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Examining Effects of Parental Sexual Abuse on Female Juvenile Delinquency Using a Social Developmental Perspective

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by

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DISSERTATION APPROVAL SHEET

This dissertation was submitted by Michelle Nagle, M.S. under the direction of the Chairperson of the dissertation committed listed below. It was submitted to the College of Psychology and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology at Nova Southeastern University.

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Statement of Original Work

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Abstract

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Delinquency has traditionally been viewed as a male phenomenon, often defined in androcentric terms, and neglecting females in studies regarding delinquent behavior. However, females are the fastest growing subpopulation of the correction population, which amplifies the importance of understanding the nature and etiology of their offending. Recent research has suggested that predictors of male juvenile delinquency do not adequately explain delinquency in females, because the androcentric research ignores the damaging impact of sexual childhood abuse and other prominent family factors on female juvenile delinquents. This study aimed to examine the impact of childhood parental sexual abuse on female juvenile delinquency from a social developmental perspective by testing a sub-model of the SDM using a longitudinal database of child abuse and neglect. Results from PLS-SEM indicated that there were multiple relationships between constructs that differed between females and males, further supporting the idea of gender-specific risk factors. The strongest effect of male gender was on the relationships between parental monitoring and parental bonding and family socialization, and sexual abuse and moderate delinquency and family socialization. The strongest effect of female gender was on the relationship between sexual abuse and serious delinquency, and neighborhood safety and antisocial beliefs. Results point towards new ideas regarding differences in male and female delinquency and the impact of sexual abuse and offer support in using the Social Development Model in the study of delinquency.

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CHAPTER I: STATEMENT OF THE PROBLEM

Females in the Juvenile Justice System

Juvenile delinquency is a multifaceted, multi-determined phenomenon requiring a multidimensional approach to treatment and prevention. The seriousness of juvenile delinquency and its trends have captured public attention over the past few decades, with crime rates significantly higher than they were mid-century. However, delinquency has traditionally been viewed as a male phenomenon, often completely neglecting females in studies regarding delinquent behavior. In fact, before the 1900's, female delinquency was relatively unheard of and widely undocumented (Snyder, 2001). Prior to 1981, the FBI did not classify arrests by sex and age. As a result, no national data on the arrest rates for females before this time are available (Fleming et al., 2002). While there is substantial research regarding the onset, maintenance, and desistance of juvenile delinquency, the vast majority of current models are based solely on male data and do not adequately explain juvenile delinquency in females. In addition, early predictors of male conduct disorders and delinquency have been shown to be largely ineffective at explaining delinquency when consistently applied to females (Hoyt & Scherer, 1998). This is problematic given that females are currently the fastest growing sub-population in corrections, with a steady increase in number of both arrests and violent offenses (Batista-Foguet, 2008; Hubbard & Pratt, 2002; Jacob, 2007; Loeber, Farrington, & Petechuck, 2003). Researchers have attributed the rise of female arrests to females being in more vulnerable situations than men, experiencing more serious mental health issues than men, and being charged with more property, drug, and "public order" offenses (i.e. sex trafficking) than men.

Historical Perspectives of Female Delinquency

The difference between male and female delinquency in terms of arrest frequency and type of crimes has remained relatively stable over time (Steketee, Junger, & Junger-Tas, 2013). The literature has suggested that the predictors of male juvenile delinquency do not adequately explain delinquency in females, primarily due to studies ignoring the damaging impact of familial sexual abuse and risk factors on female juvenile delinquency. In fact, feminist scholars have criticized these models as theories conceived by male criminologists to explain male criminality. To adequately illuminate female delinquency, theories of delinquency should incorporate the unique socialization of females and males and the ways in which gender structures society and individual experiences (Daly & Chesney-Lind, 1988).

While females tend to recidivate at lower rates than males, females who are delinquent have a worse prognosis for success later in life than non-delinquent females (Jacob, 2007; Langan & Levin, 2002; Nicholls, Cruise, Greig & Hinz, 2015). Women experience both reduced access to legitimate means to reach success goals as well as greater social disapproval of delinquent acts than do their male counterparts (Chesney-Lind & Shelden, 2013).

Neglected Risk Factors

Risk factors for delinquency focusing on the family have largely been neglected in the literature regarding female delinquency. While the study of risk factors is generally utilized to understand the onset, maintenance, and prevention of delinquency, risk factors also inform dynamic risk assessment tools used to understand outcomes once someone is detained. These tools are often used to classify custody levels in both males and females

and attempt to tap into criminogenic needs that are found to be predictive of future offense-related outcomes and recidivism (Andrews, Bonta, & Hoge, 1990). While dynamic risk assessment tools seem comprehensive, researchers note the absence of scales pertaining to relationships, parental issues, self-esteem, trauma, and victimization. This is troubling because these gender-neutral assessments serve as an inadequate guide when recommending programming, sentencing, and clinical services through the widely accepted and empirically supported risk-needs principle (Andrews & Bonta,1998). If these recommendations are not gender specific, they may be inaccurate and may not successfully decrease recidivism among females or help females achieve favorable outcomes in the future.

There exists little research on the effects of parental sexual abuse on female juvenile delinquency. In regard to child sexual abuse, most studies on abuse are methodologically limited due to the studies being descriptive in nature, lacking a theoretical perspective on abuse and delinquency, and rely mostly on agency referrals of a biased sample of children who have been adjudicated as abused (Widom 1989; Lewis, Lovely, Yeager, & Femina, 1989). In addition, studies that do exist on child sexual abuse generally do not distinguish between intrafamilial and extrafamilial. If the studies do mention intrafamilial abuse, the definitions frequently include abuse by parents, siblings, and aunts, uncles, and grandparents. As a result, it is difficult to determine if the effects of parental sexual abuse differ from other types of intrafamilial abuse. It is likely that parental sexual abuse may disrupt the bond between the child and the parent or may even lead to traumatic bonding more than other intrafamilial abuse. Given that poor attachment to parents and poor parental bonding have been shown to be strong predictors of female

offending, it is necessary to look at the effect of familial, specifically parental, sexual abuse on delinquency using a strong theoretical model that focuses on family socialization and attachment as potential risk factors of juvenile delinquency, specifically, the Social Development Model (SDM).

The Social Development Model

The Social Development Model demonstrates relatively strong theoretical basis, combining Social Learning Theory, Social Control Theory, and Differential Association Theory. The SDM suggests that individuals engage in either prosocial or antisocial behaviors based on the norms, beliefs, and values held by the individuals to whom the juvenile is bonded to. Specifically, delinquent behavior is the result of perceived opportunities to participate in the antisocial order, opportunities for antisocial involvement, and the reinforcement that occurs as the result of these behaviors. Given that the theory focuses on different developmental periods, it allows for developmentally specific intervention designs. For example, not only is each of the causal elements in the SDM a potential focus for intervention, but, due to the influence of prior bonding and behavior on future behavior there is a possibility to develop interventions focused on early stages of development. In addition, the Social Development Model incorporates many of the risk factors found to be important in predicting female juvenile delinquency (i.e. poor parental monitoring, attachment to parents, parental bonding) (Brown et al., 2005, Catalano et al., 2005; Hawkins & Weis, 2017; Jacob, 2007).

The Present Study

This study aims to examine the impact of parental sexual abuse on female juvenile delinquency from a social developmental perspective by testing a sub-model of

the social developmental model that focuses on family socialization and attachment through structural equation modeling, using a secondary data database from the Consortium of Longitudinal Studies in Child Abuse and Neglect (Choi et al., 2005; Runyan et al., 1998). This study will include self-reports measures as well as external Child Protective Services records to examine delinquency and sexual abuse in order to include individuals who commit delinquent acts who have not been formally involved with the legal system. A large longitudinal national data set of youth in the community will be used to remedy the issue of selection bias by eliminating the issue of convenience sample. The current study will utilize path analysis through structural equation modeling, which aims to provide estimates of the magnitude and significance of hypothesized connections between sets of independent variables, specifically constructs represented in the Social Development Model.

Results of this study can serve to inform the development of preventative interventions that support and promote healthy child development. It will illuminate the differences between male and female juvenile delinquency as it relates to family level risk factors. In addition, results will help fill in the gap in the literature on the damaging impacts of parental sexual abuse as it relates to later delinquency, in order to help develop pertinent interventions. Early intervention shows promise in addressing the damaging behavior dynamics before delinquent acts become firmly established aspects of youth lifestyles, both effectively and at a lower cost, by remediating stressors that maintain this behavior. If a predictive relationship is found between familial sexual abuse and delinquency, recovery may be able to be facilitated for children through interventions with an individual and family-centered focus. In addition, this study will allow for greater

generalizability of the SDM by utilizing a sample outside of the Seattle Development Project which has been primarily used in studies of the SDM. It also expands the generalizability of the SDM by utilizing measures of delinquency that include behaviors outside of substance use, which is the primary measure of delinquency of most studies validating the SDM.

CHAPTER II: LITERATURE REVIEW

Adolescence

Since the 1980's, a significant amount of research has been added to the study of adolescence development. This is primarily due to the increased influence of Bronfenbrenner's ecological perspective on human development, methodological improvements in the study of puberty, and the launch of multiple important longitudinal studies of development.

Adolescence is defined as a period of developmental transition involving an interplay of genetic, familial, and environmental influences. It also involves gains in physical and psychological development along with changes in family, school, and peer influences (Bergman & Scott, 2001; Baglivio & Jackowski, 2013). During this time, individuals between the ages of 10-years-old and 19-years-old are faced with issues surrounding changes in independence and self-identity, and choices involving schoolwork, sexuality, drugs, alcohol, and social life. This period also brings about the physical changes of puberty, as well as increased interest in romantic relationships, peer groups, and appearance, all occurring at a relatively fast rate. In the transition from childhood to adolescence, individuals begin to develop more abstract characterizations of themselves and self-concepts become more differentiated and better organized. Adolescents begin to view themselves in terms of personal beliefs and standards and less in terms of social comparisons (Harter, 1998). Research also indicates that genetic and nonshared environmental influences such as parenting, peer relations, and school experiences, are particularly strong during this time (McGue et al., 1996). Throughout adolescence children also learn patterns of both prosocial and antisocial behavior from

socializing agents of family, school, community, and peers (Jacob, 2007). Incidents involving rule breaking and behavioral problems are also common during this period and may result in delinquent behavior and involvement with law enforcement. In fact, when official rates of crime are plotted against age, rates of both incidence and prevalence of delinquency peaks between the ages of 14 and 24 (Blumstein & Cohen, 1987; Farrington, 1986). This trend appears to be consistent across gender, type of crime, and culture, and holds true during recent historical periods and in numerous western nations (Hirschi & Gottfredson, 1983).

Intervention by the criminal justice system during this critical period of development may negatively impact youths later on in adulthood, including decreased opportunities to meet educational and occupational goals, as well as increase risk for continued adult involvement in delinquency (Espinosa, Sorensen & Lopez, 2013; Sampson & Laub, 2005). A study by Carter (2019) analyzed the first four waves of the National Longitudinal Survey of Adolescent to Adult Health and found that delinquency was significantly associated with the likelihood of being unemployed compared to non-delinquents, even after controlling for temporally prior traits and resources and criminal justice contact. Over time, the social marginalization caused by the stigma attached to this label of delinquency raises the likelihood of subsequent and more stable involvement in delinquent activity later in life (Bernburg & Krohn, 2003).

Definitions of Juvenile Delinquency

Despite abundant literature on the subject, juvenile delinquency is a complex phenomenon associated with a variety of biological, social, and psychological risk and protective factors that largely depend on individual and developmental disparities across

time and place (Laundra, Kiger & Bahr, 2002). Juvenile delinquency in the U.S. is defined as actions that violate the law, committed by a person under the legal age of majority (Burfeind & Bartusch, 2015; Greguras, Broder, Zimmerman & Crighton, 1978). Delinquent actions range from minor crimes like status offenses, gambling, disorderly conduct, and curfew violations to more serious crimes of fraud, forgery, vandalism, property damage, drug trafficking, sex offenses, burglary, arson, rape, robbery, aggravated assault, and homicide. It is important to note that overt manifestations of delinquent behavior differ widely within culture, as a function of social class differences. For example, lower-class Hispanic and African American youths have been found to participate in higher rates of gang-related delinquency than Caucasian middle-class youths probably due to socioeconomic differences (McDavid & McCandless, 1962). In addition, manifestation of antisocial behavior is typically different in males and females. Females are more likely to exhibit verbal and indirect aggression such as peer exclusion, ostracism, and character defamation that may not come to attention of the adults in their life while males exhibit externalizing behaviors (Bjorkqvist, Lagerspetz, & Kauklainen, 1992; Crick & Grotpeter, 1995; Hawkins et al., 1998). Additionally, aggression experienced by females occurs more often in-home and intra-female, and therefore is less often reported (Bjorkqvist & Niemela, 1992).

While researchers agree on the definition of delinquency, there is widespread disagreement on the outcome behaviors used to measure delinquency. This, along with the fact that statutes regarding juvenile delinquency and the treatment of juvenile offenders differ from jurisdiction to jurisdiction, makes accurate reporting of juvenile delinquency difficult (Greguras et al., 1978). Previously, studies have focused on

behaviors that meet the criteria for conduct disorders while others have focused on aggressive behaviors, official convictions, court referrals, or having an official adjudication by a juvenile court (McDavid & McCandless, 1962). This has led to significantly different conclusions made about delinquent behavior in the United States.

Uniform Crime Reports (UCR) and statistics that are collected by the FBI rely on arrest data only to measure delinquency. This is problematic, given that arrest data greatly underestimates the extent of most forms of delinquency, which may result in misleading reports about trends of delinquency (Agnew & Brezina, 2001). For example, researchers have partially attributed misleading information to delinquent acts that do not become known to the police. Many crimes have no victim, and even if the crime does involve a victim, only 40% of all crime victimizations are reported to the police (Agnew & Brezina, 2001). In addition, police do not arrest a significant majority of suspected offenders that they detain. This, coupled with the fact that the FBI typically only includes the most serious offense for which the person was arrested rather than all crimes, can easily lead to a misrepresentation of crime trends in the literature (Agnew & Brezina, 2001). Given this information, it may be accurate to assume that the current statistics underestimate the amount of delinquent activity actually being committed by juveniles.

In order to counter this disparity, studies have focused on supplementing data from the FBI and UCR with self-report measures used to measure juvenile involvement in delinquent acts. Self-report measures are more comprehensive of delinquency, and research indicates that young people are willing to report accurate information about their minor and serious delinquent acts on self-report measures (Farrington, Loeber, Stouthamer-Loeber, Van Kammen & Schmidt, 1996). In fact, when comparing self-report

data with official records, peer, family, and school reports, lie detector test results, and drug test results, researches find that self-report data provide a moderately accurate estimate of delinquency (Agnew & Brezina, 2001).

Rates of Juvenile Delinquency

As was noted above, Delinquency has traditionally been viewed as a primarily male phenomenon, defined in androcentric terms, often neglecting females (Hubbard & Pratt, 2002). This is supported in the research, where female delinquency has historically been considered less serious than male delinquency and not worthy of theoretical attention or empirical research. This is extremely problematic due to the alarming differences in delinquency rates between genders.

According to OJJDP (2016), the juvenile arrest rate for all crimes are significantly higher than they were mid-century. While the U. S. is not the only country experiencing the increase in juvenile delinquency, the U.S. does possess unique factors that contribute to the rise in crime. Redding (1997) and Blumstein (2001) both found that guns and violence accompanying the increase in neighborhood drug markets, the introduction of cocaine during the 1980's, and juveniles' increased access to firearms contributed significantly to rising trends of delinquency. These factors, along with drug trafficking, breakdown of families, and increased gang activity act as possible explanations to these high crime rates (Hoffman & Summers, 2001; Heilbrun, Goldstein, & Redding, 2005).

Over the last few decades, the US has seen an increase in not only the number of arrests of females, but also the number of violent offenses (Batista-Foguet, 2008; Hubbard & Pratt, 2002; Jacob, 2007; Loeber, Farrington, & Petechuck, 2003). While females only account for a small share of juvenile homicide offenders each year, violent

offense rates have nearly tripled, with 14 percent increase in aggravated assault (FBI, 2014). According to Chesney-Lind and Paramore (2001), the increase in female arrests for assault could be explained by changes in policing rather than changes in female behavior. This change includes a change in police practice with reference to the required arrests for domestic violence cases, which results in an increased number of arrests of females for assault. Since 1998, the use of detention for females has also increased 65% as compared to males' 30% increase. (American Bar Association, 2001).

Risk Factors of Juvenile Delinquency

An abundant amount of research has been directed toward the identification of risk factors connected with the onset, maintenance, and persistence of antisocial behavior in juveniles to provide an explanation as to how children veer off the path of normal development. The development of both delinquent and prosocial behavior is thought to be shaped by risk and protective factors within individuals and in the environment (Quinsey et al., 2004). Risk factors are defined as processes that predict an increased probability of later offending.

Risk factors can be groups into two categories—static and dynamic. Static risk factors are unmodifiable and typically include variables such as age at first offense, aggression, gender, and race (Dematteo & Marczyk, 2005). Static risk factors may not be amenable to intervention but have predictive utility in the evaluation of long-term recidivism (Andrews & Bonta, 1998). Dynamic factors, on the other hand, are modifiable and include variables such as access to weapons, substance abuse, and delinquent peers. Most intervention strategies focus on eliminating these risk factors (Dematteo & Marcyzk, 2005).

While multiple theoretical models of delinquency have been developed within the existing literature, researchers have concluded that a single path to delinquency does not exist. It is also important to note that there is no single risk factor responsible for delinquent behavior, and rather an interaction of risk factors and a multiplicative effect when several risk factors are present better explains the likelihood of juvenile delinquency (Coie, Watt, West, Hawkins, Asarnow, Markman & Long, 1993). For example, Herrenkohl and colleagues (2000) concluded that a "10-year-old exposed to 6 or more risk factors is 10 times as likely to commit a violent act by age 18 than someone exposed to only one risk factor."

Risk factors in the literature have been divided into five levels: individual, family, peer, school, and community. While all levels have some effect on behavior, some risk factors' importance varies with the developmental state of the individual (Coie et al., 1993). Specifically, Loeber and colleagues (2003) reviewed 20 studies on juvenile delinquency and found that stealing, positive attitudes towards problem behavior, poor parental supervision, early onset of substance abuse, depressed mood, withdrawn behavior, truancy, negative attitude towards school, peer rejection, and residence in a disorganized neighborhood were the most important risk factors in mid-childhood, while weapon carrying, drug dealing, unemployment, peer gang membership, and dropping out of school were the most important risk factors in mid-adolescence. This is due to children becoming more integrated in the community as they age, which results in the array of risk factors expanding.

Because an exhaustive review of all known risk factors linked to delinquency is beyond the scope of this paper, the following summarizes major risk factors associated with juvenile delinquency, regardless of gender.

Individual Level Risk Factors. Individual level risk factors involve biological, genetic, physiological, cognitive, and behavioral aspects of an individual (Batista-Foguet, 2008). Difficult temperament, characterized by negative moods and difficulty in controlling behavior and emotions in early life, may be a marker for the early antecedents of antisocial behavior (Earls & Jung, 1987; Guerin, Gottfried, and Thomas, 1997; Prior, Smart, Sanson, & Oberklaid, 1993). Interestingly, temperamental markers for the development of disruptive behavior disorders can be detected as early as three years old (Rutter et al., 1998). In addition, aggressive behavior is one of the more stable dimensions of child behavior and remains significantly stable from toddlerhood to adulthood (Tremblay, 2000). Previous research supports that positive attitudes towards violence, deficient self-control, the inability to take another's perspective, psychosocial maturity, delayed maturation, depression, inadequate performance of sex roles, and withdrawn behavior are all significant individual risk factors of delinquency (Loeber et al., 2003; Mulvey, Steinberg, Piquero, Besana, Fagan, Schubert, & Cauffman, 2010; Simourd & Andrews, 1994; Steketee et al., 2013).

According to the Office of the Surgeon General (2001), individual risk factors for adolescents also include participation in general offenses, restlessness, difficulty concentrating, risk taking behavior, antisocial attitudes and beliefs, low IQ and substance use. Hawkins (2000) reviewed several studies and reported a positive relationship between hyperactivity, concentration or attention problems, impulsivity and risk taking

and later violent behavior. Stattin and Klackenberg-Larsson (1993) found that delays in language impede normal socialization and may be associated with criminality up to age 30. Low verbal IQ and delayed language remain as risk factors even after controlling for race and class (Giancola & Parker, 2001; Moffit, Lynam, & Silva, 1994). Early onset substance use is also a highly consistent indicator of continued serious offending at a later age (D'Amico, Edelen, Miles & Morral, 2008; Loeber et al., 2003). Specifically, around 50% of incarcerated adolescents report having used drugs or alcohol at the time they committed the offense for which they are incarcerated (Bilchick, 1999).

Family Level Risk Factors. Regarding family level risk factors, individuals are more likely to engage in antisocial behavior when they are exposed to harsh or lax parenting, poor parental relationships, poor parental monitoring, antisocial parents, familial abuse, and high family conflict (Farrington & Painter, 2004). Capaldi and Patterson (1994) suggested that these family characteristics are mediated through parent socialization practices and family management practices.

In a study done by McCord (1979), researchers looked at the violent offenses of 250 males and found that among males at age 10, the strongest predictors of later convictions for violent offenses were poor parental supervision, parental conflict and aggression. In addition, McCord, Widom, and Crowell (2001) also linked single-parent families with increased juvenile delinquency, which may be explained by exposure to other criminogenic influences such as less parental monitoring, less parental involvement, and low socioeconomic status. Soller, Jackson, and Browning (2014) found that parents who rationalize violence as necessary to deter victimization may be less likely to

emphasize non-violent victimization avoidance strategies and instead encourage aggression and violence in order to maintain status and respect.

While the effects of abuse will be discussed in further detail later on, it is important to note that juveniles who are exposed to abuse tend to engage in higher levels of violence than those children who do not experience abuse. Widom (1989) found that abused/neglected children were 38% more likely to be arrested for a violent offense than children who had not been abused. In addition, Widom's 20-year-follow-up of 908 abused children who were victimized before the age of 11, found that 29% of the abused children went on to have an adult arrest, as compared to 21% of the control participants. 15% of the abused females and 9% of the control females had an adult arrest. And when holding other variables constant, and abused child had 1.76 times the likelihood of being arrested as an adult, compared to the control group (Widom, 1989). In a meta-analysis conducted by Hawkins (1998), researchers found that neglect was the best predictor of later violence, with a weighted mean correlation for child maltreatment and violence in adolescence of .06 (Hawkins et al.,1998).

Peer Level Risk Factors. During adolescence, the influence of peers takes on particular importance and these risk factors are often regarded as significantly potent. Affiliation with delinquent peers, maintaining delinquent peer relationships, and a high susceptibility to peer pressure have been cited numerous times in the literature as important peer level risk factors (Batista-Foguet, 2008; Chesney-Lind & Shelden, 2013; Leventhal & Brooks-Gunn, 2004; Steketee et a., 2014). Children who associate with deviant peers are more likely to be arrested earlier than children who do not associate with such peers (Coie et al., 1993). In addition, deviant peers can lead some individuals

with no previous history of delinquent behavior to actually initiate delinquent acts and may influence already delinquent youth to increase their delinquency. The influence of peers and their acceptance of delinquent behavior is significant, and this relationship is magnified when youth have little interaction with their parents or have little respect for their parents (Steinberg, 1987). In contrast, juveniles who are socially isolated or withdrawn are also at an increased risk for engaging in violent behavior (DHHS, 2001).

Similar to delinquent peers, gang membership reflects the greatest degree of deviant peer influence on offending. Gang membership provides a readily available source of co-offenders of juvenile delinquency and has a strong relationship to violent delinquency. This remains true, even when associations with delinquent peers, poor parental supervision, low commitment to school, negative life events, family poverty, and prior involvement in violence are controlled for (Battin-Pearson et al., 2000; Battin-Pearson et al., 1998) Over the last decade, research shows that children tend to join gangs at younger ages than in the past, leading to a typically younger age at first offense.

School Level Risk Factors. Studies addressing school influences on antisocial behavior have consistently shown that poor academic performance is related to child behavior problems and to the prevalence, onset, and seriousness of delinquency (Brewer, Hawkins, Catalano, & Neckerman, 1995). Hawkins and colleagues (1987) found that weak bonds to school, low educational aspirations and poor motivation, place children at risk for offending. These characteristics, coupled with low social class, lack of educational resources, negative attitudes toward school, as well as poorly organized schools lead to the increased likelihood of delinquent behaviors (Obeidallah & Earls, 1999). The Office of the Surgeon General (2001) also cited poor academic achievement

and performance and truancy as prominent risk factors. Williams (1988) also found that prior suspension and expulsion acts as a risk factor for future delinquency given that effects of suspensions and expulsions include a loss of self-respect, increased chance of coming into contact with a delinquent subculture, and stigma associated with suspension when the individual returns to school.

Community Level Risk Factors. Existing research also points to a powerful connection between residence in an adverse environment characterized by poverty, disorganization, low collective efficacy, and the participation in criminal acts (McCord, Widom, Crowell, 2001; Mulvey et al., 2010). Specifically, disorganized neighborhoods have weak social control networks resulting from isolation among residents and high residential turnover, which allows criminal activity and delinquent activity to go unmonitored (Sampson, Raudenbush, and Earls, 1997; Herrenkohl et al., 2000).

Protective Factors. Along with risk factors, protective factors also have significant effects on delinquency, by reducing the effects of risk factors by interacting with and moderating risk factors (Clayton et al., 1995). They may also exhibit an independent influence on the negative outcome, regardless of the present risk factors (Hoge et al., 1996). There is a significant amount of researcher that presents frequent reminders that adolescence is not a period of "normative disturbance" and there is accumulating evidence that the majority of teenagers weather the challenges of the period without developing significant social, emotional, or behavioral difficulties (Steinberg, 1999). Unfortunately, little is known about the mechanisms through which individuals "age out" of certain types of problems.

On an individual level, high intelligence and educational attainment serves as a significant protective factor. Specifically, youths at risk for participating in antisocial behavior often do not become involved because of the positive reinforcement that education provides, and the time devoted to academic performance (Carson & Butcher, 1992; Hoge & Andrews, 1996; Kandel et al., 1988, DHHS, 2001). The most significant individual level protective factor cited in the literature is an intolerant attitude toward deviant behavior, given that it likely reflects a commitment to social norms and decreases the likelihood an individual would associate with delinquent peers (DHHS, 2001).

Some family level factors also act as protective factors. An absence of significant family disturbances, increased warmth, strong attachment, increased parental monitoring, and providing clear and consistent norms can assist in preventing juveniles from engaging in antisocial behavior (Carson & Butcher, 1992; Dematteo & Marczyk, 2005; Kumpfer & Alvarado, 2003; Melton et al., 1997). In addition, the establishment of a close relationship with at least one supportive adult has also shown reduced risk for participation in delinquent behavior (Hanna, 2001; Hawkins et al., 2000). Werner and Smith (1982) conducted a study that found that this positive bond between child and adult leads to greater compliance and reciprocity (Crockenberg & Litman, 1990).

An Overview of Female Juvenile Delinquency

Since its inception in 1899, the juvenile justice system in the United Stated has been plagued by sexism. Historically, girls had been referred to the juvenile courts typically for immorality and waywardness, and a significant number of girls were detained, tried, and institutionalized for these offenses (Chesney-Lind & Shelden, 1992). Reform in the 1950's and 1960's allowed the crime of immorality to be replaced with

status offenses such as running away. However, despite a move toward deinstitutionalizing these offenses, females still experience discrimination in the juvenile justice system. Chesney-Lind and Shelden (1992) argued that this bias is largely due to the definition of delinquency, and the vague language allowing for the differential treatment of females who come into the system. Specifically, adolescent females are arrested less frequently than male adolescents, and are more likely than males to have their cases handled informally rather than through formal adjudication hearings (Hoyt & Scherer, 1998). The heterogeneity in response to risks is evident when comparing male and female offending patterns—both in terms of overall participation in crime and by type of delinquent involvement (FBI 2014; Newsom, Vaske, Gehring & Boisvert, 2016). For example, females are more often arrested for status offenses, such as truancy, running away, and sexually acting out, as well as sex trafficking and embezzlement than males. Status offenses are noncriminal acts that are only considered violations of law due to the individual's status as a minor (Simourd & Andrews, 1994; Archer, 2004; Card, Stucky, Sawalani, & Little, 2008; Stekeete et al., 2013; Nicholls et a., 2015; Rhodes & Fischer, 1993). This is not to say that females are completely absent in some crimes. In fact, research has suggested that females receive harsher juvenile court sanctions for the same offenses often committed by males when handled formally in court (Carr, Hudson, Hanks & Hunt, 2008). MacDonald and Chesney-Lind (2001) found that female offenders were more likely to be treated more leniently in the early stages of involvement with the justice system and harsher in later stages.

Theories of Female Juvenile Delinquency

Historical explanations as to why females become involved with delinquency range from underdeveloped intelligence to the introduction of female gangs. While early medieval studies suggested that female offenders were possessed with dark spirits, Lombroso (1895) offered the explanation that female offenders had underdeveloped intelligence and primitive body traits (e.g. lower jaws, bigger hands, etc.). Sigmund Freud (1933) equated female crime to envy of male dominance in society, or, penis envy. The view of female offenders changed in the 1950's, when Pollack (1950) posited that female crime had a biological basis, with women being naturally deceitful and possessing a natural tendency to "conceal and misrepresent." This explanation extended to offenses such as shoplifting and fraud, which were considered natural crimes for women. Biological explanations developed further to suggest that bodily processes like menstruation, pregnancy, and menopause had a positive correlation with crime (Carr, Hudson, Hanks & Hunt, 2008) Specifically, the peak in delinquent behavior typically seen in females tends to coincide with the development of sexual maturity (Quinsey, Skilling, Lalumiere, & Craig, 2004). As time went on, theories of female delinquency began catching the interest of both sociologists and psychologists who offered more contemporary theories of crime. Early sociologists believed that female offenders were fundamentally different than males and argued that women experience more strain from the environment given that females often share the same goals as males but have less opportunity to achieve them (Quinsey et al., 2004). In contrast, Adler (1975) argued that the Women's Liberation Movement resulted in an increase in crime due to females' greater access and opportunity to participate in criminal activity. As time progressed,

psychologists suggested that female delinquency could be explained by an expression of emotional problems, specifically loneliness and dependency (Konopka, 1976). Other theories emphasized that personal distress and maladjustment was the cause of delinquency, suggesting that a "proper environment" where gender roles were enforced was enough to correct this behavior (Belknap, 1996; Carr et al., 2008). This depiction of an emotionally unbalanced girl coupled with family and social variables such as antisocial peers, female gang membership, and unstable family environments has remained in the literature ever since (Quinsey et al., 2004). The feminist model of juvenile delinquency posits that delinquency is the product of a history of victimization, mental illness, poor supervision. Regardless of the specific explanatory variables included, it is assumed that a female's pathway to crime is rooted in the gendered socialization and the male-centered society in in which she lives (Holsinger, 2000).

Risk Factors of Female Juvenile Delinquency

There have been substantial attempts to identify and examine sex differences in delinquency throughout the literature. Most of what is currently known about the predictors of juvenile delinquency is based on research conducted on male samples (Hubbard & Pratt, 2002). While some risk factors for males have relevance to females, researchers who assume that the development of antisocial behavior in females is the same as males appear to operate under a misconception (Baglivio & Jackowski, 2013; Hilterman, Bongers, Nicholls & Van Nieuwenhuizen, 2016; Loeber, Farrington & Petechuck, 2003). Specifically, it is thought that some risk factors may be seen among male offenders but in greater frequencies among females, and that some risk factors affect women and men differently. Previously, small sample sizes have created obstacles

to investigating gender-specific risk and desistence pathways for adolescent female offenders (Nichols et al., 2015).

Individual Level Risk Factors. One of the most well-documented individual differences in the literature regarding the study of antisocial behavior is that women are less aggressive than men, across cultures (Moffit, Caspi, Rutter & Silva, 2001). In a meta-analysis conducted by Eagle and Steffen (1986), researchers found a moderate effect (d =.40) across all studies on sex differences in aggression, again confirming that males are increasingly more aggressive than women. However, when assessing the type of aggression observed in females, research suggests that females are more likely to engage in indirect aggression (Frick, 1995), suggesting that females and males may not differ in the quantity but the type of aggression. Like males, once aggressive behavior becomes an established behavioral trend, it is likely to predict aggression later in life, across developmental transitions (Cairns, Cairns, Neckerman, Ferguson & Gariepy, 1989).

Behavioral differences between males and females have also been consistently documented in the literature from infancy (Fleming, Catalano, Oxford, & Harachi, 2002). Weinberg and Tronick (1997) reported that infant females exhibit better emotional regulation than infant males and that infant males are more likely to show anger than infant females. In addition, Loeber and Hay (1997) found that peer directed aggressive behavior appear to be similar in both females and males during toddlerhood, but between the ages of 3-6, males begin to display higher rates of physical aggression than females (Coie and Dodge, 1998). During childhood, behavioral problems decrease for females, but increase during adolescence (Hawkins et al., 1998; Silverthorn & Frick, 1999). This

may be attributed to different socialization processes between genders or related to differences in self-concepts and identities (Bottcher, 2001; Hawkins et al., 1998).

Females typically have higher rates of mental illness in the population, which is even more pronounced in the female juvenile delinquent population (Hilterman et al., 2016; Nicholls et al., 2015; Byrne & Howells, 2000; Teplin et al., 2002). A round-up of recent research suggests there is an increased rate of depression, bipolar disorder, anxiety, low self-esteem, behavioral disorders, and suicidal ideation in female juvenile offenders (Hawkins et al., 1998; Cauffman, 2008). In regard to internalizing disorders, early adolescence marks a time when the rates clearly diverge, with a sharp rise in the onset of depression in females (Loeber et al., 2003). While these disorders may overlap with conduct problems, depression may actually influence females' propensity toward antisocial behavior. Specifically, these disorders may fuel indifference regarding personal safety as well as consequences of their actions, increasing the likelihood of delinquent activities (Loeber et al., 2003). In another sense, depression or anxiety may increase withdraw from social situations, as well as increase difficulties in concentration, leading to withdraw from prosocial activities, peers, and institutions. Loeber, Farrington, and Petechuck (2003) suggest that mildly to moderately depressed females are more likely to commit property crimes and crimes against others than non-depressed counterparts.

Family Level Risk Factors. A consistent theme in the literature is that females in the criminal justice system often come from very violent and dysfunctional familial backgrounds, where family members disappear and reappear in erratic fashion, ultimately depriving the meaning and substance that protection, nurturance, guidance, and conflict are supposed to provide (Schaffner, 2006; Viale-Val & Sylvester 1993; Lewis, Yeager,

Cobham-Portorreal, Klein, Showalter & Anthony, 1991). For example, there tends to be more mother-child conflict in families of female delinquents than in those of male delinquents (Silverthorn & Frick, 1999). While many female juvenile delinquents may have parents present in their lives, often times divorce, overwork, substance dependence, homelessness, and incarceration lead to ineffective parenting and an inability to guide and protect children. Family dysfunction may be a risk factor that presents a particular burden for young women and may be important in the development of persistence of antisocial behaviors in adolescent female offenders (Nicholls, et.al, 2014). Parent-child relationships, parenting practices, attachment, and other family-related factors have emerged as key determinants of adolescent outcomes and studies show that parents and family remain as important forces in the socialization of adolescents through high school (Catalano & Hawkins, 1996). Research finds that females are generally supervised and monitored more closely than their male peers and that poor supervision and monitoring is more strongly related to delinquency in females (Bottcher, 1995; Cernkovich & Giordano, 1987; Hagan & Kay, 1990, Svensson, 2003). This increased monitoring may in part limit movement outside the home and may even limit interactions with peers, which could potentially reduce participation in delinquency.

Research also suggests that parents with substance abuse issues or criminal behavior are more likely to victimize their children (Rinehart, Becker, Buckley, Daily, Reichart, Graeber, VanDeMark & Brown, 2005; Dube, Anda, Felitti, Croft, Edwards & Giles, 2003). Parents with these impairments may be less likely to exhibit positive or effective parenting techniques so they may resort to abuse or other negative behaviors,

which may then increase the likelihood that the child will attempt to escape or rebel through delinquent behaviors.

Previous research also cites single-parent status as a risk factor for female delinquency (Benedek, 1990; Werner, 1987; Renee'McKnight & Loper, 2002). Single-parent status may indicate a lack of strong family bonding and a decrease in the amount of parental supervision, which have been identified as strong risk factors for female delinquency in the past (Silverthorn & Frick, 1999). Recent literature on female delinquency suggests that risk factors related to family and social relationships are more important for female adolescents than for male adolescents (Cauffman, 2008; Fields & Abrams, 2010; Zahn et.al, 2008; Hilterman et al., 2016; Miller et al., 1995; Renee'McKnight & Loper, 2002). Often times, female juvenile delinquents lack consistent parenting. Parents may be so wrapped up in their own needs that little attention is given to children. In this sense, parents are seen as insensitive, and uncaring, which may result in the child looking for nurturance and self-validation elsewhere, possibly in delinquent peers.

As family relationships become more dysfunctional the importance of peer relationships becomes magnified and the likelihood of negative peers leading to delinquency increases (Chamberlain & Rosicky, 1995). A study by Cernkovich and Giordano (1987) found that family attachment is important in inhibiting delinquency in all youth, and that for females, the dimensions of identity support, instrumental communication, conflict, and parental disapproval of peers are the strongest predictors of delinquency (Hoyt & Scherer, 1998).

Hill and Atkinson (1988) conducted a cross-sectional study on archival data from the Institute for Juvenile Research. Researchers looked at 1374 females and 1294 males between the ages of 14 and 18-years-old from a stratified sample of Illinois youth. The study focused on the effects of paternal and maternal support and curfew rules on self-reported delinquency and self-reported number of contacts with police. Results showed that parental support decreases reported delinquency more than curfew rules, with maternal support being the best predictor for females.

Recent research has also suggested that attachment to school and peers, strong bonds to the family, conflict with parents, and parental support of identify are stronger predictors of female offending than male offending (Heimer & Coster, 1999; Cernkovich & Giordano, 1987). Werner and Silberstein (2003) found that youths with positive relationships with parents are less likely to form relationships with deviant peers. The study supported earlier findings, which indicate that females are more impacted by parental variables than are males. Specifically, they found that females were impacted by living in a single-parent home, while males were not. The authors concluded that, "females are particularly vulnerable to adjustment difficulties in the face of poor family relations during adolescence. Specifically, variation in family cohesion and closeness with fathers predicted females' association with deviant peers but not males" (Werner & Silberstein, 2003).

Many researchers have addressed the different pathways to delinquency between males and females by demonstrating the importance of sexual and physical abuse in the development of female offending (Chesney-Lind and Rodriguez, 1983; Rivera and

Widom, 1990). A comprehensive overview of the damaging effects of sexual abuse will be further explored later.

Peer Level Risk Factors. In a longitudinal study by Caspi et al. (1993), researchers collected information from 297 females involved in the New Zealand multidisciplinary Health & Developmental Study. Researchers looked at the effects of age of menarche, school context, social class, childhood behavioral problems, norm-breaking behavior, and familiarity with delinquent peers on self-reported delinquency. Results showed that females in mixed-sex schools were more familiar with delinquent peers than those in all-females school and that early-maturing females were more likely to engage in norm-violating behaviors.

In addition, research suggests that in adolescence, peer relationships and approval become more desired in females due to the fact that there is more peer monitoring of antisocial behavior because it is more normative at that age (Silverthorn & Frick, 1999).

School Level Risk Factors. Tremblay (1992) found that disruptive behavior in first grade had direct effect on later delinquent behavior in females, although poor school achievement was not a necessary causal factor for males (Hoyt & Scherer, 1998).

Community Level Risk Factors. Research often cites poverty as a significant contributor to female delinquency, citing that only 40% of women in prison report having full-time employment prior to arrest (Bureau of Justice Statistics, 1999). Research attributes an increase in poverty to limited education and vocational skills, drug use, child care responsibilities, and rewarding illegal opportunities (i.e. sex trafficking) (Belknap, 2007; Chesney-lind & Rodriguez, 1983; Daly, 1992). Holtfreter, Reisig, and Morash (2004) recently noted that poverty increased the odds of recidivism by a factor of 4.6 and

the odds of supervision violation by 12.7, even after minority status, age, education, were controlled for. Additionally, among women who were initially living below poverty level, public assistance (e.g. food stamps, WIC) reduced the odds of recidivism in females by 83%.

Protective Factors. Self-efficacy and self-confidence serve as protective factors for women. Specifically, the ability to control their lives and achieve goals have been cited by correctional treatment staff, offenders, and researchers as relevant to desistance from crime (Carp & Schade, 1992; Case & Fasenfest, 2004; Schram & Morash, 2002; Task force on Federally Sentenced Women, 1990).

A Closer Look at Child Abuse on Female Juvenile Delinquency

Recent theories of delinquent behavior suggest that delinquency is often preceded by some form of childhood victimization (Maxfield and Widom, 1996). It is estimated that three million cases of child abuse or neglect are reported annually (Bender, 2010; US Department of Health and human services, 2009).

Research on child abuse often has mixed findings, based on the definition of child abuse, if gender is studied, and what population is chosen. However, child abuse is the most commonly cited correlation in the literature on delinquent females (Banyard, Williams, Siegel, & West, 2002). Females report higher rates of witnessing and experiencing violent crimes and physical and sexual abuse than males (Dixon, Howie & Starling, 2005; Bender, 2010). Hubbard & Pratt (2002) found that past victimization plays a distinct role in the lives of female juvenile delinquents. Specifically, females not only report more victimization than males, but they also report more extreme victimization and more repeat experiences of abuse (Wood, Foy, Goguen, Pynoos, &

James, 2002; Belknap & Holsinger, 2006). Disproportionate exposure to trauma, resulting distress, and maladaptive coping mechanisms can precipitate the onset of mental illness, which in turn can perpetuate a cycle of behavioral dysfunction and offending behavior (Sorbello, Eccleston, Ward, & Jones, 2002; Nicholls et al., 2015). Drug use has been thought to also mediate the relationship between trauma and aggression, which perpetuates criminalization (Nicholls et al., 2015).

The Adverse Child Experiences study documented that abuse (i.e. physical, sexual, and emotional) and potentially damaging childhood experiences contribute to the development of risk factors, and that these experiences should be recognized as the basic causes of morbidity and mortality in adult life. The study found a graded relationship between the number of categories of childhood exposure and each of the adult health risk behaviors. Specifically, results demonstrated that individuals who experience four or more categories of childhood adverse experiences, compared to those who experienced none, had a 4 to 12-fold increase in health risks for alcoholism, drug abuse, depression, and suicide attempts; a 2 to 4-fold increase in risks for smoking, and poor self-rated health, and a 1.4 to1.6-fold increase in physical inactivity and severe obesity. These adverse childhood experiences show a graded relationship to the presence of diseases such as cancer, lung disease, heart disease, and skeletal fractures (Felitti et al., 1998). This research is congruent with a study on the long-term consequences of child abuse by Dube, Anda, Whitfield, Brown, Felitti, Dong, and Giles (2005) conducted from 1995 to 1997, which outlined an increased risk for substance use and misuse, psychiatric disorders, suicidal, and family-related outcomes such as divorce and domestic violence.

Bolger, Patterson, & Kupersmidt (1998) looked at the impact of victimization on peer relations and found that the more severe or chronic the child abuse, the more likely the child will be less well liked by peers, have difficulty making friends, and have lower self-esteem (Jacob, 2007). This may indicate a pathway from abuse to the choice of negative or delinquent peers to later delinquency.

Child Sexual Abuse. According to Byrne & Howells (2000) between 75 percent and 85 percent of all female offenders have experienced at least one instance of sexual abuse, often at an early age. According to other recent statistics, 68 percent of adult women in the U.S. criminal justice system reported being molested as young females (Schaffner, 2006). According to the study of females in juvenile correctional settings conducted by the American Correctional Association (1990), a very large proportion of these females had experienced sexual abuse, with nearly half saying they had experienced sexual abuse 11 or more times (Chesney-Lind & Shelden, 2013). Female sexual abuse usually starts earlier than males and lasts longer than males. While females experience more sexual abuse than males, when controlling for frequency of sexual abuse, females are more negatively impacted by the sexual abuse than males (Adams & Tucker, 1982).

Self-reported sexual abuse has been previously linked to school failure, eating disorders, substance abuse and other negative outcomes (Chandy, Blum & Resnick, 1996). Studies link females' early sexual debut as well as unhealed childhood injuries from sexual trauma to unhealthy practices such as self-medicating with drugs, alcohol, striking out in aggression and violence, and seeking parental-type attention from adult men through romance and sexuality. In addition, some research has found that some delinquent decisions females make, such as violent crimes against others, appear to be an

attempt to solve their sexual abuse problem (Schaffner, 2006; Browne & Finklehor, 1986; Heffernan et al., 2000). Relationships between violent offenses and child sexual abuse generally receive less attention in the literature.

Kendall-Tackett, Williams, and Finkelhor (1993) conducted a meta-analysis on the effects of child sexual abuse and found that sexual victimization accounted for 43 percent of the variance in measures of aggression when comparing sexually abused and non-abused children.. Chesney-Lind and Shelden (1998) found that one of the first steps in female delinquency is status offending, which includes truancy, running away, being incorrigible, in response to abusive situations. Specifically, young females tend to run away from the violence and abuse in their homes and become vulnerable to further involvement in crime as a means of survival (Fleming et al., 2002). For example, once on the streets, a female may turn to sex trafficking or stealing in order to survive. This is especially true for females, given that most of the abuse happens in the home. By forcing females to stay in the home or charging the female with a punishable offense if she leaves (e.g. running away), the juvenile justice system may be criminalizing females' survival methods (Chesney-lind, 2013).

A study of women psychiatric patients found that half of the victims of childhood sexual abuse ran away before the age of 18, but only 20 percent of the non-victim group had run away (Meiselman, 1978). In addition, a history of victimization is one of the strongest predictors of engagement in violent behaviors, involvement in gangs in girls (Blum, Ireland & Blum, 2003; Snethen, 2010; Graves, 2007).

In a study by Chandy, Blum, and Resnik (1996), researchers examined gender differences in outcomes related to school performance, disordered eating, suicidal

involvement, sexual risk taking, substance abuse, and delinquent behaviors of 270 male and 2,681 female teenagers with a self-reported history of sexual abuse. Utilizing multivariate analyses, the study found that female adolescents engaged in internalizing behaviors and males in externalizing behaviors. Males were at higher risk than females in poor school performance, delinquent activities, and sexual risk taking. Female adolescents showed higher risk for suicidal ideation, disordered eating, and substance abuse. It is important to note that delinquency was defined as property damage, simple assault, stealing, cheating on test, running away from home, and involvement in sex trafficking. It is important to note that this study only focused on adolescents in Minnesota who were primarily Caucasian (86%) and who fell into a medium socioeconomic status range (56%). This suggests that the study may not be generalizable to the population. In addition, sexual abuse was broadly defined and relied solely on self-reports. There was also no distinction between extrafamilial and intrafamilial sexual abuse (Resnick, Harris, Rosenwinkel, & Blum, 1989).

The Los Angeles Epidemiologic Catchment Area report by Stein, Golding, Siegel, Burnam, and Sorenson (1988) is one of the only studies based on a random representative sample to have examined the prevalence of adult sexual dissatisfaction or disturbance in CSA victims. Based on a probability sample of 3132 men and women, the study investigated the long-term psychological sequelae of CSA, 20% of the 51 women with a history of CSA reported one or more symptoms of sexual disturbance within 6 months. Specifically, 36% had a fear of sex, 36% had less sexual pleasure, and 32% had less sexual interest. However, a control group was not reported for this study.

In a study by Tsai, Feldmen-Summers, and Edgar (1979), researchers examined factors contributing to the differential adjustment of women sexually molested as children. Three groups of 30 women were recruited from a clinical sample of women who were molested as children seeking therapy, a nonclinical group of women who were molested but not seeking therapy, and a control group of women who had not been molested. Findings indicated that adult adjustment relied heavily on the frequency and duration of molestation. Specifically, individuals molested at age 12 or later appeared to feel a greater responsibility for the involvement in the molestation and developed somewhat more pronounced feelings of guilt. In addition, women who were more frequently molested as children had a longer duration of molestation and acquired stronger and more enduring associations between the molestation and feelings of guilt and pain. It is important to note that all participants were black, with 60% married and 70% college educated. The study included perpetrators that were both intrafamilial and extrafamilial (Tsai, Feldmen-Summers, & Edgar, 1979).

In another study, researchers looked at 7513 female adolescents from a midwestern county to contrast risk factors of female gang involvement. The results indicated that females involved in gangs reported a significantly greater history of running away from home, greater levels of aggressive and delinquent behaviors, and greater levels of experienced sexual abuse, family conflict, and less parental monitoring compared to a control group. This study utilized property crimes and carrying a weapon to measure delinquency and did not separate intrafamilial and extrafamilial sexual abuse (De La Rue & Espelage, 2014).

In a study by Goodkind and Sarri (2006), researchers surveyed 169 young females involved or at risk of involvement with the juvenile justice system, comparing girls who experienced sexual abuse and those who did not. Results indicated that girls experiencing sexual abuse had more negative mental health, substance use, risky sexual behavior, and delinquency outcomes (Goodkind & Sarri, 2006).

Siegel & Williams (2003) looked at 206 women who were treated in a hospital emergency room in a major city following a report of sexual abuse between 1973 and 1975. Their subsequent juvenile and adult criminal records were compared and matched to a comparison group. The study found that sexual and physical abuse that occurred as a child were significant factors in the prediction of adult delinquency. In addition, the study found that those who were sexually abused were also significantly more likely to run away and be declared dependents of the court. The study, however, did not find sexual abuse to be a better predictor of juvenile delinquency. In contrast, results indicated that those who were sexually abused were more likely to be arrested for violent crimes as adults.

Research by Booth and Zhang (1996), focusing on runaway and homeless adolescents, has shown that 55% of runaways met the diagnostic criteria for conduct disorder. Importantly, logistic regression showed that sexual abuse was the sole significant predictor of conduct disorder. Half of the runaways in the study had experienced sexual abuse, 28% of males and 76% of females, with an average age of onset of sexual abuse of nine years. Sexual abuse generally occurred approximately one year prior to the onset of the first symptom of conduct disorder, suggesting a temporal

link between sexual abuse and conduct disorder. It appears that running away may sometimes be one of the sequelae of conduct disorder preceded by child sexual abuse.

Swanston, Parkinson, O'Toole, Plunkett, Shrimpton & Oates (2003) conducted a longitudinal study of 38 substantiated sexual abuse victims and a comparison group of 68 non-abused same-aged peers. Researchers examined whether sexual abuse was associated with subsequent juvenile offending, aggression, and delinquency after controlling for a range of confounding variables. The study found that a history of child sexual abuse predicted self-reported criminal behavior, suggesting that child sexual abuse may be an independent risk factor for delinquency. The study includes substance abuse as one of the scales of delinquency. The study also controlled for age, sex, socio-economic status, and family structure. The generalizability of the study is questionable due to the small sample size and due to the sampling method. Additionally, the generalizability is questionable because an analysis of the abused group was not statistically possible due to the small sample size. As a result, gender effects are not reflected. In a five-year follow-up of this study, 84 sexually abused individuals were followed up and compared to a group of 84 nonabused young people. The study found that abused individuals performed more poorly than their non-abused peers. Specifically, sexually abused individuals indicated more depression, anxiety, disordered eating, self-injury, suicide attempts, and substance use.

It is important to note that some studies did not find the correlation between abuse and crime in adolescents but found that this correlation did not appear until adulthood. Widom (1989)'s prospective study of the criminal records of adults who had substantiated physical or sexual abuse in childhood found that these adults had higher rates of

criminality than a matched comparison group who did not have an abuse history. The study also found that abused females were far more likely to commit a crime as an adult than the comparison group of women but were not found to be more likely to be involved in a violent or sex crime. The study found that the type of abuse differed by gender, so the comparison based on gender may be flawed.

Guttierres and Reich (181) looked at a sample of 5392 children referred for child abuse in Arizona, with 774 of these individuals classified as juvenile offenders. The study found a correlation between abuse and escape activities such as running away and truancy but found no difference in matched comparison with siblings and comparison group for violent offenses. One limitation is this study focused on violence as the dependent variable so may have missed the delinquent but non-violent connection between abuse and delinquency more often seen with delinquent females (e.g. running away).

Parental Sexual Abuse. Sexual abuse in females is more likely to be perpetrated by family members (De Jong, Hervada, and Emmett, 1983). In fact, the victim of one in four people in the US incarcerated for sexual assault, are their own children (Schaffner, 2006). A survey by Phelps (1982) revealed that 32 percent of females had been sexually abused by parents or persons closely connected to their families. A study by Baskin and Sommers (1998) looked at 170 violent female felons and found that 36 percent reported sexual abuse by an immediate family member and 26 percent reported sexual abuse by an extended family member. According to recent research, not only are females three times more likely than males to be sexually abused, but 40 to 70 percent of females in the juvenile justice system report a past history of familial abuse compared to 20-30 percent

of females in the community (Sedlak & Broadhurst, 1996; Girls Inc., 1996). The highest rates of sexual disturbance were found in studies examining father-daughter incest (Herman, 1981; Meiselman, 1978). In addition, Finklehor (1979) found that among 796 undergraduates reporting sexual abuse, father-daughter incest was rated as the most traumatic. Intrafamilial sexual abuse is significantly more traumatic given that threatens the relationship between the child and the child's most important source of social support. It undermines the child's relationship with family members and provides the child with an environment of parental rejection, social isolation, and punitive parenting (Finkelhor, 1993). In addition, it involves a greater betrayal and loss of trust than abuse by others (Russel, 1986). It is important to note that there are two themes that appear in parental sexual abuse. Specifically, there are deviations in the processes of defining, regulating and integrating aspects of the self of the victims, and deviations in the related ability to experience a sense of trust and confidence in relationships (Harter, 1998). Abuse in childhood challenges the likelihood of the victim establishing a sense of self-competence in the social world beyond the home. In adolescence, it appears that victims rely on immature coping strategies, which increase the likelihood of impulsivity, misconduct, sexual acting out, running away, and delinquency (Harter, 1998).

Parental sexual abuse, sometimes referred to as incest, has a long and convoluted history within the literature with a wide variation in prevalence rates. Van Buskirk and Cole (1983) cite that there is little agreement on the definition of parental sexual abuse given that there is a wide continuum of behaviors and relationships that could be included in the definition, ranging from incidental contact to penetration, which may skew the prevalence rates. According to the DSM-5, sexual abuse is defined as penetration, genital

fondling, sodomy, incest, rape, and indecent exposure (American Psychiatric Association, 2013). Mohr and colleagues (1964) reported that actual penis to vagina intercourse rarely occurs with prepubescent children. The great majority of sexual acts consist of the sex-play type found among children such as looking, showing, and fondling (Mohr, Turner, Turner, & Jerry, 1964). Fischer and McDonald (1998) found that intrafamilial abuse often involves digital penetration, vaginal penetration, genital fondling, and oral sex.

Walker (2014) cited that up through the 20th century, parental sexual abuse was protected from the full legal repercussions accorded to stranger abuse, which is unsurprising given that the state has traditionally provided the home and the family with the highest level of protection from government insight. The discrepancy in prevalence rates may also exist due to the unwillingness of victims to disclose the abuse. Until recently, the lack of reporting was generally explained by a lack of truthfulness of a child, or the child's complicity in the act itself (Lowry, 2013). However, recent research suggests that other factors play into the underreporting of parental sexual abuse. These factors include pressure for secrecy within an incestuous family, grooming of the child by an abusive parent, and the child's attachment behavior under conditions of stress (Lowry, 2013). These factors may also include fear of their own safety, feelings of shame and self-blame, the anticipated impact on the family, or even feelings of loyalty to the offender (Gekoski, Davidson, & Horvath, 2016). Some clinicians dismiss patient reports of incestuous experiences as fantasy, however it has been concluded that children are molested more frequently than was previously generally believed (Rosenfeld, Nadelson, Krieger, & Backman, 1977).

Parental sexual abuse, while intrafamilial, is extremely unique compared to other forms of intrafamilial abuse as well as extrafamilial abuse. There is a significant difference in power between the parent and the child, and the abuse is usually intermittent in nature, with periods of loving and caretaking in between incidents (Lowry, 2013). As a result, parental sexual abuse appears to have greater negative effects than extrafamilial sexual abuse. In a study by Fischer and McDonald (1998), researchers looked at 1,037 cases of child sexual abuse from two western Canadian cities. The study indicated that victims of parental sexual abuse suffer worse physical and emotional symptoms given the longer duration and greater level of intrusion suffered than victims of extrafamilial sexual abuse and other intrafamilial abuse.

It is well documented in the literature that girls are more likely to be victims than boys. In addition, while the greatest risk of being sexually abused by a parent is between ages 12 and 14, research suggests that parental sexual abuse may have an onset as early as 6-years-old (Cankaya et al., 2012; Gekoski et al., 2016). Parental sexual abuse often occurs within dysfunctional families, characterized by disorder and role reversal with the child as the caregiver. There is also research documenting that parental sexual abuse is more likely to occur in families with high rates of divorce, substance abuse, and psychiatric disturbances, as well as in families where sexual attitudes are poorly defined (Beitchman et al., 1991; Moor & Sillvern, 2006; Cosden & Cortez-ison, 1999). Children exposed to sexual activity at a young age in disorganized and pathological home situations may experience attitudes towards sexuality that could be expressed simply as a way that adults “have fun,” which may create warped and dysfunctional beliefs about sexual relationships. It is likely that abuse and dysfunctional families are reciprocally

related, with the abuse leading to a fracture of the family structure as well (Csorba et al., 2005). The role of family variables, such as marital conflict and parental psychopathology are thought to have a pivotal impact on the child's response to the abuse (Beitchman et al., 1992).

The trauma of sexual abuse is associated with psychological maladjustment beginning shortly after the abuse and continuing into adulthood (Godbout, Briere, Sabourin, & Lussier, 2014). It is also apparent that parental sexual abuse has greater negative effects than extrafamilial sexual abuse (Briere & Elliot, 1993; Finkelhor & Baron, 1986). This is due to the fact that parental sexual abuse rarely occurs in isolation or in the context of nurturing parent-child relationships and is often accompanied by more pervasive disruptions in child-parent relationships (Moor & Silvern, 2006). Some literature even suggests that the effects of parental sexual abuse may not be linked directly to the sexual activity itself, but by the poor parenting, disorganization in the family, and emotional deprivation seen in such cases (Gold, Hughes, & Swingle, 1996; Lowry, 2013).

Parental sexual abuse was found to be correlated with parental dominance, lack of parental support, violent home life, poor attachments, parental psychopathology, and disturbed parent-child relationships (Edwards & Alexander, 1992; Merrill et al., 2001; Lowry, 2013). Guilt, anger, and anxiety about abandonment are the predominant feelings found in incestuous families. These distorted and disturbed relationships may prevent the child from forming mature relationships outside of the primarily family (Rosenfeld et al., 1977).

Concerning psychiatric diagnoses, all forms of child abuse are associated with subsequent pathology (Rosenfeld et al., 1977). However, it appears that frequent and forceful abuse perpetuated by a parent is associated with the highest levels of long-lasting psychological effects (Beitchman, Zucker, Hood, DaCosta, & Akman, 1991; Boney-McCoy & Finklehor, 1996; Briere & Elliott, 1993). In recent research, a number of disorders have been identified in which the incidence of incest, significantly exceeds the chance rate. These conditions include sexualized behaviors, ADHD, PTSD, anxiety, depression, borderline personality disorder, antisocial personality disorder, eating disorders, substance abuse, sexual dysfunction, and dissociative disorders. It has also been linked to an increased number of suicide attempts, psychiatric hospitalizations, and incidents of domestic violence (Goodwin, Cheeves, & Connel, 1990). Victims often experience difficulty with affect regulation and interpersonal problems, as well as low self-esteem (Alexander, 1992). Parental sexual abuse has also been linked to aggressive and violent behavior, as well as high rates of delinquency. Parental sexual abuse has also been linked to a reduction in social competence, skill building, and emotional processing (Tyler, Johnson, & Brownridge, 2008).

Sexual abuse itself can be conceptualized as a risky family factor, falling on the most severe spectrum of risk.

Attachment and Bonding. Both attachment and bonding pay a huge role in the onset and maintenance of parental sexual abuse. Specifically, early parental sexual abuse is related to unhealthy attachments with caregivers. Children develop an internal working model of themselves and others through their early experiences with their caregivers. Poor family attachments may not only precede child sexual abuse but may also mediate

the effects of abuse (Cosden & Cortez-ison, 1999). Egeland, Jacobvitz, and Sroufe, (1988) found that adults sexually abused as children were less likely to be abusive themselves if they experienced satisfying and emotionally supportive relationships subsequent to abuse.

Attachment also plays a role on how parents and children experience the sexual abuse. Dismissing attachment from parents could lead to a blocking of one's own experience and to decreased responsivity towards the child. Preoccupied attachment could lead to role reversal and a sense of entitlement that would preclude normal caretaking. Fearful avoidance could interfere with impulse control and prevent a non-offending parent from hearing the child's bids for help. The sexual abuse can be experienced as rejection, role reversal, parentification, or as fear and unresolved trauma (Alexander, Anderson, Brand, Schaeffer, Grelling & Kretz, 1998). Parental sexual abuse also offers a unique complication in bonding. While one may assume that there would be a rupture in the bond between the parent perpetrating the abuse and the child, recent research suggests that a problematic, traumatic bond, may exist between the parent and the child. The concept of traumatic bonding holds promise in explaining some of the more confusing dynamics of incest. Traumatic bonding has been defined as strong emotional ties that develop between two persons where one person intermittently abuses the other. It involves cognitive distortions revolving around blame, power, and trust, and behavioral strategies of both the victim and perpetrator that reinforce the tie between them (Lowry, 2013). Traumatic bonding has previously been seen between individuals experiencing domestic violence, devotees of destructive cults and their leaders, and internees of concentration camps and the guards (Lowry, 2013).

Traumatic bonding typically develops as a cycle. It begins in the building up stage where the parent experiences pressure of increasing sexual arousal toward the child, which then moves towards rationalization of the sexual act with the child, and the act itself. After the sexual abuse, the parent experiences pleasant relief but shortly leads to the parent feeling guilt and shame. At this point, the parent will take on more appropriate parental role with the child, or withdraw from the child, which the child experiences as a positive aspect. However, the pressure of increasing sexual arousal begins again and as a result the cycle continues. The pattern of buildup, act of abuse, and relief can become habituated and the growing dependency on the child for both arousal and relief precludes the parent from seeking more appropriate sexual partners (Lowry, 2013).

The initial act of overt sexual abuse occurs without warning, and is experienced as disgusting, punitive, and even confusing to the child. While the child attempts to make sense of what has happened, the limited cognitive resources of the child limit their explanation of the abuse to an egocentric perspective. This may lead to the child holding herself responsible for the sexual abuse and may become hypervigilant to when it will occur again. To combat feelings of powerlessness and anxiety, the child may begin engaging in behaviors that increase the likelihood that the abuse will continue to occur, which leads the parent to believe that the child wants the behavior. This results in mutual emotional dependency, and the likelihood that the abuse will continue happening (Lowry, 2013).

Mother-Perpetrated Sexual Abuse. The literature regarding parental sexual abuse primarily focuses on father-daughter sexual abuse given that it is more prevalent within the community. A review of the literature suggests that up to 80% of incest cases

involved sexual relationships between fathers and daughters (Weinberg, 1963). However, recent research suggests that while both mother-son and mother-daughter sexual abuse is poorly recognized, they are both have significant implications for both the perpetrator and the victim (Lamy et al., 2016; Kendall-Tacket, 1987). Mother-child sexual abuse is frequently not reported given that children do not construe their mother's perpetrating actions as abuse given that some behaviors may be difficult to distinguish from normal caregiving. In addition, victims of parental sexual abuse may find it harder to disclose that the perpetrator was their own parents (Denov, 2003).

Mother-child sexual abuse is unique given that it involves a violation of trust and exploitation of the child's affection and dependency needs. When a mother abuses a child, the child experiences significant difficulty in forming a sense of self separate from the mother, an excessive need to return to the mother to validate the child's existence, and significant enmeshment (Gannon & Cortoni, 2010; Haliburn, 2017). Some victims experience dissociation, anxiety, phobias, sleep difficulties, and eating disorders as the result of mother-child sexual abuse. Research suggests that the younger the child, the more devastating the consequences (Cole & Putnam, 1992; Haliburn 2017). Research also suggests that victims of female perpetrated sexual abuse are usually younger compared to male counterparts. Specifically, the abuse often starts in infancy and continues for 6-11 years, with 92 percent of victims under the age of 9 (Courtois, 1988; Peters, 2009). Additionally, compared to male counterparts, female abusers tend to have significant complex personal trauma histories (Haliburn, 2017).

There is a lack of sufficient research regarding mother-daughter sexual abuse. However, what is known is that victims often experience feelings of powerlessness,

vulnerability, and the need to be in control that sometimes leads to identification with the mother and the likelihood of exploitation by others (Haliburn, 2017). Daughters also often feel shame and guilt associated with the abuse. Women who have been sexually abused by their mothers often experience significant ambivalence about having their own children, may struggle with the transition into motherhood, and often seek significant support and guidance in parenting (Haliburn, 2017; Reckling, 2004).

In contrast to mother-daughter sexual abuse, sons who have been sexually abused by their mothers often experience a feeling of being, "king of the world." This may explain why mother-son sexual abuse is underreported in the literature (Haliburn, 2017). While they may feel more positively towards the experience initially, sons often develop problematic substance abuse, sexual problems, and exhibit self-harming behavior. Males may exhibit a dissociative style, have poor social skills, and be mistrustful, insecure, isolated, and uncomfortable around women (Brodie, 1992). Sons may also experience poor social adjustment, inappropriate attempts to reassert their masculinity, and confusion regarding sexual identity (Gekoski et al., 2016).

Important Studies on Intrafamilial Sexual Abuse. In a study by McCabe, Lansing, Garland & Hough (2002), researchers utilized self-report and parent-report measures to look at risk factors for delinquency in a sample of 625 youth who were adjudicated between 1997 and 2000. This sample was a large, stratified, randomly selected and ethnically diverse sample of 16 to 17-year-olds In California. The study found that female delinquents scored higher on reported measures of abuse and family mental health problems than males. This study also found that females were more likely to have psychiatric symptoms and to have a history of parental sexual abuse. The study

did not allow for the control by type of crime committed by the sample, so it is possible that the females in this study were more severely disturbed than the males. Results indicated that females were more likely than males to have experienced almost all types of abuse and neglect, and that girls appear to experience greater abuse and trauma than their male counterparts.

In a study by Tseng and Schwarzin (1990) researchers looked at gender and race differences in seven types of characteristics for 15,758 households in Indiana that were investigated for child sexual abuse. The study found that significant correlations exist between gender and sexual abuse. Specifically, female children were more susceptible to incest than were male children (20.8% vs 12%). Female children were also found to be 2.1 times more vulnerable to abuse by immediate caregivers than their male counterparts.

In a study by Harter, Alexander, and Neimeyer (1988), researchers looked at 85 college women, including 29 with a history of sexual abuse by a family member and 56 control subjects to study the possible mediators of social adjustment. Of the 29 abused females, 12 had been abused by a paternal figure, including fathers and step-fathers. Results confirmed differences between incestuously abused and non-abused subjects in perceived social isolation, social adjustment, and structure of the family of origin. Abuse subjects received lower ratings for social adjustment, perceived themselves as more different than significant others, and reported less cohesion and adaptability in their families of origin. Further analyses indicated that sexual abuse by a paternal figure and sexual abuse that included intercourse significantly contributed to social maladjustment and to perceived social isolation respectively, even after significant effects of family structure were controlled. It is important to note that the study did not look at parental

sexual abuse specifically, and only looked at college students reporting historical incidents of abuse.

In a study by Alexander (1985) researchers looked at 93 sexually abused children in comparison to 65 non-abused children from a psychiatric clinic and 78 non-abused children from a well child clinic. Researchers found that the incestuous family isolates itself from the environment and inhibits growth and change that is inherent in children establishing outside contacts and leaving home. Sexually abused children in the study displayed significantly more behavior problems than controls. However, it is important to note that the perpetrator of the sexual abuse was not disclosed aside from being considered incestuous.

Theories of Juvenile Delinquency

Throughout the literature, there are a significant number of theories focusing on biological, sociological, and psychological traits that exist with the aim of explaining the development, maintenance, and desistance of delinquent behavior. The existence of multiple theories is due, in part, to the changes in the nature of juvenile offending as well as the understanding of risk and protective factors associated with delinquency. Despite the fact that risk factors are relatively well known, there is a lack of theoretical convergence on the etiology of delinquency. The central challenge, when attempting to explain delinquency, is upholding its etiological complexity while maintaining some degree of conceptual and analytic parsimony (Blumstein, 2005). The challenge for theory is to specify clearly the mechanisms by which identified risk and protective factors for crime interact in the etiology of these behaviors, and to explain both the development of antisocial behavior and the desistance from such behavior. It is important to note that no

single theory of deviant behavior has survived an empirical test without disconfirmation of some hypothesized relationships between concepts.

Merton (1938) developed the strain theory, which argues that delinquency results from an anomic imbalance between culture and social structure, when juveniles are unable to achieve their goals through legitimate means. Agnew (1992) further explained the strain theory by arguing that delinquency also results in illegal attempts to escape aversive and painful environments. Shaw and McKay (1969) developed the social disorganization theory, which argued that residential location is a significant risk factor for delinquency. Specifically, juveniles who live in high crime areas have a greater chance at being exposed to pro-criminal attitudes, and that their families, being impoverished, were less effective agents of socialization and control, which led to criminality and delinquency. Sutherland and Cressey (1978) developed the theory of differential association, which has been the dominant criminological theory. It suggests that criminal behavior is learned through the association with other antisocial peers. The differential association theory, along with social learning theory and social control theory will be further discussed later. Moffit (1993) went on to develop a theory of delinquency that categorizes individuals as either life-course persistent or adolescent-limited offenders. The theory posits that there are marked individual differences in the stability of antisocial behavior. While many behave antisocially, this behavior is temporary and limited for most, but stable in persistent in a small number of individuals. The theory suggests that individuals on a life-course persistent path experience neuropsychological issues (poor prenatal nutrition, brain injury) and adverse homes and neighborhoods. They also lack a behavioral repertoire of prosocial alternatives. Specifically, antisocial

behavior begins with a trait, like difficult temperament, and then moves into environments that exacerbate the behavior. This suggests that there is a constant process of reciprocal interaction between personal traits and environmental reactions to them. In contrast, adolescent-limited offenders show little continuity in their antisocial behavior and are able to abandon antisocial behavior when prosocial styles are more rewarding (Moffit, 1993).

While there is substantial research that provides support for each of these theories in some respect, the vast majority of studies of aggression and juvenile delinquency have focused on males. As a result, the current models for the development of juvenile delinquency are based on male data and do not adequately explain juvenile delinquency in females. In addition, most models do not focus on a developmental perspective, which considers both stability and transformations in behavior in their developmental context.

Tittle (1995) stresses the importance of both synthesizing and integrating components of existing theories into more comprehensive models of delinquency. He cites two examples, specifically strain theory and self-control theory, as good advances in understanding causes of deviant behavior but noted that they were limited by their exclusion of variables. The Social Development Model includes most the causal constructs and multiple domains described by many of the recent theories and attempts to integrate them into a broader, dynamic causal context. The Social Development Model integrates empirically supported components of Social Learning Theory, Social Control Theory, and Differential Association in an attempt to resolve differences in key assumptions of these models (Tittle, 1995; Huang, Kosterman, Catalano, Hawkins, & Abbot, 2001).

The Social Development Model

The Social Development Model (SDM) uses a holistic, multi-domain approach to explain the onset, escalation, persistence, and desistence of antisocial and prosocial behaviors (Brown et al., 2005; Catalano et al, 2005). The SDM assumes that delinquency initiates at early adolescence, peaks at 15-17, and then declines (Jacob, 2007). SDM synthesizes existing theories of deviance with the strongest empirical support into a coherent model (Catalano & Hawkins, 1996). Specifically, it is a synthesis of Social Control Theory, Social Learning Theory, and Differential Association Theory (Catalano and Hawkins, 1996).

In 1969, Hirschi developed the Social Control theory of behavior, which identifies causal elements in the etiology of both delinquency and conforming behavior (Simourd & Andrews, 1994). The Social Control Theory assumes that delinquency is the result of a lack of involvement and weak bond formation with socializing agents who would otherwise deter such behavior (Hoyt & Scherer, 1998). In contrast, the theory posits that establishment of strong prosocial bonds inhibit antisocial behavior through conformity to prevailing norms and values (Simourd & Andrews, 1994). The theory is comprised of 4 elements: attachment, commitment, involvement, and beliefs (Moore, 2011).

Attachment refers to the symbolic linkage between a person and society. Individuals with a strong and stable attachment to others within society are presumed to be less likely to go against societal norms because of their need maintain attachment. (Moore, 2011). Parents play a central role in helping individuals develop control. Specifically, when parents have a strong emotional bond and attachment to their children, establish clear rules for behavior, closely monitor their children, and consistently sanction

children for rule violation, individuals are more likely to develop high control (Agnew & Brezina, 2001). Commitment refers to the investment an individual has in social activities and institution, based on the premise that there is an association between level of commitment and propensity for deviance. Specifically, an individual who has invested energy and time into conforming to social norms is less likely to deviate than someone who has not made an investment (Moore, 2011). Involvement refers to the time spent in socially approved activities. The theory assumes that large amounts of structured time spent in socially approved activities reduces the propensity for deviance given that there is less unstructured time available for deviance. The theory also posits that individuals who hold strong beliefs in favor of societal norms are less likely to deviate.

The SDM expands on the social control theory, but defines social bonds differently, considering attachment and commitment to be the focal point. Specifically, the model conceptualizes involvement as a mechanism for establishing social bonds and beliefs as a consequence of bonding. In addition, the model conceptualizes beliefs as internalized standards for the behaviors of individuals and for the institution in which the adolescent is bonded. The SDM also hypothesizes that bonding to antisocial others promotes observance to the beliefs and behaviors held by those others increasing likelihood of engaging in behavior consistent with those beliefs and norms (Catalano & Hawkins, 1996).

In regard to the Social Learning Theory, Bandura developed the theory in 1977, which posits that children learn patterns of behavior from socializing agents of family, school, community, and peers (Bandura & Walters, 1977; Jacob, 2007). Children learn these behaviors through processes of observation, imitation, and modeling by observing

other's behavior, attitudes, and outcomes of the behaviors themselves. Children learn by observing the consequences of behavior, in the form of reinforcement or punishment. They are more likely to repeat a behavior if someone is rewarded for that same behavior. Through these interactions, rewarded behaviors are maintained, and punished behaviors are extinguished (Simourd & Andrews, 1994).

Bandura suggested that the act of learning is mediated by 4 processes: attention, retention, reproduction, and motivation. Attention refers to the extent to which one is exposed to and notices the behavior. For a behavior to be imitated and expressed, it has to grab the attention of the individual learning the behavior. Retention refers to how well the behavior is remembered while reproduction refers to one's ability to perform the behavior that the model demonstrated. Motivation refers to the will to perform the behavior. Specifically, individuals must consider the rewards and punishment that follow the behavior.

Regarding Differential Association, Matsueda developed the theory in 1988, which posits that behavior is learned through interactions with others and the values of the predominant group with whom they associate (Simourd & Andrews, 1994). Interactions present individuals with both prosocial and antisocial pathways of behavior. The pathway an individual chooses relies on whether they possess the skills necessary for committing to the behavior, and whether they have been exposed to an excess of reinforcement favorable to that path. Concerning delinquency, an adolescent must have skills necessary to commit the antisocial behavior and exposed to an excess of reinforcement favorable to the violation of the law (Moore, 2011). In addition, adolescents are more likely to engage in delinquency when others have reinforced the

delinquency in the past and they anticipate that they will continue to reinforce the delinquency.

Taken these three theories together, the SDM suggests that engagement in both prosocial and antisocial activities operates through perceived opportunities for involvement with others, attachment and bonding with others, socioemotional and cognitive skills used in interacting with others, perceived rewards, reinforcement, and punishment received through these interactions, and moral beliefs and values (Brown et al., 2005; Catalano & Hawkins, 1996; Simourd & Andrews, 1994).

A social bond is defined as "attachment to others in the social unity, commitment to lines of action consistent with the socializing unit, and belief in the values of the unit" (Catalano & Hawkins, 1996). It suggests that antisocial and prosocial influences steer youth along a deviant or conventional developmental pathway, and that behavior will be prosocial or antisocial depending on the predominant behaviors, norms, and values held by those to whom the individual is bonded (Brown et al., 2005). The social bond inhibits behaviors inconsistent with the beliefs held and behaviors practiced by the socializing unit through establishment of an individual's stake in conforming to the norms, values, and behaviors of the socializing unit to which she is bonded (Laundra et al., 2002; Catalano & Hawkins, 1996).

The SDM also posits that people engage in activities and interactions with others because of the behavior's long-term and short-term payoffs. For example, participating in an extracurricular activity in school may produce the short-term payoff of being bonded to prosocial peers, while a long-term payoff may be fewer opportunities for involvement in antisocial activities (Catalano & Hawkins, 1996).

In regard to explaining both prosocial and antisocial behavior, it is important to note that the two paths operate with similar social processes that produce bonding. As a result, it is necessary to make a careful distinction between the two paths. Even individuals who are bonded to prosocial norms are exposed to situations where antisocial and delinquent behavior may be useful (Matza, 1964). As a result, it is necessary to explain how some individuals diverge on one path over the other, and how behavior is maintained.

According to the SDM, prosocial behavior is the result of perceived opportunities to participate in the prosocial order, and opportunities for prosocial interaction and involvement. Perceived opportunities to participate in the prosocial order refer to individuals being aware that opportunities to participate in activities are available and that these activities satisfy the individual's personal interest. For example, an individual need first be aware that prosocial extracurricular activities are offered at school and second, be aware that these activities satisfy their personal interest. Prosocial interaction and involvement refers to a behavioral variable that predicts the development of the social bond of attachment and commitment. The development of these attachments depends on the extent to which the interactions and involvements are reinforced. Specifically, attachment only occurs if there is sufficient positive reinforcement (Conger, 1976; Catalano & Hawkins, 1996). This reinforcement differs from person to person, based on what an individual may find rewarding.

In addition, an individual's skills for prosocial interaction and involvement affect the level of reinforcement perceived as coming from the interaction, suggesting that this may moderate the relationship between involvement and rewards. As a result, if

attachment and commitment depend on level of perceived reinforcement for involvement, then factors that enhance reinforcement should indirectly affect the development of attachment and commitment (Catalano & Hawkins, 1996). Factors such as emotional skills, impulse control, coping skills, problem-solving skills, and an understanding of norms and social cues should increase the probability that an individual will experience rewards for these interactions (Catalano & Hawkins, 1996).

Concerning socioemotional and cognitive skills, it is important to consider that adolescent brains are not fully developed in regions related to higher-order executive functions needed for prosocial decision making, impulse control, and planning ahead (Graham v. Florida, 2010; Miller v. Alabama, 2012). Two United States Supreme Court Cases, Graham v. Florida (2010) and Miller v. Alabama (2012), rejected the imposition of the death penalty to individuals under the age of 18, and life imprisonment without the possibility of release, respectively, given this information. These cases supported their arguments with evidence that juveniles lack the capacity for mature judgment, are more vulnerable than adults to negative external influences, and have characters that are not fully formed.

Regarding impulse control, juveniles are also seen as less able to restrain their impulses and exercise self-control. Research suggests that the developing adolescent can only learn to develop control through experience (Graham v. Florida, 2010). Given that juveniles have less experience than adults to draw from, attachments influence beliefs about what is right and wrong. As a result, the juvenile internalizes these perceived standards of the institutions, groups, and persons to which the individual is attached. Strong prosocial attachments, with consistent rules and rewards for good behavior, strong

belief in the moral order, and consistent parenting increase the likelihood of prosocial behaviors (Drapela & Mosher, 2007). The opposite can be assumed for antisocial attachments.

Juveniles are also less capable than adults to consider alternative courses of action and maturely weighing risks and rewards. In this sense, they are less oriented to the future and less able to consider long-term consequences (Graham v Florida, 2010). Juveniles place more weight on risk than reward, and as a result are more likely to not only experiment with antisocial activity, but to be rewarded for this activity by delinquent peers and negative influences (Steinberg, 2009). Juveniles lack the freedom and autonomy that adults possess to escape these pressures, and as a result, their actions are shaped directly by family members and peers. The juvenile's sense of self is defined through attachment to parental figures and decision-making is guided primarily by the desire for not only parental approval but also peer approval as the juvenile develops (Graham v. Florida, 2010; Steinberg & Cauffman, 1996).

Decision-making with regards to antisocial and prosocial behavior improves throughout adolescence through changes in affective processing, specifically improving regulation of responses to emotional and social influences (Miller v. Alabama, 2012). Research on decision making under conditions of uncertainty indicates that neither adolescents nor adults perform at an optimal level under many circumstances involving complex decisions, (Shaklee, 1979; Kahneman & Tversky, 1982). However, in order to develop competence in decision-making, juveniles would benefit from practicing and being reinforced for prosocial decision making by parents and external influences (Drapela & Mosher, 2007).

Tying this into child abuse and neglect, recent neuroscience research suggests that child maltreatment has an effect on both the structure and the function of the brain. Teicher and colleagues (2004) published a review of the effects of abuse, neglect, and trauma on children's brain development and found that children with histories of abuse had significant reduction in their corpus callosum, while Chugani and colleagues (2001) found significantly decreased metabolism in the limbic areas (amygdala, hippocampus, and hypothalamus) which are utilized to regulate emotional responses and responses to stress. In addition, Cicchetti and Valentino (2006) found that disruptions in attachment with parents who abuse children may actually lead to disruptions in the endogenous opiate system, related to the ability to be comforted.

This recent research may raise issues concerning the Social Development Model, which requires socioemotional and cognitive skills in regard to social interactions. However, it is clear that inadequate skills lead the juvenile to look for guidance from the individuals and institutions that the juvenile is bonded with, which provides support for the SDM which puts emphasis on attachment, bonding, and reinforcement.

The attachments to prosocial activities and people are thought to directly affect the development of belief in the moral validity of society's laws. This is explained through the internalization of the standards of behavior of the people and institutions that the individual is bonded to. As a result, beliefs in these laws and values directly decrease the probability of antisocial behavior. Antisocial behavior is thought to occur when individuals are denied opportunities to participate in prosocial interactions, possess inadequate prosocial skills, or when the environment fails to consistently reinforce them for prosocial behaviors, thus breaking down prosocial socialization (Brown et al., 2005;

Catalano & Hawkins, 1996). When low bonding to prosocial others results in low perceived costs of antisocial behavior, personal calculation of reward is sufficient enough to produce antisocial bonding (Hirschi, 1969). As a result, delinquent peers and parents are thought to have the greatest effect on delinquency when youths are attached to these friends and parents. Antisocial behavior is encouraged through the internalization of a set of norms favorable to criminal involvement. In addition, antisocial behavior also results when individuals are bonded with socializing units who hold antisocial beliefs and values, and perceive rewards for problem behavior, such as parents who use drugs or delinquent peers. Once an individual is on an antisocial path, the perceived opportunity for prosocial behaviors decrease.

Concerning delinquency, the SDM examines delinquency the result of acquired antisocial behaviors brought on by risk factors from the social order (Brown et al., 2005). It attempts to predict delinquency based on knowledge of exposure to earlier risks in the development of the child (Jacob, 207) For example, the rewards for delinquency decrease for adolescents who are experimenting with drugs or antisocial behaviors if they have not been exposed to large numbers of risk factors in earlier stages (Jacob, 2007).

The SDM explains change in behavior as a series of causal linkages formed in the context of peers, family, school, and community, with the relative influence of these social domains shifting as children and adolescents pass through different developmental stages (Simourd & Andrews, 1994). The SDM consists of four periods of development to account for changing impacts of socializing agents across developmental periods. These periods incorporate age-specific prosocial and antisocial behavior (Catalano & Hawkins, 1996; Obeidallah & Earls, 1999). This allows not only for changing biological and social

factors, but also blends theoretical perspectives on peer pressure, social bonds, and imitation (Simourd & Andrews, 1994). As a result, the model identifies salient socialization units and etiological processes for preschool, elementary, middle school, and high school periods. These are separated by major transitions in environment in which children are socialized, rather than conceiving these stages as periods of cognitive or moral development.

During these four periods, three factors influence the impact of these transitions: The level of prosocial and antisocial bonding to social units established in previous periods, rewards for behaviors that the child perceives as a result of experiences in the prior period, and level of antisocial behavior manifested in prior period (Catalano & Hawkins, 1996). Viewing prior antisocial behavior as problem behavior in the model allows inclusion of behavioral continuity, while avoiding the claim that antisocial behavior predicts later involvement in the same antisocial behavior. Negative events of childhood during critical developmental periods have a stronger likelihood that exposure to risks will lead to lack of social bonds and no inhibition from antisocial or deviant behaviors (Catalano & Hawkins, 1996).

During the preschool stage, parents are the most significant socializing factors (Jacob, 2007). As children move into the elementary school period, children begin learning patterns of behavior primarily through socializing units of family and school (Laundra et al., 2004). Children become attached to parents and teachers, have a commitment to school, and form beliefs in the validity of the moral values and norms (Jacob, 2007). As children move into the middle school period, peers become important socializing units. Children are socialized through peer norms and behaviors, school

policies, and family management practices. Delinquency begins to emerge during this stage, and arrests encourage termination of this behavior as a way of reducing perceived rewards in delinquency (Catalano & Hawkins, 1996). In high school, peers continue to be an important socializing unit. Risk and protective factors have been established at this point, and this period is characterized by factors that maintain antisocial or prosocial behaviors (Catalano & Hawkins, 1996; Jacob, 2007). In addition, parents remain an important force concerning decisions such as sexual activity and substance use (Munsch & Blyth, 1993).

Thornberry (1996) stresses the important of utilizing a developmental perspective as well as reciprocal effects of risk factors. The SDM hypothesizes reciprocal effects primarily through effects of socialization experiences in prior developmental periods on perceive opportunities in the next period. As a result, reciprocal effects are modeled as transitions in socializing environments across developmental periods.

Risk Factors Incorporated in the Social Development Model. The SDM integrates individual, family, peer, school, and community risk factors in order to explain antisocial and prosocial behavior. These risk factors are thought to be multiplicative with possible moderation by protective factors (Catalano & Hawkins, 1996; Jacob, 2007). Along with these levels of risk factors, the SDM also includes position in social structure and acquired skills as extraneous variables (Obeidallah & Earls, 1999). In regard to position in social structure, the SDM theory proposes that there is no direct effect of position in the social structure on antisocial behavior. Rather, it has an indirect effect through its impact on perceived opportunity for prosocial and antisocial involvements and interactions (Catalano & Hawkins, 1996). For example, coming from low SES is

hypothesized to increase opportunities for antisocial involvement due to the higher prevalence of visible crime in low-income neighborhoods.

Protective factors are hypothesized to operate indirectly through interaction with risk factors, mediating or moderating the effects of risk exposure. Protective factors include positive social orientation, intelligence, family cohesion and warmth, and social supports (Jacob, 2007).

Studies Testing the Social Development Model. Multiple studies have been conducted to test the Social Development Model. The Seattle Social Development Project has confirmed the SDM's central premises at multiple developmental stages (Brown et al., 2005).

In a study by Hill and colleagues (1999), researchers utilized logistic regression to identify risk factors at ages 10 through 12 that were predictive of joining a gang between ages 13 and 18 using the Social Development Model. The study found that constructs found in the SDM in the domains of neighborhood, family, school, and peer significantly predicted joining a gang in adolescence. This study provides support for the social development model and the risk factors identified within the model.

A study by Fleming and colleagues (2008) looked at annual survey data from 776 students in grades 6th through 9th to examine the relationship among after school activities, misbehavior in school, and delinquency using the Social Development Model. The study found that antisocial behavior in one developmental time period leads to less involvement with prosocial activities and interactions in the next developmental time period, which supports the hypotheses of the SDM.

In a study by Herrenkohl and colleagues (2001), researchers utilized data from the Seattle Social Development Project to compare social developmental mechanisms predictive of violence at age 18 for youths who had initiated violence in childhood. Researchers used structural equation modeling to test relationships among SDM constructs and analyses revealed that during adolescence, socialization pathways leading to violence at age 18 were similar to those who initiated violence in childhood, suggesting that the SDM is generalizable to both children and adolescents, and that preventative interventions may be effective for individuals in both groups. It is important to note that this study utilized the same sample that was used in the creation of the SDM and may not be generalizable to the population.

In a study by Laundra and colleagues (2004), researchers examined the effects of social institutions as well as alienation and gender differences on delinquency by empirically testing the social control factors within the larger framework of the SDM. Researchers defined delinquency using 4 indicators: frequency of suspension, carrying a handgun, motor vehicle theft, and assault. Results found that delinquency was influenced by lack of attachment and commitment to parents, schools, and peers in both males and females. The study also found that a lack of belief in the moral order was a stronger predictor of delinquency for females than for males. This study added to the empirical literature on the SDM by measuring delinquency in a unique way. Up until this study, the SDM had primarily been tested using drug use as a measure of delinquency. As a result, this study helps the SDM become a stronger tool for understanding a broader category of delinquent youth. However, the study was conducted using a population from Utah, with

the vast majority of individuals identifying as Mormon, which may explain the relatively low levels of delinquency reported.

In a study by Choi and colleagues (2005), researchers examined the applicability of the SDM across racial and ethnic groups including African American, Asian Pacific Islander, American, multiracial, and European American youths. Researchers found that common risk factors within the SDM can be applied to adolescents regardless of race and ethnicity, strengthening the generalizability of the model itself.

To date, only two studies exists examining gender differences in predicting delinquency using the social development model. In a study by Fleming, Catalano, Oxford, and Harachi (2014), researchers looked at a subsection of the SDM representing prosocial influences in the etiology of problem behavior and compared girls and boys from low income with boys and girls from medium income families to assess differences across groups in the measurement and structural model of the SDM. The sample consisted of 851 elementary school students and results indicated overall similarity in the reliability of both the measurement and the structural model. This study demonstrates the usefulness of the SDM in its ability to explain variation in delinquency, violence, and substance use. The study found that loadings on problem behavior demonstrated lower measurement reliability for girls than boys, which researchers attributed to lower levels of problem behavior reported by girls. It is important to note that this study only utilized a Caucasian, suburban sample, and focused only on elementary school development.

In a study by Jacob (2007), researchers compared whether an SDM of delinquent peers, school problems, single parent household, and child abuse, is a stronger predictor of delinquency for males or females. Results of the study suggested that the SDM

adequately predicts female delinquency, however this study did not focus on criminal behavior specific to females and used a cross-sectional design on a population of incarcerated youth in 1995.

It is important to note that Alarid and colleagues (2000) found that the difference between male and female delinquency can be explained by differences in parental bonding and attachment when looking at Social Bond Theory and Differential Association Theory. Specifically, they found that attachment to parents was a significantly stronger predictor of female offending, whereas attachment to peers was positively related to male offending. Across crime types, social control measures were better at explaining female offending, whereas differential association measures were stronger predictors of males' participation in delinquency. While this study does not solely focus on the Social Development Model, it does look at relevant risk factors that the SDM incorporates as they relate to both males and females.

Replication studies provide an important opportunity to further theory development, which is an important step in validation. Specifically, it is difficult to argue for the utility of the model if it has not been replicated in conditions beyond those in which it was originally developed (Brown et al., 2005). Catalano & Kosterman (1996) and others have found support for the model's prediction of delinquency and substance use particularly among all male samples (Bond, Tomborou, Thomas, Catalano, & Patton, 2005). Lonczak (2001) demonstrated the model's ability to predict delinquency in late adolescence.

Past SDM research fails to adequately account for gender differences in delinquency and is assumed to work similarly for males and females. However, some

studies trying to replicate the findings of the social development model found evidence that some variables may be moderated by gender (Laundra et al., 2002).

The SDM is a stronger theory than multiple recent theories, specifically because of the implications it has for developmentally specific intervention designs. For example, each of the causal elements in the SDM is a potential focus for intervention. In addition, due to the influence of prior bonding and behavior on future behavior, there is a possibility to develop interventions focused on early stages of development.

The Current Study

This study will utilize a partial SDM model that specifies pathways from socioeconomic status (SES), external constraints, and the processes of social development in the family, to youth beliefs and delinquency, as seen in Appendix F. A study by Choi and colleagues (2005) validated a partial model of the SDM that focuses specifically on family socialization, which is described below. Low SES represents position in social structure, according to the SDM. Poor parental monitoring and peer antisocial beliefs are considered external constraints of the partial SDM. Poor parental monitoring is related to later delinquency, and cross-sectional and longitudinal studies show that poorly monitored adolescents tend to be antisocial or delinquent (Aseltine, 1994; Barber, 1996). While older definitions of parental monitoring relied solely on parental report, more recent research suggests a strong intercorrelation (.70) between child disclosure and parent report (Stattin & Kerr, 2000). As a result, both will be considered in the current study. Neighborhood safety is included as an external constraint given that the lack of safety indicates that rules and monitoring behaviors are ineffective

or absent. The partial SDM does not measure peer and neighborhood socialization processes, therefore paths are drawn directly to youth beliefs.

While the full SDM model defines family socialization in terms of opportunities, involvement, and rewards, Lonczack (2001) found substantial common variance in these socialization constructs, suggesting that socialization processes can be defined as a single construct. Poor attachment and poor parental bonding have been found to mediate the effects of child abuse on behavior (Finkelhor, 1993; Hoyt & Scherer, 1998). Weak bonds to the family are stronger predictors of female offending than males. Family socialization includes democratic parenting styles, level of communication, and positive reinforcement, while bonding refers to the psychological and affectionate aspect of family processes (Lonczak et al., 2001).

Children who experience parental child abuse experience traumatic bonding, a form of relatedness in which one person mistreats the other with abuse but also provides attention and some form of affection and connectedness (Finkelhor & Browne, 1985). Previous research suggests that the more severe the abuse, the less likely individuals will be liked by peers. This could indicate a pathway from abuse to negative or delinquent peers to later delinquency. Delinquent peers are thought to have the greatest effect on delinquency when youths are attached to these friends and parents.

The problem addressed by this study is the lack of research focused on female juvenile delinquency and how familial sexual abuse effects female juvenile delinquents in adolescence. This study will extend an existing model that shows promise in predicting problem behaviors—the Social Development Model. Specifically, this study will explore

the part of the SDM that specifies the processes of social development in the family (Figure 1).

Hypotheses. H_1 There will be a higher number of females who experience parental sexual abuse than males

H_2 Relationships between predictors will be different for females than males, suggesting that there are different risk factors for male and female delinquency

H_3 Sexual abuse will be a significant predictor of Parental Bonding in females due to the existence of traumatic bonding

H_4 Parental Bonding will predict antisocial beliefs in females, and this will be stronger for females

H_5 Sexual abuse will predict mild to moderate delinquency in females

CHAPTER III: METHODS

Overview of Project and Sample Selection

The Consortium of Longitudinal Studies in Child Abuse and Neglect (LONGSCAN) was formed in 1990, bringing together five long-term studies of the antecedents and consequences of child abuse and neglect with common measurement and data collection procedures (Runyan et al., 1998). The consortium has sought to identify or develop appropriate instrumentation for the measurement of etiologic and outcome variables related to child maltreatment with a combined sample of sufficient size and unprecedented statistical power and flexibility.

Longitudinal studies were initiated at five different sites. The three sites in the east (EW), Midwest (MW) and Northwest (NW) are primarily urban and the Southwest (SW) is primarily suburban. The one statewide site in the South (SO) includes urban, suburban, and rural communities. The study sites are linked through a governance agreement and a coordinating center at the University of North Carolina at Chapel Hill. All five studies share measures, definitions, training, data collection strategies, data entry, and data management.

Data were collected on the 1354 children and their families from July 1991 through January 2012. Each study's cohort of children was enrolled when the children were 4 years old or younger. Each child was followed through the age of 18. Data were collected from multiple informants to measure both outcomes and intervening factor that may influence the link between risk status and outcomes.

Comprehensive assessments of children were completed at ages 4, 5, 6, 12, 15, 16, and 18. At these points, face-to-face interviews with the primary caregiver and child

were conducted. Beginning at age 6, information about the child's academic performance and social adjustment was collected from the child's teacher. Every 2 years, Child Protective Services case narratives and Central Registry records were reviewed. Brief, yearly telephone contacts were initiated with the caregivers, to enhance subject retention and collect data about service utilization, life events, and child behavior problems. A participant was not considered permanently lost to follow-up unless the child died or the child's caregiver asked to permanently withdraw from the study. Although tracking and participant methods have been developed and implemented to assure the least possible attrition throughout the years, the attrition rate from baseline to age 18 is 31.3%.

Sample Description. Each cohort sample includes different selection criteria, representing varying levels of risk or exposure to maltreatment. The East, South, and Southwest sites recruited samples from pre-existing samples of high-risk children who had been followed since birth to 18 months of age. The Midwest sample consists of 3 groups of newly recruited 3-18-month-old infants meeting selection criteria. The Northwest sample consists of newly recruited children between 0 and 4 years of age. A description of the overall sample can be seen in Table 1. A description of selection criteria for each individual site can be found in Appendix E.

It is important to note that while the initial LONGSCAN study acts as a longitudinal database, not all information was collected at every time point (e.g. delinquency only collected at ages 16 and 18). As a result, the database acts as a cross-sectional database given that all variables are unable to be assessed at every time point. For this reason, temporal relationships between variables and causal relationships are unable to be assessed. While this may act as a limitation, it should be noted that the

database includes significant information about child abuse and neglect and its relationship to juvenile delinquency.

Measures

The constructs in the model were operationalized as latent variables, i.e., concepts that can be measured using multiple item scores or indicators. These items are listed in Appendix A.

Socioeconomic Status (SES). SES was measured using questions about educational attainment of caregiver, and whether the household receives food stamps, welfare, or public housing. SES has historically been difficult to measure throughout the literature. Some studies rely on single-item variables to measure SES (e.g. net income, Income divided by household size, education attainment of parents) while other studies rely on composite variables to measure SES with numerous indicators making up a scale. The items used in this study have been used in a number of studies measuring SES, and have demonstrated acceptable reliability and validity (Catalano, Hawkins, Krenz, Gillmore, Morrison, Wells et al., 1993; Gottfredson & Koper, 1996).

Parental Monitoring. Parental Monitoring was operationally defined as parents' knowledge of the child's whereabouts, activities, and associations. Cross-sectional and longitudinal studies show that poor parental monitoring is related to later delinquency. While some research suggests that the effect of parental monitoring is due to child disclosure, child disclosure and parental monitoring are highly correlated (.70). Sample items include, "Do you know where your child is at night?" "Do you know where your child is after school?" and "Do you know who your child's friends are?"

Family Socialization and Parental Bonding. Family Socialization and Parental Bonding were measured by a number of items that include involvement in family and rewards from parents. The SDM defines family socialization within three distinct constructs: opportunities, involvement, and rewards. Lonczak and colleagues (2001) found substantial common variance in these socialization constructs, suggesting that socialization can be a single construct. Bonding was measure by a number of items that include attachment to parents and how close children feel to their caregiver. Sample items include, "Do you have a helpful adult in your life?" "Does your parent spend time with you?" "Do you feel like you can talk about personal problems with your caregiver?" "Do you make decisions together?" "Do your parents praise you for doing good things?" "How close do you feel to your parent?" "In our home we feel loved."

Neighborhood Safety. Neighborhood Safety was measured by a number of items regarding perceived safety in the neighborhood. Sample items include, "It's dangerous in this neighborhood," "there is drug abuse in this neighborhood," "It's not safe to walk alone," and "I feel safe in my neighborhood."

Peer Antisocial Beliefs. Peer antisocial beliefs was measured by items regarding the youth's perceptions of peer's beliefs about a range of behavior. Sample items include, "Do your friends use drugs?" "Do your friends commit crimes?

Antisocial Beliefs. Antisocial Beliefs was measured by items regarding attitudes regarding behaviors such as using drugs, drinking, and carrying weapons. Sample items include "Have you driven a car when you have been drinking?" "Have you been in the car driven by someone who has been drinking?" "It's okay to fight and yell in our household," "I disobey my parents," and "I can easily get a hold of a weapon."

Delinquency. Delinquency was defined as actions that violate the law, committed by a person under the legal age of majority, including both violent and non-violent crimes, status offenses and substance use. Self-report measures were used to measure delinquent behaviors. The items were classified as mild delinquency (e.g. obscene calls); moderate delinquency (e.g., drunk in public) and serious delinquency (e.g., set fires, stole car, hurt someone, murder).

Sexual Abuse. Sexual Abuse, defined as fondling, oral-genital contact, or penetration, was measured by items regarding sexual abuse by parental figures (mother, father, step-mother, and step-father) during the lifetime of the child. Self-reported measures were used as well as official records from CPS collected every two years over the lifetime.

Analytic Strategy

PLS-SEM vs. CB-SEM. It is first necessary to consider which of two types of SEM should be chosen to build the proposed model: either the covariance-based approach (CB-SEM) or the variance based partial least squares approach (PLS-SEM). Many ambiguities, misconceptions and controversial opinions are associated with the use of SEM as a modeling tool (Bagozzi, 2010; Sarstedt, Hair, Thiele,, Gundergan & Ringle, 2016; Ong & Puteh, 2016; Rigdon, Sarstedt, & Ringle, 2010; Tarka, 2018). Therefore, the choice of using PLS-SEM or CB-SEM was considered with due skepticism and caution after reviewing the literature. PLS-SEM was chosen over CB-SEM for the reasons outlined below.

First, CB-SEM, using AMOS software, is reputed to be the most rigorous strategy, and is generally chosen by researchers whose aim is to confirm and/or explain

an existing theory by attempting to build a model that reproduces the empirical covariance matrix. In contrast, PLS-SEM, using SmartPLS software is generally used to develop a new theory, or extend an existing theory (Ong & Putch, 2017; Hair, Hult, Ringle, & Sarstedt, 2017). PLS-SEM does not use the covariance matrix but explores the empirical data iteratively to maximize the explained variance. PLS-SEM facilitates the building or extending of theory, the making of predictions, and the generation of unique insights into the behavior of people that cannot be obtained using CB-SEM (Rigdon et al., 2017). PLS-SEM was more appropriate for the current study because the goal was not to confirm the Social Development Model (SDM) but rather to use the SDM as a basis to incorporate the effects of gender and sexual abuse on social development and delinquency. The strength of PLS-SEM in the current study was not its utility to confirm a theory, but its facility to provide clues, and to generate hypotheses with practical applications, for example, by pointing researchers, decision makers, and policy makers toward new and profitable directions regarding the differences between male and female delinquents and the impact of sexual abuse, that could not be achieved using CB-SEM.

Second, PLS-SEM, unlike CB-SEM is a non-parametric method that is not so sensitive to the measurement levels and distributional characteristics of the empirical measurements. PLS-SEM operates using categorical variables measured at the ordinal or nominal levels (Trinchera, Russolillo, & Lauro, 2008; Hair et al., 2017; Ong & Putch, 2017). In contrast, CB-SEM was originally designed as a parametric method, assuming the use of normally distributed variables measured at the interval/ratio level (Janoo, Yap, Auchoybur, & Lazim, 2014). PLS-SEM was more appropriate than CB-SEM to achieve the objectives of the current study because the proposed model included categorical

variables that violated the parametric assumptions of CB-SEM. All the item scores (i.e., the indicators of the constructs) in the proposed model were measured at nominal or ordinal levels, as defined in Appendix A. For example, the measurements levels of the empirical data included 2-point nominal scales (e.g., “1 = Yes, 0 = No) and 5 -point ordinal scales (e.g., "1 = Very well, 2 = Well, 3 = Some. 4 = A little. and 5 = Not at all". The frequency distributions of all of the measurements deviated from normality. Deviation from normality was not, however, the main reason for choosing PLS-SEM over CB-SEM, because the statistical inferences of CB-SEM are reputed to be robust, even if the empirical data are not normally distributed (Janoo et al., 2014).

Third, some of the constructs in the proposed model were formative, whilst others were reflective. PLS-SEM operates with both formative and reflective constructs, whereas CB-SEM operates best with reflective constructs (Hair et al., 2017). If a construct is specified as reflective, when, in fact, it should be formative, then the model is at least compromised, and at worst, it could be meaningless (Cadogan, Lee, & Chamberlain, 2013; Diamantopoulos & Siguaw, 2006; Roy, Tarafdar, Ragu-Nathan, & Marsillac; 2012).

A reflective construct is assumed to be a causal factor, that can be identified by factor analysis. A reflective construct consists of multiple indicators (empirical measurements) that mirror the multifaceted effects of the construct. The indicators of a reflective construct must be inter-correlated and inter-changeable with each other. For example, in the current study, the effects of the reflective construct “Parental Bonding” are “Parents told you they loved you;” “How close do you feel to your parents?” “In our home we feel loved.” Parental Bonding is the causal factor and the indicators are its

multiple inter-related effects. In a reflective construct, the internal consistency reliability of the indicators must be high, because the indicators are the multiple inter-correlated effects of a unifying construct (Hair et al., 2017).

In contrast, a formative construct is usually assumed to be an overall effect, measured by one or more measured indicators, which are not necessarily related to, or inter-changeable with each other, but they may be the cause(s) of the construct. Some formative constructs may consist only of a convenient aggregation of indicators, or a single indicator, rather than being a conceptually meaningful entity that reflects causal relationships (Cadogan, Lee, & Chamberlain, 2013). For example, in the current study, the formative construct Socioeconomic Status consisted of an aggregation of the following indicators: "Employment status; Receive TANF; Receive child support; Receive food stamps; Receive WIC; Receive subsidized housing; Receive reduced or free lunch, and Late making rent payments" (See Appendix A). Delinquency was also a formative constructive, because it consisted of different types of delinquency, classified as "Mild", "Moderate" or "Serious" (see Appendix A). The internal consistency reliability of the indicators of a formative construct may be low, because the indicators do not necessarily measure a unifying construct. Formative constructs that exhibit low internal consistency reliability can be operationalized with PLS-SEM but not usually with CB-SEM (Hair et al., 2017).

Third, CB-SEM requires the use of goodness-of-fit statistics to determine if the proposed model reproduces the covariance matrix, whilst PLS-SEM does not. Consequently, critics of PLS-SEM argue that it cannot determine how well a given conceptual model represents the observed data using well-established statistical criteria.

(Rönkkö & Evermann, 2013; Rönkkö, McIntosh & Antonakis, 2016), PLS-SEM is unable to confirm an existing theory, or explain the causal relationships between constructs, or facilitate the estimation of the discrepancies in the goodness-of-fit between alternative models. The proposed model was found not to be a good fit to the covariance-matrix; however, this was not an important issue. Goodness-of-fit is not a guarantee of a model's usefulness or practical application. Bollen and Pearl (2013) argued that researchers using CB-SEM tend to focus too heavily on tests of model fit. Even though a model constructed using CB-SEM is a good fit to the covariance matrix, that model may have little predictive ability and/or practical application in the real world. Even if a theory is apparently confirmed using CB-SEM, the assumptions underlying the covariance-based model may still be questioned (Tarka, 2018). On the other hand, a structural equation model that does not fit the covariance matrix, may still yield useful predictions, and still have a theoretical and pragmatic value (Maydeu-Olivares & Garcia-Ferero, 2010).

Fourth, in the context of research in psychology, PLS-SEM has not been formally adopted or critically tested by many researchers (Rönkkö & Evermann, 2013; Rönkkö, McIntosh & Antonakis, 2016). These criticisms do not necessarily imply that PLS-SEM is not applicable as a tool in psychological research. Supporters of PLS-SEM argue that PLS-SEM is a useful alternative when the assumptions of CB-SEM do not hold (Henseler, Dijkstra, Sarstedt, Ringle, 2014; Hair et al, 2017). Furthermore, the utility of PLS-SEM in psychological research is generally considered to be exploratory rather than confirmatory and explanatory (Karima & Meyer, 2014; Lowry & Gaskin, 2014; Rigdon et al., 2017; Riou, Guyon, & Falissard, 2016; Willaby, Costa, Burns, MacCann &

Roberts, 2015). Exploratory and predictive models are generally more useful than confirmatory and explanatory models when the researcher has limited previous information about the possible strengths and directions of the model pathways. Hair et al. (2017) recommended that if the goal is theory confirmation, or comparison of alternative theories, then the researcher should choose CB-SEM. Alternatively, if the goal is exploratory, to create new theory, or extend existing theory, then the researcher should choose PLS-SEM.

Steps in PLS-SEM. The steps used to create the proposed model using SmartPLS software were as follows:

Step 1: The empirical data were downloaded from the online database. One SPSS data file contained the items to measure seven predictor variables (Socioeconomic status; Parental Monitoring, Neighborhood Safety; Antisocial Peers; Parental Bonding; Family Socialization; and Antisocial Beliefs) collected at three time points, labelled "VISIT" (12, 14, and 16) for $N = 1142$ cases. A second SPSS data file contained the items to measure Delinquency collected at two time points, labelled "VISIT" (16 and 18) for $N = 1041$ cases. A third SPSS data file contained the items defining the lifetime incidences of Sexual Abuse for $N = 809$ cases. Appendix A defines the numerical item scores (0, 1, 2, 3, 4, 5, or 6) used to measure the specified nominal or ordinal categories within each item. Data from ages 12-16 was utilized given that prior research suggests that risk factors incorporated in the SDM are most important between mid-childhood and mid-adolescence (Loeber et al.,2003). In addition, the onset of parental sexual abuse for both males and females is typically between ages 10 and 14.

Step 2*:* The scores for seven items were reversed, to ensure that their corresponding construct was measured in one logical direction, from low to high; or from high to low, as defined in Appendix A.

Step 3: The time-series of item scores for each case was eliminated given that not all variables were collected at every age. The item scores collected at different time points for each case were summated to generate a single lifetime score for each item.

Step 4: The file containing the lifetime item scores used to measure Delinquency was merged with the file containing the lifetime item scores used to measure Socio-economic status; Parental Monitoring, Neighborhood Safety; Antisocial Peers; Parental Bonding; Family Socialization; Antisocial Beliefs, and Sexual Abuse.

Step 5: Each case was identified by a unique code number, termed the "LONGSCAN SUBJECT ID". Based on their unique ID codes, the lifetime item scores computed to measure Delinquency for $N = 762$ cases were aligned with the lifetime item scores used to measure Socio-economic status; Parental Monitoring, Neighborhood Safety; Antisocial Peers; Parental Bonding; Family Socialization; and Antisocial Beliefs, and Sexual Abuse for $N = 762$ cases.

Step 6: The cases that could not be aligned across all of the items listed in Appendix A, (due to missing values) had to be excluded. This cleaning meant that the proportion of cases used to construct the model was 762/1143, 66.7% of the total number of cases in the database.

Step 7: The file containing $N = 762$ cases was split into two files. One file contained the data for $N = 424$ females. The second file containing the data for $N = 338$ males. A descriptive analysis was conducted using SPSS to summarize the constructs for

males and females. Both files were then imported into SmartPLS software using the CSV (comma-delimited) format. Prior to the analysis, all of the item scores were transformed into Z- scores so that they were standardized into a common measurement scale, with a mean of 0.0 and a variance of 1.0.

Step 8: The path diagram in Figure 1 was drawn using the graphic user interface of SmartPLS to explore the relationships between the constructs. The circular symbols in the path diagram represented the constructs. The rectangular symbols represented the indicators, labelled using the item codes listed in Appendix A. The formative constructs had arrows pointing inwards from the indicators. The reflective constructs had arrows pointing outwards into the indicators. The arrows joining the indicators and the constructs represented the factor loading coefficients in the measurement model. The unidirectional arrows between the constructs represented the structural model, measured in terms of the relative strengths and directions of the partial regression coefficients (path coefficients or β weights) between the constructs. PLS-SEM did not permit the inclusion of bi-directional arrows in the path diagram. Therefore, feedback loops could not be analyzed (e.g., it was not possible to determine if antisocial beliefs became stronger and/or if parental bonding became weaker when an individual was more delinquent).

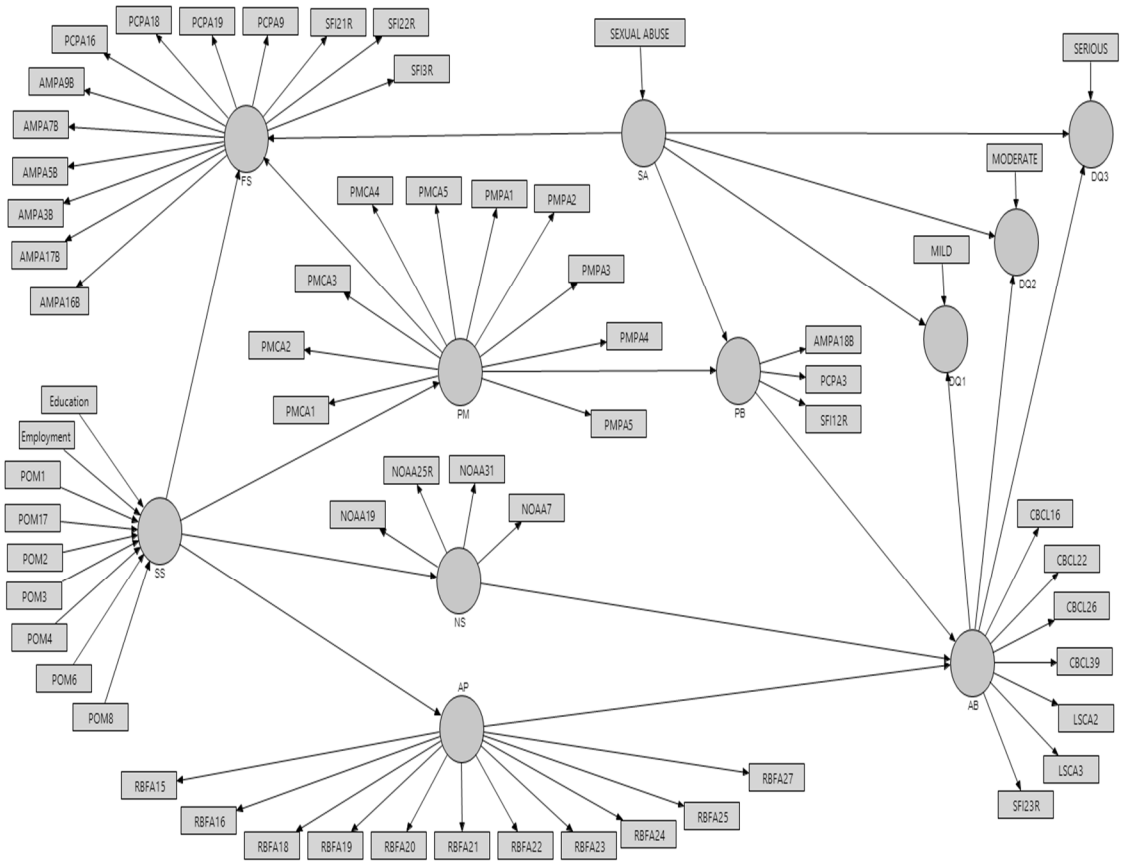

Figure 1. Path diagram constructed using the graphic user interface of SmartPLS.
Note: SS = Socio-economic Status; FS = Family Socialization; PM = Parental Monitoring; NS = Neighborhood Safety; AP = Antisocial Peers; PB = Parental Bonding; AB = Antisocial Beliefs; SA = Sexual Abuse; DQ1 = Mild Delinquency; DQ2 = Moderate Delinquency; DQ3 = Serious Delinquency.

Step 9: The measurement model to define the relationships between the constructs and the indicators was built by composite factor analysis, whereby each construct was operationalized as an exact linear combination of its indicators. (Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016). Each construct was a latent variable created by linearly transforming the original data in such a way as to explain as much of the variance as possible. Composite factor analysis is not conceptually or mathematically equivalent to alternative methods of factor analysis (e.g., principal components) supported by SPSS and AMOS, which identify factors by separating out the error variance (i.e., the variance

that does not explain the construct being measured) from the explained variance (Afthanhoran, 2013; Ong & Putch, 2017).

Step 10: The reflective constructs in the measurement model were validated by testing for discriminant validity, convergent validity and internal consistency reliability (Hair et al., 2017). The factor loading coefficients (i.e., the correlations between the item scores and each reflective construct) were examined. Good discriminant validity was indicated if the factor loading coefficients for the indicators of each reflective construct exceeded the factor loadings on alternative constructs. The factor loadings for the indicators of each reflective construct should ideally be at least .5, but lower loadings (down to .25) were tolerated, so long as the item was conceptually relevant to measure the construct, and the construct had good convergent validity and internal consistency reliability. Good convergent validity was indicated if the average variance extracted (AVE) by the indicators of each construct was 50% or larger (meaning that the variance explained by the indicators was greater than the unexplained variance caused by random error).

Cronbach's alpha was not applicable to estimate the internal consistency reliability of the constructs in the measurement models because its fundamental theoretical assumption (Tau equivalence) was violated by PLS-SEM. Cronbach's alpha assumes that the proportions of the variance that each indicator contributes toward its corresponding construct are exactly equal, and that the factor loadings of each indicator on its corresponding construct are exactly equal. Violating the assumption of Tau equivalence yields estimates of internal consistency reliability that are too small, making constructs appear to be less reliable than they actually are (McNeish, 2018; Sijitsma,

2009). Composite Reliability was estimated an alternative to Cronbach's alpha, because Composite Reliability does not assume Tau equivalence (Trizano-Hermosill & Alvarado, 2016). Good internal consistency reliability was indicated if the Composite Reliability coefficient was at least .7 (Hair et al., 2017).

Step 11: The structural models (one model for the males, and one model for the females) were evaluated by interpreting the standardized path coefficients, which could potentially range from −1 to +1. The relative magnitudes of the path coefficients, represented by the unidirectional arrows in Figure 1, estimated the strengths of the partial correlations between pairs of constructs, and were conceptually equivalent to the partial regression coefficients or β weights in a multiple regression equation. The mean (*M),* standard deviation (*SD*) standard error (*SE*) and 95% *CI* (*M* ± 1.96 * *SE*) of each path coefficient were estimated by bootstrapping, whereby 5000 random sub-samples were drawn with replacement from the item scores. The bootstrap applied the Monte-Carlo algorithm, which shuffled the data like a pack of cards at a casino between each sub-sample (Davidson & Hinkley, 2006).

Step 12*:* The primary criteria for the evaluation of a model constructed using PLS-SEM are the coefficients of determination (R^2), representing the proportions of the variance explained for each construct, on a scale from 0 to 1. (Hair et al., 2017). In the context of research in psychology and social science, the R^2 values were interpreted as effect sizes or indices of practical significance, to determine if the relationships between the constructs were strong enough to have real world applications (Kirk, 1998). $R^2 \leq .04$ reflected an effect size with negligible practical significance in the context of psychology and social science, whilst $R^2 = .25$ reflected an effect size with moderate practical

significance, and R^2 = .64 reflected an effect size with strong practical significance (Ferguson, 2009). Hephill (2003) made a significant point, stating that empirical guidelines for interpreting the magnitude of correlation coefficients typically among psychological studies are not widely available. This becomes problematic when attempting to determine cut-offs for interpreting effect sizes. Hephill (2003) concluded, after conducting a meta-analysis that correlation coefficients can be separated into weak (.02-.21), moderate (.21-.33) and strong (.35-.78). However, it is important to note that research involving the use of PLS-SEM frequently, and almost exclusively, utilizes the cut-off criteria set forth by Ferguson (2009) as stated previously. Given that some R^2 values were above .8, the issue of multicollinearity was addressed. Multicollinearity (i.e., strong correlations between variables) artificially inflates the standard errors (*SE)* of the path coefficients (β). If the *SE* of a path coefficient is highly inflated, then the *t-test* statistic and the *p-value* computed to indicate the statistical significance of the path coefficient is compromised (because $t = \beta/SE$). Also, the 95% *CI* are incorrect (because they are computed using *SE)*. Tolerance and *VIF* statistics are used to determine if multicollinearity is a problem. Multicollinearity can be detected with the help of tolerance and its reciprocal, called variance inflation factor (*VIF*). If the value of tolerance is less than 0.2 or 0.1 and, the value of *VIF* is 10 and above, then the multicollinearity is problematic. Given that the tolerance statistics for the variables in the model were not less than .1 and the *VIF* statistics were not above 10, it was concluded that the statistical inferences were not compromised by multicollinearity (See Appendix D)

Step 13: The path coefficients in the model for the females were compared with the path coefficients in the models for the males using independent samples t-tests. The path coefficients for the males and females were assumed to be significantly different if $p < .05$. However, it was not assumed that the *p-value* reflected the importance of this difference. Rather, in accordance with the official statements issued by the American Statistical Association, it was assumed that the conventional $p < .05$ criterion does not reflect the importance of the results of a statistical test, and that *p*-values alone should not be interpreted alone to draw scientific conclusions or to make policy decisions (McShane & Gal, 2017; Wasserstein & Lazar, 2016; Wasserstein, Schirm, & Lazar, 2019).

Step 14: The values of *Cohen's d* were computed to indicate the effects of gender on the path-coefficients. The interpretation was that $d \leq .41$ reflected an effect size with negligible practical significance in the context of psychology and social science, whilst $d = 1.15$ reflected an effect size with moderate practical significance, and $d = 2.70$ reflected an effect size with strong practical significance (Ferguson, 2009).

CHAPTER IV: RESULTS

The results are presented in three sections. First, the demographic characteristics of the participants are summarized. Second a descriptive analysis of the data is presented. Third, the structural equation models are validated and compared for the female and male participants.

Demographic and Contextual Characteristics of Participants

After the process of merging three files into one file, and screening and cleaning the data, the sample consisted of $N = 762$ participants with no missing values. Table 1 summarizes the frequency distributions of gender, race, education, employment, and sexual abuse in this sample.

Table 1
Demographic and Contextual Characteristics of the Sample (N = 762)

Characteristic	Categories	*n*	%
Gender	Female	424	55.6
	Male	338	44.4
Race	Black	441	57.9
	White	197	25.9
	Mixed	75	9.8
	Hispanic	44	5.8
	Other	3	0.4
	Native American	2	0.3
Education	Diploma/GED	626	82.2
	No Diploma/GED	136	17.8
Employment status	No employment	534	70.1
	Full, part-time, or available employment	228	29.9
Sexual abuse	No	737	96.7
	Yes	25	3.3

The majority of the sample (55.6%) were female. The most frequent races were Black (57.9%) and White (25.9%). Most (82.2%) had received education to Diploma/GED

level, but the majority (70.1%) did not have any type of employment. Only 25, 3.3% of the participants had experienced familial sexual abuse, of which 5 were male, and 20 were female.

Descriptive Analysis of Constructs

Table 2 summarizes the descriptive statistics for the total scores of the items used to measure each variable, classified by gender.

Table 2
Descriptive Statistics for the Constructs by Gender

Constructs	Male (n = 338)				Female (n = 424)			
	Mdn	*M*	*SD*	*Skewness*	*Mdn*	*M*	*SD*	*Skewness*
Mild Delinquency	0.00	0.05	0.50	10.80	0.00	0.11	0.50	4.99
Moderate Delinquency	1.00	2.67	3.88	2.07	0.00	1.58	2.85	3.33
Serious Delinquency	0.00	0.74	1.76	3.44	0.00	0.34	1.01	4.89
Sexual Abuse	0.00	0.04	0.47	12.25	0.00	0.10	0.49	5.01
Socio-economic Status	4.00	4.61	3.39	0.86	4.00	4.42	3.28	0.79
Parental Monitoring	48.00	44.59	11.73	-0.81	48.00	44.15	13.09	-0.73
Parental Bonding	49.00	46.87	7.40	-0.66	48.00	46.18	7.80	-0.63
Neighborhood Safety	30.00	28.68	7.90	-0.39	30.00	27.87	8.60	-0.41
Antisocial Peers	3.00	4.20	5.16	1.82	2.00	3.48	4.13	1.90
Antisocial Beliefs	19.50	19.77	6.35	0.11	19.00	18.85	6.42	-0.04
Family Socialization	94.00	86.84	21.30	-0.96	94.00	85.54	23.96	-0.85

All of the frequency distributions tended to deviate from normality, indicated by the differences in the locations of the mean (*M*) and median (*Mdn*) scores, as well as Skewness statistics > 1.0 (reflecting a positive skew) and Skewness statistics < 1.0 (reflecting a negative skew). Figures 3 and 4 visualize the skewed frequency distributions of the constructs for the female and male participants using histograms. The

deviations from normal bell-shaped curves violated the assumption of parametric statistics and justified the use of a non-parametric methods to analyze the data.

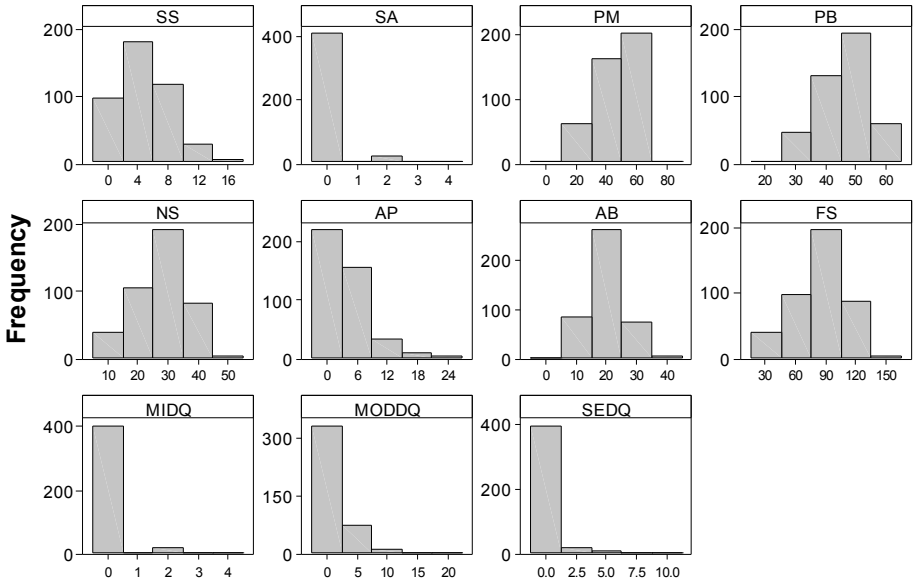

Figure 2. Frequency distribution histograms of the constructs (N = 424 female participants)

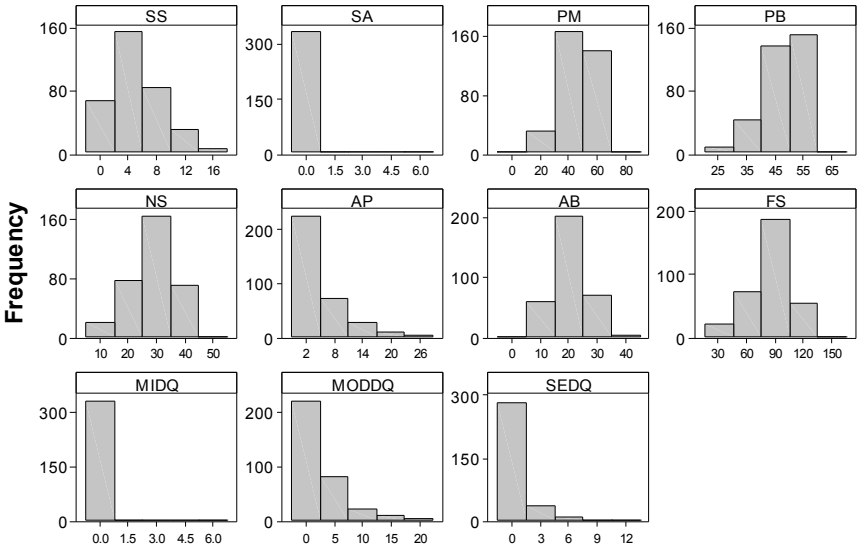

Figure 3. Frequency distribution histograms of the constructs (N = 338 male participants)

Note: SS = Socio-economic Status; SA = Sexual Abuse; PM = Parental Monitoring; PB = Parental Bonding; NS = Neighborhood Safety; AP = Antisocial Peers; AB = Antisocial Beliefs; FS = Family Socialization; MIDQ = Mild Delinquency; MODQ = Moderate Delinquency; SEDQ = Serious Delinquency.

Structural Equation Modeling

The results of PLS-SEM are presented separately for the female and male participants as follows:

Model for the Female Participants. Appendix B provides a copy of the output from SmartPLS using the empirical data for the female participants ($N = 424$). Figure 4 presents the path diagram with the results of PLS-SEM displaying the statistics (factor loading coefficients; path coefficients and *R2* values).

Table 3 presents the quality criteria to validate the reflective constructs in the measurement model for the female participants. Convergent validity was adequate because the average variance extracted by the indicators in each construct ($AVE = 46.3\%$ to 86.8%) was close to or greater than 50%. Good internal consistency reliability was indicated because the Composite Reliability coefficients (.782 to .956) were all greater than .7.

Table 3
Quality Criteria for the Reflective Constructs in the Model for the Female Participants

Construct	AVE	Composite Reliability
Family Socialization	59.6%	.947
Parental Monitoring	68.2%	.955
Antisocial Beliefs	45.6%	.782
Antisocial Peers	46.3%	.900
Neighborhood Safety	64.7%	.876
Parental Bonding	87.8%	.956

Because Socio-economic Status, Delinquency, and Sexual Abuse were formative constructs, their convergent validity and internal consistency reliability was not measured.

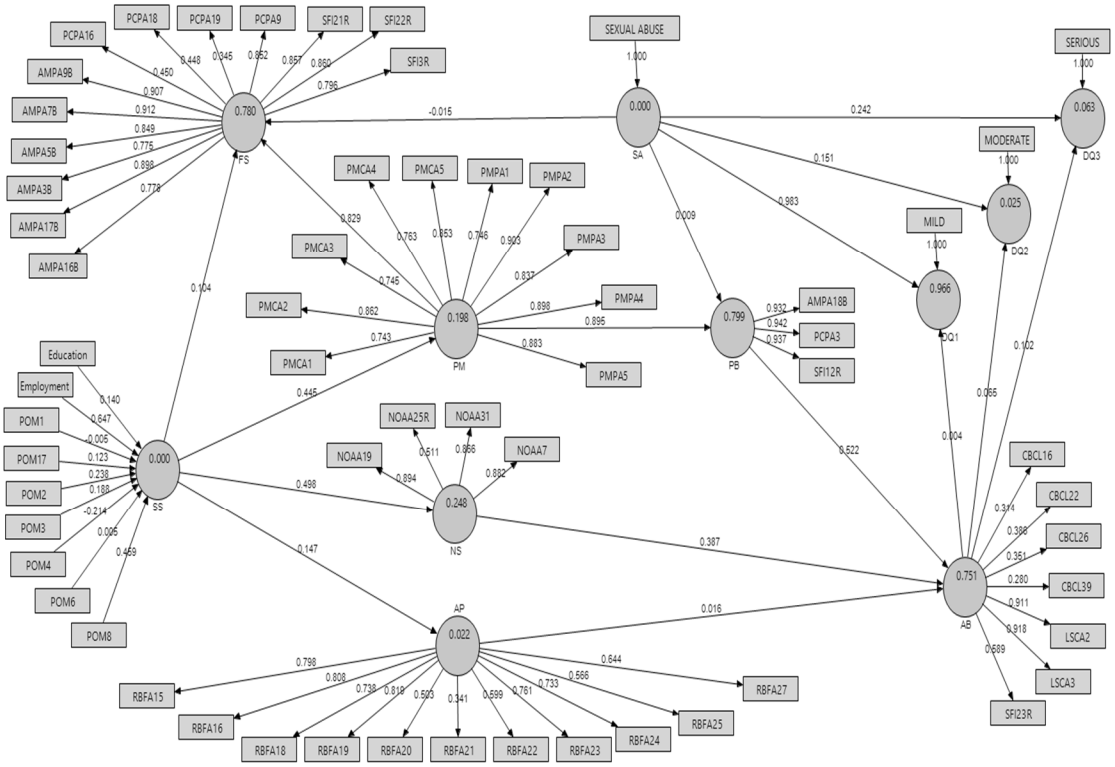

Figure 4. Results of PLS-SEM for the female participants (N = 424).

Note: SS = Socio-economic Status; FS = Family Socialization; PM = Parental Monitoring; NS = Neighborhood Safety; AP = Antisocial Peers; PB = Parental Bonding; AB = Antisocial Beliefs; SA = Sexual Abuse; DQ1 = Mild Delinquency; DQ2 = Moderate Delinquency; DQ3 = Serious Delinquency. Factor loading coefficients are displayed between the constructs and the indicators; path coefficients are displayed between pairs of constructs; and R^2 values are displayed within the constructs.

The factorial validity of the reflective constructs was indicated because all but four of the loading coefficients were greater than .5. Four lower factor loadings (CBCL16 = .314; CBCL22 = .388; CBCL26 = .351; and CBCL39 = .280) were tolerated in one construct (Antisocial Beliefs) because these items (Bullies or is mean to others; Disobedient at home; Not guilty after misbehaving; Hangs out with troublemakers) were conceptually relevant to measure Antisocial Beliefs. Eight of the nine factor loadings for the items used to measure socio-economic status were less than .3, justifying the identification of Socioeconomic status as a formative construct, consisting only of an

aggregation of unrelated items, rather than a linear combination of inter-correlated items, as evidenced by a clinical cut-off of .25.

Appendix B presents the factor loading coefficients of all the items used to measure each construct as well as the cross-loadings of these items on alternative constructs. Good discriminant validity was indicated because the loadings for all of the indicators used to measure each construct exceeded their loadings on alternative constructs.

Table 4 presents the path coefficients (β) estimated from the sample data (N = 424) corresponding to the values in Figure 4. Also presented in Table 4 are the mean (M) standard error (SE) and 95% confidence intervals (CI) of the path coefficients computed after bootstrapping the data with 5000 sub-samples. If the 95% CI did not capture zero, then it was assumed that the mean values of the path coefficients were significantly different from zero. If the 95% CI captured zero, then it was assumed that the mean values of the path coefficients were not significantly different from zero. The path coefficients were interpreted assuming that 0.2 = weak; .5 = moderate, and .8 = strong.

Table 4
Evaluation of the Path Coefficients in the Model for the Female Participants

Path	β	After Bootstrapping with 5000 sub-samples			
		M	*SE*	*95% CI*	
Socio-economic Status → Family Socialization	.104	.104	.019	.067*	.104
Socio-economic Status → Neighborhood Safety	.498	.501	.027	.448*	.554
Socio-economic Status → Parental Monitoring	.445	.449	.032	.386*	.512
Socio-economic Status → Antisocial Peers	.147	.154	.040	.076*	.232
Parental Monitoring → Family Socialization	.829	.828	.015	.799*	.857
Parental Monitoring → Parental Bonding	.895	.895	.009	.877*	.913
Neighborhood Safety → Antisocial Beliefs	.387	.385	.045	.297*	.473
Parental Bonding → Antisocial Beliefs	.522	.522	.054	.416*	.628
Antisocial Peers → Antisocial Beliefs	.015	.025	.020	-.014	.064
Sexual Abuse → Family Socialization	-.015	-.016	.011	-.038	.006
Sexual Abuse → Parental Bonding	.009	.018	.013	-.007	.043
Sexual Abuse → Mild Delinquency	.983	.981	.010	.961*	1.001
Sexual Abuse → Moderate Delinquency	.151	.146	.047	.054*	.238
Sexual Abuse → Serious Delinquency	.242	.232	.123	-.009	.473
Antisocial Beliefs → Mild Delinquency	.004	.005	.004	-.003	.013
Antisocial Beliefs → Moderate Delinquency	.065	.065	.033	.000	.130
Antisocial Beliefs → Serious Delinquency	.102	.097	.036	.026*	.168

Note: * 95% do not capture zero

Socio-economic Status was a statistically significant ($p < .05$) predictor of Family Socialization, Neighborhood Safety, Parental Monitoring, and Antisocial Peers. The strongest outcome of poor socio-economic status was poor neighborhood safety (β = .498). Parental monitoring was a strong predictor of both family socialization (β = .829)

and Parental Bonding (β = .895). Neighborhood Safety and Parental Bonding were moderately strong predictors of Antisocial Beliefs (β = .387 and .522 respectively); however, Antisocial Peers was not a significant predictor of Antisocial Beliefs ($\beta \approx 0$).

The strongest outcome of Sexual Abuse was Mild Delinquency (β = .983) whilst Moderate Delinquency was a weaker outcome (β = .151). Sexual Abuse was not a significant predictor of Family Socialization, Parental Bonding, or Serious Delinquency ($\beta \approx 0$). The only statistically significant outcome of Antisocial Beliefs was Serious Delinquency (β = .102). Antisocial Beliefs were not significant predictors of Mild or Moderate Delinquency ($\beta \approx 0$).

Table 5 presents the R^2 values for the endogenous constructs (i.e., those with other constructs directed into them). Sexual Abuse was an exogenous construct, and therefore did not have an R^2 value. The magnitudes of the R^2 values are interpreted using the criteria defined by Ferguson (2009).

Table 5
R^2 Values for the Endogenous Constructs in the Model for the Female Participants

Construct	R^2	Interpretation
Mild Delinquency	.966	Strong
Parental Bonding	.799	Strong
Family Socialization	.780	Strong
Antisocial Beliefs	.751	Strong
Neighborhood Safety	.248	Moderate
Parental Monitoring	.198	Moderate
Serious Delinquency	.062	Weak
Moderate Delinquency	.025	Negligible
Antisocial Peers	.021	Negligible

The R^2 values for two of the endogenous constructs (Moderate Delinquency, and Antisocial Peers) were less than .04, suggesting that the variance explained in these constructs had negligible practical significance. This suggests that other factors should be considered when studying these constructs. The R^2 values for Serious Delinquency was

just above .04, reflecting weak practical significance. The R^2 values for two constructs (Parental Monitoring and Neighborhood Safety) close to .25 suggesting that the variance explained in these two constructs had moderate practical significance. The four constructs with the strongest practical significance (Mild Delinquency, Parental Bonding, Family Socialization, and Antisocial Beliefs) had R^2 values greater than .7, indicating that large proportions of their variance were explained.

Model for the Male Participants. Appendix C provides a copy of the output from SmartPLS using the empirical data for the male participants (N = 338). Figure 5 presents the path diagram with the results of PLS-SEM displaying the statistics (factor loading coefficients; path coefficients and R^2 values).

Table 6 presents the quality criteria to validate the reflective constructs in the measurement model for the male participants. Convergent validity was adequate because the average variance extracted by the indicators in each construct (AVE = 52.0 % to 90.4%) was greater than 50%. Good internal consistency reliability was indicated because all the Composite Reliability coefficients (.787 to .966) were all greater than .7.

Table 6
Quality Criteria for the Reflective Constructs in the Model for the Male Participants

Construct	AVE	Composite Reliability
Family Socialization	66.3%	.960
Parental Monitoring	73.3%	.965
Antisocial Beliefs	55.9%	.787
Antisocial Peers	52.0%	.813
Neighborhood Safety	69.8%	.899
Parental Bonding	90.4%	.966

Because Socio-economic Status, Delinquency, and Sexual Abuse were formative constructs, their convergent validity and internal consistency reliability was not measured.

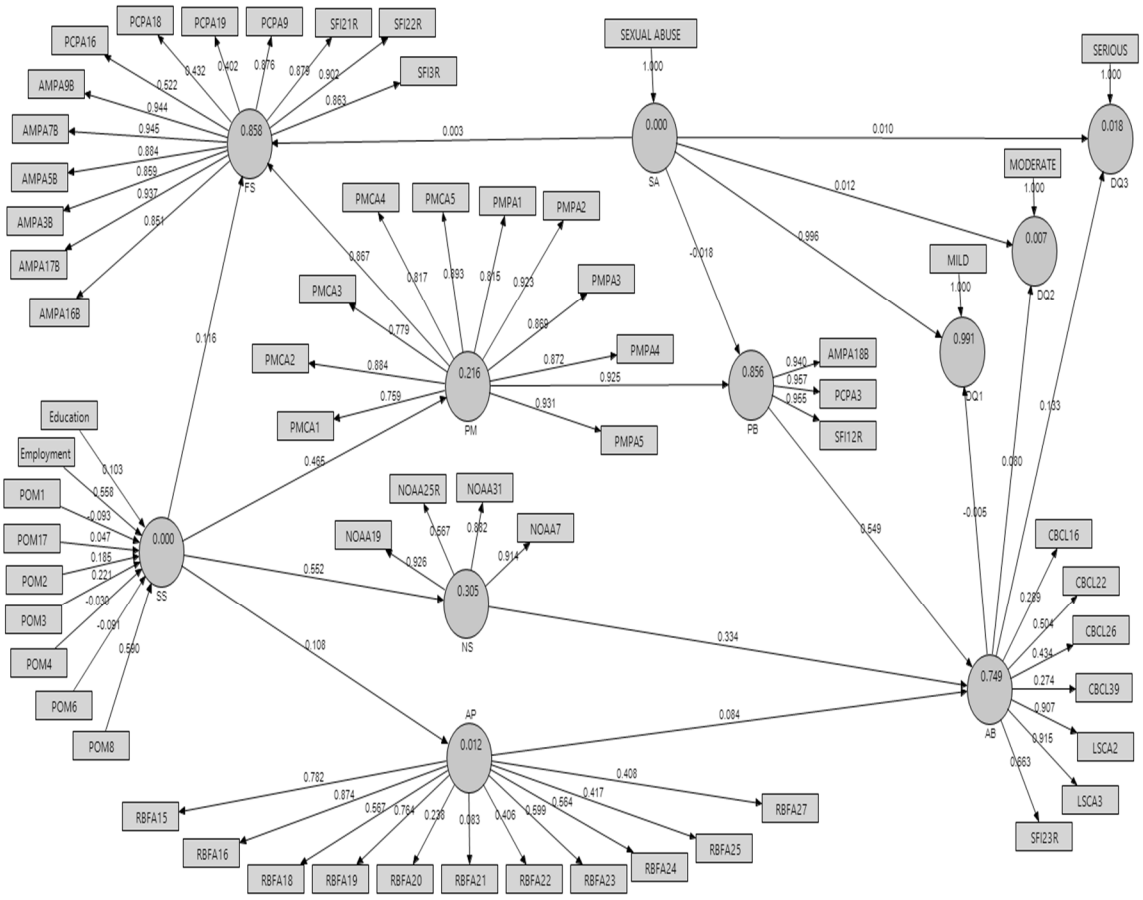

Figure 5. Results of PLS-SEM for the male participants ($N = 338$)

Note: SS = Socio-economic Status; FS = Family Socialization; PM = Parental Monitoring; NS = Neighborhood Safety; AP = Antisocial Peers; PB = Parental Bonding; AB = Antisocial Beliefs; SA = Sexual Abuse; DQ1 = Mild Delinquency; DQ2 = Moderate Delinquency; DQ3 = Serious Delinquency. Factor loading coefficients are displayed between the constructs and the indicators; path coefficients are displayed between pairs of constructs; and R^2 values are displayed within the constructs.

The factorial validity of the reflective constructs was indicated because all but three of the loading coefficients were greater than .5. Three lower factor loadings (CBCL16 = .289; CBCL26 = .434; and CBCL39 = .274) were tolerated in one construct (Antisocial Beliefs) because these items were conceptually relevant to measure Antisocial Beliefs. Seven of the nine factor loadings for the items used to measure Socio-economic status were less than .5, justifying the identification of Socio-economic status as a

formative construct, consisting only of an aggregation of unrelated items, rather than a linear combination of inter-correlated items.

Appendix C presents the factor loading coefficients of all the items used to measure each construct as well as the cross-loadings of these items on alternative constructs. Good discriminant validity was indicated because the loadings for all of the indicators used to measure each construct exceeded their loadings on alternative constructs.

Table 8 presents the path coefficients (β) estimated from the sample data (N = 424) corresponding to the values in Figure 5. Also presented in Table 7 are the mean (M) standard error (SE) and 95% confidence intervals (CI) of the path coefficients computed after bootstrapping the data with 5000 sub-samples. If the 95% CI did not capture zero, then it was assumed that the mean values of the path coefficients were significantly different from zero. If the 95% CI captured zero, then it was assumed that the mean values of the path coefficients were not significantly different from zero. The path coefficients were interpreted assuming that 0.2 = weak; .5 = moderate, and .8 = strong.

Table 7
Evaluation of the Path Coefficients in the Model for the Male Participants

Path	β	After Bootstrapping with 5000 sub-samples			
		M	*SE*	95% CI	
Socio-economic Status → Family Socialization	.116	.116	.016	.085*	.147
Socio-economic Status → Neighborhood Safety	.552	.557	.024	.510*	.604
Socio-economic Status → Parental Monitoring	.465	.470	.029	.413*	.527
Socio-economic Status → Antisocial Peers	.108	.122	.041	.042*	.202
Parental Monitoring → Family Socialization	.867	.866	.011	.844*	.888
Parental Monitoring → Parental Bonding	.925	.925	.006	.913*	.937
Neighborhood Safety → Antisocial Beliefs	.334	.334	.037	.261*	.407
Parental Bonding → Antisocial Beliefs	.549	.547	.042	.465*	.629
Antisocial Peers → Antisocial Beliefs	.084	.087	.030	.028*	.146
Sexual Abuse → Family Socialization	.003	.011	.008	-.005	.027
Sexual Abuse → Parental Bonding	-.018	-.022	.016	-.053	.009
Sexual Abuse → Mild Delinquency	.996	.996	.003	.990*	1.002
Sexual Abuse → Moderate Delinquency	.012	.026	.021	-.015	.067
Sexual Abuse → Serious Delinquency	.010	.030	.024	-.017	.077
Antisocial Beliefs → Mild Delinquency	-.006	-.005	.004	-.013	.003
Antisocial Beliefs → Moderate Delinquency	.080	.081	.042	-.001	.163
Antisocial Beliefs → Serious Delinquency	.133	.132	.039	.056*	.208

Note: * 95% do not capture zero

Socio-economic Status was a statistically significant ($p < .05$) predictor of Family Socialization, Neighborhood Safety, Parental Monitoring, and Antisocial Peers. The strongest outcome of poor socio-economic status was poor neighborhood safety (β = .552). Parental monitoring was a strong predictor of both family socialization (β = .867) and Parental Bonding (β = .925). Neighborhood Safety and Parental Bonding were moderately strong predictors of Antisocial Beliefs (β = .334 and .549 respectively).

Antisocial Peers was statistically significant but only a weak predictor of Antisocial Beliefs (β = .084).

The strongest outcome of Sexual Abuse was Serious Delinquency (β = .996). Sexual Abuse was not a significant predictor of Mild or Moderate Delinquency, Family Socialization, Parental Bonding ($\beta \approx 0$). The only statistically significant but weak outcome of Antisocial Beliefs was Serious Delinquency (β = .133). Antisocial Beliefs were not significant predictors of Mild or Moderate Delinquency ($\beta \approx 0$).

Table 8 presents the R^2 values for the endogenous constructs. The magnitudes of the R^2 values are interpreted using the criteria defined by Ferguson (2009).

Table 8
R^2 Values for the Endogenous Constructs in the Model for the Male Participants

Construct	R^2	Practical Significance
Mild Delinquency	.991	Strong
Parental Bonding	.856	Strong
Family Socialization	.858	Strong
Antisocial Beliefs	.749	Strong
Neighborhood Safety	.305	Moderate
Parental Monitoring	.216	Moderate
Serious Delinquency	.018	Negligible
Moderate Delinquency	.007	Negligible
Antisocial Peers	.012	Negligible

The R^2 values for three of the endogenous constructs (Serious Delinquency, Moderate Delinquency, and Antisocial Peers) were less than .04, suggesting that the variance explained in these constructs had negligible practical significance. This suggests that other factors should be considered when studying these constructs. The R^2 values for two constructs (Parental Monitoring and Neighborhood Safety) were around 0.25 suggesting that the variance explained in these constructs had moderate practical significance. The four constructs with the strongest practical significance (Mild

Delinquency, Parental Bonding, Family Socialization, and Antisocial Beliefs) all had high proportions of their variance explained, indicated by R^2 greater than .7.

Table 9 compares the path coefficients in the models for male and female participants.

Table 9
Comparison of Path Coefficients in Models for Male and Female Participants

Path	Male (N = 338)		Female (N = 424)		M_D (Male minus Female)	t-test p	Cohen's d
	M	*SD*	*M*	*SD*			
Parental Monitoring → Parental Bonding	.925	.006	.895	.009	.030	<.001*	4.00
Sexual Abuse → Moderate Delinquency	.026	.021	.146	.047	-.120	<.001*	3.53
Parental Monitoring → Family Socialization	.866	.011	.828	.015	.038	<.001*	2.92
Sexual Abuse → Family Socialization	.011	.008	-.016	.011	.027	<.001*	2.84
Sexual Abuse → Parental Bonding	-.022	.016	.018	.013	-.040	<.001*	2.76
Sexual Abuse → Serious Delinquency	.030	.024	.232	.123	-.202	<.001*	2.75
Antisocial Beliefs → Mild Delinquency	-.006	.004	.005	.004	-.010	<.001*	2.50
Antisocial Peers → Antisocial Beliefs	.087	.030	.025	.020	.062	<.001*	2.48
Sexual Abuse → Mild Delinquency	.996	.003	.981	.010	.015	<.001*	2.31
Socio-economic Status → Neighborhood Safety	.557	.024	.501	.027	.056	<.001*	2.20
Neighborhood Safety → Antisocial Beliefs	.334	.037	.385	.045	-.051	<.001*	1.24
Antisocial Beliefs → Serious Delinquency	.132	.039	.097	.036	.035	<.001*	0.93
Socio-economic Status → Antisocial Peers	.122	.041	.154	.040	-.032	<.001*	0.79
Socio-economic Status → Parental Monitoring	.470	.029	.449	.032	.021	<.001*	0.69
Socio-economic Status → Family Socialization	.116	.016	.104	.019	.012	<.001*	0.68
Parental Bonding → Antisocial Beliefs	.547	.042	.522	.054	.025	<.001*	0.52
Antisocial Beliefs → Moderate Delinquency	.081	.042	.065	.033	.016	<.001*	0.43

Note: * Difference between means (M_D) is statistically significant ($p < .05$). Cohens $d \leq .41$ is negligible practical significance; $d = 1.15$ is moderate practical significance; $d \geq 2.70$ is strong practical significance (Ferguson, 2009).

The differences between all of the path coefficients in the models for the male and female participants were statistically significant ($p < .001$) and these differences also exhibited practical significance (*Cohen's d* > .41). The relative magnitudes of Cohen's *d*

indicated that the strongest effect of male gender, relative to female gender (Cohen's $d >$ 2.70) was to increase the path coefficients between Parental Monitoring → Parental Bonding, Sexual Abuse → Moderate Delinquency, Parental Monitoring → Family Socialization, and Sexual Abuse → Family Socialization. In contrast, the opposite effect was found for Sexual Abuse → Serious Delinquency, where the path coefficients were lower for male participants compared with female participants. This implied that Sexual Abuse had a greater effect on Serious Delinquency among the females. Male participants also had a lower path coefficient than females for Antisocial Beliefs → Mild Delinquency with a moderate effect size (Cohen's $d = 2.50$). Other moderately strong effects (Cohen's $d > 1.15$) were indicated by the male participants having higher path coefficients than the female participants for Antisocial Peers → Antisocial Beliefs, Sexual Abuse → Mild Delinquency, and Socio-economic Status → Neighborhood Safety. In contrast, male participants had a lower path coefficient than the female participants for Neighborhood Safety → Antisocial Beliefs. All the other path coefficients were higher for the male participants than the female participants, but with lower effect sizes (Cohen's $d < 1.15$).

Conclusion

The results of PLS-SEM facilitated the use of the SDM as a basis from which to develop a new model incorporating the effects of gender and sexual abuse on social development and delinquency. The results did not provide definitive answers given the exploratory nature of the statistics, but nevertheless pointed toward new ideas regarding the differences between male and female delinquents, and the impact of sexual abuse on

delinquency. These issues will be considered in the following discussion of the results.

CHAPTER V: DISCUSSION

The aim of the current study was to utilize a sub-model of the larger Social Development model, specifically the portion focusing on family socialization processes, to better understand the effects of parental sexual abuse on female juvenile delinquency. Previous research has neglected females in the study of juvenile delinquency and research suggests that the risk factors for male juvenile delinquency do not adequately predict delinquency in females. The focus of this study set out to first add to the growing body of research examining the usefulness of the Social Development Model in populations outside of the sample on which the model was initially developed. In addition, a second goal was to add to the research on female juvenile delinquency and to address neglected risk factors, specifically parental sexual abuse. In order to accomplish these goals, partial least squares structural equation modeling was used to test a sub-model of the SDM, using a database of child abuse and neglect as well as external Child Protective Services records to examine the effects of sexual abuse on female juvenile delinquency. Results from the female model were compared to the male model to further examine differences between family risk factors of male and female juvenile delinquency. It should be noted that this study is exploratory in nature, given the use of PLS-SEM. While no definitive causal conclusions can be made, results still shed significant light on the effects of sexual abuse on both male and female juvenile delinquency, which should be the continued focus of future research.

Demographic and Contextual Characteristics

First and foremost, it's necessary to address the demographic and contextual characteristics of the participants. The sample was primarily female (55%) and the

majority of participants identified as African American (57%) which is not representative of the make-up of the population of the United States. According to the 2000 census, the population make up was 63% Caucasian compared to 12% African American (U.S. Census Bureau, 2000). However, the sample appears to be representative of the population of "high-risk" individuals. Specifically, African Americans are significantly more likely to be high-risk in regard to HIV/AIDS, poverty, and homicide, compared to Caucasians (Office of Minority Health, 2011). In addition to these statistics, 82% of caregivers had received a diploma/GED, and 70% of caregivers had no employment in the sample. As a result, the results may not be generalizable to all races and ethnicities.

Regarding sexual abuse, while the sample only included 25 individuals who experienced parental sexual abuse, it is important to note that 20 of those individuals were female, compared to 5 males. These findings support H_1 which hypothesized that there would be a higher number of females who experienced parental sexual abuse than males. These findings are supported by previous studies of sexual abuse that suggest that females experience sexual abuse at a higher rate than males (Dixion, Howie, & Starling; Bender, 2010; Byrne & Howells, 2000; Schaffner, 2006; Chesney-Lind & Shelden, 2013). In addition, given that all 25 individuals reported parental sexual abuse, this adds to the growing literature that females are more likely than males to be sexually abused by parents (De Jong, Hervada, & Emmet, 1983; Phelps, 1982; Baskin & Sommers, 1998; Sedlack & Broadhurst, 1996). These small numbers further support research that suggests that parental sexual abuse is rarely reported, for a multitude of reasons, including an unwillingness to disclose due to pressure of secrecy within an incestuous

family, a fear for safety, feelings of self-blame, or even feelings of loyalty to the parent, which will be discussed further as a limitation.

Constructs of the SDM and Findings Relevant to Research

Results from this study supported the assumptions presented by the SDM that, for both males and females, SES has an indirect effect on antisocial behavior through its impact on prosocial and antisocial involvements and interactions. Specifically, SES was a significant predictor of Family Socialization, Neighborhood Safety, Parental Monitoring, and Antisocial Peers. These results are not surprising, given that low socioeconomic status affects the social context in which the family operates. For example, SES increases opportunities for antisocial involvement due to the higher prevalence of visible crime in low-income neighborhoods. Concerning Neighborhood Safety and Antisocial Peers, previous research supports the idea that individuals from low SES communities frequently report higher perceptions of neighborhood crime and untrustworthy neighbors. Low SES neighborhoods are typically characterized by physical deterioration, neighborhood disorganization and high residential mobility which likely increases individuals' perceptions of neighborhoods being less safe and less stable (Shaw & McKay, 1969). It is difficult to determine if the areas themselves influence antisocial behavior, which would increase the number of antisocial peers an individual socializes with, or if that antisocial individuals tend to live in deprived areas because of public housing allocation policies. Regarding to Family Socialization, low SES likely effects the amount of time a parent spends with the child, which would limit the amount of socialization that occurs. Concerning Parental Monitoring, low SES mothers likely find it more challenging to track and supervise the whereabouts of their children and may even

consider it less important to do, which is supported in research by Pettit and colleagues (2001).

Both the male and female models of the Social Development Model provide a significant amount of information about each construct as well as the overall utility of the model.

The Female Model. In regard to the female model, the results suggest that Neighborhood Safety was a moderate predictor of Antisocial Beliefs. This is supported through previous research on the SDM that suggests that unsafe neighborhoods have a higher amount of witnessed crime, drug activity, as well as a higher number of antisocial individuals compared to safer neighborhoods. Concerning antisocial beliefs, these beliefs develop based on who an individual is socialized to. As a result, if females live in an unsafe neighborhood, the likelihood that females would be socialized by antisocial peers and parents would be higher than in a safe neighborhood where there may be more opportunity to be socialized by prosocial peers. Given that Parental Bonding was a moderately strong predictor of Antisocial Beliefs and Antisocial Peers was not a significant predictor of Antisocial Beliefs, this would suggest that parents play a significant role over peers in the development of antisocial beliefs for females. This is supported by the SDM which posits that bonding to antisocial parents promotes the observance to the beliefs and behaviors held by those bonded individuals, increasing the likelihood of engaging in behavior consistent with antisocial beliefs and norms. In addition, given that juveniles are less likely to restrain impulses and exercise self-control, they rely more on the individuals they are bonded to for decision making. If they are bonded to antisocial parents, they would be more likely to make antisocial decisions. This

is in partial support of H_4, which suggested that Parental Bonding will predict antisocial beliefs in females. However, it only partially supports H_4 given this relationship path coefficient was higher for males.

Results of this study also suggest that for females, Parental Monitoring was a strong predictor of both Family Socialization and Family Bonding. Generally speaking, the SDM explains this relationship in regard to involvement in family and rewards from parents. Specifically, if a parent is involved in knowing their children, specifically where they are and who they are with, they are likely spending a significant amount of time with the child, talking about problems, praising the child for good things, and expressing warmth toward the child. An increase in parental monitoring may limit movement outside the home and may even limit interactions with others, suggesting a stronger bond between parent and child and a lesser likelihood of forming relationships with deviant peers. In contrast, poor parental monitoring may be liked to ineffective parenting and an inability to guide and protect children. As a result, children may look elsewhere for socialization opportunities, diminishing the bond between parents and children.

Interestingly, Antisocial Beliefs was not a significant predictor of Mild Delinquency or Moderate Delinquency for females but was a significant predictor of Serious Delinquency for females. Serious Delinquency was defined as crimes including stealing cars, gang fights, being paid for sex, getting in trouble with the police, and number of lifetime arrests, while Mild and Moderate Delinquency were defined as carrying weapons, making obscene phone calls, stealing items worth under 50 dollars, property damage, joyrides, and fraud. These results go against the assumptions of the Social Development Model. The development of antisocial beliefs occurs through the

attachment and socialization of antisocial socializing agents. As a result, once a female develops antisocial beliefs, she likely internalizes a set of norms favorable to criminal involvement given that she is bonded to individuals who hold antisocial beliefs and values. She also is more likely to perceive rewards for problem behaviors, which increases the probability of antisocial behavior and decrease the perceived opportunities for prosocial behaviors. While the relationship between child sexual abuse and violent offending has not been looked at extensively in the literature, several studies have reported that children who are sexually abused are significantly more physically aggressive than children who are not. Baskin and Sommers (1998) interviewed 170 violent female offenders and found that 36 percent reported being sexually abused by a member of their immediate family. As mentioned above, in a study done by Widom (1989), researchers found that sexual abuse was a statistically significant risk factor for violent offending. As a result, findings from this current study are supported by this previous literature.

Concerning parental sexual abuse, which was the focal point of this study, Sexual Abuse was not a significant predictor of Family Socialization, Parental Bonding, or Serious Delinquency, however was a strong predictor of Mild Delinquency. This refutes H_3. This is in direct contrast from the previous research that has found that females who were sexually abused by their parents experienced pervasive disruptions in child-parent relationships and emotional deprivation. Previous research has also suggested that a traumatic bond exists between the parent in child, with the bond vacillating between nurturing and loving and problematic and abusive. It was expected that parental sexual

abuse would threaten the bond between child and parent and better predict difficulties in family socialization and parental bonding. Specifically, the effects of sexual abuse were predicted to be linked to poor parenting, disorganization, and emotional deprivation, as supported by previous research (Lowry, 2013; Brier & Elliot, 1993; Moor & Silvern, 2006; Godbout et al., 2014; Csorba et al., 2005; Beitchman et al., 1991; Cosden & Cortez-ison, 1999; Egeland et al., 1988). However, the finding that Sexual Abuse does not predict Serious Delinquency somewhat supports previous findings that females who are sexually abused are more likely to commit status offenses, such as running away, as a proposed way to escape the effects of sexual abuse. This finding also supports H_5, which hypothesized that Sexual Abuse will predict mild to moderate delinquency. In addition, sexual abuse in childhood challenges the likelihood of the victim establishing a sense of self-competence in the social world beyond the home. As a result, to deal with sexual abuse victims often rely on immature coping strategies, which increase the likelihood of misconduct, sexual acting out, running away, and mild delinquency (Harter, 1998). Specifically, females are frequently charged with drug and "public order" offenses than men. In 2016, females made up 41% of theft crimes, 40% of liquor law violations, and 36% of disorderly conduct crimes. It is important to note that this may be a biased finding, better explained by the small number of individuals endorsing participation in mild delinquency. Given this information, it is difficult to make specific conclusions without a larger number of individuals endorsing both sexual abuse and mild delinquency. As a result, it is unlikely that this predictive relationship exists and is rather the result of a small sample size error. An interesting finding that the effect of gender on the pathway from sexual abuse to serious delinquency was greater for females,

suggesting that sexual abuse had a greater effect on serious delinquency among females, even though it was not a significant predictor. It is possible that these results are due to the small number of individuals included in the study who were sexually abused by their parents, as mentioned above. This small sample size makes making interpretations difficult due to variability in the sample. Specifically, this small sample may not be representative of the population. In addition, small sample sizes decrease statistical power, and skew the results making type I and type II errors more likely.

The Male Model and Gender Discrepancies. While the male model exhibits some similarities to the female model, it also diverges in its findings. This is in support of H_2, suggesting that the relationships between some constructs are different for males and females, which in turn suggests that risk factors affect males and females differently. Similar to the female model, SES was a significant predictor of family socialization, neighborhood safety, parental monitoring, and antisocial peers. The explanations provided above also apply to males as well given the lack of previous research on gender differences regarding SES. It is important to note that the pathway for SES predicting neighborhood safety was significantly higher for males than females, suggesting that males from high SES neighborhoods may feel safer than females. While the SDM posits that a decrease in observable antisocial acts and antisocial peers should promote an increase in neighborhood safety for both males and females, it is possible that other factors may play into females' perception of safety that males may not experience (e.g. fear of sexual and physical assault, powerlessness, etc.) which may account for the discrepancy.

For males, Parental Monitoring was a significant predictor of Family Socialization and Parental Bonding, and that the pathway between Parental Monitoring and Parental Bonding and Family Socialization appear stronger for males. This is an interesting finding given that previous research has suggested that family factors are more important for females than males. However, some research by McCord and colleagues (2001) found that the strongest predictors of later violent convictions for males were poor parental supervision and parental conflict. In addition, prior research also suggests that increased parental monitoring along with establishing close relationships to supportive adults acts as protective factors against juvenile delinquency regardless of gender (Crockenberh & Litman, 1990).

Neighborhood Safety, Parental Bonding, and Antisocial Peers were all significant predictors of Antisocial Beliefs. Importantly, Antisocial Peers was not a significant predictor of Antisocial Beliefs for females as it is for males, suggesting that bonding to antisocial peers may be more important for males in the development of antisocial beliefs. It is possible that this discrepancy may be due to males' higher likelihood of gang involvement compared to females, which creates a strong relationship to violent delinquency and antisocial beliefs, even when controlling for parental supervision, family poverty, and prior involvement in delinquency (Battin-Pearson et al., 2000). It may also be related to the make-up of the sample being primarily African American. Specifically, African Americans are more likely to participate in higher rates of gang related delinquency than Caucasians (McDavid and McCandless, 1962).

Results from this study also suggested that Antisocial Beliefs was not a significant predictor of Mild or Moderate Delinquency but was a significant predictor of Serious

Delinquency for males, which is supported by previous research that males account for more violent offenses than female. Specifically, in 2016, males accounted for 81% of violence offenses compared to females who accounted for only 17% of violent offenses.

Concerning sexual abuse, results suggest that Sexual Abuse was not a significant predictor of family socialization, parental bonding, moderate delinquency, or serious delinquency for males. Sexual Abuse was, however, a significant predictor of Mild Delinquency. It is difficult to make any significant interpretations about males in regard to sexual abuse given the extremely small sample size, however the fact that it was a significant predictor of mild delinquency sheds some light on the idea posed by past researchers that males often feel positively about the initial experience of sexual abuse given a "king of the word" feeling, but later develop problematic substance use, sexual problems, and self-harm behavior (Brodie, 1992). Given that they also experience poor social adjustment, and inappropriate attempts to assert their masculinity, it may be possible that males who are victims of sexual abuse somewhat socially isolate themselves, and as a result, participate in mild delinquent acts like carrying a weapon, making obscene calls, and being drunk in public that don't necessarily involve a victim or social interaction (Gekoski et al., 2016).

Limitations

Obviously this study is not without significant limitations. First and foremost, this study utilized PLS-SEM over CB-SEM, which limits the extent to which the SDM can be confirmed through reproducing a covariance matrix and how well the conceptual model fits the observed data using well-established statistical criteria. The data did not meet the assumptions needed for CB-SEM to be utilized (e.g. data normality, continuous

variables) and given that this was secondary data collected for a previous study, the way in which the data was collected could not be changed. In addition, arrows in the models were limited to unidirectional, and as a result, feedback loops could not be assessed. However, as explained in previous sections, this study sought to incorporate the effects of gender and sexual abuse on social development and delinquency, utilizing a theory that had been confirmed in previous studies.

Along the lines of utilizing secondary data, a second limitation is small sample size, specifically in regard sexual abuse. Given that only 25 of the participants endorsed parental sexual abuse, it is difficult to make significant interpretations of the results. However, it should be noted that throughout the research, parental sexual abuse has a historically low rate of reporting. It has been suggested that throughout the research children may not report parental sexual abuse due to pressure for secrecy, grooming of the child, fear for safety, and feelings of shame and self-blame. In addition, given that children who experience this type of sexual abuse are less likely to socialize outside of the home, it's unlikely that they would be able to report to outside agencies or feel safe doing so.

This study does not incorporate a control group of individuals who experienced no type of abuse, given that this database was collected on a sample of children who were abused or neglected, limiting its generalizability. It would be helpful to look at both physical and emotional abuse, though sexual abuse has been linked to poorer outcomes and larger long-term effects. It is possible that these children were also physically or emotionally abused, which may have had confounding effects on the results, however much of the association between abuse and long-term development has to do with the

family context in which the abuse occurs rather than the abuse itself (Smith and Thornberry, 1995).

Methodologically speaking, it is difficult to determine if any of the individuals who were sexually abused were part of attrition over time periods. It is possible that bias exists if the individuals that were part of attrition are not missing completely at random, however it is impossible to tell with the scope of this study. It is also possible that there may be uncontrolled sources of confounding that may be correlated with both exposure to child maltreatment and later delinquency that were not incorporated in this study, specifically mental health diagnoses of both children and caregivers. Given that this study employs data originally collected to look at abuse and neglect, fewer items exist in the database from which to construct indicators for latent variables. As a result, latent variables may not be as strong as if the researcher collected data specifically for this study.

Implications for Practice and Future Research

Despite limitations, the research does contribute important information about a group that, although overrepresented in both the juvenile and adult justice systems, has been relatively underrepresented in the research—female delinquents who have been sexually abused. Methodologically speaking, this study relied on both self-reports of sexual abuse and CPS records that were not based on retrospective reports. As a result, the data is less likely to be prone to errors of recall such as false memories or repression. This study not only utilized a large sample but utilized both self-report and caregiver report in order to account for delinquent acts that do not come to the attention of police in order to give a more accurate picture of female and male participation in delinquency. IT

has been shown in the literature that young people are willing to report accurate information about both minor and serious delinquent acts on self-report measures.

This study was also among the few studies to distinguish intrafamilial sexual abuse from extrafamilial sexual abuse, and also to distinguish parental sexual abuse from other intrafamilial abuse, shedding light on possible effects of parental sexual abuse on juvenile delinquency. Specifically, it supported the assumption that low levels of attachment and bonding are important indicators of future delinquency.

Regarding the model, until recently, the Social Development Model focused specifically on substance use as a measure of delinquency. This study added to studies expanding the definition of delinquency. It also adds some support for the generalizability of the model to individuals who have been abused.

Future studies should attempt to utilize this model in terms of CB-SEM, to provide confirmation of the theory outside of the population it was developed on. In addition, future studies should control for other family factors in order to determine the impact of sexual abuse without the possible confounding variables of other types of abuse and damaging dynamics. Future studies should also consider collapsing delinquency into a continuous variable rather than separating delinquency into mild, moderate, and serious to eliminate small sample sizes in regard to each level of delinquency. Lastly, future research should work to operationalize a definition of delinquency that can be generalized across studies to solve the issue of inconsistency in the literature.

This study highlights the need for programs addressing childhood parental sexual abuse and the need to consider the wider family and social context within which this abuse occurs. Early intervention shows promise in addressing the damaging family

dynamics before delinquent acts become firmly established aspects of youths' lifestyles, by remediating stressors that increase these behaviors. Programs should utilize an individual and family-centered focus to address these problematic family dynamics.

One of the biggest conclusions that can be made from this study is that the majority of girls who suffered from parental sexual abuse in this sample were not arrested as juveniles or engaged in delinquent acts, which is an encouraging finding that points to the idea that there are factors of resilience that shield females from these outcomes. Further studies should focus on identifying these protective factors to further inform prevention programs.

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Appendix A:

Definitions of Variables

Variable	Item name	Description of Item	Item Scores
Gender	BK6A2	Male or Female	1 = Female 2 = Male
Socio-economic Status (Higher scores = poorer socio-economic status)	POM1	TANF	0 = No 1 = Yes
	POM2	Child support	
	POM3	Food stamps	
	POM4	WIC	
	POM6	Subsidized housing	
	POM8	Reduced or free lunch for children	
	POM17	Late making rent or mortgage payments	
	DEMB8	Employment status	0 = Yes 1 = No
	DEMB6	Have high school diploma/GED	0 = Yes 1 = No
Parental Monitoring (Higher score = better parental monitoring)	PMCA1	Parents know who your friends are	0 = Don't know 1 = A little 2 = A lot
	PMCA2	Parents know where you are at night	
	PMCA3	Parents know how you spend your money	
	PMCA4	Parents know what you do with free time	
	PMCA5	Parents know where you are after school	
	PMPA1	Know who child's friends are	
	PMPA2	Know where child goes at night	
	PMPA3	Know how child spends his/her money	
	PMPA4	Know what child does with free time	
	PMPA5	Know where child is after school	
Neighborhood Safety Higher score = unsafe neighborhood)	NOAA7	There is vandalism	1= Strongly Disagree; 2= Disagree; 3= Agree; 4 = Strongly Agree
	NOAA13	There is open drug activity	
	NOAA19	Homes or businesses get broken into	
	NOAA25R	In this neighborhood, I feel safe	
	NOAA31	People are victims of muggings/beatings	
Antisocial Peers (Higher score = more antisocial peers)	RBFA15	Friends smoke cigarettes	0 = None; 1 = Some; 2 = Most
	RBFA16	Friends drink alcohol	
	RBFA18	Friends carry guns or other weapons	
	RBFA19	Friends smoke marijuana	
	RBFA20	Friends use cocaine or crack	
	RBFA21	Friends use heroin	
	RBFA22	Friends use other drugs	
	RBFA23	Friends sell or deliver drugs	
	RBFA24	Friends shoplift or steal	
	RBFA25	Friends set fires	

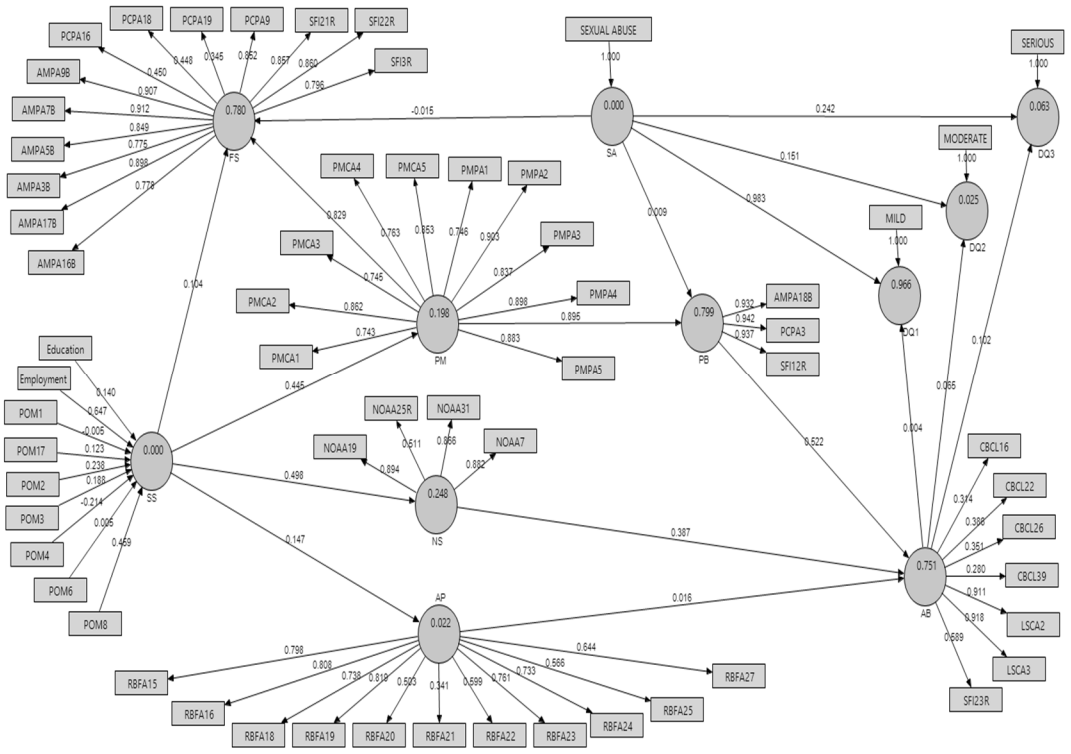
	RBFA27	Friends damage or destroy things	
Antisocial Beliefs (Higher score = more antisocial beliefs)	CBCL16	Bullies or is mean to others	0 = Not true; 1 = Sometimes true; 2 = Often true
	CBCL22	Disobedient at home	
	CBCL26	Not guilty after misbehaving	
	CBCL39	Hangs out with troublemakers	
	SFI23R	OK to fight/yell in household	1 = Very well, 2 = Well, 3 = Some, 4 = A little, 5 = Not at all (reversed)
	LSCA2	How often do you say things you shouldn't	3 = Never; 2 = Some of the time; 1 = Most of the time; 0 = All of the time
	LSCA3	Lying	
Sexual Abuse (Higher score = more sexual abuse)	SA	Total number of incidences of familial sexual abuse (by mother and/or father) during lifetime	0 = Never; 1 = Once 2 = Two times; 3 = Three times 4 = Four times; 5 = Five times; 6 = Six times
Parental Bonding (Higher score = greater parental bonding)	AMPA18B	Parents told you they loved you	0 = Never; 1 = Almost never; 2 = Sometimes 3 = A lot
	PCPA3	How close you feel to parent	1= Not at all, 2= Little, 3 = Somewhat, 4 = Quite a bit, 5 = very much
	SFI12R	In our home we feel loved	1 = Very well, 2 = Well, 3 = Some, 4 = A little, 5 = Not at all (reversed)
Family Socialization (Higher score = better family socialization).	AMPA3B	Parents helped with homework	0 = Never; 1 = Almost never; 2 = Sometimes; 3 = A lot
	AMPA5B	Parents comforted you if upset	
	AMPA7B	Parents helped you do your best	
	AMPA9B	Parents cared in trouble at school	
	AMPA16B	Parents praised you	
	AMPA17B	Parents cared if did bad things	
	PCPA9	Make decisions together	
	PCPA16	Talked about personal problem	
	PCPA18	Talked about school work	
	PCPA19	Worked on a project	
	SFI3R	We all have a say in household plans	1 = Very well, 2 = Well, 3 = Some, 4 = A little, 5 = Not at all (reversed)
	SFI21R	Household is good at solving problems	
	SFI22R	Members easily express warmth/caring	
Delinquency (Mild)	DELA1	Carried a weapon	0 = Never 1 = 1-2 times 2 = 3-9 times 3 = 10 or more times
	DELA 3	Made obscene calls	
	DELA21	Hit to hurt	
	DELA 4	Drunk in public	
	DELA7	Avoided paying for something	
	DELA10	Stolen $5-$50	

	DELA13	Snatched purse	
	DELA14	Held stolen goods	
Delinquency (Moderate)	DELA5	Damaged property	
	DELA6	Set fire to house	
	DELA15	Joyride	
	DELA18	Fraud	
	DELA11	Stolen $50-$100	
Delinquency (Serious)	DELA12	Stolen >$100	
	DELA16	Stolen a car	
	DELA20	Attacked to hurt or kill	
	DELA24	Gang fights	
	DELA25	Paid for sex	
	DELA27	In trouble with police	
	DELA29	Lifetime arrests	
	LECC20d	Jailed	

Note: Items with the suffix R were reverse-coded

Appendix B:

Output from SmartPLS (Model for the Female Participants)



Structural Model Specification

PLS

Quality Criteria

Overview

	AVE	Composite Reliability	R Square	Cronbachs Alpha
DQ2			0.024643	
DQ3			0.062965	
FS	0.595608	0.947362	0.779589	0.936012
PM	0.682025	0.955202	0.197996	0.947466
AB	0.455767	0.756230	0.751387	0.758424
AP	0.462488	0.900430	0.021581	0.889557
NS	0.646757	0.875497	0.247710	0.796623
PB	0.877966	0.955719	0.798686	0.930492
DQ1			0.965538	
SA				
SS				

Cross Loadings

	DQ2	DQ3	FS	PM	AB	AP	NS	PB	DQ1	SA	SS
AMPA16B	-0.113653	-0.070361	0.777775	0.658705	0.644125	0.002036	0.597171	0.749220	-0.099110	-0.107198	0.379689
AMPA17B	0.065555	0.052739	0.898243	0.817176	0.843695	0.173976	0.761429	0.871832	-0.136928	-0.137456	0.483568
AMPA18B	-0.021186	0.017835	0.883219	0.818422	0.799837	0.119988	0.754799	0.932249	-0.154064	-0.149099	0.472037
AMPA3B	-0.101572	-0.005431	0.774586	0.626415	0.629860	0.004491	0.556597	0.688205	-0.170064	-0.165977	0.326745
AMPA5B	-0.066388	-0.049612	0.849218	0.736151	0.706412	0.033164	0.631936	0.791169	-0.145326	-0.149716	0.359252
AMPA7B	-0.021969	-0.002034	0.911885	0.800316	0.787888	0.120811	0.724473	0.868509	-0.169279	-0.168691	0.458870
AMPA9B	0.030884	0.048769	0.906628	0.825832	0.833891	0.150792	0.776914	0.872104	-0.134632	-0.135769	0.484782
CBCL16	0.130531	0.169729	0.053973	0.006080	0.314472	0.075508	0.191519	0.023280	0.026456	0.027399	0.102543
CBCL22	0.166139	0.191146	0.104909	0.087169	0.385561	0.131847	0.241607	0.088906	0.005909	0.000575	0.102293
CBCL26	0.114231	0.114551	0.094917	0.068984	0.351053	0.121044	0.234314	0.056767	0.044977	0.034665	0.179711
CBCL39	0.165399	0.133076	0.098726	-0.015691	0.279548	0.224500	0.197919	0.062438	0.010464	0.005803	0.092362
Education	-0.050607	-0.019482	0.139159	0.156071	0.161885	0.040104	0.222401	0.185682	0.039485	0.050881	0.364482
Employment	0.076951	0.042215	0.377189	0.370675	0.366503	0.132801	0.332518	0.395382	-0.011748	0.017632	0.764632
LSCA2	-0.029699	-0.008066	0.854186	0.830914	0.911471	0.124324	0.767105	0.867750	-0.127851	-0.133271	0.471479
LSCA3	-0.004991	0.021695	0.864846	0.839287	0.917939	0.124255	0.770133	0.870415	-0.129831	-0.135520	0.466686
MILD	0.135345	0.219869	-0.167165	-0.186316	-0.120063	0.048861	-0.109103	-0.160150	1.000000	0.982612	-0.019082
MODERATE	1.000000	0.766067	-0.031362	-0.064657	0.046088	0.423463	0.032466	-0.027972	0.135345	0.143076	0.073837
NOAA19	0.027776	0.073564	0.561009	0.522503	0.634800	0.116649	0.894069	0.597946	-0.090502	-0.080876	0.403115
NOAA25R	0.062373	0.039655	0.731895	0.722999	0.700107	0.245731	0.510567	0.721435	-0.130086	-0.136544	0.322864
NOAA31	-0.024302	0.051113	0.584619	0.512719	0.580086	0.088023	0.865830	0.607271	-0.044389	-0.039097	0.432332
NOAA7	0.033532	0.108362	0.559160	0.516522	0.622632	0.115093	0.881663	0.590496	-0.075305	-0.068401	0.409053
PCPA16	0.163325	0.150962	0.450338	0.344166	0.437983	0.130379	0.374148	0.390480	-0.015342	-0.024519	0.211176
PCPA18	-0.012517	0.032367	0.448019	0.399474	0.339204	0.063343	0.328060	0.411722	-0.089348	-0.092178	0.294957
PCPA19	-0.029621	-0.055897	0.345176	0.256944	0.176725	0.051590	0.184457	0.281591	-0.100619	-0.092954	0.091118
PCPA3	-0.030284	0.002181	0.885103	0.836631	0.775934	0.115832	0.759848	0.942106	-0.144965	-0.141196	0.467701
PCPA9	-0.006436	-0.004718	0.851722	0.804761	0.673402	0.148797	0.670694	0.838166	-0.169808	-0.162492	0.411382
PMCA1	-0.119948	-0.084976	0.620623	0.742869	0.537143	-0.112871	0.452762	0.628585	-0.154846	-0.150301	0.277387
PMCA2	-0.077087	-0.080092	0.755533	0.861866	0.713265	0.007036	0.625277	0.769475	-0.179173	-0.173592	0.395706
PMCA3	-0.172976	-0.121327	0.620222	0.745338	0.569288	-0.144001	0.498333	0.632677	-0.088439	-0.097255	0.300693
PMCA4	-0.134712	-0.098034	0.641077	0.763496	0.579156	-0.103066	0.468398	0.635561	-0.102751	-0.104284	0.319854
PMCA5	-0.096854	-0.130061	0.707763	0.852883	0.674194	-0.031649	0.561981	0.707493	-0.160267	-0.153028	0.360059
PMPA1	-0.017474	-0.007474	0.658583	0.745604	0.533466	0.086414	0.505943	0.687038	-0.186902	-0.172880	0.280637

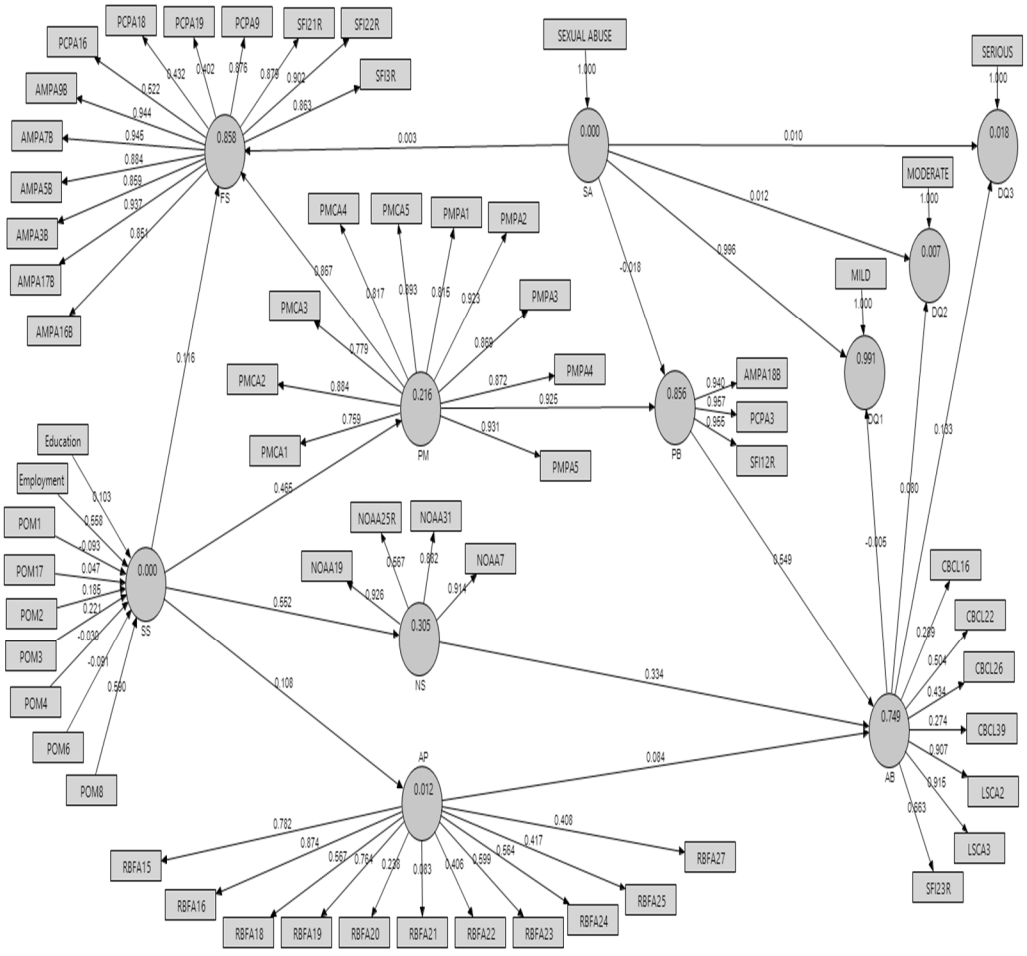
PMPA2	-0.006195	0.019577	0.840291	0.903483	0.792613	0.168054	0.739930	0.849687	-0.201825	-0.193675	0.467904
PMPA3	-0.010275	0.027535	0.743364	0.837295	0.671574	0.157895	0.633980	0.756991	-0.152989	-0.152490	0.377694
PMPA4	0.011734	0.022719	0.804552	0.897840	0.731030	0.172220	0.687213	0.823231	-0.165548	-0.164254	0.393491
PMPA5	0.024856	0.037596	0.808809	0.883362	0.758029	0.183305	0.733298	0.835658	-0.134102	-0.127667	0.450460
POM1	-0.097665	-0.070212	0.130239	0.100322	0.152404	-0.071724	0.140212	0.149537	-0.005757	-0.002657	0.239500
POM17	0.006806	0.054991	0.121995	0.050646	0.145726	0.026684	0.156900	0.108208	-0.028335	-0.023352	0.234806
POM2	0.176276	0.120173	0.135789	0.079242	0.125122	0.129032	0.152447	0.134276	-0.025796	-0.020498	0.281216
POM3	-0.052908	0.016540	0.176171	0.172898	0.127249	0.007958	0.193171	0.190757	0.001882	0.005523	0.372766
POM4	-0.002494	-0.000985	0.030261	0.001202	0.035505	0.001851	0.033022	0.047381	-0.018553	-0.028649	0.045666
POM6	-0.056298	-0.041598	0.113451	0.070510	0.092271	-0.094233	0.109813	0.125910	-0.022510	-0.013383	0.182130
POM8	-0.005180	0.037969	0.294946	0.274434	0.317309	0.044501	0.362953	0.325855	-0.025270	-0.024110	0.649515
RBFA15	0.309665	0.276655	0.121381	0.059664	0.148234	0.798060	0.149028	0.145537	0.038221	0.048722	0.106770
RBFA16	0.422065	0.358227	0.166259	0.119382	0.176011	0.808446	0.185864	0.182276	0.111625	0.107112	0.108961
RBFA18	0.364767	0.267605	0.065777	0.007245	0.086046	0.738318	0.142525	0.080671	-0.059132	-0.052083	0.153819
RBFA19	0.379318	0.203263	0.133999	0.056986	0.157811	0.818742	0.156150	0.141744	0.044227	0.030541	0.121314
RBFA20	0.157589	0.126361	0.037087	0.014622	0.079673	0.503418	0.044753	0.031120	0.010250	-0.005165	-0.004494
RBFA21	-0.005898	0.000883	-0.034727	-0.057671	0.014874	0.341396	0.006317	-0.032819	0.030337	0.008099	-0.062505
RBFA22	0.218476	0.194728	0.007467	0.011164	0.090198	0.598797	0.027018	0.034111	0.051079	0.015886	0.035798
RBFA23	0.210819	0.162716	0.048534	-0.000045	0.052205	0.761231	0.109324	0.082765	0.008153	-0.012236	0.102486
RBFA24	0.315301	0.278607	0.098153	0.042147	0.143309	0.733097	0.171192	0.101124	0.020595	-0.010987	0.116300
RBFA25	0.120847	0.167045	0.051396	0.033723	0.062997	0.566387	0.071424	0.054155	0.012431	-0.006264	0.067723
RBFA27	0.248444	0.232150	0.018497	-0.006354	0.034578	0.644356	0.073794	0.013390	0.098855	0.093595	0.119037
SERIOUS	0.766067	1.000000	-0.007064	-0.043453	0.071531	0.340167	0.086703	0.003781	0.219869	0.229613	0.080850
SEXUAL ABUSE	0.143076	0.229613	-0.164319	-0.181552	-0.125740	0.034716	-0.104303	-0.153996	0.982612	1.000000	0.006806
SFI12R	-0.027161	-0.009297	0.904576	0.856819	0.770889	0.169437	0.739401	0.936614	-0.151126	-0.142586	0.472437
SFI21R	-0.061978	-0.037992	0.856562	0.746090	0.650101	0.119696	0.637681	0.820983	-0.139229	-0.128058	0.368034
SFI22R	-0.032039	-0.026575	0.860457	0.749642	0.665942	0.135232	0.642139	0.835518	-0.142897	-0.134013	0.383805
SFI23R	0.087316	0.100079	0.340221	0.378104	0.589009	0.070165	0.432458	0.368708	-0.078186	-0.075588	0.169735
SFI3R	-0.081456	-0.063102	0.796415	0.697555	0.597326	0.104887	0.588397	0.760733	-0.118087	-0.106741	0.309524

Path Coefficients (Mean, STDEV, T-Values)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
PM -> FS	0.829073	0.828274	0.015388	0.015388	53.877543
PM -> PB	0.895201	0.895100	0.009578	0.009578	93.466945
AB -> DQ1	0.003547	0.005301	0.004198	0.004198	0.844928
AB -> DQ2	0.065107	0.064696	0.033878	0.033878	1.921824
AB -> DQ3	0.102016	0.096922	0.034572	0.034572	2.950839
AP -> AB	0.015861	0.025227	0.019627	0.019627	0.808147
NS -> AB	0.386867	0.385372	0.044904	0.044904	8.615505
PB -> AB	0.522309	0.522180	0.054367	0.054367	9.607060
SA -> DQ1	0.983058	0.980956	0.010355	0.010355	94.934527
SA -> DQ2	0.151263	0.146257	0.046790	0.046790	3.232820
SA -> DQ3	0.242441	0.232177	0.122878	0.122878	1.973016
SA -> FS	-0.014508	-0.016182	0.010907	0.010907	1.330116
SA -> PB	0.008529	0.017948	0.012981	0.012981	0.657064
SS -> FS	0.104127	0.104527	0.019017	0.019017	5.475547
SS -> PM	0.444967	0.448528	0.032276	0.032276	13.786216
SS -> AP	0.146906	0.153918	0.039668	0.039668	3.703396
SS -> NS	0.497705	0.501537	0.026802	0.026802	18.569777

Appendix C:

Output from SmartPLS (Model for the Male Participants)



Quality Criteria

Overview

	AVE	Composite Reliability	R Square	Cronbachs Alpha
DQ1			0.990802	
DQ2			0.006654	
DQ3			0.017844	
FS	0.663441	0.960365	0.858170	0.951429
PM	0.732703	0.964658	0.216137	0.958883
AB	0.559460	0.787091	0.748668	0.766836
AP	0.520576	0.813133	0.011684	0.860873
NS	0.698139	0.899599	0.305089	0.840382
PB	0.903666	0.965683	0.855980	0.946666
SA				
SS				

Cross Loadings

	DQ1	DQ2	DQ3	FS	PM	AB	AP	NS	PB	SA	SS
AMPA16B	-0.032722	-0.010397	0.074123	0.850850	0.783014	0.707189	0.058932	0.731700	0.817330	-0.031576	0.421052
AMPA17B	-0.041632	0.014573	0.060279	0.936583	0.887052	0.856452	0.154411	0.826615	0.915861	-0.039095	0.521118
AMPA18B	-0.024278	0.019205	0.067234	0.920225	0.867789	0.823489	0.099260	0.804431	0.940178	-0.022265	0.513964
AMPA3B	-0.037053	-0.074938	0.020601	0.858989	0.768863	0.703924	0.029251	0.734999	0.806895	-0.034197	0.437254
AMPA5B	-0.015147	0.023375	0.088065	0.883774	0.811952	0.757394	0.081357	0.761349	0.854679	-0.012928	0.448034
AMPA7B	-0.017374	-0.017005	0.053653	0.944722	0.890521	0.843182	0.094216	0.826788	0.929216	-0.014900	0.537218
AMPA9B	-0.022152	0.035892	0.089832	0.944304	0.887674	0.862860	0.142521	0.838151	0.919824	-0.019327	0.537314
CBCL16	0.124791	0.145332	0.127185	0.033594	-0.023363	0.288772	0.175954	0.127455	0.012905	0.130872	0.106404
CBCL22	0.118040	0.238065	0.232077	0.192318	0.141595	0.504304	0.266080	0.236810	0.181166	0.122645	0.101333
CBCL26	0.092340	0.185775	0.232745	0.195949	0.100151	0.433881	0.213995	0.233821	0.151678	0.099125	0.115470
CBCL39	0.110696	0.232830	0.199221	0.048921	-0.048861	0.273946	0.312198	0.098384	0.028968	0.112314	0.089529
Education	-0.008128	-0.094016	-0.071018	0.149333	0.142326	0.117702	-0.044669	0.212736	0.164312	-0.019090	0.319604
Employment	-0.061544	-0.001300	-0.051136	0.358774	0.344702	0.316597	0.133468	0.330120	0.373797	-0.066284	0.677251
LSCA2	-0.025239	-0.003062	0.049052	0.874778	0.844827	0.907024	0.088596	0.778676	0.868021	-0.021881	0.456137
LSCA3	0.001830	0.035226	0.069578	0.906966	0.869156	0.915248	0.149200	0.828764	0.905163	0.005976	0.507580
MILD	1.000000	0.011694	0.012759	-0.033505	-0.027129	0.029676	0.018016	-0.021029	-0.043521	0.995377	-0.088647
MODERATE	0.011694	1.000000	0.695891	0.016608	-0.047788	0.080704	0.450127	0.028982	0.019811	0.014672	-0.006609
NOAA19	-0.018688	0.031130	0.065113	0.695497	0.631125	0.666975	0.167570	0.926169	0.678542	-0.014208	0.476891
NOAA25R	-0.026466	0.016811	0.051478	0.761380	0.751150	0.709629	0.133693	0.567144	0.781504	-0.023548	0.373239
NOAA31	0.006807	0.027448	0.053280	0.651938	0.577523	0.610580	0.146020	0.881839	0.630052	0.011342	0.497543

NOAA7	-0.030094	0.020066	0.046488	0.686112	0.625921	0.676214	0.134854	0.914042	0.667523	-0.025518	0.471440
PCPA16	0.059649	0.156702	0.177239	0.522107	0.449118	0.542390	0.236035	0.465866	0.475665	0.066364	0.205774
PCPA18	-0.053449	0.003033	0.005368	0.432445	0.374018	0.431758	0.148423	0.450868	0.385958	-0.053090	0.316043
PCPA19	-0.039675	-0.064689	-0.004935	0.402154	0.331094	0.267563	-0.019062	0.276381	0.343338	-0.039944	0.159795
PCPA3	-0.081340	-0.020657	0.036635	0.917137	0.893342	0.770042	0.123019	0.803168	0.957057	-0.080670	0.509050
PCPA9	-0.017115	-0.031552	0.012967	0.875646	0.839666	0.694912	0.088641	0.741867	0.866650	-0.015842	0.459649
PMCA1	-0.040396	-0.062367	-0.062977	0.713307	0.759095	0.569730	0.013914	0.598624	0.710171	-0.042198	0.355191
PMCA2	-0.017905	-0.074650	0.009711	0.862208	0.884015	0.789212	0.023116	0.769860	0.844441	-0.015824	0.474270
PMCA3	0.001449	-0.093322	-0.053007	0.693562	0.779275	0.605571	0.003007	0.613449	0.698206	0.001715	0.374305
PMCA4	-0.015597	-0.094563	-0.079448	0.727842	0.816829	0.633173	-0.056755	0.627410	0.733301	-0.015753	0.389638
PMCA5	-0.031387	-0.018305	0.014320	0.850145	0.893105	0.764975	0.010880	0.746473	0.839872	-0.030137	0.450842
PMPA1	-0.029992	-0.039626	0.038905	0.713072	0.814819	0.568549	-0.008960	0.568722	0.725249	-0.030569	0.309340
PMPA2	-0.035695	-0.012731	0.034791	0.852163	0.923324	0.758299	0.066153	0.711342	0.861714	-0.033676	0.425987
PMPA3	0.015367	-0.009927	0.049884	0.795892	0.868627	0.689514	0.079055	0.666737	0.810129	0.017501	0.366896
PMPA4	-0.060915	-0.012308	0.036065	0.775298	0.871846	0.639542	0.033753	0.640533	0.785233	-0.060556	0.359509
PMPA5	-0.017469	-0.008137	0.041357	0.865613	0.930654	0.772171	0.075703	0.741130	0.879880	-0.014973	0.449161
POM1	0.067364	-0.044414	-0.005873	0.197857	0.142842	0.135091	-0.069072	0.221276	0.169476	0.066107	0.353881
POM17	-0.017695	0.024604	-0.004256	0.100685	0.072356	0.114400	0.108890	0.169634	0.076316	-0.024215	0.238585
POM2	0.004560	0.004129	0.050625	0.194165	0.206450	0.235729	0.047050	0.220749	0.203986	0.008240	0.403656
POM3	-0.018395	0.000283	-0.008836	0.245667	0.188153	0.172424	0.040651	0.336178	0.221732	-0.019446	0.505002
POM4	-0.044322	-0.041439	-0.041726	0.105967	0.073058	0.114018	0.030617	0.127745	0.094310	-0.042977	0.203006
POM6	0.045959	0.086162	0.061725	0.067234	0.060425	0.086404	0.057857	0.157853	0.056686	0.049583	0.195041
POM8	-0.068250	0.007345	0.014611	0.399844	0.331798	0.356266	0.025711	0.444083	0.391848	-0.070708	0.760306
RBFA15	0.049361	0.229470	0.187911	0.091031	0.025245	0.187843	0.781802	0.121159	0.098973	0.043753	0.066032
RBFA16	-0.002889	0.346575	0.254186	0.155222	0.085655	0.217269	0.873875	0.163593	0.155789	-0.004358	0.087204
RBFA18	0.094271	0.335201	0.293149	0.047543	-0.018949	0.060005	0.567306	0.113414	0.047035	0.098619	0.075261
RBFA19	-0.031003	0.369414	0.313486	0.032049	-0.033114	0.132218	0.764193	0.127701	0.031850	-0.027837	0.052711
RBFA20	0.054896	0.147640	0.221410	-0.065411	-0.096267	-0.031459	0.238495	-0.023406	-0.062864	0.057344	-0.036679
RBFA21	0.048745	0.117125	0.213152	-0.059857	-0.074727	-0.062676	0.083303	-0.029893	-0.047589	0.050724	-0.070000
RBFA22	-0.007210	0.214230	0.340552	-0.029401	-0.036837	0.029524	0.406410	0.002606	-0.020383	-0.006054	-0.022935
RBFA23	-0.058204	0.338725	0.305418	-0.041546	-0.105563	0.022594	0.599150	0.038824	-0.042248	-0.057379	0.051995
RBFA24	0.030510	0.407359	0.368814	-0.025037	-0.050916	0.056888	0.563667	0.032993	-0.017325	0.033858	0.013282
RBFA25	0.032960	0.397654	0.425816	0.026665	-0.019108	0.055198	0.416809	0.086208	0.049306	0.035060	0.018026
RBFA27	0.050923	0.298097	0.264494	0.044909	-0.019258	0.035721	0.407695	0.089580	0.035542	0.053646	0.101160
SERIOUS	0.012759	0.695891	1.000000	0.072827	0.006096	0.133202	0.359948	0.065693	0.062912	0.014695	-0.023886

SEXUAL ABUSE	0.995377	0.014672	0.014695	-0.030553	-0.026073	0.035010	0.017492	-0.016012	-0.041781	1.000000	-0.093983
SFI12R	-0.018838	0.057741	0.075351	0.924658	0.876865	0.798521	0.118750	0.779119	0.954519	-0.016568	0.468903
SFI21R	-0.062345	0.031415	0.046557	0.879170	0.799187	0.695003	0.079617	0.691262	0.862829	-0.059008	0.420573
SFI22R	-0.024116	0.056998	0.068926	0.902426	0.821628	0.721207	0.084309	0.709347	0.896091	-0.020760	0.436908
SFI23R	-0.000051	-0.022202	0.055360	0.477719	0.486456	0.663258	0.133156	0.517398	0.484463	0.002897	0.229550
SFI3R	-0.046829	0.070009	0.087212	0.863173	0.776128	0.676274	0.106751	0.684513	0.835144	-0.044188	0.412587

Path Coefficients (Mean, STDEV, T-Values)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
PM -> FS	0.866877	0.866389	0.011277	0.011277	76.869058
PM -> PB	0.924562	0.924504	0.006707	0.006707	137.851802
AB -> DQ1	-0.005179	-0.005182	0.003788	0.003788	1.367277
AB -> DQ2	0.080289	0.081261	0.042152	0.042152	1.904749
AB -> DQ3	0.132851	0.131883	0.038714	0.038714	3.431588
AP -> AB	0.084252	0.087175	0.029801	0.029801	2.827179
NS -> AB	0.334406	0.333618	0.036609	0.036609	9.134597
PB -> AB	0.549001	0.547002	0.042096	0.042096	13.041598
SA -> DQ1	0.995558	0.995586	0.003155	0.003155	315.532052
SA -> DQ2	0.011861	0.026211	0.020618	0.020618	0.575305
SA -> DQ3	0.010044	0.029710	0.023967	0.023967	0.419084
SA -> FS	0.002945	0.011273	0.008283	0.008283	0.355577
SA -> PB	-0.017675	-0.022434	0.016147	0.016147	1.094603
SS -> FS	0.115930	0.115849	0.015607	0.015607	7.428057
SS -> PM	0.464905	0.470521	0.028502	0.028502	16.311069
SS -> AP	0.108092	0.122020	0.041309	0.041309	2.616643
SS -> NS	0.552349	0.557049	0.024046	0.024046	22.970206

Appendix D:

Collinearity Statistics

	Collinearity Statistics	
	Tolerance	VIF
Sexual Abuse (Yes/No)	.176	5.698
Parental Monitoring	.181	5.510
Parental Bonding	.126	7.941
Neighborhood Safety	.301	3.322
Antisocial Peers	.764	1.308
Antisocial Beliefs	.487	2.052
Family Socialization	.268	3.271
Mild Delinquency	.174	5.752
Moderate Delinquency	.413	2.423
Serious Delinquency	.432	2.317
Socio-economic Status	.840	1.191

Appendix E:

Selection Criteria for Each Individual Site

Site	Selection Criteria	*n*
East	Selected from 3 pediatric clinics serving low income, inner city children. Child factor (inadequate growth in first 2 years of life) Parent factor (HIV infection)	282
Midwest	Recruited from families reported to CPS and neighborhood controls.	245
Northwest	Selected from a pool of children aged 0-4 judged to be at moderate risk for suspected child maltreatment. 60% of the referrals were substantiated.	254
South	Selected from population identified as high risk at birth by state public health tracking effort. Children were 4-5-years-old at entry	243
Southwest	Selected from maltreated children who had entered a county dependency system due to confirmed maltreatment. All children in an out-of-home placement with relative or foster family.	330