		
Sexual abuse scale	326	12.03 (6.54)	153	7.98 (2.72)	7.37***	.000
Physical abuse scale	326	11.86 (6.23)	156	7.17 (4.01)	8.58***	.000
Emotional abuse scale	325	11.58 (6.17)	154	6.66 (3.25)	9.30***	.000
Physical neglect scale	326	17.41 (6.50)	156	14.46 (5.56)	4.88***	.000
Emotional neglect scale	325	18.87 (9.17)	156	16.33 (8.41)	2.91**	.004

Note. ** = $p < .01$, *** = $p < .001$.

Childhood exposure to nudity and sexual activity. Next, I describe Table 7 which shows the Means and Standard Deviations for the childhood exposure to nudity and sexual activity predictor variables of both JSOs and JDs. Again, independent samples t-tests were used to assess whether the means of the two groups are significantly different from each other in terms of the frequency and severity of childhood exposure to nudity and sexual activity before and after age 10. For both variables, a higher score indicates more frequent and more severe exposure. As illustrated in Table 6, the two groups significantly differed regarding frequency and severity of childhood exposure to nudity

and sexual activity with the JSO youth reporting an average score almost twice as high as the average score for the JD youth before age 10 ($t(468) = 4.09, p = .000$). Regarding exposure after age 10, again the JSO youth had a higher average score compared with the JD youth ($t(459) = 2.21, p = .027$). The implications of these findings are discussed below.

Table 7.
Childhood Exposure to Nudity and Sexual Activity Means for Juvenile Sexual Offenders and Juvenile Delinquents

	Juvenile Sex Offenders		Juvenile Delinquents		<i>t</i>	<i>p</i>
	<i>N</i>	<i>M</i> (SD)	<i>N</i>	<i>M</i> (SD)		
Childhood exposure to nudity and sexual activity before age 10	319	3.42 (4.53)	151	1.77 (2.85)	4.09***	.000
Childhood exposure to nudity and sexual activity after age 10	314	4.75 (5.04)	147	3.66 (4.59)	2.21*	.027

Note. * = $p < .05$, *** = $p < .001$.

Correlations

A Pearson correlation matrix (see Table C1 in Appendix C) was created to determine the linear relationship among the variables. As seen in Table C1, there are several correlations among variables for this sample. Relationships exist between family structure and functioning, family functioning and all the child maltreatment scales, as well as family functioning and childhood exposure to nudity and sexual activity both before and after age 10.

Additionally there were correlations among the child maltreatment and trauma variables that are noteworthy. Respondents who reported physical abuse were also likely to report experiences with sexual abuse ($r = .40, p = .000$). Youth who reported experiencing emotional abuse also indicated experiencing sexual abuse ($r = .42, p = .000$) and physical abuse ($r = .85, p = .000$). Respondents who had a history of physical neglect

also reported a history of sexual abuse ($r = .41, p = .000$) as well as physical abuse ($r = .61, p = .000$), and emotional abuse ($r = .57, p = .000$). Many youth who experienced emotional neglect disclosed having been sexually abused ($r = .19, p = .000$), physically abused ($r = .47, p = .000$), emotionally abused ($r = .49, p = .000$), and physically neglected ($r = .49, p = .000$).

Furthermore, correlations exist between child exposure to nudity and sexual activity and the child maltreatment and trauma variables. Respondents who reported childhood exposure to nudity and sexual activity before age 10 were also likely to report experiences with sexual abuse ($r = .47, p = .000$), physical abuse ($r = .31, p = .000$), emotional abuse ($r = .28, p = .000$), physical neglect ($r = .42, p = .000$), and emotional neglect ($r = .16, p = .000$). Youth who reported childhood exposure to nudity and sexual activity after age 10 also indicated experiencing sexual abuse ($r = .31, p = .000$), physical abuse ($r = .24, p = .000$), emotional abuse ($r = .25, p = .000$), as well as physical neglect ($r = .31, p = .000$).

Logistic Regression

Finally, to answer the research question, “*Do family characteristics and childhood experiences predict group membership in juvenile sex offender and juvenile delinquent groups?*” logistic regression was conducted. The final model included the following independent variables: age, race, grade, family structure, family functioning, sexual abuse, physical abuse, emotional abuse, physical neglect, emotional neglect, and childhood exposure to nudity and sexual activity before and after age 10. The dependent variable was the offender’s group membership (0= JD, 1= JSO) (see Table 8). The variables were entered in one model. As illustrated in Table 8, the results of the logistic

regression yield several significant findings. Three of the variables were significant in predicting whether an individual was a JSO: family functioning, sexual abuse, emotional abuse, while physical neglect was almost significant and negatively contributes to being a JSO. These three variables were critical in discriminating between these two groups. The Nagelkerke R square for the model was .41. The model chi-square was significant ($p = .000$), indicating that the four variables increased the ability to predict whether the youth was a JSO or JD. The logistic regression model correctly predicted JSO status for 75.6% of the youth. Additionally, the model was effective at predicting which youth belonged to the JSO group (82.5% correctly classified), but less effective at predicting which youth belonged to the JD group (61.1% correctly classified). Overall, the model fit better for the JSO group. The implications of these findings are discussed below.

Table 8.

Logistic Regression Predicting Juvenile Sexual Offender versus Juvenile Delinquent^{a,b} (n=389)

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>p</i>	<i>Exp(B)</i>
Age	-.029	.119	.061	.805	.971
Grade	.021	.127	.028	.866	1.022
Non-white, of color	-.506	.280	3.262	.071	.603
Family structure	-.075	.128	.337	.561	.928
Family dysfunction	.243***	.058	17.294	.000	1.274
Sexual abuse scale	.189***	.047	16.039	.000	1.209
Physical abuse scale	-.002	.052	.002	.967	.998
Emotional abuse scale	.217***	.060	13.293	.000	1.243
Physical neglect scale	-.071*	.036	3.862	.049	.932
Emotional neglect scale	-.035	.019	3.390	.066	.966
Childhood exposure to nudity and sexual activity before age 10	.041	.066	.396	.529	1.042
Childhood exposure to nudity and sexual activity after age 10	-.021	.044	.222	.637	.980
Constant	-1.663	1.836	.820	.365	.190

Note. ^a $\chi^2 = 135.41$, $df = 12$, $p = .000$

^b The dependent variable is coded as 1 for a juvenile sex offender and 0 for a juvenile delinquent

* = $p < .05$, *** = $p < .001$

Discussion

The results of this comparison study confirm many of the research hypotheses, while challenging others, regarding family characteristics and childhood experiences of JSOs and JDs. Many results are consistent with both theory and previous empirical data, while also providing new information about this population.

Hypothesis 1: More disruptive family structure is associated with being in the JSO group

First, it was hypothesized that more disruptive family structure will be associated with being in the JSO group. There are a considerable number of studies regarding the influence of family structure on juvenile delinquency in general. For example, the extant literature on juvenile delinquency suggests a single parent family structure, specifically a single-mother household, is related to delinquency (Anderson, 2002; Astone & McLanahan, 1991, 1994; Breivik, Olweus, & Endersen, 2009; Demuth & Brown, 2004; Downey & Powell, 1993; Geismar & Wood, 1986; Gove & Crutchfield, 1982; Hoffman & Johnson, 1998; Maginnis, 1997; Mandara & Murray, 2006; Matsueda & Heimer, 1987; Murry, Williams, & Salekin, 2006; Wu, 1996). Rates of delinquency in adolescence appear to be higher for those residing in single parent families as opposed to two parent families, although several researchers have suggested these results may be a proxy for other factors, for example parental absence, parental monitoring, parent/child attachment, and/or economic instability and stress (Anderson, 2002; Demuth et al., 2004; Gove et al., 1982; Maginnis, 1997; Matsueda et al., 1987). Prior to this study family structure had not been explored as a correlate for JSOs specifically.

The findings for this sample suggest there is no difference between groups in terms of family structure. It is important to note the correlation between family structure and family functioning. This correlation may support the notion that having both parents present to care for, supervise, and socialize children is important and that the absence of one parent weakens the quality of the family's ability to function (Anderson, 2002). Therefore family structure may be related to family functioning. As stated above, the mean answer given by both JSOs and JDs most closely corresponds to the answer, "Mother and partner or Father and partner." This suggests that the youth in this sample may have resided in a two parent family but not with both biological parents. The family functioning may not have been negatively affected in terms of parental monitoring or economic instability and stress for youth in these types of two parent families. Although, not residing with both biological parents may have impacted family functioning in terms of parental absence and parent/child attachment. The results of this study suggest that the two groups do not differ based on family structure, which leads one to a look at possible group differences as a function of family functioning.

Hypothesis 2: Greater levels of family dysfunction are associated with JSO group membership

Second, greater levels of family dysfunction were hypothesized to be associated with JSO group membership, as indicated by the presence of parent substance abuse, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness. In this sample, correlations exist between family functioning and the abuse scales, as well as early exposure to nudity and sexuality before and after age 10. These correlations among variables may suggest that

beyond the types of dysfunction noted above, family functioning also captures abuse and exposure. Although JDs report high rates of family dysfunction, JSOs and JDs in this sample differ significantly, with JSOs indicating overall dysfunction two times higher than JDs. These findings suggest there are differences of degree, rather than kind, regarding dysfunction, with JSOs experiencing more frequent and severe forms of parent and family dysfunction than JDs. For the overall sample, and especially for the JSOs, these findings suggest that among a broad range of family functioning issues, offending is only one of many difficulties they face. For both JSOs and JDs, in addition to receiving treatment for their offending, these findings underscore the importance of tailoring treatment to the specific history and needs of each youth and providing services that address parental and family dysfunction as well. Also for both JSOs and JDs, it is possible that the presence of these parent and family difficulties provided opportunities to not only learn these problematic and criminal behaviors but also to incorporate them into their own behavioral repertoire as outlined by social learning theory.

Hypothesis 3: Greater levels of child maltreatment are associated with being in the JSO group

Third, it was hypothesized that greater levels of child maltreatment and trauma are associated with being in the JSO group. Overall, this was confirmed, with JSOs reporting higher means than the JD youth for physical and emotional abuse, as well as physical and emotional neglect. However, physical neglect negatively correlates with being in the JSO group and instead predicts JD group membership. It is possible that physical neglect predicting JD group membership may be associated with crimes such as theft or selling drugs in order to provide basic needs for oneself or one's family. Again,

these results suggest that while many JD youth experienced child maltreatment and trauma throughout childhood, JSO youth had more frequent and severe histories.

Furthermore, these results are consistent with those of Seto et al. (2010), who found that JSOs had higher exposure to violence in the family, physical abuse, emotional abuse, and neglect compared to JDs.

Hypothesis 4: Youth with a history of sexual abuse victimization are associated with JSO group membership

Fourth, greater levels of sexual abuse victimization were hypothesized to be associated with being in the JSO group. The results for this sample confirm that the two groups vary significantly with JSOs reporting an average score approximately one and a half times greater than JDs. These findings are consistent with previous studies (Burton et al., 2002; Seto et al., 2010) and can be explained theoretically by social learning theory. Overall, JSOs in this sample experienced more frequent and severe sexual abuse victimization, learned this abusive behavior, and incorporated it into their behavioral repertoire, essentially repeating what they experienced themselves. Again, these results are consistent with those of Seto et al. (2010), who found that JSOs had higher exposure to sexual violence in the family compared to JDs.

Hypothesis 5: Youth with childhood exposure to nudity and sexual activity are associated with being in the JSO group

Finally, it was hypothesized that greater levels of childhood exposure to nudity and sexual activity will be associated with being in the JSO group. In this sample, correlations exist between 1) childhood exposure to nudity and sexual activity before and after age 10 and 2) the abuse scales and family functioning. These correlations among

variables may suggest that childhood exposure to nudity and sexual activity may be considered a form of abuse in and of itself, but may also capture other forms of abuse and neglect. Additionally, there are correlations between exposure and race. This may suggest that there are differences when it comes to aspects of family life that may be a function of race, ethnicity, or culture, such as household boundaries, rules of privacy, and sleeping arrangements (e.g., co-sleeping, family bed).

The results confirm that JSO youth in this sample were more frequently exposed, both before and after age 10, to nudity and sexual activity, compared to the JD youth. JSOs report an average score almost twice as high as JDs for exposure before age 10. This exposure included everything from seeing naked adults and children, to witnessing sex between adults or between adults and children, and to abusive or forceful sexual behaviors. For the JSOs this may explain why their criminal behavior was sexual. If they were growing up in a sexualized environment, as characterized by frequent and severe exposure to nudity and sexual activity, it may have impacted the youth's conceptualization of privacy, sexual boundaries, sexual behavior, adult and child relationships, and abuse. Based on the principles of learning from social learning theory, this exposure to nudity and sexual activity modeled by the adults in the youth's family, may have increased the youth's level of learning through observation (Bandura, 1986). Similar to claims made about the learning experiences of sexually abused and traumatized youth, this type of exposure to nudity and sexual activity resulted in learning experiences that created a knowledge base different from that of youth who did not experience such exposure. This difference may explain their sexual offending behavior (Burton et al., 2002). Similar to exposing youth to sexually explicit material and

pornography, this in person and first hand exposure to nudity and sexual activity can be conceptualized as a form of sexual abuse and victimization, and may result in similar traumatization and psychological distress sequelae.

Limitations

There are limitations in this comparison study. Regarding the sample, there are geographical limitations on the state level; however, the sample represents youth from urban, suburban, and rural settings within an entire Midwestern state. This differs from previous studies with samples from only one facility or treatment program, drawing from a more limited geographical area. Additionally, the sample contains youth in residential placement only. Therefore, it does not provide information on youth adjudicated and sentenced to probation and outpatient treatment, who continue to live with their families in the community. The sample neither provides the comparison study with a non-adjudicated comparison group nor does it create matched samples of JSOs and JDs. Also, entry into the juvenile justice system may vary from jurisdiction to jurisdiction, limiting the ability to generalize from this sample to others. Regarding the data and methods, limitations include the use of self-report measures for data collection that ask questions retrospectively. As with many studies, the sensitivity of the measures may be a limitation. Since it is cross-sectional, causality cannot be established. Finally, there is no means to identify differences between those who completed the survey and those who did not since that information is not included in the data collection for the larger study.

Implications

Research

Several directions for future research are implied by the results of this study. The effects of the family environment and history should be explored further since they may provide important correlates to JSO criminal behavior (Borduin, Schaeffer, & Heiblum, 2009), as suggested by social learning theory. While family structure was not predictive of being a JSO in this study, the correlation between family structure and family functioning may have implications for future research. Many of the youth in this study indicated residing in two parent families, not with both biological parents but with mother and partner or father and partner. The absence of a biological parent as a primary caregiver might be explored further in terms of how that aspect of family structure impacts the family's functioning and possibly the youth's engagement in criminal behavior. Of note, 90% of JSO youth in this sample reported some form of family dysfunction, warranting further examination. Future researchers might also include long term recidivism models that test the utility of family treatment with this population.

A question that must be raised and researched when considering JSOs relates to the JSOs who have histories of sexual abuse victimization, physical and emotional abuse and neglect victimization, as well as childhood exposure to nudity and sexual activity, since these domains seem to differentiate the groups in this sample. With the exception of physical neglect, JSOs seem to have more frequent and severe histories of abuse, neglect, and childhood exposure to nudity and sexual activity. In this study, physical neglect was almost significant in predicting JD group membership and might be examined further. For example, is there a connection between their physical neglect and their criminal

offenses? Are they stealing or selling drugs in order to help provide basic needs for themselves and their family? Furthermore, childhood exposure to nudity and sexual activity is a new area to explore with JSOs. There has been a recent focus on exposure to pornography (Burton, Leibowitz, Booxbaum et al., 2011), but not childhood exposure to nudity and sexual activity. While this may be a form of sexual abuse in and of itself, we may not currently be capturing this aspect in our research. There is evidence in this study to suggest that it may be a common experience for JSO youth that warrants further examination.

There are several implications for research related to evidence based treatments for these youth. Treatments with demonstrated effectiveness for these youth include Multisystemic Therapy (MST) (Borduin, Mann, Cone, Henggeler, Fucci, Blaske, & Williams, 1995; Henggeler, Rodick, Borduin, Hanson, Watson, & Urey, 1986; Henggeler, Borduin, Melton, Mann, Smith, Hall, Cone, & Fucci, 1991; Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler & Schoenwald, 2011; Ogden & Halliday-Boykins, 2004; Henggeler, Melton & Smith, 1992; Timmons-Mitchell, Kishna, Bender, & Mitchell, 2006) and Multidimensional Treatment Foster Care (MTFC) (Chamberlain, 2003). These are family centered practice models that decrease antisocial behavior, recidivism, and out of home placement, while increasing pro-social behavior. Effective treatment for these youth involves providing treatment for the family as well (Borduin et al., 2009). This insight provides guidance for our research and implies that we should focus on the families of these youth. The family characteristics and environment may provide possible correlates to the offending behaviors of JSOs and JDs, as demonstrated in this study. Finally, other areas of exploration should include

comparison studies that utilize a sample of JSOs sanctioned to probation and community based treatment to act as a comparison group for JSOs in residential treatment, similar to the youth in this sample.

Assessment, Treatment, and Discharge Procedures

Several enhancements to current assessment, treatment, and discharge procedures are implied by the results of this study. Clearly, parent, family, and home environment characteristics must be assessed, as implied by the frequency and severity of family problems in this sample. While child maltreatment, including trauma, abuse, and neglect, are often assessed prior to treatment, it may be necessary to continue to assess for these issues throughout the treatment phase, as youth more clearly understand these concepts and feel more comfortable disclosing such histories to treatment staff. Furthermore, evidence from this study suggests that neglect is common and often severe for the JSOs in this sample, warranting attention throughout assessment and treatment phases. Childhood exposure to nudity and sexual activity should also be included in assessment, as implied by the frequency and severity of such exposure in this sample. More thorough assessment procedures may reveal that other children in the home or family have experienced similar histories. Attempts should be made to secure early intervention and prevention services for these youth as well.

Regarding treatment, the findings from this study suggest that JSOs in residential care are a heterogeneous population with a broad range of difficulties and problems, further suggesting treatment should be broad as well, addressing problems specific to each individual as opposed to those generally exhibited by JSOs and JDs as a whole. Additionally, it is important to include the parent and family in treatment whenever

possible, creating a greater emphasis on family and home environment issues. Treatment with families due to the severity of the family's problems is implied, although at this time we do not know if this target is related to risk of re-offense, either sexual or non-sexual.

Prior to discussing treatment implications further, it is important to note that only 5%, or 15,000 annually, of eligible high-risk offenders, or those sent to residential placement, have the opportunity to benefit from programs with proven effectiveness (Greenwood, 2008). The majority of current services provided to juvenile offenders have not shown to be effective or have not been evaluated. Despite great need, treatment services are deficient in residential facilities (Sedlak & McPherson, 2010). Additionally, recent survey data suggest a decline in programs addressing family dysfunction by offering treatment services to parents and caregivers (Burton & Smith-Darden, 2001), even though effective treatment for these youth, such as MST, involves providing treatment for the family (Borduin et al., 2009). This decline in service provision for the family is unfortunate considering adolescents and their parents have noted improvements in self-control and emotional regulation when parents were engaged in treatment (Thornton, Stevens, Grant, Indermaur, Chamarette, & Halse, 2008). Unfortunately, the unintended consequence of current practice is that it may be increasing antisocial behavior and criminality in these youth (Henggeler et al., 2011). The Blueprints for Violence Prevention Initiative, developed by the Center for the Study and Prevention of Violence at the University of Colorado in Boulder, and supported by the Office of Juvenile Justice and Delinquency Prevention, developed and implemented research-based criteria for evaluating the effectiveness of 600 intervention programs (Mihalic, Fagan, Irwin, Ballard, & Elliott, 2004). MST and MTFC were among the programs identified as

effective interventions for juvenile offenders. Effectiveness was measured by recidivism rates, a decrease in anti-social behavior, an increase in pro-social behavior, and a reduction in out of home placement (Mihalic et al., 2004). While these programs are deemed effective with youth similar to those in my sample, they are not implemented in residential placement settings, but are community based and seen as an alternative to residential placement.

MST and MTFC are evidence based practice models with demonstrated effectiveness with JSOs and JDs. Being community based, both address problems where they occur and target key risk factors in the youth's social ecology, including family characteristics and functioning, to reduce antisocial behavior (Howell, 2003; Liberman, 2008; Loeber, Burke, & Pardini, 2009). Both use behavioral and cognitive behavioral (CBT) intervention techniques, within a systemic conceptual framework, to improve the functioning of the youth and his family. These programs provide intensive training, supervision, and support of staff, and require intervention fidelity (Henggeler et al., 2011). Again, current practice of placing antisocial youth together in residential programs for extended periods of time may lead to peer contagion, deviancy training, modeling and rewarding of deviant behavior by peers, as well as secondary trauma (Dodge, Dishion, & Lansford, 2006). The findings from this study support family centered treatments such as MST and MTFC for JSOs and JDs, although the youth in this sample are in residential settings. While discussing the policy implications involved in creating alternatives to residential placement is beyond the scope of this paper, it is noteworthy to discuss what may be considered the ideal treatment for these youth and their families.

Both MST and MTFC are community based and family centered treatments with demonstrated effectiveness for families of youth with both sexual and non-sexual offending behaviors. There may be aspects of these treatments that can be implemented with residential youth or utilized after a youth is discharged from placement, serving as a step-down program when they are reintegrated into the family home and community. As is often the case with youth in residential placement, there may be limited access to the family during residential treatment. Modifications to treatment will require an increase in training and education for residential staff on the importance of family history and family therapy for these youth. Regardless of a program's access to families, we should address home environment and family related issues with the youth prior to discharge from residential treatment, especially if they are returning to the care of their family. In terms of discharge, more stringent requirements for the family (i.e. family treatment, parental substance abuse treatment, etc.) prior to returning a youth home to their care may be necessary in order to keep family dynamics from affecting the youth's treatment progress and recidivism. For example, as part of the discharge plan, community based family services or aftercare services should be provided once the youth returns home. While MST and MTFC are effective community based treatments, they are currently not easily accessible in some jurisdictions. For example, in the state of New York, JSOs often do not qualify for MTFC due to their sexual offense adjudication status (Christeson, Kass, & Wiley, 2007; Task Force on Transforming Juvenile Justice, 2009). While MST has proven to be effective with JSOs in community based samples (Letourneau et al., 2009), the only MST program in the entire state of New York that was accepting JSOs and their families was discontinued in May 2011 (personal communication via email with

Munsch, May 23, 2011). Again, while these youth may not be able to receive these specific treatment protocols, there may be aspects of these family centered treatments that can be incorporated into the services that are accessible, both in their residential programs and once they are discharged. Overall, a greater treatment emphasis on the family characteristics and family environments of these youth may prove beneficial, as problematic family characteristics and dysfunction have demonstrated to be frequent and at times severe for the youth in this study.

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Appendix A

The Evaluation Measures

Developmental Antecedents

A demographic form was used to collect information regarding the gender, race, age at first sexual offense, age at last sexual offense, duration of sexual offending, age at survey completion, and grade of the respondents. In terms of gender, the entire sample was male. Information regarding race and ethnicity was obtained by the following question: *Please choose the ONE race or ethnic group you feel closest to?* Given the small percentage of Asian/Pacific Islanders and Arab Americans, these respondents were collapsed into one group “Other.” Information about age was obtained by the following questions: *When you started and stopped sexually abusing people, how old were you the first time you sexually abused someone? How old were you the last time you sexually abused someone?; How old are you?*

Family Characteristics. Questions regarding family structure (e.g., identification of caregivers, parental absence, out of home placement of children) and family functioning (e.g., parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, frequent moves or homelessness) were used in this study.

Child Maltreatment and Trauma Variables. The Childhood Trauma Questionnaire (CTQ) (Bernstein et al, 1998) is a 34-item scale that screens for traumatic experiences throughout childhood including physical, sexual, and emotional abuse, as well as physical and emotional neglect, retrospectively. It uses a five-point Likert scale from “Never true” (1) to “Very often true” (5). Respondents were asked to rate the

frequency of their childhood abuse experiences with the stem question: *When I was growing up... .*

The Physical Abuse scale was computed from five items in the CTQ: *Someone in my family hit me or beat me; People in my family hit me so hard that it left me with bruises or marks; I was punished with a belt, a board, a cord (or some other hard object); I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor; and I believe I was physically abused.* Cronbach's alpha was calculated for the physical abuse scale at .89.

The Sexual Abuse scale was computed from six items in the CTQ: *I had sex with an adult or with someone who was a lot older than me (someone at least five years older than me); Someone tried to touch me in a sexual way or tried to make me touch them; Someone threatened to hurt me or tell lies about me unless I did something sexual with them; Someone in my family molested me; and I believe I was sexually abused.*

Cronbach's alpha was calculated for the sexual abuse scale at .84. Additionally, a yes/no question: *Were you sexually abused as a child?*, was used in this study. Questions about characteristics of sexual abuse victimization (e.g., gender, age, and relationship to abuser; number of abusers; severity of sexual abuse victimization; and modus operandi or level of force used by abuser) were used in this study (Burton et al., 2002).

The Emotional Abuse scale was computed from five items in the CTQ: *People in my family called me things like "stupid," "lazy," or "ugly"; People in my family said hurtful or insulting things to me; I was frightened of being hurt by someone in my family; Someone in my family hated me; and I believe I was emotionally abused.* Cronbach's alpha was calculated for the emotional abuse scale at .89.

The Physical Neglect scale was computed from nine recoded items in the CTQ: *I didn't have enough to eat; I lived in a group home or foster home; I knew there was someone to take care of me and protect me; I was living on the streets by the time I was a teenager or even younger; My parents were too drunk or high to take care of my family; People in my family got into trouble with the police; I had to wear dirty clothes; I lived with different people at different times (like different relatives and foster families); and I spent time out of the house and no one knew where I was.* Cronbach's alpha was calculated for the physical neglect scale at .76.

The Emotional Neglect scale was computed from nine recoded items in the CTQ: *There was someone in my family who I could talk to about my problems; People in my family showed confidence in me and encouraged me to succeed; There was someone in my family who helped me feel important and special; There was someone in my family who wanted me to be a success; I felt loved; People in my family felt close to each other; People in my family looked out for each other; Someone in my family believed in me; and My family was a source of strength and support.* Cronbach's alpha was calculated for the emotional neglect scale at .92.

Childhood Exposure to Nudity and Sexual Activity. The frequency and type of childhood exposure to nudity and sexual activity was assessed by 12 self-report items based on Leguizamo's (2000) interview, using a 7 point scale with answer choices: 1(never), 2(1-5 times), 3(6-25 times), 4(26-50 times), 5(51-100 times), 6(101-500 times), 7 (over 500 times). Respondents were asked both: *Before the age of 10, how many times had you seen...*, and *After the age of 10, how many times have you seen...*, the following six questions: *Naked adults in person; Naked children in person; Adults having sex in*

person; Adults forcing adults to have sex in person; Adults having sex with children in person; and Children having sex with children in person. Cronbach's alpha was calculated for the before age 10 scale at .78 and for the after age 10 scale at .75.

Criminal Behavior

Non-sexual Crime. The Self-Report Delinquency Scale (SRD) (Elliot, Huizinga & Ageton, 1985) is a 28-item self-report measure used to assess non-sexual delinquency ranging from drug use to aggression and contains several subscales including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs. "Inter-item reliability is sound for most of the subscales with the exception of drug use and public disorderly (Burton, Duty et al., 2011). Cronbach's alpha was calculated for the entire measure at .93.

The alcohol use subscale was computed from two recoded items in the SRD: *Before I was arrested I...Used alcohol or other liquor; and Was drunk in a public place.* Cronbach's alpha was calculated for the alcohol use subscale at .79.

The drug use subscale was computed from four recoded items in the SRD: *Before I was arrested I...Used inhalants such as glue; Used pot, hash, weed, marijuana; Used cocaine, coke, or crack; and Used other types of drugs.* Cronbach's alpha was calculated for the drug use subscale at .61.

The felony assault subscale was computed from two recoded items in the SRD: *Before I was arrested I...Attacked someone with the idea of seriously hurting or killing the person; and Was involved in gang fights.* Cronbach's alpha was calculated for the felony assault subscale at .67.

The felony theft subscale was computed from four recoded items in the SRD: *Before I was arrested I...Stole or tried to steal a motor vehicle such as a car or motorcycle; Stole or tried to steal something worth more than \$100; and Knowingly bought, sold, or held stolen goods (or tried to)*. Cronbach's alpha was calculated for the felony theft subscale at .89.

The general delinquency subscale was computed from seven recoded items in the SRD: *Before I was arrested I...Carried a hidden weapon; Stole or tried to steal things worth \$100 or less; Paid someone to have sexual relations with me; Stole money or other things from my parents or other members of my family, Had or tried to have sexual relations with someone against their will; Hit or threatened to hit one of my parents; and Hit or threatened to hit my supervisor or another employee*. Cronbach's alpha was calculated for the general delinquency subscale at .68.

The property damage subscale was computed from three recoded items in the SRD: *Before I was arrested I...Purposely damaged or destroyed property belonging to my parents or other family members; Purposely damaged or destroyed other property that did not belong to me (not counting family or work property); and Purposely set fire to a building, a car, or other property (or tried to)*. Cronbach's alpha was calculated for the property damage subscale at .74.

The public disorderly subscale was computed from three recoded items in the SRD: *Before I was arrested I...Begged for money or things from strangers; Used or tried to use credit cards without the owner's permission; and Made obscene telephone calls (such as calling someone and saying dirty things)*. Cronbach's alpha was calculated for the public disorderly subscale at .51.

The selling drugs subscale was computed from two recoded items in the SRD: *Before I was arrested I...Sold marijuana, pot, weed, hash; and Sold hard drugs such as heroin, cocaine, and LSD*. Cronbach's alpha was calculated for the selling drugs subscale at .84.

The robbery variable is comprised of one item in the SRD: *Before I was arrested I...Broke or tried to break into a building or vehicle to steal something or just look around*. Cronbach's alpha was not calculated.

Sexual Crime. The Self-Report Sexual Aggression Scale (SERSAS) used in prior studies (Burton et al., 2002; Burton, 2003; Burton, Leibowitz, Booxbaum et al., 2011) measures sexually aggressive behaviors over the lifespan. Scales that originated from this measure include: a scale of severity of sexual aggression using a 7 point rank order scale which runs from 1= exhibitionism or voyeurism to 7= penetration, fondling and exhibitionism or voyeurism; age of starting to abuse others; number of victims by age and gender; and a rank order scale for modus operandi (or level of force used in offenses) which runs from 0= did not use any of the three modus operandi to 7= used all three modus operandi (offered favors, made threats, and used force). Cronbach's alpha indicated good reliability, at $\alpha = .87$, for this entire instrument, with an 8 week test-retest agreement of 96% (Burton, 2000; Burton et al., 2002).

Questions about planning of sexual offenses and number of sexual offense victims were used in this study. Additionally, Burton et al. (2002) created a more comprehensive measure for complexity and severity of sexual crimes using a 15 point scale with 0 = none, 1 = exposure, 2 = fondling, 3 = exposure and fondling, 4 = oral sex, 5 = exposure and oral sex, 6 = oral sex and fondling, 7 = oral sex, exposure, and fondling, 8 =

penetration with penis, digits, or objects, 9 = penetration and exposure, 10 = penetration and fondling, 11 = penetration, exposure, and fondling, 12 = penetration and oral sex, 13 = penetration, exposure, and oral sex, 14 = penetration, exposure, fondling, and oral sex.

Appendix B

Power Analysis for Logistic Regression

Table B1.
Numeric Results of Power Analysis

Power	N	Pcnt N			Odds		R^2	α	β
		X=1	P0	P1	Ratio				
0.78722	49	50.000	0.050	0.400	12.667	0.150	0.05000	0.21278	
0.78722	52	50.000	0.050	0.400	12.667	0.200	0.05000	0.21278	
0.79747	56	50.000	0.050	0.400	12.667	0.250	0.05000	0.20253	
0.79328	33	50.000	0.050	0.500	19.000	0.150	0.05000	0.20672	
0.77704	35	50.000	0.050	0.500	19.000	0.200	0.05000	0.22296	
0.77704	37	50.000	0.050	0.500	19.000	0.250	0.05000	0.22296	
0.77046	23	50.000	0.050	0.600	28.500	0.150	0.05000	0.22954	
0.77046	25	50.000	0.050	0.600	28.500	0.200	0.05000	0.22954	
0.77046	26	50.000	0.050	0.600	28.500	0.250	0.05000	0.22954	
0.79342	74	50.000	0.100	0.400	6.000	0.150	0.05000	0.20658	
0.79342	78	50.000	0.100	0.400	6.000	0.200	0.05000	0.20658	
0.79342	83	50.000	0.100	0.400	6.000	0.250	0.05000	0.20658	
0.79155	45	50.000	0.100	0.500	9.000	0.150	0.05000	0.20845	
0.79155	48	50.000	0.100	0.500	9.000	0.200	0.05000	0.20845	
0.79155	51	50.000	0.100	0.500	9.000	0.250	0.05000	0.20845	
0.78108	30	50.000	0.100	0.600	13.500	0.150	0.05000	0.21892	
0.78108	32	50.000	0.100	0.600	13.500	0.200	0.05000	0.21892	
0.78108	34	50.000	0.100	0.600	13.500	0.250	0.05000	0.21892	
0.79684	115	50.000	0.150	0.400	3.778	0.150	0.05000	0.20316	
0.79684	122	50.000	0.150	0.400	3.778	0.200	0.05000	0.20316	
0.79684	130	50.000	0.150	0.400	3.778	0.250	0.05000	0.20316	
0.79374	63	50.000	0.150	0.500	5.667	0.150	0.05000	0.20626	
0.79374	67	50.000	0.150	0.500	5.667	0.200	0.05000	0.20626	
0.79374	71	50.000	0.150	0.500	5.667	0.250	0.05000	0.20626	
0.78864	39	50.000	0.150	0.600	8.500	0.150	0.05000	0.21136	
0.78864	42	50.000	0.150	0.600	8.500	0.200	0.05000	0.21136	
0.78864	45	50.000	0.150	0.600	8.500	0.250	0.05000	0.21136	

Note.

Power is the probability of rejecting a false null hypothesis. It should be close to one.

N is the size of the sample drawn from the population.

P0 is the response probability at the mean of X.

P1 is the response probability when X is increased to one standard deviation above the mean.

Odds Ratio is the odds ratio when P1 is on top. That is, it is $[P1/(1-P1)]/[P0/(1-P0)]$.

R^2 is the R^2 achieved when X is regressed on the other independent variables in the regression.

α is the probability of rejecting a true null hypothesis.

β is the probability of accepting a false null hypothesis.

Summary Statements for Power Analysis

A logistic regression of a binary response variable (Y) on a binary independent variable (X)

with a sample size of 49 observations (of which 50% are in the group X=0 and 50% are in the

group $X=1$) achieves 79% power at a 0.05000 significance level to detect a change in Prob ($Y=1$) from the baseline value of 0.050 to 0.400. This change corresponds to an odds ratio of 12.667. An adjustment was made since a multiple regression of the independent variable of interest on the other independent variables in the logistic regression obtained an R-Squared of 0.150.

Figure B1.
Power Analysis

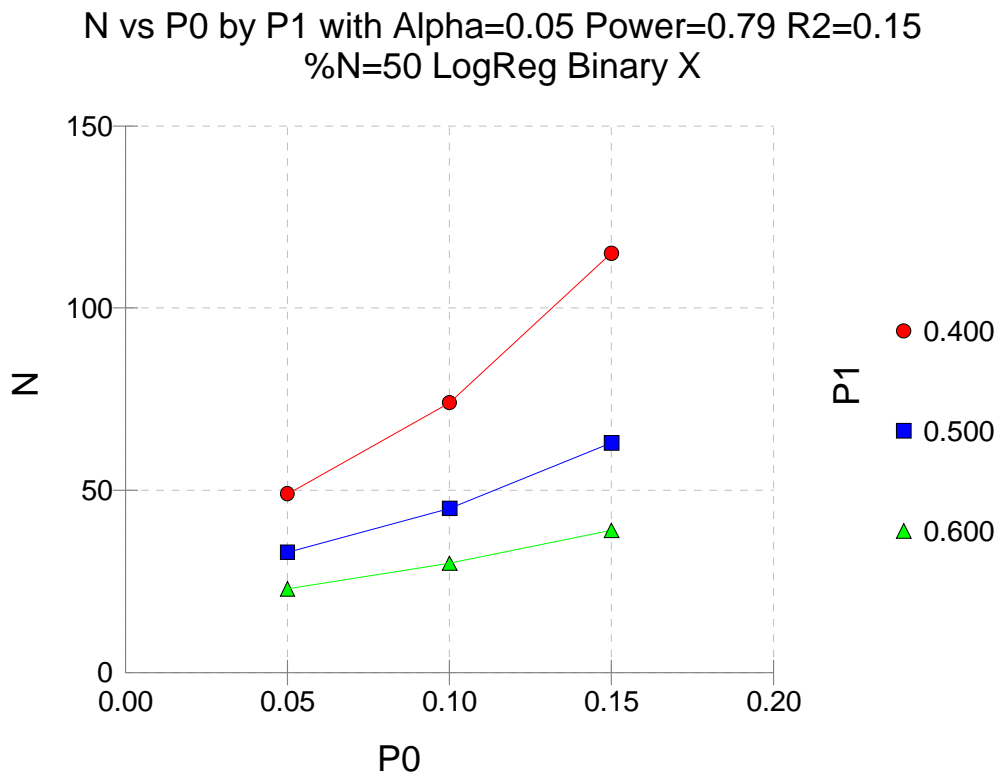


Figure B2.
Power Analysis

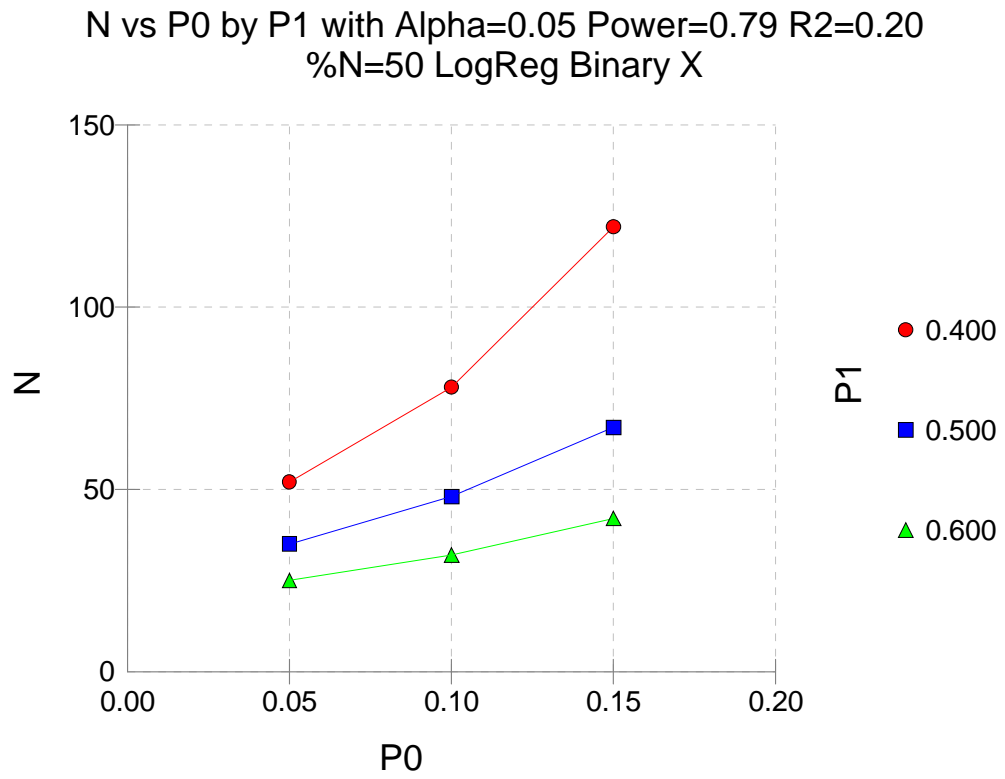
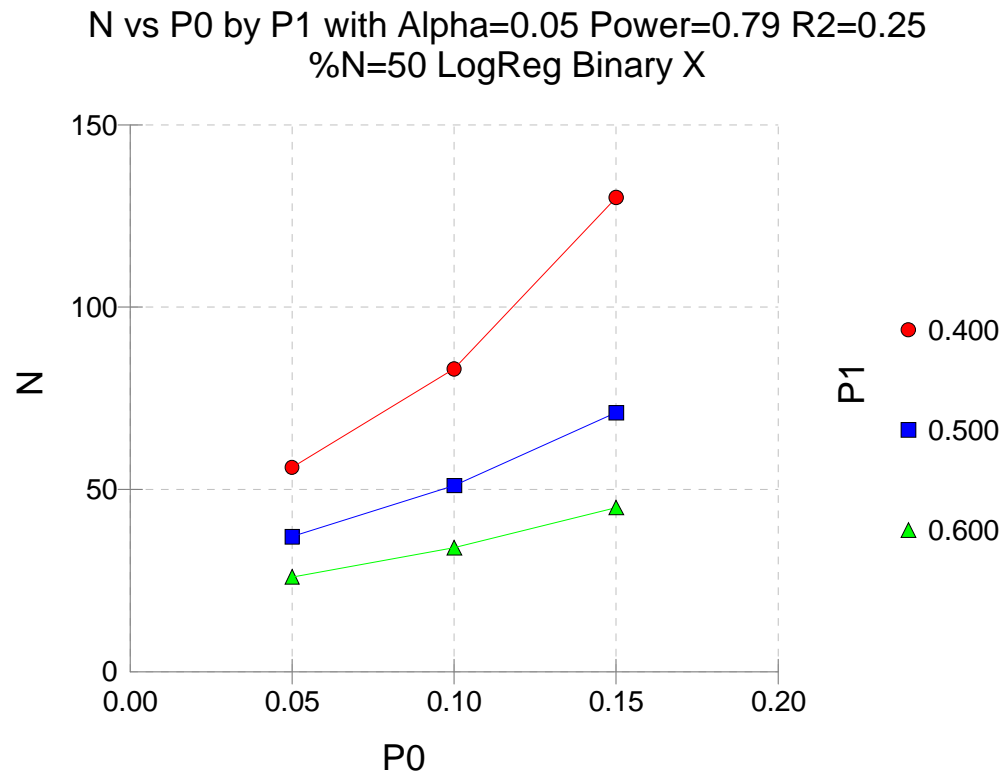


Figure B3.
Power Analysis



Appendix C

Table C1.
Pearson Correlation Matrix of the Predictor Variables

	Age	Race	Grade	Family structure	Family functioning	Sexual abuse scale	Physical abuse scale	Emotional abuse scale	Physical neglect scale	Emotional neglect scale	Childhood exposure to nudity and sexual activity before 10	Childhood exposure to nudity and sexual activity after 10
Age	1.0											
Race	.09*	1.0										
Grade	.65***		1.0									
Family structure	.01	.22***	.01	1.0								
Family functioning	.03	.07	.02	.14**	1.0							
Sexual abuse scale	.05	.01	.00	.06	.31***	1.0						
Physical abuse scale	.13**	.04	.07	.05	.46***	.40***	1.0					
Emotional abuse scale	.17***	.08	.07	.01	.47***	.42***	.85***	1.0				
Physical neglect scale	.11*	.10*	.04	.23***	.51***	.41***	.61***	.57***	1.0			
Emotional neglect scale	.07	.01	.02	.01	.32***	.19***	.47***	.49***	.49***	1.0		
Childhood exposure to nudity and sexual activity before 10	.01	.16***	.02	.12**	.27***	.47***	.31***	.28***	.42***	.16***	1.0	
Childhood exposure to nudity and sexual activity after 10	.12**	.16***	.10*	.08	.18***	.31***	.24***	.25***	.31***	.08	.70***	1.0

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Paper 3: Factors Associated with the Severity of Sexual Crime and the Frequency of General Delinquency among Juvenile Sexual Offenders in Residential Treatment

Introduction

Sexual offenses committed by juveniles pose a significant problem, both socially and clinically. In the United States, males under the age of 18 account for roughly 18% of the arrests for sexual offenses, including forcible rape and child molestation (Federal Bureau of Investigations, 2006). Additionally, in an historical study, approximately one half of all adult sexual offenders reported they had committed their first sexual offense when they were an adolescent (Abel, Osborn, & Twigg, 1993). Unfortunately, only 5%, or 15,000 annually, of eligible high-risk offenders, or those incarcerated in residential treatment facilities, have the opportunity to benefit from programs with proven effectiveness (Greenwood, 2008). The majority of current treatment services and programs for JSOs have not been shown effective or have not been evaluated. Despite great need, treatment services are deficient in residential treatment facilities (Sedlak & McPherson, 2010). Additionally, survey data suggest a decline in programs addressing family dysfunction by offering treatment services to parents and caregivers (Burton & Smith-Darden, 2001). This is unfortunate considering adolescents and their parents have noted improvements in self-control and emotional regulation when parents were engaged in treatment (Thornton, Stevens, Grant, Indermaur, Chamarette, & Halse, 2008). Unfortunately, the unintended consequence of current practice is that it may be increasing antisocial behavior and criminality (Henggeler & Schoenwald, 2011). Given these reports, researchers need to identify factors that contribute to the criminal behavior of juvenile sex offenders (JSOs), to further understand the onset and course of sexual offending, and lend guidance to the development of effective treatments. Moreover, while these youth are often viewed as a specialized population of

juvenile delinquents (JDs), they also tend to report co-occurrence of non-sexual criminal behaviors. Further investigation regarding the etiology of criminal behavior for JSOs is warranted to determine chronic and possibly diverse patterns in their delinquency.

Regarding etiology, the literature on JSOs indicates that certain characteristics of the family environment, as well as early childhood experiences, may contribute to sexually aggressive behavior. Additionally, social learning theory suggests that a child's primary context for learning is his family, and a child's behavior may be learned directly and indirectly from role models in the family (Akers, 1985; Bandura, 1969b; Stinson, Sales, & Becker, 2008). For example, if a JSO's family is characterized by family criminality, domestic violence, and trauma, and similar qualities are being demonstrated in the criminal behavior of the JSO, then an element of conditioning or modeling may have occurred, connecting these family experiences with the JSO's criminal behavior. This modeling may also be important to an understanding of the long term effects of child maltreatment and early exposure to sexuality for JSOs.

While there is a dearth of research on the relationship between child maltreatment and sexual offending, the term "child maltreatment" has often been used to aggregate various forms of abuse and neglect. In turn, this requires subsequent studies to differentiate between forms of abuse and neglect. This differentiation is important for an understanding of the etiology of offending for JSOs and for an examination of patterns of offending for these youth. For example, this study examines the relationship between neglect and sexual and non-sexual criminal behavior outcomes, which has largely been overlooked. Additionally, there has been a recent focus on the use of pornography by JSOs and its role in their sexual offending (Burton, Leibowitz, Booxbaum, & Howard, 2011; Ford & Linney, 1995; Leguizamo, 2000; Knight & Sims-Knight, 2004; Burton & Meezan, 2004; Emerick & Dutton, 1993; Allen, D'Alessio, &

Emmers-Sommer, 2000). However, similar to the images depicted in pornography, in person childhood exposure to nudity and sexual activity has largely been ignored. Consistent with social learning theory, which suggests that children learn behaviors from role models and early childhood experiences, it is critical when examining juvenile sexual offending that childhood exposure to sexual activity in all forms be considered. This study examines childhood exposure to nudity and sexual activity and to sexual abuse victimization, and the relationship of these predictors with sexual and non-sexual criminal behavior outcomes.

Overall, the present study was designed to improve on prior work and represents an important step toward empirically understanding the role of the JSO's family and childhood experiences in their criminal behavior, both sexual and non-sexual. Ultimately to create and provide effective prevention and intervention programming for sexual abuse, it is important to understand how these family characteristics and early childhood experiences are specifically manifested in the JSO's offending. Additionally, further investigation may be useful in determining chronic and possibly diverse patterns of delinquency in JSOs, highlighting problematic criminal behavior beyond just sexual offending.

This study, using a social learning theory framework, explores the relationship between the predictor variables (i.e., family characteristics, child maltreatment, childhood exposure to nudity and sexual activity) and the outcome variables (i.e., severity of sexual crime and frequency of general delinquency) in a sample of 333 adjudicated male JSOs in residential treatment. Youth mandated to residential treatment, compared to those mandated to community supervision and outpatient mental health programs, are deemed unsafe to remain in the community with their families, are often the most severe offenders, and have numerous offenses and victims. Therefore, the research question for this study is: *What factors are associated with*

the severity of sexual crime as well as the frequency of general delinquency among juvenile sex offenders in residential treatment? The hypotheses are:

1. Family structure is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
2. Family functioning, including the presence of parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
3. Child maltreatment including physical abuse, emotional abuse, physical neglect, and emotional neglect, is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
4. Childhood exposure to nudity and sexual activity is associated with the severity of sexual crime as well as the frequency of non-sexual crime.
5. A history of sexual abuse victimization is associated with the severity of sexual crime as well as the frequency of non-sexual crime.

Literature Review

Theory

Social learning theory is the most consistently used explanatory construct in the JSO literature. In its application to families, this theory states that people model the behavior they were exposed to throughout childhood, making examination of the family crucial. Juvenile delinquency has been associated with family structure and functioning variables in previous studies, and sexual offending has been correlated with specific family characteristics. Finally,

evidence based practice models stress the importance of including the family in assessment, treatment, and relapse prevention (Borduin, Schaeffer, & Heiblum, 2009; Borduin, Mann, Cone, Henggeler, Fucci, Blaske, & Williams, 1995; Chamberlain, 2003; Henggeler, Rodick, Borduin, Hanson, Watson, & Urey, 1986; Henggeler, Borduin, Melton, Mann, Smith, Hall, Cone, & Fucci, 1991; Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, & Schoenwald, 2011; Ogden & Halliday-Boykins, 2004; Henggeler, Melton, & Smith, 1992; Timmons-Mitchell, Kishna, Bender, & Mitchell, 2006). These theoretical considerations, previous research, and current treatment modalities suggest that social learning theory provides an appropriate framework to explore the relationship between family characteristics, childhood experiences, and sexual and non-sexual criminal behavior. Hence, this study explores the perceptions held by JSOs of their childhood experiences and family environments, a significant context for youth, to see if such experiences and characteristics are associated with the complexity and severity of sexual crime as well as the frequency of general delinquency.

While the present study is guided by social learning theory, two other predominant theoretical perspectives on the relationship between developmental antecedents and criminal behavior are social control theory and strain theory. Social learning theory assumes that through processes of imitation and modeling, children adopt patterns of behavior that are violent and delinquent. Children observe role-models experiencing or receiving positive outcomes for their behavior (Bandura, 1969b; Widom, 1998; Garland & Dougher, 1990; Walters & Grusec, 1977). Social control theory suggests there is a natural tendency toward crime and violence. Such tendencies are restrained by social bonds, which if disrupted by parents and caregivers, increase the likelihood that the child will offend (Hirschi, 1969; Zingraff, Leiter, Johnsen, & Myers, 1994; Sampson & Laub, 1993). Strain theory maintains that maltreatment and other adverse

childhood events are a source of acute stress that may alter a child's response to environmental stimuli, predisposing a child to aggressive behaviors (Agnew, 1985, 1992; Veltman & Browne, 2001; Cicchetti & Rogosch, 2001; Widom, 1994). Across disciplines, there is increasing evidence that childhood events have negative consequences for behavior and skills in adolescence and beyond (Currie, 2009; Almond & Currie, 2011).

Individual and Family Characteristics of Juvenile Sex Offenders

Among studies of JSOs, childhood experiences and characteristics of the family environment have been demonstrated as important domains in the development of criminal behavior (Burton, Duty, & Leibowitz, 2011; Barbaree & Langton, 2006; Monastersky & Smith, 1985; Marshall & Barbaree, 1990). The 15,000 juveniles arrested for sex crimes each year vary in terms of their sexual offense severity; degree of clinical dysfunction, trauma, and abuse history (Zimring, 2004, Becker, Kaplan, Tenke, & Tartaglini, 1991; Bagley & Shewchuk-Dann, 1991; Becker, 1990; Knight & Sims-Knight, 2004); and aggressive, antisocial, and nonsexual criminal behaviors (Knight & Prentky, 1993; Knight & Sims-Knight, 2003, Grossman, Martis, & Fichtner, 1999, CSOM, 1999, Becker et al., 1991; Bagley et al., 1991). Furthermore, it has been suggested that families of JSOs also vary in terms of their structure and functioning.

The families of JSOs have been characterized in the literature as having high rates of violence, family instability, disorganization, lack of resources, inadequate parental monitoring of children, troubled family relationships, and single parent status, usually female-headed (Rich, 2003; Awad, Saunders, & Levene, 1984; Deisher, Wenet, Paperny, Clark, & Fehrenbach, 1982; Fehrenbach, Smith, Monastersky, & Deisher, 1986; Lewis, Shankok, & Pincus, 1979; Longo, 1982; Smith, 1988; Vizard, Monck, & Misch, 1995; Ford & Linney, 1995; Spaccarelli, Bowden, Coatsworth, & Kim, 1997; Becker, Cunningham-Rathner, & Kaplan, 1986; Loeber & Dishion,

1983; van der Put et al., 2012). Additionally, families of JSOs have high rates of substance abuse, early exposure to sexual material and behavior, and child maltreatment (discussed in more depth below), and they lack resources to cope with the effects of abuse once disclosed (CSOM, 1999; Vizard et al., 1995; Awad & Saunders, 1991; Lightfoot & Barbaree, 1993; Ford & Linney, 1995; Spaccarelli, Bowden, Coatsworth, & Kim, 1997; Barbaree & Marshall, 2006). Other characteristics of JSO families include parents with mental health issues (Awad & Saunders, 1991; Becker, Cunningham-Rathner, & Kaplan, 1986), childhood separation from parents (Kahn & Chambers, 1991; Fehrenbach et al., 1986; Smith & Israel, 1987), and family criminality (Morris, Anderson & Knox, 2002; Zgourides, Monto & Harris, 1994; Baker, Tabacoff, Tornusciolo & Eisenstadt, 2001; Bagley et al., 1991; Caputo, Frick, & Brodsky, 1999; Wieckowski, Hartsoe, Mayer, & Shortz, 1998). Parental criminology, specifically, in the criminology literature is one of the strongest predictors of an individual's criminal behavior and activity (Hjalmarsson & Lindquist, 2012). Social learning theory and the extant literature suggest that in order to understand the etiology of sexual offending among juveniles, the familial nature of crime must be more fully understood.

In terms of limitations, while there are a considerable number of studies regarding the influence of family structure on juvenile delinquency in general (Anderson, 2002; Astone & McLanahan, 1991, 1994; Breivik, Olweus, & Endersen, 2009; Demuth & Brown, 2004; Downey & Powell, 1993; Geismar & Wood, 1986; Gove & Crutchfield, 1982; Hoffman & Johnson, 1998; Maginnis, 1997; Mandara & Murray, 2006; Matsueda & Heimer, 1987; Murry, Williams, & Salekin, 2006; Wu, 1996), it has not been established as a correlate for JSOs specifically. The present study addresses this gap in the JSO and criminality literature by examining the relationship between family structure and all criminal behavior of JSOs, not just sexual crime.

Furthermore, the extant literature on JSOs examines both youth in residential treatment settings and outpatient community based treatment. However, for youth in residential treatment facilities it is not clear if there are individual and family characteristics specific to these youth who are deemed unsafe to remain in the community with their families, are often the most severe offenders, and have numerous offenses and victims. The present study focuses specifically on JSOs in residential treatment facilities to offer clarity on the individual and family characteristics of these youth and to examine the associations between family characteristics and all criminal behavior, including both sexual and non-sexual crime characteristics.

Child Maltreatment

Regarding child maltreatment histories, the Center for Sex Offender Management (1999) found that 20-50% of JSOs between age 13- 17 years reported histories of, or exposure to, physical abuse, and 40-80% reported sexual abuse histories (Hanson, 1990; Hanson & Slater, 1998; Murphy & Smith, 1996; Ryan, Miyoshi, Metzner, Krugman & Fryer, 1996; Vizard et al., 1995; Watkins & Bentovim, 1992; Worling, 1995). Although discussed in more depth below, the incidences of sexual abuse among JSOs exceed estimates in the general child and adolescent population (Finkelhor, Turner, Ormrod, Hamby & Kracke, 2009) and in other JDs (Seto et al., 2010; Burton, Miller & Shill, 2002; Fehrenbach et al., 1986). In their meta-analysis, Seto et al., (2010) found a higher prevalence of physical abuse among JSOs compared to JDs and nonoffending adolescents. They also found that JSOs reported a greater prevalence of emotional abuse and/or neglect compared with reports by JDs and non-offending adolescents (Seto et al., 2010). The present study advances the field by addressing an important gap in the literature regarding the distinctions made between abuse and neglect for JSOs. Physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect are examined individually as

opposed to in aggregate form as done in earlier studies. Furthermore, individual relationships are explored between these five forms of abuse and neglect and all criminal behavior for JSOs in this study.

Sexual abuse victimization and subsequent sexual offending.

The most comprehensive survey of the incidence and prevalence of children's exposure to violence, The National Survey of Children's Exposure to Violence (NatSCEV), asked children about abuse victimization experienced within the past year as well as within their lifetime. NatSCEV found that 1 in 16 children (6.1%) were sexually victimized in the past year of survey completion, and 1 in 10 (9.8%) over their lifetimes (Finkelhor et al., 2009). Additionally, the Administration on Children, Youth, and Families of the U.S. Department of Health and Human Services (2007) report that more than half of all children who are sexually abused, are sexually abused by a parent or other relative (U.S. Department of Health and Human Services, Administration on Children, Youth, and Families, 2007). Although, for male children there is some evidence to suggest they are more likely to be sexually abused by a non-relative than a relative (Vander Mey, 1988). Research suggests that sexual abuse by a family member may increase the likelihood for the victim to blame himself for the sexual abuse as opposed to those children molested by someone outside the family (London, Bruck, Ceci, & Shuman, 2005). Sexual abuse victimization at the hands of a relative may be more severe in terms of the violation of the relationship and the intrusiveness of the abuse. Additionally, the severity of potential damage to the victim and family may be higher for those sexually abused by family members as opposed to non-relative abusers, in terms of their ability to trust family members who are supposed to protect them from harm, the experience of self-blame, as well as the strain and distress placed on family relationships, often creating divided loyalties within the family (Cohen,

Mannarino, & Deblinger, 2006; Deblinger, Lippmann, & Steer, 1996; Deblinger & Stauffer, 1996; Fischer & McDonald, 1998; London et al., 2005; NCTSN, 2009). Additionally, research indicates that intrafamilial child sexual abuse may have an earlier onset, longer duration, higher level of intrusion, and greater physical and emotional injury for the victim, compared to extrafamilial child sexual abuse (Fischer et al., 1998). In the present study the relationship to the abuser for the subsample of sexually victimized JSOs will be included to explore its association with sexual and non-sexual crime for JSOs in residential treatment.

For JSOs, rates of childhood sexual abuse victimization vary widely across studies, from less than 10% (Fagan & Wexler, 1988) to over 90% (Veneziano, Veneziano, & LeGrand, 2000). These rates are further varied when samples differ based on residential and community settings. Higher rates of sexual victimization are reported by youth in residential treatment facilities compared to those sanctioned to probation and outpatient treatment in community settings (Zakireh, Ronis & Knight, 2008; Hunter, Figuerdo, Malamuth, & Becker, 2003; Murphy, DiLillo, Haynes, & Steere, 2001), which may suggest a connection between sexual abuse victimization history and offense severity. An estimated average rate of sexual abuse victimization may be as low as 40%, based on a meta-analysis of more than 50 studies ($N > 9,000$ youth) (Burton & Schatz, 2003). Compared to JDs, JSOs report a more frequent history of sexual abuse (van der Put, van Vugt, Stams, Dekovic, & Laan, 2012; Seto et al., 2010). Overall, child sexual abuse histories for JSOs have been reported to be disproportionately high and predictive of future offending characteristics (Burton, 2000, 2003; Burton et al., 2002; Seto et al., 2004; Burton, Duty, & Leibowitz, 2011; van der Put et al., 2012).

Research has demonstrated considerable evidence that sexual abuse is a risk factor in sexually coercive behavior (Burton, Duty et al. , 2011, Knight et al., 2004, Swanston, Parkinson,

O'Toole, Plunkett, Shrimpton, & Oates, 2003), aggressiveness (Swanston et al., 2003), and general delinquency (Burton, Duty et al., 2011). Consistent with social learning theory, the subsequent sexual offending of sexually abused JSOs may replicate the sexual abuse they experienced (Barbaree & Langton, 2006; Veneziano et al., 2000). While examining this victim to victimizer model, Burton et al., (2002) also found that the severity of sexual abuse for JSOs predicts the severity of their subsequent sexual offending. This is similar to findings that suggest JSOs with more severe sexual victimization histories abused the most children and more often than non-sexually abused JSOs (Hummel, Thomke, & Oldenburger, 2000). In terms of the onset of sexual offending, adult SOs who began sexually offending in adolescence reported a higher frequency and severity of childhood sexual abuse than those who started sexually offending as adults (Burton & Smith-Darden, 2001; DiCenso, 1992). The present study will examine the relationship between the severity of sexual abuse victimization and the outcome variables for sexually victimized JSOs in residential treatment, to indicate if the aforementioned findings are similar to those of the present study.

Research on the sexually abused sexual abuser, or the victim to victimizer model, has also highlighted others characteristics of sexual offending related to sexual abuse victimization. For example, Worling (1995) found that JSOs with male child victims had higher rates of sexual abuse victimization in their own childhoods compared to other JSOs. Kaufman, Hiliker, and Daleiden (1996) similarly found a connection between sexual abuse history and perpetrating against younger male victims. Additionally, Hunter et al. (2003) revealed connections for JSOs between having a history of sexual victimization by a non-relative male abuser who did not use a high level of violence, and the subsequent selection to offend against a male child. In light of previous studies on the relationship between sexual abuse and sexual coercion that is mediated

by deviant sexual fantasies (Knight et al., 2003), Grabell and Knight (2009) found that sexual abuse occurring during the age range of 3 to 7 years old correlates with subsequent adolescent sexual fantasy for sexually victimized JSOs. Combined, there is evidence to suggest that sexual offending behavior of JSOs may be influenced by modeling or conditioning associated with their own sexually abusive childhood experiences, as supported by social learning theory and the victim to victimizer model. At the same time, the victim to victimizer model clearly cannot account for non-sexually abused JSOs.

While sexual abuse victimization may be true for some JSOs, not all JSOs report a sexual abuse victimization history. Despite this, few studies have explored how sexual offending differs for sexually abused and non-sexually abused JSOs. Burton, Duty et al. (2011) found that when comparing sexually abused JSOs with non-sexually abused JSOs, the former indicated greater developmental and behavioral challenges on all self-report instruments. Overall, the sexually abused group had more traumatic childhoods, lived in family environments characterized by crime, and exhibited more antisocial behaviors. Such behaviors started earlier and lasted longer, compared to the non-sexually abused JSOs (Burton, Duty et al., 2011). Similarly, Burton, Duty et al. (2011) found that when sexually abused JSOs and nonsexually abused JSOs were compared on a number of variables, the results indicated that the sexually abused JSOs had more severe developmental antecedents, such as trauma, family characteristics, and early exposure to pornography, compared to the nonsexually abused group. Additionally, the sexually abused JSOs were found to have more recent behavioral difficulties, including characteristics of sexual aggression, sexual arousal, use of pornography, and nonsexual criminal behavior compared to the non-sexually abused JSOs (Burton, Duty et al., 2011). This recent literature suggests there

may be differences among sexually victimized and non-sexually victimized JSOs, warranting further exploration.

The present study examines the factors associated with sexual and non-sexual crime for a subsample of sexually victimized JSOs in residential treatment. Additionally, the present study offers exploration of associations between the outcome variables and specific characteristics of the sexual abuse victimization including, the relationship with the abuser, the severity of sexual abuse victimization, the modus operandi or level of force used. Notably, the present study explores correlations between sexual abuse victimization predictor variables and general delinquency outcomes for JSOs, in addition to sexual crime outcomes.

Cycle of violence and neglect.

Supported by social learning theory, the cycle of violence hypothesis suggests that a child is predisposed to violence in later years when he has a history of abuse and victimization. In other words, violence begets violence. In terms of the connection between child maltreatment and sexual offending specifically, Knight et al. (2004) tested an adult sex offender (SO) predictive model of sexual aggression on JSOs and found three paths leading to sexually coercive behaviors. Each path originated in abuse, two paths starting with physical and verbal abuse, and the third starting with sexual abuse (Knight et al., 2004). In terms of general criminality, research demonstrates that maltreatment in childhood correlates strongly with crimes being committed in adolescence and adulthood (Currie & Tekin, 2012; Kitzmann, Gaylord, Holt & Kenny, 2003; Luntz & Widom, 1994; Maxfield & Widom, 1996; McCord, 1983; Pollock, Briere, Schneider, Knop, Mednick, & Goodwin, 1990; Widom, 1989; Widom & Maxfield, 2001).

Widom et al. (2001) found that childhood abuse and neglect increased the likelihood of juvenile arrest by 59%, adult arrest by 28%, and violent crime by 30%, as supported by previous research (Widom, 1995; Smith & Thornberry, 1995; Zingraff, Leiter, Myers, & Johnsen, 1993). Children with histories of maltreatment were younger at the time of their first arrest, were arrested more frequently, and committed almost twice as many offenses compared to children who were not maltreated (Widom et al., 2001). These findings are consistent with the general delinquency literature showing early onset of criminal behavior to be associated with an increase in a variety of criminal activity, seriousness of crime, and duration of criminal problems (Loeber & Stouthamer-Loeber, 1987). Regarding violent crime, those who were physically abused were most likely to be arrested compared to those who were neglected and sexually abused, although, the neglected group was only slightly less likely to be arrested (Widom et al., 2001). Overall, Widom and Maxfield's (2001) findings support the cycle of violence hypothesis.

Similarly, Currie et al. (2012) found that child maltreatment is a major determinant of criminal behavior since it almost doubles the probability of engaging in different types of crime, and roughly doubles the probability of being convicted as a juvenile. These findings may suggest that those who are maltreated engage in crime at a younger age compared to those without a maltreatment history (Currie et al., 2012). They also found that sexual abuse had the largest negative effects on crime. Additionally, the probability of engaging in criminal behavior increased with multiple experiences of different types of maltreatment (Currie et al., 2012).

In addition to the cycle of violence, there is evidence to suggest that victims of childhood neglect are predisposed to violent and criminal behavior as well (Widom et al., 2001). For example, Van der Put et al., (2012) found neglect to be significantly related to general recidivism for misdemeanor offense JSOs and child victim JSOs. Since neglect also leads to violence, the

extant literature suggests a closer look at families characterized by neglect (Widom et al., 2001) and better assessments of child maltreatment histories for violent youth could be gained by including questions specific to neglect, both physical and emotional.

Regarding limitations, while the literature has explored various types of violence and their relatedness to criminal outcomes, such relationships should be explored for JSOs specifically. Furthermore, for JSOs who also commit general delinquency crimes it may prove useful to examine the types of violence associated with the full criminal repertoire of JSOs in residential treatment. In the present study the cycle of violence is explored in terms of child maltreatment histories and their association with both the sexual and non-sexual criminal behaviors of JSOs in residential treatment. Additionally, this new caveat of neglect predisposing youth to violent and criminal behavior is explored in the present study by examining both physical and emotional neglect and their independent relationships with sexual and non-sexual crime.

Childhood Exposure to Nudity and Sexual Activity

While there has been a limited focus in the JSO literature on exposure to pornography and sexually explicit materials (Burton, Leibowitz, Booxbaum, & Howard, 2011; Ford et al., 1995; Leguizamo, 2000; Knight et al., 2004; Burton & Meezan, 2004; Emerick & Dutton, 1993; Allen, D'Alessio, & Emmers-Sommer, 2000), there is a dearth of literature on sexual abuse. However, these two categories may fail to capture a JSO's childhood exposure to nudity and sexual activity through observation and witnessing of these acts, both sexually abusive and non-abusive. In their meta-analysis, Seto et al. (2010) found that JSOs compared to JDs reported significantly higher scores for exposure to and/or family presence of sexual violence involving other individuals. While a JSO's observation of sexually explicit behaviors and/or sexual

violence is considered sexual abuse by some definitions, it is not clear whether the current definition of “sexual abuse” and how it is operationalized through assessment and data collection questions accurately capture this childhood exposure to nudity and sexual behavior through observation and witnessing. Furthermore, when asked about sexually abusive experiences and victimization, JSOs may not consider witnessing sexual activity in their home, for example, a form of sexual abuse, and in turn may not endorse such a view. This may result in an inaccurate picture of a JSO’s exposure to sexual activity and sexual abuse. While JSOs are often questioned about their exposure to sexually explicit materials and pornography, there is little consensus in the literature regarding the impact of this exposure on offending (Burton, Leibowitz, & Booxbaum et al., 2011).

Extant studies on exposure to pornography suggest that while there are a range of differences in exposure to pornography as well as the nature of that exposure across JSOs and JDs, JSOs seem to have more exposure to pornography overall (Ford et al., 1995; Leguizamo, 2000; Burton, Leibowitz, Booxbaum et al., 2011). Leguizamo (2000) found that JSOs were more often exposed to hard core pornography both before and after the age of 10, compared to JDs. Additionally, soft core pornography exposure before the age of 10 was significantly more likely for JSOs compared to JDs (Leguizamo, 2000). Emerick et al. (1993) found a significant correlation between the number of female victims and the severity of the pornographic material used by JSOs during masturbation. Until recently, many studies did not investigate exposure to pornography as an etiological variable for sexual offending (Burton, Leibowitz, Booxbaum et al., 2011). Considering this gap in the literature, some researchers hypothesized that pornography exposure may lead to aggressive sexual fantasy for some JSOs (Knight et al., 2004). While others suggested that exposure to pornography coupled with orgasm, physiological stimulation,

and masturbation may reinforce cognitive rehearsals of previous sexual behavior and/or aggression for those with sexual victimization histories (Burton et al., 2004). Similarly, it has been proposed that cognitive distortions about sex, which are common among sexual abusers (Burton, Leibowitz, Booxbaum et al., 2011), may be related to masturbatory fantasies stimulated by exposure to pornography (Malamuth & Check, 1985). Furthermore, it has been hypothesized that using pornography, coupled with sexual arousal, to overcome negative emotional states, may lead to aggressive sexual behaviors for adolescents (Allen et al., 2000). More recently, in a comparison of JSOs and JDs, the JSOs reported more exposure to pornography than JDs both before and after the age of 10. Unexpectedly, for the JSOs their exposure to pornography was not correlated with any aspect of sexual crime collected in the study (i.e., the age of their first sex offense, their reported number of victims, the severity of their sexual offense, arousal to rape, the degree of force used during their sexual offense) (Burton, Leibowitz, Booxbaum et al., 2011). However, exposure to pornography was significantly correlated with all the general delinquency crime scores in the study (Burton, Leibowitz, Booxbaum et al., 2011). Furthermore, the authors propose that learning from experiences directly may be more powerful and salient compared to learning from pictorial stimuli (Burton, Leibowitz, Booxbaum et al., 2011), suggesting further investigation concerning the observation of sexual activity in person.

While the impact of pornography exposure in childhood and adolescence remains unclear, so too does the impact of viewing actual sexual activity in person. JSOs are often questioned about their exposure to sexually explicit and/or violent materials and pornography, but what if these images were experienced in-person and in real time? How do we capture the observation of nudity and “live-porn”? In other words, the JSO’s observation of nudity, sexual activity, and sexual violence remains unclear. Moreover, is this exposure correlated with sexual

and non-sexual offending for JSOs? In terms of developmental antecedents for offending, does the timing of the exposure in childhood make a difference? Overall, these questions create a need for a revised definition of childhood exposure to nudity and sexual activity and a further examination of such exposure. The present study addresses gaps in the literature by examining the associations between childhood exposure to nudity and sexual activity and the outcome variables. Notably, the present study explores the independent relationships of exposure before age 10 and after age 10 with criminal behavior outcomes.

General Delinquency of Juvenile Sex Offenders

The extant literature reports that many JSOs also commit non-sexual offenses (as much as 62% to 94%) (Butler & Seto, 2002; Ronis & Borduin, 2007; Ryan et al., 1996; France & Hudson, 1993), challenging the notion of crime specialization. While the timing of general delinquency offenses in relation to sexual offenses is not clear, there is a body of literature regarding the recidivism of JSOs that includes general delinquency crimes. This literature reports that the majority of JSOs who recidivate commit non-sexual crimes as opposed to sexual crimes (van der Put et al., 2012; McCann et al., 2008; Caldwell, 2007, 2010; Gerhold, Brown, & Beckett, 2007; Worling & Langstrom, 2006, Burton et al., 2004). In fact, Burton et al., (2004) found that JSOs are three to four times more likely to recidivate non-sexually than sexually. Additionally, in their meta-analysis, McCann and Lussier (2008) found sexual offense recidivism to be generally low (roughly 12%) for JSOs compared to their much higher non-sexual offense recidivism (roughly 41%). Some researchers have concluded that many JSOs persist in criminal activity, but few specialize in sexual offending (Carpentier & Proulx, 2011; Caldwell, 2010; Vandiver, 2006; Veneziano & Veneziano, 2002), warranting a closer look at the general delinquency of JSOs. High rates of non-sexual recidivism among JSOs suggest that some risk

factors may predict both sexual and non-sexual recidivism (Carpentier et al., 2011; Caldwell, 2002; Lipsey & Derzon, 1998; Prentky, Pimental, & Cavanaugh, 2006). These findings may suggest that sexual offending is part of a broader pattern of juvenile delinquency and that a general delinquency explanation, as opposed to a special sex offender specific explanation, is adequate. On the other hand, reports have also acknowledged that JSOs are a distinct group of offenders who differ from JDs in terms of factors that explain their offending (Becker, 1990, 1998; Worling et al., 2006).

When Seto et al., (2010) tested both specialization and general delinquency explanations for JSOs in a meta-analysis of 59 studies that compared JSOs with JDs, they did not find support for the general delinquency explanation. Instead they found that that JSOs and JDs differ in meaningful ways that support specialization explanations for their sexual offending, such as sexual abuse histories, exposure to sexual violence, and abuse and neglect. Similar differences in sexual abuse histories and victimization were also found in a more recent study comparing several JSO subgroups (based on victim characteristics and severity of sex crime) and JDs, with child victim JSOs and felony offense JSOs reporting more frequent sexual victimization compared to misdemeanor offense JSOs and JDs (van der Put et al., 2012). Also, in the Seto et al., (2010) meta-analysis, JSOs had extensive criminal histories and general delinquency risk factors that predicted recidivism among JSOs. In conclusion, they recommended more studies in which JSOs are divided into subgroups to see if risk factors for reoffending, both sexually and non-sexually, vary across these groups (Seto et al., 2010).

Following the suggestion of previous research, van der Put et al. (2012) examined the degree to which risk factors for general delinquency occur among various groups of JSOs and JDs, as well as the strength of their impact. Their meta-analysis showed that general delinquency

risk factors were far more prevalent among JD and misdemeanor offense JSO groups than among felony offense JSO and child victim JSO groups. However, the impact of most risk factors for general delinquency were significantly greater among JSO groups than among JDs. Risk factors for general delinquency are less commonly found among JSOs; however when they occur, their impact on general delinquency recidivism is much stronger (van der Put et al., 2012). Although the aforementioned recidivism literature may be describing factors that contribute differently to recidivism than to initial offending, there is evidence to suggest further examination of factors contributing to general delinquency among JSOs is needed. A portion of findings presented in the aforementioned literature are generated using meta-analysis. The reliability of meta-analysis has been called into question and may present issues for generalizing to other populations (Flather, Farkouh, Pogue, Yusuf, 1997; LeLorier, Gregoire, Benhaddad, Lapierre, & Derderian, 1997; Walker, Hernandez, Kattan, 2008). Issues of reliability and generalizability warrant further investigation using other samples and methodologies. The present study will examine the general delinquency of JSOs in residential treatment using multiple regression on one sample. Overall, this study advances the field by exploring both sexual crime and general delinquency to determine chronic and possibly diverse patterns in the delinquency of JSOs in residential treatment.

Contributions of Present Study

The present study of JSOs uses a relatively large sample of 333 adjudicated youth from every state-run facility in a Midwestern state. While there may be geographical limitations on the state level, the sample will represent youth from urban, suburban, and rural settings within a state. This differs from previous studies with samples from only one facility or treatment program, drawing from a more limited geographical area. Overall, this study advances the field

by focusing on youth in residential treatment and explores both sexual crime and general delinquency to determine chronic and possibly diverse patterns in the delinquency of JSOs in residential treatment. Also, while there are a considerable number of studies regarding the influence of family structure and family criminality on juvenile delinquency in general, these have yet to be established as correlates for JSOs specifically. In terms of child maltreatment and trauma, as indicated, JSOs often have challenging family issues and high rates of trauma. This study examines physical abuse, sexual abuse, emotional abuse, physical neglect, emotional individually as opposed to in aggregate. Also, few studies have explored how sexual offending and general delinquency differ for sexually abused JSOs, so analyses in this study are completed on both the full sample as well as a subsample of sexually victimized JSOs. Furthermore, specific characteristics of their sexual abuse victimization are studied including the relationship to the abuser, the severity of the sexual abuse victimization, and the modus operandi in the sexual abuse victimization. While studies have examined the cycle of violence and impact of child maltreatment overall, as well as individual types of abuse, neglect has largely been overlooked in these studies. Therefore, in addition to exploring child maltreatment and different types of abuse independently, the separate domains of physical and emotional neglect were explored as correlates to both sexual offending and general delinquency in this study. This study also addresses a gap in the literature regarding childhood exposure to nudity and sexual activity for JSOs and its correlation with sexual offending and general delinquency, which has not been explored thus far. In summary, this study explores the relationship between the predictor variables (i.e., family characteristics, child maltreatment, childhood exposure to nudity and sexual activity), and the outcome variables (i.e., severity of sexual crime and frequency of general delinquency) in a sample of 333 adjudicated male JSOs in residential treatment.

Methods

Sample

All adjudicated JSOs in every state-run residential treatment facility in a Midwestern state were included in the study. The sample consists of 333 male adolescents adjudicated delinquent for the commission of sexual offenses incarcerated in six residential treatment facilities. In each of the six residential delinquency institutions, administrators, clinicians, and front line staff were asked for approval for each boy's participation in the survey. For regression models 1 and 2, all JSOs (n= 333) were included in the analysis sample. For regression models 3 and 4 only the sexually victimized JSOs (n= 215) were included in the sample for analysis. Sexual abuse victimization was assessed in the Self Report Sexual Aggression Scale (SERSAS) by asking, "were you sexually abused as a child?" to which respondents could indicate either "yes" or "no." Youth in this subgroup responded affirmatively to this question indicating they had been sexually victimized (Burton et al., 2002; Burton, 2003; Burton, Duty et al., 2011).

Data Collection

In 2004, 333 adjudicated youth with sexual offenses in six residential treatment facilities in a Midwestern state voluntarily completed surveys. After consent was obtained, pencil and paper surveys were administered in a small group (8-12) format. The youth were separated within a classroom setting to ensure they did not view other participants' responses. Pencil and paper survey administration was utilized in an attempt to offer anonymity and minimize underreporting or distress due to stigma or discomfort (e.g., questions about abuse and sexuality). Additionally, staff and trained graduate student research assistants were present to assist youth who had difficulty understanding a particular question, struggled with reading, or

became distressed. No incentives for survey completion were offered, and youth were informed that new disclosures of abuse or perpetration would be reported to the proper authorities.

Measures

This study employed detailed family and childhood history forms that had been used in previous studies (Burton, 2003; Burton et al., 2002). The Evaluation Measures (see Appendix) used in this study, are divided into two categories, predictor variables and outcome variables. Below are descriptions of each set of measures.

Predictor variables.

Family characteristics. Questions regarding family structure and functioning were used in this study (see Appendix). Family structure was treated as a rank order variable, ranging from 1-4, with an emphasis on the number of biological parents the child resides with (see Paper 1, Table 1 for the range and distribution). This rationale is based on research indicating that family structure is related to juvenile delinquency. More specifically, childhood residence in households with one biological parent only, a single-parent, or a non-intact family, often referred to as a *broken home*, is associated with higher rates of juvenile delinquency and antisocial behavior than are intact homes, usually referring to families with two biological parents (Astone et al., 1991, 1994; Breivik et al., 2009; Demuth et al., 2004; Downey et al., 1993; Geismar et al., 1986; Gove et al., 1982; Hoffman et al., 1998; Maginnis, 1997; Mandara et al., 2006; Murry et al., 2006; Wu, 1996). As described in Paper 1, more than 50% of the JSOs were raised in a two parent family, including two biological parents, mother and partner, and father and partner households. In terms of primarily residing with the mother opposed to the father, roughly one quarter were raised by a single mother, and almost one fifth were raised by their mother and her partner. Family functioning is a composite score that represents the sum, ranging from 0-8, of eight conditions

including, parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness. A higher score indicates more dysfunction (see Paper 1, Table 7 for the range and distribution). As stated in Paper 1, 90% of JSOs indicated some form of family dysfunction in their home. More specifically, when asked to describe their family and home environment, roughly half reported family health problems, family criminality, domestic violence, and parent substance abuse. In addition, approximately 30% reported frequent moves or homelessness and family mental health problems, while roughly one quarter reported their parent sold drugs and their family lived in poverty. Cronbach's alpha was calculated for the family functioning scale at .74, indicating sound scale reliability.

Child maltreatment variables. The Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 1998) is a 34-item scale that screens for traumatic experiences throughout childhood including physical, sexual, and emotional abuse, as well as physical and emotional neglect, retrospectively. It uses a five-point Likert scale from "Never true" (1) to "Very often true" (5). Respondents were asked to rate the frequency and severity of their childhood abuse and neglect experiences. For all of the abuse scale variables, a higher score indicates more frequent and more severe abuse experiences.

The Physical Abuse scale represents the sum of five items in the CTQ (see Appendix) with possible scores ranging on the scale from 5 to 25. As described in Paper 1, JSOs reported an average score of, $M = 11.86$, $SD = 6.23$, indicating a moderate to severe experience of physical abuse (see Table 1). Cronbach's alpha was calculated for the physical abuse scale at .89, indicating high scale reliability.

The Sexual Abuse scale represents the sum of six items in the CTQ (see Appendix) with possible scores ranging on the scale from 6 to 30. The average score for sexual abuse victimization was, $M = 12.03$, $SD = 6.54$, indicating a moderate to severe experience of sexual abuse, as stated in Paper 1 (see Table 1). Cronbach's alpha was calculated for the sexual abuse scale at .84, indicating high scale reliability. Additionally, questions were asked about the characteristics of the sexual abuse victimization (Burton et al., 2002). Responses were scaled to indicate severity of sexual abuse victimization in the following manner, 1 = exposure, 2 = fondling, 3 = exposure and fondling, 4 = oral sex, 5 = oral sex and exposure, 6 = oral sex and fondling, 7 = oral sex, fondling, and exposure, 8 = penetration with penis, digits, or object, 9 = penetration and exposure, 10 = penetration and fondling, 11 = penetration, exposure, and fondling, 12 = penetration and oral sex, 13 = penetration, oral sex, and exposure, 14 = penetration, oral sex, and fondling, 15 = penetration, oral sex, exposure, and fondling. A relationship to abuser variable was coded as follows: 1 = non-relative, 2 = relative, 3 = both relatives and non-relatives. Responses were scaled with an emphasis on the severity of violation of the relationship, level of intrusiveness, and severity of potential damage to the victim and family, in terms of their ability to trust family members who are supposed to protect them from harm, experience of self-blame, as well as the strain and distress placed on family relationships, often creating divided loyalties within the family (Cohen et al., 2006; Deblinger, Lippmann et al., 1996; Deblinger et al., 1996; Fischer et al., 1998; London et al., 2005; NCTSN, 2009). This rationale is also based on research indicating intrafamilial child sexual abuse may have an earlier onset, longer duration, higher level of intrusion, and greater physical and emotional injury for the victim, compared to extrafamilial child sexual abuse (Fischer et al., 1998). A modus operandi variable was scaled to indicate severity of force used by the sexual abuser in the following

manner, 1 = games, 2 = threats, 3 = games and threats, 4 = force, 5 = force and games, 6 = force and threats, 7 = force, games, and threats.

The Emotional Abuse scale represents the sum of five items in the CTQ (see Appendix) with possible scores ranging on the scale from 5 to 25. The average score for JSOs was, $M = 11.58$, $SD = 6.17$, indicating a low to moderate experience of emotional abuse, as stated in Paper 1 (see Table 1). Cronbach's alpha was calculated for the emotional abuse scale at .89, indicating high scale reliability.

The Physical Neglect represents the sum of nine recoded items in the CTQ (see Appendix) with possible scores ranging on the scale from 9 to 45. Paper 1 states that JSOs had an average score of, $M = 17.41$, $SD = 6.50$, for physical neglect, indicating a severe to extreme experience of physical neglect (see Table 1). Cronbach's alpha was calculated for the physical neglect scale at .76, indicating sound scale reliability.

The Emotional Neglect scale represents the sum of nine recoded items in the CTQ (see Appendix) with possible scores ranging on the scale from 9 to 45. As described in Paper 1, the average score was, $M = 18.87$, $SD = 9.17$, indicating a severe to extreme experience of emotional neglect (see Table 1). Cronbach's alpha was calculated for the emotional neglect scale at .92, indicating very high scale reliability.

Table1.

Guidelines for Classification of CTQ Scale Total Scores (Bernstein et al., 1998)

Scale	Classification			
	None (or Minimal)	Low (to Moderate)	Moderate (to Severe)	Severe (to Extreme)
Physical Abuse	5-7	8-9	10-12	≥ 13
Sexual Abuse	5	6-7	8-12	≥ 13
Emotional Abuse	5-8	9-12	13-15	≥ 16
Physical Neglect	5-7	8-9	10-12	≥ 13
Emotional Neglect	5-9	10-14	15-17	≥ 18

Childhood exposure to nudity and sexual activity. The frequency and type of childhood exposure to nudity and sexual activity was assessed by 10 self-report items based on Leguizamo's (2000) interview. Respondents were asked to rate the frequency and type of childhood exposure both before age 10 (5 questions) and after age 10 (5 questions), using a 7 point scale with answer choices: 1(never), 2(1-5 times), 3(6-25 times), 4(26-50 times), 5(51-100 times), 6(101-500 times), 7(over 500 times). Childhood exposure to nudity and sexual activity before age 10 represents the sum of five items, with possible scores ranging from 5-35. Childhood exposure to nudity and sexual activity after age 10 represents the sum of five items, with possible scores ranging from 5-35. As stated in Paper 1 (see Tables 15 and 16), before age 10 years old, 60.4% of youth reported observing naked adults and 40.9% reported seeing naked children. After the age of 10 years old, 76.8% of youth reported observing naked adults and 44.5% reported seeing naked children. Similarly, both before and after age of 10 years old, more than half of the JSOs reported observing adults having sex, while almost 20% reported observing children having sex with children. Additionally, both before and after 10 years old, close to 10% of JSOs reported seeing adults force adults to have sex, as well as adults having sex with children. Cronbach's alpha was calculated for the before age 10 scale at .78 and for the after age 10 scale at .75, indicating sound scale reliability.

Outcome variables.

Severity of sexual crime. The Self-Report Sexual Aggression Scale (SERSAS) used in prior studies (Burton et al., 2002; Burton, 2003; Burton, Leibowitz et al., 2011) measures sexually aggressive behaviors over the lifespan. Burton et al. (2002) created a more comprehensive measure for severity of sexual crimes using a 15 point scale. The severity of sexual crime variable represents an overall average score ranging from 1-15. Responses were

scaled to indicate severity of sexual crime in the following manner, 1 = exposure, 2 = fondling, 3 = exposure and fondling, 4 = oral sex, 5 = oral sex and exposure, 6 = oral sex and fondling, 7 = oral sex, fondling, and exposure, 8 = penetration with penis, digits, or object, 9 = penetration and exposure, 10 = penetration and fondling, 11 = penetration, exposure, and fondling, 12 = penetration and oral sex, 13 = penetration, oral sex, and exposure, 14 = penetration, oral sex, and fondling, 15 = penetration, oral sex, exposure, and fondling. A higher score indicates more complex and severe sexual abuse experiences. As described in Paper 1 (see Table 22), more than half of the JSOs penetrated their victims, with more than 20% using a combination of penetration, oral sex, exposure, and fondling. Roughly one quarter of the JSOs used oral sex to sexually offend their victims, while close to 20% fondled their victims, and few reported only exposing themselves. Cronbach's alpha indicated high reliability, at $\alpha = .87$, for this instrument, with an 8 week test-retest agreement of 96% (Burton, 2000; Burton et al., 2002).

Frequency of general delinquency. The Self-Report Delinquency Scale (SRD) (Elliot, Huizinga & Ageton, 1985) is a 28-item self-report measure used to assess non-sexual delinquency ranging from drug use to aggression and contains several subscales including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs. The frequency of general delinquency variable represents an overall average score ranging from 1-7. Responses were scaled to indicate frequency of general delinquency crimes in the following manner, 1 = never, 2 = once a month, 3 = once every 2-3 weeks, 4 = once a week, 5 = 2-3 times a week, 6 = once a day, 7 = 2-3 times a day. Higher scores indicate more frequent general delinquency crimes. "Inter-item reliability is sound for most of the subscales with the exception of drug use and public disorderly (Burton, Duty & Leibowitz, 2011). As described in Paper 1 (see Table 17), the overall average frequency of non-

sexual delinquency was, $M = 6.99$, $SD = 7.06$, with possible scores ranging from 1 (indicating no delinquency) to 7 (the most frequent, at “2-3 times a day”). Cronbach’s alpha was calculated for the entire measure at .93, indicating very high reliability.

Data Analysis

The purpose of the present study was to explore the relationships of various family characteristics and childhood experiences associated with the complexity and severity of sexual crime and the frequency of general delinquency for JSOs in residential treatment. Multiple regression analysis was selected as the most appropriate statistical method for its ability to assess whether one dependent variable can be predicted from a set of independent or predictor variables (Agresti & Finlay, 2009). Overall, it allows for reducing the initial set of predictor variables through elimination of unnecessary variables which aides in simplifying the data and enhances predictive accuracy. Furthermore, selection of predictors does not solely rely upon statistical results, but also considers the meaningfulness to the situation. Entering variables into the equation using a block-wise method allows for variables that may be highly correlated to be combined into blocks (Agresti et al., 2009; Cohen & Cohen, 1983; Halinski & Feldt, 1970; Pedhazur, 1997; Stevens, 2002; Tabachnick & Fidell, 2007). Thus, I conducted four block-wise multiple regressions in which I entered the child maltreatment and childhood exposure to nudity and sexual activity variables in the first block. Then the family variables were entered in the second block to determine if they have an independent effect on the outcome variables or if they moderate the effect of the child maltreatment and exposure variables. Separate regressions were run for each outcome variable. For regression models 1 and 2, the full sample of JSOs in residential treatment ($n = 333$) were included in the sample. For regression models 3 and 4 only

the sexually victimized JSOs (n= 215) were included in the sample for analysis. Missing data was addressed through case-wise deletion for the multiple regression analyses.

Next, multicollinearity was examined. Multicollinearity is the extent to which the independent variables in the model are more highly correlated with each other than with the dependent variable. This can be problematic when estimating the contributions of individual predictor variables since it inflates the variances of the parameter estimates leading to a lack of statistical significance of individual independent variables even when the overall model may be significant (Tabachnick et al., 2007). This may result in misleading conclusions regarding the relationships between independent and dependent variables. Multicollinearity can be assessed by examining the tolerance and variance of inflation factor (VIF), which measures the impact of collinearity among the variables in the model. While there is no formal VIF value used to determine the presence of multicollinearity, it is suggested that VIF should be less than 10 (Tabachnik et al., 2007). SPSS 14 was used for data entry and SPSS 18 and 19 for analysis.

Power Analysis

For the purpose of conducting a power analysis, the main outcome is the complexity and severity of the sexual offense. I used 23 predictors in the model, with the main one being whether a juvenile sex offender previously experienced sexual abuse victimization or not (see Appendix B). I wished to detect an R^2 of 10-20% for the outcome on sexual offenses only. I also assumed that the R^2 for the outcome on the other 22 predictors is 10%. Based on these assumptions, there was adequate power for the analysis (Cohen, 1998). A sample size of 66 achieves 80% power to detect an R^2 of 0.10 attributed to independent variable(s) using an F-Test with a significance level (alpha) of 0.05000. The variables tested are adjusted for an additional

22 independent variable(s) with an R^2 of 0.10 (see Appendix B). The sample size for the present study is 333 adjudicated JSOs incarcerated in residential treatment.

Results

Regression 1: Results for Prediction of Severity of Sexual Crime for Juvenile Sexual Offenders

Multiple regression analyses were conducted to examine the relationships of family characteristics and childhood experiences with the severity of sexual crime for JSOs. The predictor variables were entered in two blocks, resulting in two models. The predictors in the first block included sexual abuse victimization, physical abuse, emotional abuse, physical neglect, emotional neglect, childhood exposure to nudity and sexual activity before age 10, and childhood exposure to nudity and sexual activity after age 10. The predictors in the second block included family structure and family functioning variables.

In the first model, as shown in Table 2, there was a statistically significant relationship between emotional abuse and the severity of sexual crime for the full sample of JSOs in residential treatment. However, in the second model the relationship between emotional abuse and the severity of sexual crime was no longer statistically significant once the family variables were included in the model (see Table 2). Contrary to my expectation, there were no significant relationships between the other predictor variables and the outcome variable. Additionally, family structure and family functioning were not predictive of the severity of sexual crime (Model 2).

The tolerance levels and variance inflation factors did not reveal evidence of multicollinearity. In this analysis, all variance inflation factors were below 10, indicating no issues with multicollinearity. Overall, the results indicate that emotional abuse is related to the

complexity and severity of sexual crime committed by these youth. The implications of these findings are discussed below.

Table 2.
Prediction of Severity of Sexual Crime for Juvenile Sexual Offenders

Predictor	Complexity and Severity of Sexual Crime	
	Model 1	Model 2
	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)
Constant	6.67 (1.09)	6.91 (1.16)
Sexual abuse victimization scale	.04 (.05)	.04 (.05)
Physical abuse scale	-.11 (.10)	-.11 (.10)
Emotional abuse scale	.20* (.09)	.18 (.10)
Physical neglect scale	.01 (.07)	.00 (.07)
Emotional neglect scale	-.01 (.04)	-.01 (.04)
Childhood exposure to nudity and sexual activity before age 10	-.03 (.11)	-.04 (.11)
Childhood exposure to nudity and sexual activity after age 10	.08 (.09)	.09 (.09)
Family structure	--	-.22 (.31)
Family functioning	--	.12 (.11)
<i>R</i> ²	.04	.04

Note. † = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Regression 2: Results for Prediction of Frequency of General Delinquency for Juvenile Sexual Offenders

Multiple regression analyses were conducted to examine the relationships of family characteristics and childhood experiences with the frequency of general delinquency for JSOs. The predictor variables were entered in two blocks, resulting in two models. The predictors in the first block included sexual abuse victimization, physical abuse, emotional abuse, physical neglect, emotional neglect, childhood exposure to nudity and sexual activity before age 10, and

childhood exposure to nudity and sexual activity after age 10. The predictors in the second block included family structure and family functioning variables.

As shown in Table 3, in both models there was a statistically significant relationship between physical neglect and the frequency of general delinquency, as well as between childhood exposure to nudity and sexual activity after age 10 and the frequency of general delinquency for the full sample of JSOs in residential treatment. Physical neglect and childhood exposure to nudity and sexual activity after age 10 were independently associated with the frequency of general delinquency. There were no other significant associations between predictor variables and the outcome variable. Additionally, there was no appreciable change in estimates of associations between Model 1 and Model 2, suggesting that family structure or family functioning do not play an important mediating role between the measures of physical neglect or exposure to nudity and sexual activity after age 10 and the frequency of general delinquency. Nor were family structure or family functioning independently associated with the frequency of general delinquency.

The tolerance levels and variance inflation factors did not reveal evidence of multicollinearity. In this analysis, all variance inflation factors were below 10, indicating no issues with multicollinearity. Overall, the results indicate that physical neglect and childhood exposure to nudity and sexual activity after age 10 are robust predictors of the frequency of general delinquency for JSOs. The implications of these findings are discussed below.

Table 3.
Prediction of Frequency of General Delinquency for Juvenile Sexual Offenders

Predictor	Frequency of General Delinquency	
	Model 1	Model 2
	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)
Constant	-4.58 (5.30)	-3.56 (5.76)
Sexual abuse victimization scale	-.30 (.28)	-.30 (.28)
Physical abuse scale	-.26 (.52)	-.27 (.53)
Emotional abuse scale	.43 (.51)	.41 (.52)
Physical neglect scale	1.90*** (.36)	1.94*** (.40)
Emotional neglect scale	-.38 (.22)	-.39 (.22)
Childhood exposure to nudity and sexual activity before age 10	-.55 (.57)	-.55 (.57)
Childhood exposure to nudity and sexual activity after age 10	3.08*** (.47)	3.09*** (.48)
Family structure	--	-.70 (1.54)
Family functioning	--	.02 (.61)
<i>R</i> ²	.35	.35

Note. † = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Regression 3: Results for Prediction of Severity of Sexual Crime for Sexually Victimized Juvenile Sexual Offenders

Table 4 shows results from multiple regressions predicting the severity of sexual crime for sexually victimized JSOs. The predictors in the first block included sexual abuse victimization, relationship to sexual victimization abuser, complexity and severity of sexual victimization, modus operandi for sexual victimization, physical abuse, emotional abuse, physical neglect, emotional neglect, childhood exposure to nudity and sexual activity before age 10, and childhood exposure to nudity and sexual activity after age 10. The predictors in the second block included family structure and family functioning variables.

In both models there was a statistically significant relationship between the severity of sexual victimization and the severity of sexual crime for the subsample of sexually victimized JSOs in residential treatment (see Table 4). The association between emotional abuse and the severity of sexual crime was only marginally significant, and there were no other significant relationships between the predictor variables and the outcome variable. Nor were family structure or family functioning predictive of the outcome.

The tolerance levels and variance inflation factors did not reveal evidence of multicollinearity. In this analysis, all variance inflation factors were below 10, indicating no issues with multicollinearity. Overall, the results indicate that the complexity and severity of sexual victimization is related to the complexity and severity of sexual crime committed by these youth. The implications of these findings are discussed below.

Table 4.
Prediction of Severity of Sexual Crime for Sexually Victimized Juvenile Sexual Offenders

Predictor	Complexity and Severity of Sexual Crime	
	Model 1	Model 2
	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)
Constant	4.75 (1.75)	4.40 (1.82)
Sexual abuse victimization scale	-.12 (.08)	-.13 (.08)
Relationship to sexual victimization abuser	.76 (.56)	.70 (.57)
Severity of sexual victimization	.20* (.08)	.20* (.09)
Modus operandi for sexual victimization	.05 (.21)	.07 (.21)
Physical abuse scale	-.03 (.13)	-.02 (.13)
Emotional abuse scale	.19 (.12)	.20† (.12)
Physical neglect scale	.03 (.09)	.00 (.10)
Emotional neglect scale	.01 (.06)	.02 (.06)
Childhood exposure to nudity and sexual activity before age 10	-.17 (.12)	-.16 (.13)
Childhood exposure to nudity and sexual activity after age 10	.15 (.11)	.14 (.11)
Family structure	--	.37 (.41)
Family functioning	--	-.07 (.16)
<i>R</i> ²	.34	.35

Note. † = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Regression 4: Results for Prediction of Frequency of General Delinquency for Sexually Victimized Juvenile Sexual Offenders

Multiple regression analyses were conducted to examine the relationships of family characteristics and childhood experiences with the frequency of general delinquency for a subsample of sexually victimized JSOs. The predictor variables were entered in two blocks, resulting in two models. The predictors in the first block included sexual abuse victimization, relationship to sexual victimization abuser, severity of sexual victimization, modus operandi for

sexual victimization, physical abuse, emotional abuse, physical neglect, emotional neglect, childhood exposure to nudity and sexual activity before age 10, and childhood exposure to nudity and sexual activity after age 10. The predictors in the second block included family structure and family functioning variables.

In the first model, as shown in Table 5, there was a statistically significant relationship between sexual abuse victimization and the frequency of general delinquency, between physical neglect and the frequency of general delinquency, and between childhood exposure to nudity and sexual activity after age 10 and the frequency of general delinquency for sexually victimized JSOs in residential treatment. In the second model the statistically significant relationship remained between physical neglect and the frequency of general delinquency as well as between childhood exposure to nudity and sexual activity after age 10 and the frequency of general delinquency (see Table 5). However, in the second model a statistically significant relationship between emotional neglect and the frequency of general delinquency emerged while the relationship between sexual abuse victimization and the frequency of general delinquency was no longer statistically significant once the family variables were included in the model (see Table 4). Contrary to my expectation, there were no other significant relationships between the predictor variables and the outcome variable. Nor were family structure or family functioning independently associated with the frequency of general delinquency.

The tolerance levels and variance inflation factors did not reveal evidence of multicollinearity. In this analysis all variance inflation factors were below 10, indicating no issues with multicollinearity. Overall, the results indicate that physical neglect and childhood exposure to nudity and sexual activity after age 10 are robust predictors of the frequency of general delinquency for sexually victimized JSOs in residential treatment. However, there is also

evidence that emotional neglect is related to the frequency of general delinquency committed by these youth. The implications of these findings are discussed below.

Table 5.
Prediction of Frequency of General Delinquency for Sexually Victimized Juvenile Sexual Offenders

Predictor	Frequency of General Delinquency	
	Model 1	Model 2
	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)
Constant	6.27 (9.66)	10.90 (10.02)
Sexual abuse victimization scale	-.91* (.44)	-.86 (.44)
Relationship to sexual victimization abuser	-1.31 (3.04)	-1.18 (3.03)
Severity of sexual victimization	.44 (.48)	.49 (.48)
Modus operandi for sexual victimization	.63 (1.16)	.50 (1.16)
Physical abuse scale	-.89 (.74)	-.93 (.74)
Emotional abuse scale	1.14 (.67)	.94 (.68)
Physical neglect scale	1.66*** (.49)	1.86*** (.57)
Emotional neglect scale	-.61 (.32)	-.63* (.32)
Childhood exposure to nudity and sexual activity before age 10	-.83 (.72)	-.90 (.72)
Childhood exposure to nudity and sexual activity after age 10	4.00*** (.66)	4.02*** (.66)
Family structure	--	-3.62 (2.14)
Family functioning	--	.52 (.86)
<i>R</i> ²	.40	.41

Note. † = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Discussion

The results of this study confirm many of the research hypotheses, and challenge others. While some results are consistent with both theory and previous empirical data, others provide new information about this population. Surprisingly, none of the family variables were

significant, which leads one to look at child maltreatment, especially neglect, as well as childhood exposure to nudity and sexual activity.

Hypothesis 1: Family structure is associated with the severity of sexual crime as well as the frequency of non-sexual crime

First, it was hypothesized that family structure is associated with the severity of sexual crime as well as the frequency of general delinquency. Contrary to my hypothesis, the findings for this sample suggest that both sexual and non-sexual crime characteristics are not a function of family structure. While there are a considerable number of studies regarding the influence of family structure on juvenile delinquency in general (Anderson, 2002; Astone et al., 1991, 1994; Breivik et al., 2009; Demuth et al., 2004; Downey et al., 1993; Gove et al., 1982; Maginnis, 1997; Mandara et al., 2006; Matsueda et al., 1987; Wu, 1996), it had not been established as a correlate for JSOs specifically. Overall, the results of this study suggest that sexual and non-sexual crime characteristics are not a function of family structure for JSOs in residential treatment, as measured in this study, which lead one to look at possible differences in offending as a function of family functioning.

Hypothesis 2: Family functioning, including the presence of parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness, is associated with the complexity and severity of sexual crime as well as the frequency of non-sexual crime

Second, family functioning, including the presence of parent substance abuse, parental drug sales, frequent changes in who lives at home, neglect of children, physical abuse of children, sexual abuse of children, children being placed outside the family, family criminality,

family health problems, family mental health problems, domestic violence, poverty, and frequent moves or homelessness was hypothesized to be associated with the severity of sexual crime as well as the frequency of general delinquency. It is important to note that 90% of JSO youth in this sample reported some form of family dysfunction, as stated in Paper 1. More specifically, when asked to describe their family and home environment, roughly half reported family health problems, family criminality, domestic violence, and parent substance abuse. In addition, approximately 30% reported frequent moves or homelessness and family mental health problems, while roughly one quarter reported their parent sold drugs and their family lived in poverty. However, contrary to my hypothesis, the findings suggest that both sexual and non-sexual crime characteristics are not related to family functioning, as measured in this study. The prevalence of dysfunction in this sample coupled with the fact that the only evidence based practice model for JSOs in the extant literature is Multisystemic Therapy (MST) (Borduin, Mann, Cone, Henggeler, Fucci, Blaske, & Williams, 1995; Henggeler, Rodick, Borduin, Hanson, Watson, & Urey, 1986; Henggeler, Borduin, Melton, Mann, Smith, Hall, Cone, & Fucci, 1991; Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler et al., 2011; Ogden & Halliday-Boykins, 2004; Henggeler, Melton & Smith, 1992; Timmons-Mitchell, Kishna, Bender, & Mitchell, 2006), which creates a contradiction in relation to these findings. MST utilizes family treatment components to achieve positive outcomes including lower recidivism rates and higher pro-social activities and relationships compared to treatment as usual for community samples. The family treatment and engagement components are essential tenants of this treatment modality, which consistently shows its effectiveness with JSOs and their families. If the only evidence based practice treatment model for JSOs is to target family characteristics and functioning, in addition to the youth's functioning, one would expect that family characteristics and environment would

be related to the criminal behavior of these youth. However, the success of MST is found in community samples, and so it is possible that the findings of this study suggest a difference between JSOs in residential treatment and JSOs in community based treatment. Following this study, it may be interesting to compare residential and community samples in terms of family functioning. Other considerations for explaining these results include issues of measurement and the manner in which domains were operationalized.

Family functioning is a composite score of multiple items in this study. In future research it may be of interest to look at the items in this domain individually, to see if crime characteristics are a function of various aspects of family functioning. Since parental criminology, for example, has support in the criminology literature as one of the strongest predictors of an individual's criminal behavior and activity (Hjalmarsson et al., 2012), it may be advantageous to look at family criminality or parental criminality specifically as individual predictors, as opposed to family functioning composite scores. Additionally, it is possible that other domains, such as child maltreatment and childhood exposure to nudity and sexual activity, serve as a proxy for family functioning, and capture similar characteristics of the family environment. Again, future studies may benefit from evaluating the predictive quality of individual items as opposed to a composite score. Overall the results of this study suggest that sexual and non-sexual crime characteristics are not a function of family functioning for JSOs in residential treatment, as measured in this study. This can lead one to look at possible differences in offending as a function of child maltreatment, as well as childhood exposure to nudity and sexual activity.

Hypothesis 3: Child maltreatment including physical abuse, emotional abuse, physical neglect, and emotional neglect, is associated with the severity of sexual crime as well as the frequency of non-sexual crime

Third, it was hypothesized that child maltreatment including physical abuse, emotional abuse, physical neglect, and emotional neglect is associated with the severity of sexual crime as well as the frequency of general delinquency. Specific types of maltreatment were confirmed to be associated with sexual and non-sexual crime characteristics. It is important to note, JSOs in this sample reported an average score for physical abuse of, $M = 11.86$, $SD = 6.23$, indicating a moderate to severe experience of physical abuse; an average score for sexual abuse victimization was, $M = 12.03$, $SD = 6.54$, indicating a moderate to severe experience of sexual abuse; an average score for emotional abuse of, $M = 11.58$, $SD = 6.17$, indicating a low to moderate experience of emotional abuse; an average score for physical neglect was, $M = 17.41$, $SD = 6.50$, indicating a severe to extreme experience of physical neglect; and an average score for emotional neglect was, $M = 18.87$, $SD = 9.17$, indicating a severe to extreme experience of emotional neglect, as stated in Paper 1.

For the full sample of JSOs in residential treatment there is a significant relationship between physical neglect and the frequency of general delinquency. For the sexually victimized JSOs in residential treatment there is a significant relationship between physical neglect and the frequency of general delinquency, as well as between emotional neglect and the frequency of general delinquency. These findings are a reminder that these youth are often victims as well as perpetrators and that their victimization requires thorough assessment (including thorough examination of neglect within the child maltreatment domain) as well as treatment, since their

criminal behavior is related to their victimization. Additionally, such treatment may ultimately impact recidivism rates. JSOs who recidivate tend to commit non-sexual crimes as opposed to sexual crimes (van der Put et al., 2012; McCann et al., 2008; Caldwell, 2007, 2010; Gerhold et al., 2007; Worling et al., 2006, Burton et al., 2004), and are three to four times more likely to recidivate non-sexually than sexually (Burton et al., 2004).

As hypothesized, physical neglect is significantly related to the frequency of general delinquency for the full sample of JSOs and for the subsample of sexually victimized JSOs in residential treatment. This relationship provides a new contribution to the JSO and criminality literature. Additionally, it is supported by social learning theory and the caveat of childhood neglect and subsequent crime in the cycle of violence hypothesis. It is possible that physical neglect predicting frequency of general delinquency may be associated with crimes such as theft or selling drugs in order to provide basic needs for oneself or one's family. As also hypothesized, emotional neglect is significantly related to the frequency of general delinquency, but only for the subsample of sexually victimized JSOs in residential treatment. This relationship provides a new contribution to the JSO and criminality literature. Additionally, this finding is supported by social learning theory and the caveat of childhood neglect and subsequent crime in the cycle of violence hypothesis. Emotional neglect, which predicts the frequency of general delinquency, may be associated with social learning theory in terms of the JSO's ability to depersonalize and emotionally distance himself from his victims, mimicking the neglect he experienced, and thus creating a level of callousness and lack of remorse. For the JSO whose emotional neglect created a sense of callousness, it may have made it easier for him to follow-through with general delinquency crimes without concern for those affected by such crimes. Non-contact offenses, such as theft, robbery, and selling drugs may be examples in which the JSO does not come in

contact with the victim and therefore is not forced to acknowledge the consequences of his criminal actions on others, all of which may make it easier to offend. Overall, physical and emotional neglect, which predict frequency of general delinquency for JSOs, represents a new contribution to the JSO and criminality literature, and further confirms previous research regarding the caveat of childhood neglect and subsequent crime in the cycle of violence hypothesis (Currie et al., 2012; Van der Put et al., 2012; Widom et al., 2001). It also confirms the extant literature which reports that many JSOs also commit non-sexual offenses (as much as 62% to 94%) (Butler et al., 2002; Ronis et al., 2007; Ryan et al., 1996; France et al., 1993), challenging the notion of crime specialization.

Contrary to my expectation, many of the predictors in this domain of child maltreatment were neither significantly related to either the severity of sexual crime nor the frequency of general delinquency. The absence of these relationships in the present study challenges previous findings (see Currie et al., 2012; Kitzmann et al., 2003; Widom et al., 2001; Maxfield et al., 1996; Luntz et al., 1994; McCord, 1983; Pollock et al., 1990; Widom, 1989).

Hypothesis 4: Childhood exposure to nudity and sexual activity is associated with the severity of sexual crime as well as the frequency of non-sexual crime

Fourth, childhood exposure to nudity and sexual activity was hypothesized to be associated with the severity of sexual crime as well as the frequency of general delinquency. Specific timing of the childhood exposure was confirmed to be associated with sexual and non-sexual crime characteristics. It is important to note after age 10, 76.8% of JSO youth in this sample reported observing naked adults and 44.5% reported seeing naked children. Similarly, after age 10 more than half of the JSOs reported observing adults having sex, while almost 20% reported observing children having sex with children. Additionally, after age 10 close to 10% of

JSOs reported seeing adults force adults to have sex, as well as adults having sex with children, as described in Paper 1.

In the present study there is a significant relationship between childhood exposure to nudity and sexual activity after age 10 and the frequency of general delinquency for both the full sample of JSOs and the subsample of sexually victimized JSOs in residential treatment. This relationship provides a new contribution to the JSO and criminality literature. This finding may be supported by social learning theory in the sense that childhood exposure to nudity and sexual activity after age 10 involves issues of poor boundaries and rule-breaking, which may then lead to the manifestation of these same characteristics in the youth's criminal behavior. General delinquency involves poor boundaries in terms of a sense of entitlement (i.e., theft, robbery, alcohol and drug use, assault, property damage), as well as a rule-breaking pattern (Burton et al., 2004) that is present in most general delinquency crimes (i.e., alcohol and drug use, assault, theft, property damage, public disorderly, robbery). It may be of interest in future studies to see if this relationship between childhood exposure to nudity and sexual activity and the frequency of general delinquency is also true for juvenile delinquents.

Contrary to my expectation, such exposure was not found to be significantly related to the severity of sexual crime. Previously, I made the argument that there are similar characteristics between pornography exposure and childhood exposure to nudity and sexual activity since similar images and sexual acts may be depicted in both. The findings from the present study may be partially explained by similar findings from studies of pornography exposure. For example, findings from a study examining pornography exposure for JSOs, found that pornography exposure was not correlated with sexual crime, but rather significantly related to the general delinquency of JSOs (Burton, Leibowitz, Booxbaum et al., 2011). Overall, the

relationship between childhood exposure to nudity and sexual activity after age 10 and the frequency of general delinquency for the full sample of JSOs as well as for the subsample of sexually victimized JSOs is a new contribution to the JSO and criminality literature. In turn, the examination of this new variable creates limitations in terms of generalizing to other populations or comparing to previous research. However, these findings confirm the extant literature which reports that many JSOs also commit non-sexual offenses (as much as 62% to 94%) (Butler et al., 2002; Ronis et al., 2007; Ryan et al., 1996; France et al., 1993), challenging the notion of crime specialization.

Hypothesis 5: A history of sexual abuse victimization is associated with the severity of sexual crime as well as the frequency of non-sexual crime

Finally it was hypothesized that a history of sexual abuse victimization is associated with the severity of sexual crime as well as the frequency of general delinquency. Specific characteristics of sexual abuse victimization were confirmed to be associated with sexual and non-sexual crime characteristics. It is important to note, the average score for sexual abuse victimization was, $M = 12.03$, $SD = 6.54$ for JSOs in this sample, indicating a moderate to severe experience of sexual abuse. In terms of the severity of the sexual abuse victimization, more than 40% experienced a combination of penetration, oral sex, exposure, and fondling, as described in Paper 1.

In this study it was confirmed that the severity of sexual abuse victimization is significantly related to the severity of sexual crime. Although it was a strong predictor of group membership into the JSO group in Paper 2, and while it is significantly related to the outcome variable in this study, the severity of sexual abuse victimization explains little of the variance in the severity of sexual crime for sexually victimized JSOs. The relatedness between the severity

of sexual abuse victimization and the subsequent severity of sexual offending is supported by social learning theory and the cycle of violence hypothesis, confirming previous research and literature on the sexually abused sexual abuser (Burton, Leibowitz, Eldredge et al., 2011, Knight et al. 2004, Swanston et al., 2003; Burton et al., 2002; Barbaree & Langton, 2006; Veneziano et al., 2000).

Additionally, it was found that sexual abuse victimization is significantly related to the frequency of general delinquency but only before the family variables are entered into the model. Once all of the predictor variables are in the model, sexual abuse victimization is no longer significantly related to the frequency of general delinquency. Overall, sexual abuse victimization, as measured in this study, explains little of the variance in the frequency of general delinquency for sexually victimized JSOs since other variables namely, emotional neglect, physical neglect, and exposure to nudity and sexual activity after age 10 explain most of the variance. The neglect and exposure variables are more meaningful for this subsample of JSOs, in terms of their general delinquency. The results of this study challenge the notion that sexual abuse victimization is a risk factor for the general delinquency of JSOs, as previously found (Burton et al., 2011). This discrepancy may be due to differences in measurement, sampling, and interpretation of findings.

As discussed previously, in the subsample of sexually abused JSOs in this study, it was found that the frequency of general delinquency is related to childhood exposure to nudity and sexuality after age 10. This exposure variable may have served as a proxy for what has been measured as the domain of sexual abuse in other studies (see Burton, Leibowitz, Eldredge et al., 2011). The results of the present study and those of the Burton et al. (2011) study may in fact be similar; that sexual abuse, be it contact abuse or exposure to the nudity and sexual activity of others, is related to general delinquency for JSOs, despite differences in how sexual abuse and

exposure to nudity and sexuality were operationalized. Burton, Leibowitz, Eldredge et al. (2011) found that sexual abuse victimization is related to general delinquency, which my results challenge, unless one considers differences in measurement and how variables and domains are operationalized. When sexual abuse is assessed, one may assume that sexual abuse refers only to sexually abusive acts that involve physical contact between the perpetrator and the victim. A JSO may not endorse the statement that he was sexually abused unless there was physical contact. However, where does this leave us in categorizing non-contact, exposure, and observation experiences of sexual abuse, in terms of being exposed to inappropriate sexually explicit acts? With sexual offending we make distinctions between contact offenses (i.e., sexual assault, rape) and non-contact offenses such as exposure (i.e., flashing, showing a minor sexually explicit materials such as pornography) and internet crimes (i.e., possession or distribution of child pornography). Should we make similar distinctions for victimization histories as well? As stated in the literature review, pornography exposure is assessed in this population and is a new focus of the JSO literature; however, observation of sexual activity, similarly depicted in pornography materials, seems to have been neglected in the literature thus far. Both of these early experiences of sexuality are abusive to a child and may play a role in the general delinquency for that child when he enters adolescence. This notion is supported by social learning theory and the cycle of violence hypothesis. Again, this is a new contribution to the JSO and criminality literature and confirms the extant literature which reports that many JSOs also commit non-sexual offenses (as much as 62% to 94%) (Butler et al., 2002; Ronis et al., 2007; Ryan et al., 1996; France et al., 1993), challenging the notion of crime specialization.

In summary, the results of this study confirm many of the research hypotheses, while challenging others. Many results are consistent with both theory and previous findings, while

others provide new information about this population. The results of this study suggest that for the full sample of JSOs in residential treatment, emotional abuse is related to the severity of sexual crime, while physical neglect and childhood exposure to nudity and sexual activity after age 10 are related to the frequency of general delinquency. Additionally, the results of this study have offered some insight regarding the subpopulation of sexually victimized JSOs. Within this subpopulation the findings of this study suggest that the severity of sexual victimization are related to the severity of sexual crime. Furthermore, sexual abuse victimization, physical neglect, emotional neglect, and childhood exposure to nudity and sexual activity after age 10 are related to the frequency of general delinquency for the subpopulation of sexually victimized JSOs in residential treatment. Contrary to my expectations, it was surprising that none of the family variables measured in this study were significantly related to sexual and non-sexual crime characteristics.

Limitations

Some limitations to this study should be acknowledged. The sample may not be representative of the general population of JSOs. Additionally, there are geographical limitations of the sample on the state level; however, the sample will represent youth from urban, suburban, and rural settings within the entire state. This differs from previous studies with samples from only one facility or treatment program, drawing from a more limited geographical area. Also, the sample contains youth incarcerated in residential treatment only. Therefore, it does not provide information on youth adjudicated and sentenced to probation and outpatient community based treatment, and who continue to live with their families. Additionally, the sample does not provide the study with a comparison group of non-adjudicated youth. Also, entry into the juvenile justice system may vary from jurisdiction to jurisdiction, limiting our ability to

generalize from this sample to others. Regarding the data and methods, limitations include the use of self-report measures for data collection that ask questions retrospectively. As with many studies, the sensitivity of the measures, the operationalization of domains, and the use of composite scores may be a limitation. Since it is cross-sectional, causality cannot be established. Furthermore, there is no means to identify differences between those who completed the survey and those who did not since that information is not included in the data collection for the larger study.

Implications

Research

Several directions for future research are implied by the results of this study. While the family structure and functioning variables were not associated with criminal behavior in this study, they should be explored further through alternate measurement, by looking at individual variables as opposed to a composite score. Doing so may provide important correlates to JSO criminal behavior, as found in previous research (Borduin, Schaeffer, & Heiblum, 2009), and as suggested by social learning theory. It is important to note that 90% of JSO youth in this sample reported some form of family dysfunction, warranting further examination. Future researchers should also include long term recidivism models that test the utility of family treatment with this population in light of the reported dysfunction.

Questions that must be raised and researched relate to those JSOs who have histories of child maltreatment and childhood exposure to nudity and sexual activity, since these domains were found to contribute to criminal behavior in this sample. Neglect should be examined further, since it seems to largely be overlooked in the extant literature or is grouped together with other forms of child maltreatment, making it difficult to assess its contribution to subsequent

criminal behavior in these youth. Additionally, neglect proposes a new caveat for the cycle of violence hypothesis and warrants further investigation. In terms of emotional neglect specifically, one question is whether this type of victimization makes it easier for them to victimize someone else, by desensitizing themselves to the victim or by passing on feelings of worthlessness to others through criminal means. Additionally, it may be interesting to explore specific qualities of the relationship between physical neglect and general delinquency. For example, are they stealing or selling drugs in order to help provide basic needs for themselves and their family? Similarly, childhood exposure to nudity and sexual activity is a new area to explore with JSOs and warrants further investigation.

As stated previously, there has been a recent focus on exposure to pornography, but not sexually explicit in-person observations and experiences. In this study I described these experiences as childhood exposure to nudity and sexual activity, a new area of exploration for the JSO population. While this may be a form of sexual abuse in and of itself, I may not currently be capturing this aspect in my research pertaining to the childhood exposure to nudity and sexual activity variables. There is evidence in this study to suggest that such exposure may be a common experience for JSO youth, contributing to the frequency of general delinquency and warranting further examination. Finally, other areas of general delinquency exploration should include comparison studies that utilize JDs, as well as a sample of JSOs sanctioned to probation and community based treatment, to act as comparison groups for JSOs in residential treatment, similar to the youth in this study's sample. Continuing to explore the subpopulation of sexually victimized JSOs may also prove useful in determining if these youth operate differently as a function of their victimization.

In terms of intervention research, evidence based treatments with demonstrated effectiveness for JSOs include Multisystemic Therapy (MST) (Borduin et al., 1995; Henggeler et al., 1986; Henggeler et al., 1991; Henggeler et al., 1997; Henggeler et al., 2011; Letourneau et al., 2009; Ogden et al., 2004; Henggeler et al., 1992; Timmons-Mitchell et al., 2006) and Multidimensional Treatment Foster Care (MTFC) (Chamberlain, 2003). These are family centered practice models that decrease antisocial behavior, recidivism in these youth, and out of home placement, while increasing pro-social behavior. Effective treatment for these youth involves providing treatment for the family as well (Borduin et al., 2009). This insight provides guidance for research and implies that focus should be on the families of these youth. The family characteristics and environment may provide possible correlates to the offending behaviors of JSOs, if measured differently than was done in this study. Other promising evidence based treatments specific to youth involved in the juvenile justice system, and which focus on victimization and trauma, include Trauma Affect Regulation: Guide for Education and Therapy (TARGET), Trauma-Focused Cognitive-Behavior Therapy (TF-CBT), as well as the extensively field tested Trauma and Grief Component Therapy for Adolescents (TGC T-A) (Pilnik & Kendall, 2012). Since it is common to the youth in this sample to have victimization and trauma histories that contribute to both their sexual and non-sexual offending, further research on the effectiveness of these evidence based treatments and promising programs should be conducted in order to assess their utility with JSOs specifically.

Assessment and Treatment Procedures

Several enhancements to current assessment, treatment, and discharge procedures are implied by the results of this study. Clearly child maltreatment, including sexual abuse, physical neglect, and emotional neglect, must be assessed as implied by the findings of this study. While

these are often assessed prior to treatment, it may be necessary to continue to assess for these issues throughout the treatment phase as youth more clearly understand these concepts and feel more comfortable disclosing such histories to treatment staff. Furthermore, evidence from this study suggests that physical and emotional neglect are important correlates to general delinquency for JSOs, warranting attention throughout assessment and treatment phases. Additionally, childhood exposure to nudity and sexual activity should also be included in assessment, as implied by its relatedness to general delinquency for JSOs in this sample. It is important to learn more about the frequency and severity of such exposure for these youth. More thorough assessment procedures may reveal that other children in the home or family have experienced similar histories. Attempts should be made to secure early intervention and prevention services for these youth as well. Finally, while the results of this study do not indicate significant relationships between the family variables and crime characteristics, the family and home environment is an important context for youth that warrants thorough assessment.

Prior to discussing treatment implications it is important to note again that only 5%, or 15,000 annually, of eligible high-risk offenders, or those incarcerated in residential treatment facilities, have the opportunity to benefit from programs with proven effectiveness (Greenwood, 2008). The majority of current treatment services and programs have not been shown effective or have not been evaluated. Despite great need, treatment services are deficient in residential treatment facilities (Sedlak et al., 2010). Additionally, survey data suggest a decline in programs addressing family dysfunction by offering treatment services to parents and caregivers (Burton et al., 2001). This is unfortunate considering adolescents and their parents have noted improvements in self-control and emotional regulation when parents were engaged in treatment (Thornton et al., 2008). Unfortunately, the unintended consequence of current practice is that it

may be increasing antisocial behavior and criminality (Henggeler et al., 2011). The Blueprints for Violence Prevention Initiative, developed by the Center for the Study and Prevention of Violence at the University of Colorado in Boulder, and supported by the Office of Juvenile Justice and Delinquency Prevention, developed and implemented research-based criteria for evaluating the effectiveness of 600 intervention programs (Mihalic, Fagan, Irwin, Ballard, & Elliott, 2004). MST and MTFC were among the programs identified as effective interventions for juvenile offenders. Effectiveness was measured by recidivism rates, a decrease in anti-social behavior, an increase in pro-social behavior, and a reduction in out of home placement (Mihalic et al., 2004). While these programs are deemed effective with youth similar to those in my sample, they have not been implemented in residential placement settings, but are community based and seen as an alternative to residential placement.

In terms of treatment that can be provided to youth in residential facilities, the U.S. Department of Justice's Office of Justice Programs (OJP) has identified several effective programs that have strong evidence to indicate they are achieving their intended outcomes. Overall they suggest a trauma-informed care approach, that utilizes a framework that understands, considers, and provides treatment for exposure to violence and trauma-related issues (Pilnik & Kendall, 2012), including the histories of abuse and neglect seen in the present study's sample. Some of the core components of trauma-informed care include understanding that trauma has a complex course, is a central event in life, and shapes one's sense of self and others (including victims); understanding that symptoms and behaviors may be coping mechanisms that are no longer effective; and understanding that interventions require a relational approach as opposed to confrontational approaches to change behavior (Hodas, 2006). The treatment programs that compliment this trauma-informed system of care include Trauma Affect

Regulation: Guide for Education and Therapy (TARGET), Trauma-Focused Cognitive-Behavior Therapy (TF-CBT), as well as the extensively field tested Trauma and Grief Component Therapy for Adolescents (TGC T-A). These treatment approaches were developed for children and youth exposed to violence and use individual or group therapy to promote the development of skills, affect regulation, interpersonal connections and relationships, competence, and resiliency (Pilnik et al., 2012). Again, the findings of this study indicate that criminal behavior is related to child maltreatment variables. Therefore, it may show promise to utilize trauma focused treatments that address histories of child maltreatment with JSOs in residential treatment. While these youth may not be able to receive these specific treatment protocols, there may be aspects of these treatments that can be incorporated into the services that are accessible, both in their residential treatment programs and once they are discharged into the community. Overall, a greater treatment emphasis on child maltreatment, including physical neglect, emotional neglect, emotional abuse, sexual abuse, and childhood exposure to nudity and sexual activity, may prove beneficial for JSOs in residential treatment, as these variables have demonstrated their relatedness to sexual and non-sexual crime characteristics for youth in this study.

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Appendix A

The Evaluation Measures

Developmental Antecedents

A demographic form was used to collect information regarding the gender, race, age at first sexual offense, age at last sexual offense, duration of sexual offending, age at survey completion, and grade of the respondents. In terms of gender, the entire sample was male. Information regarding race and ethnicity was obtained by the following question: *Please choose the ONE race or ethnic group you feel closest to?* Given the small percentage of Asian/Pacific Islanders and Arab Americans, these respondents were collapsed into one group “Other.” Information about age was obtained by the following questions: *When you started and stopped sexually abusing people, how old were you the first time you sexually abused someone? How old were you the last time you sexually abused someone?; How old are you?*

Family Characteristics. Questions regarding family structure (e.g., identification of caregivers, parental absence, out of home placement of children) and family functioning (e.g., parent substance abuse, parental drug sales, family criminality, family health problems, family mental health problems, domestic violence, poverty, frequent moves or homelessness) were used in this study.

Child Maltreatment and Trauma Variables. The Childhood Trauma Questionnaire (CTQ) (Bernstein et al, 1998) is a 34-item scale that screens for traumatic experiences throughout childhood including physical, sexual, and emotional abuse, as well as physical and emotional neglect, retrospectively. It uses a five-point Likert scale from “Never true” (1) to “Very often true” (5). Respondents were asked to rate the frequency of their childhood abuse experiences with the stem question: *When I was growing up... .*

The Physical Abuse scale was computed from five items in the CTQ: *Someone in my family hit me or beat me; People in my family hit me so hard that it left me with bruises or marks; I was punished with a belt, a board, a cord (or some other hard object); I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor; and I believe I was physically abused.* Cronbach's alpha was calculated for the physical abuse scale at .89.

The Sexual Abuse scale was computed from six items in the CTQ: *I had sex with an adult or with someone who was a lot older than me (someone at least five years older than me); Someone tried to touch me in a sexual way or tried to make me touch them; Someone threatened to hurt me or tell lies about me unless I did something sexual with them; Someone in my family molested me; and I believe I was sexually abused.* Cronbach's alpha was calculated for the sexual abuse scale at .84. Additionally, a yes/no question: *Were you sexually abused as a child?*, was used in this study. Questions about characteristics of sexual abuse victimization (e.g., gender, age, and relationship to abuser; number of abusers; severity of sexual abuse victimization; and modus operandi or level of force used by abuser) were used in this study (Burton et al., 2002).

The Emotional Abuse scale was computed from five items in the CTQ: *People in my family called me things like "stupid," "lazy," or "ugly"; People in my family said hurtful or insulting things to me; I was frightened of being hurt by someone in my family; Someone in my family hated me; and I believe I was emotionally abused.* Cronbach's alpha was calculated for the emotional abuse scale at .89.

The Physical Neglect scale was computed from nine recoded items in the CTQ: *I didn't have enough to eat; I lived in a group home or foster home; I knew there was someone to take care of me and protect me; I was living on the streets by the time I was a teenager or even*

younger; My parents were too drunk or high to take care of my family; People in my family got into trouble with the police; I had to wear dirty clothes; I lived with different people at different times (like different relatives and foster families); and I spent time out of the house and no one knew where I was. Cronbach's alpha was calculated for the physical neglect scale at .76.

The Emotional Neglect scale was computed from nine recoded items in the CTQ: *There was someone in my family who I could talk to about my problems; People in my family showed confidence in me and encouraged me to succeed; There was someone in my family who helped me feel important and special; There was someone in my family who wanted me to be a success; I felt loved; People in my family felt close to each other; People in my family looked out for each other; Someone in my family believed in me; and My family was a source of strength and support.* Cronbach's alpha was calculated for the emotional neglect scale at .92.

Childhood Exposure to Nudity and Sexual Activity. The frequency and type of childhood exposure to nudity and sexual activity was assessed by 12 self-report items based on Leguizamo's (2000) interview, using a 7 point scale with answer choices: 1(never), 2(1-5 times), 3(6-25 times), 4(26-50 times), 5(51-100 times), 6(101-500 times), 7 (over 500 times). Respondents were asked both: *Before the age of 10, how many times had you seen...*, and *After the age of 10, how many times have you seen...*, the following six questions: *Naked adults in person; Naked children in person; Adults having sex in person; Adults forcing adults to have sex in person; Adults having sex with children in person; and Children having sex with children in person.* Cronbach's alpha was calculated for the before age 10 scale at .78 and for the after age 10 scale at .75.

Criminal Behavior

Non-sexual Crime. The Self-Report Delinquency Scale (SRD) (Elliot, Huizinga & Ageton, 1985) is a 28-item self-report measure used to assess non-sexual delinquency ranging from drug use to aggression and contains several subscales including alcohol use, drug use, felony assault, felony theft, general delinquency, property damage, public disorderly, robbery, and selling drugs. “Inter-item reliability is sound for most of the subscales with the exception of drug use and public disorderly (Burton, Duty et al., 2011). Cronbach’s alpha was calculated for the entire measure at .93.

The alcohol use subscale was computed from two recoded items in the SRD: *Before I was arrested I...Used alcohol or other liquor; and Was drunk in a public place.* Cronbach’s alpha was calculated for the alcohol use subscale at .79.

The drug use subscale was computed from four recoded items in the SRD: *Before I was arrested I...Used inhalants such as glue; Used pot, hash, weed, marijuana; Used cocaine, coke, or crack; and Used other types of drugs.* Cronbach’s alpha was calculated for the drug use subscale at .61.

The felony assault subscale was computed from two recoded items in the SRD: *Before I was arrested I...Attacked someone with the idea of seriously hurting or killing the person; and Was involved in gang fights.* Cronbach’s alpha was calculated for the felony assault subscale at .67.

The felony theft subscale was computed from four recoded items in the SRD: *Before I was arrested I...Stole or tried to steal a motor vehicle such as a car or motorcycle; Stole or tried to steal something worth more than \$100; and Knowingly bought, sold, or held stolen goods (or tried to).* Cronbach’s alpha was calculated for the felony theft subscale at .89.

The general delinquency subscale was computed from seven recoded items in the SRD: *Before I was arrested I... Carried a hidden weapon; Stole or tried to steal things worth \$100 or less; Paid someone to have sexual relations with me; Stole money or other things from my parents or other members of my family, Had or tried to have sexual relations with someone against their will; Hit or threatened to hit one of my parents; and Hit or threatened to hit my supervisor or another employee.* Cronbach's alpha was calculated for the general delinquency subscale at .68.

The property damage subscale was computed from three recoded items in the SRD: *Before I was arrested I... Purposely damaged or destroyed property belonging to my parents or other family members; Purposely damaged or destroyed other property that did not belong to me (not counting family or work property); and Purposely set fire to a building, a car, or other property (or tried to).* Cronbach's alpha was calculated for the property damage subscale at .74.

The public disorderly subscale was computed from three recoded items in the SRD: *Before I was arrested I... Begged for money or things from strangers; Used or tried to use credit cards without the owner's permission; and Made obscene telephone calls (such as calling someone and saying dirty things).* Cronbach's alpha was calculated for the public disorderly subscale at .51.

The selling drugs subscale was computed from two recoded items in the SRD: *Before I was arrested I... Sold marijuana, pot, weed, hash; and Sold hard drugs such as heroin, cocaine, and LSD.* Cronbach's alpha was calculated for the selling drugs subscale at .84.

The robbery variable is comprised of one item in the SRD: *Before I was arrested I... Broke or tried to break into a building or vehicle to steal something or just look around.* Cronbach's alpha was not calculated.

Sexual Crime. The Self-Report Sexual Aggression Scale (SERSAS) used in prior studies (Burton et al., 2002; Burton, 2003; Burton, Leibowitz, Booxbaum et al., 2011) measures sexually aggressive behaviors over the lifespan. Scales that originated from this measure include: a scale of severity of sexual aggression using a 7 point rank order scale which runs from 1= exhibitionism or voyeurism to 7= penetration, fondling and exhibitionism or voyeurism; age of starting to abuse others; number of victims by age and gender; and a rank order scale for modus operandi (or level of force used in offenses) which runs from 0= did not use any of the three modus operandi to 7= used all three modus operandi (offered favors, made threats, and used force). Cronbach's alpha indicated good reliability, at $\alpha = .87$, for this entire instrument, with an 8 week test-retest agreement of 96% (Burton, 2000; Burton et al., 2002).

Questions about planning of sexual offenses and number of sexual offense victims were used in this study. Additionally, Burton et al. (2002) created a more comprehensive measure for complexity and severity of sexual crimes using a 15 point scale with 0 = none, 1 = exposure, 2 = fondling, 3 = exposure and fondling, 4 = oral sex, 5 = exposure and oral sex, 6 = oral sex and fondling, 7 = oral sex, exposure, and fondling, 8 = penetration with penis, digits, or objects, 9 = penetration and exposure, 10 = penetration and fondling, 11 = penetration, exposure, and fondling, 12 = penetration and oral sex, 13 = penetration, exposure, and oral sex, 14 = penetration, exposure, fondling, and oral sex.

Appendix B

Power Analysis for Multivariate Regression Analysis

Table B1.
Numeric Results of Power Analysis

Power	N	α	β	Independent Variables Tested		Independent Variables Controlled	
				Cnt	R^2	Cnt	R^2
0.80125	66	0.05000	0.19875	1	0.10	22	0.10
0.80554	44	0.05000	0.19446	1	0.15	22	0.10
0.80170	34	0.05000	0.19830	1	0.20	22	

Note.

Power is the probability of rejecting a false null hypothesis.

N is the number of observations on which the multiple regression is computed.

α is the probability of rejecting a true null hypothesis. It should be small.

β is the probability of accepting a false null hypothesis. It should be small.

Cnt refers to the number of independent variables in that category.

R^2 is the amount that is added to the overall R-Squared value by these variables.

Independent Variables Tested are those variables whose regression coefficients are tested against zero.

Independent Variables Controlled are those variables whose influence is removed from experimental error.

Summary Statements for Power Analysis

A sample size of 66 achieves 80% power to detect an R-Squared of 0.10 attributed to 1

independent variable(s) using an F-Test with a significance level (alpha) of 0.05000. The

variables tested are adjusted for an additional 22 independent variable(s) with an R-Squared of

0.10.

Figure B1.
Power Analysis

