A STUDY OF FAMILY RISK CONTEXTS AND CHILD CONDUCT PROBLEMS AMONG RURAL, LOW-INCOME FAMILIES

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ABSTRACT

BHARATHI JAYANTHI ZVARA: A Study of Family Risk Contexts and Child Conduct Problems Among Rural, Low-Income Families
(Under the direction of Martha Cox)

This dissertation research is comprised of three studies using data from a larger study, the Family Life Project, aimed at examining the role of family functioning in the development of conduct problems in young children within high-risk contexts. Specifically, study 1, using propensity-matched controls, explores long-term adjustment of women in terms of individual functioning, parenting behavior, and relationship quality as a function of childhood sexual trauma status. Study 2 focuses attention on the pathways by which a mother’s childhood sexual trauma may exert influence on her parenting behavior and thereby influence the behavioral development of her children, including her depressive symptomatology, parenting behavior, and alcohol and substance use using the same propensity matched sample as in study 1. Using a subsample of resident fathers from the larger Family Life Project, the focus of study 3 was on mothers’ adaptive parenting strategies of maternal gatekeeping behaviors in the prediction of conduct problems in her children in the context of a home environment with an alcohol-and substance-using father and intimate partner violence. Data for these analyses were obtained from mother reports and coding from observational protocols from the Family Life Project. The use of propensity-matched controls to create a control group matched on family of origin variables, study 1 provides evidence that when women with childhood sexual trauma are compared with the matched comparison women, females who experienced childhood sexual trauma show poor functioning, across many domains including interpersonal functioning, relationship quality and
parenting. Study 2 provides evidence to support the notion that mothers’ childhood sexual trauma is related to child conduct problems in her children. The findings from study 2 reveal that maternal childhood sexual trauma, her depressive symptoms, intimate partner violence, and maternal parenting are closely linked to child conduct problems. The findings from study 3 suggest that intimate partner violence and fathers’ alcohol and substance use are related to his harsh intrusive parenting, which in turn is related to child conduct problems. There was evidence that maternal gatekeeping moderates the association between fathers’ harsh intrusive parenting and child conduct problems, such that mothers encouragement of fathers high in harsh intrusive parenting to spend greater, as compared to less time with their children, was related to higher levels of conduct problems. In sum, this research highlights the importance of examining multiple family contexts to understanding conduct problems in young children.
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In conclusion, I dedicate this dissertation to all the loves of my life. First to my Mother and Father who came to this country to offer their children a better life, I thank you for your
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CHAPTER 1: General Introduction

Externalizing behavior problems in childhood are considered major risk factors for later psychopathology (Campbell, Shaw, & Gilliom, 2000; Reef, Diamantopoulos, van Meurs, Verhulst, & van der Ende, 2010). Of particular interest is the grouping of externalizing behaviors known as conduct problems (McMahon & Frick, 2005). The term conduct problems is used to describe a broad range of disruptive and rule-breaking behaviors, including temper tantrums, frequent arguing with adults, lying, truancy, and more serious types of antisocial behavior such as physical aggression, theft, property destruction, and alcohol and substance use (Hinshaw & Lee, 2003; Lynskey & Fergusson, 1995; Frick, Lahey, Loeber, Tannenbaum, Van Horn, Christ, et al., 1993). National survey data reveal that the prevalence of conduct problems in young children is 10% to 25% (Snyder, 2001). Conduct problems have received increasing empirical attention because they have been linked to significant monetary, societal, and individual costs, including persistent antisocial behavior such as criminality (Moffitt, Caspi, Harrington, & Milne, 2002; Moffitt & Caspi, 2001). Although not all children with early conduct problems develop more severe conduct disorders, research has indicated that early behavior problems are related to the later development of more serious psychopathology (Hinshaw & Lee, 2003; Lahey, & Waldman, 2003). Evidence suggests that, left untreated, conduct problems such as aggression and oppositional behavior in young children may become crystallized patterns of antisocial behavior by late childhood and early adolescence (Eron, 1990), beginning a trajectory of escalating academic problems, school drop-out, substance abuse, delinquency, and violence (Loeber & Farrington, 2000; Snyder, 2001).
Family factors including maladaptive parenting behaviors are well-researched influences on the development of conduct problems. As a group, parents of children with conduct problems are less positive, more permissive, and more inconsistent in their child-rearing behaviors; they also use more aggressive and violent discipline (Dishion, French, & Patterson, 1995). Although a significant amount of literature has amassed on the role of parenting and other family factors that may be related to the development of conduct problems, there are still unanswered questions regarding these linkages. For example, very little research has explored the development of conduct problems in certain low frequency, but high-risk family environments, such as one with a mother who has experienced childhood sexual trauma or a home environment with an alcohol and substance using father or one characterized as having interparental violence. Research has focused on the long-term consequences of childhood sexual trauma, but it is not entirely apparent how the development of children’s conduct problems may differ in a home environment with a mother reporting a trauma history versus a home in which the mother does not have a trauma history, although it is clear that mothers who experience early sexual trauma may show impaired parenting (Banyard, 1997). Despite interest on the welfare of children that grow up in families that may be at particularly high risk for difficulties in childrearing, there have been challenges to this line of inquiry. One key limitation has been the issue of recruitment. For example, different approaches to recruitment may lead to non-representative samples (i.e. college students or clinical samples). Generalizable research on high-risk families requires samples that are both large enough for adequate statistical power and similar enough to community populations that its results can be generalized to them. The use of a large representative community sample would provide the opportunity to study these small groups with enough numbers to sufficiently power the investigation.
Similarly, although research has linked a father’s alcohol use and intimate partner violence to child behavioral outcomes, there are still gaps in our knowledge of this high-risk family environment. For example, it is not entirely clear why some children in these high-risk home environments develop conduct problems while others do not. Given that no significant problems are apparent in as many as 44% of adult children in alcoholics makes this an important and understudied home environment in need of further investigation (D'Andrea, Fisher, & Harrison, 1994).

The overarching goal of this dissertation is to examine the role of family functioning in the development of conduct problems in young children within two little-studied, but high-risk family contexts. Despite research links between family function (e.g., parenting) and child conduct problems, this dissertation adds to the literature by exploring the development of conduct problems in these two understudied family environments and examining the role that maternal parenting may play. Although greater detail is provided in the overview of chapters, this dissertation seeks to explain the associations between child conduct problems and the parenting of mothers who experienced childhood sexual trauma versus mothers who did not experience such trauma. Furthermore, this dissertation explores adaptive parenting strategies (e.g., maternal gatekeeping) mothers may employ that provide a protective buffer from the development of conduct problems in young children in families with fathers who are involved in varying degrees of alcohol/drug use.

1.1 Conduct Problems in Young Children

In young children, some behavior problems may be normative. For example, when compared to older children, preschool and young children occasionally display minor physical aggression (e.g., pushing, hitting), defiance (e.g., saying “no,” refusing to follow parental
directions), and temper tantrums. These behaviors, however, decline in frequency as children mature and develop better emotional and behavioral regulation skills that are tied to an increase in problem-solving ability and appropriate coping skills (see Campbell, 1995, for a review). In contrast, as children get older, no decline in these behaviors or an increase in problematic behaviors may suggest behavioral psychopathology (Campbell, 1995).

Moffitt et al (2002) have made the distinction between early- and adolescent-onset of behavioral problems and show that one of the most consistent differences between early and adolescent onset of behavioral problems is that children who have conduct problems in early childhood show a more severe, aggressive, and chronic pattern of antisocial behavior in late adolescence and young adulthood than children with adolescent-onset conduct problems (Frick & Loney, 1999; Moffitt & Capsi, 2001; Moffitt, Caspi, Harrington, & Milne, 2002). That early onset of disruptive conduct problems is associated with an increased risk for serious, persistent, and long-term conduct disorders and antisocial behavior adds urgency to the need to identify factors that may attenuate or ameliorate the pathways by which young children develop conduct problems (Morrell & Murray, 2003).

Much of the literature relating to the development and stability of conduct problems has focused attention on the role of family processes, including poverty, parental psychopathology, marital conflict, and parenting behavior (Tebes, Kaufman, Adnopoz, & Rcusin, 2001; Webster-Stratton & Hammond, 1999). For example, a wealth of research relates aspects of parent-child interactions, such as sensitive parenting, to child behavioral adjustment (Grolnick, Gurland, DeCourcey, & Jacob, 2002). Sroufe, Egeland, Carlson, and Collins (2005) noted that children whose parental interactions are characterized by sensitive, responsive care from the parent are better able to handle frustration and have fewer behavioral problems than those receiving over-
stimulating, intrusive care. In contrast, parents’ indifferent, unresponsive caregiving is associated with children’s problematic behaviors, including conduct problems (Campbell, et al., 2000).

1.2 Children’s Vulnerability to Family Context

While there is general agreement in the broader child development literature that family processes are linked to conduct problems, few studies have examined family functioning in less frequently occurring high-risk family environments. For example, although existing research has suggested that approximately 19% of females in the United States experience childhood sexual trauma (Pereda, Guilera, Forns, & Gómez-Benito, 2009; Briere & Elliott, 2003), very little is known or understood about the parenting provided by mothers who have experienced childhood sexual trauma and the implications for the development of their children. Few studies have specifically focused on the development of conduct problems in home environments with mothers who have histories of childhood sexual trauma compared to mothers who do not have such histories. The past three decades have seen an explosion of interest in the long-term consequences of childhood sexual trauma and its association with the socioemotional adjustment of the survivors and their children (Briere & Elliott, 2003). Examining children’s vulnerability in the context of maternal childhood sexual trauma is important because prior research has linked trauma history with numerous domains of adult interpersonal functioning, including problems in the parental role (Banyard, 1997). However, despite the growing interest reflected in the literature, the field of study has numerous limitations, including the definition of sexual trauma and issues relating to sampling, because much of the prior research has come from clinical samples or samples of convenience (DiLillo, 2001), thereby weakening the generalizability of the results.
Broadly, childhood sexual trauma can, and often does, include everything from exposure to pornographic material to physical assault (Putnam, 2003). Many studies have not differentiated between types of abuse, and findings are often compared across studies, making the associations between childhood sexual trauma and adult functioning less clear. Second, many of the studies have been conducted with female college students, so the findings are not generalizable to a more diverse population (Spiegel, 2000). Third, nearly all of the existing research has involved surveys and questionnaires administered to clinical samples and these nonrandom sampling procedures have resulted in serious limitations upon the external validity of results (DiLillo, 2001). In addition to using surveys and questionnaires, it has been proposed that the use of direct observation of dyadic and family interactions would provide useful information for objective assessment of relationship functioning (Putnam, 2003; DiLillo, 2001). Finally, long-term longitudinal studies on the impact of childhood sexual trauma on later functioning are limited (DiLillo & Damashek, 2003).

Although early research provides a glimpse into understanding the influence of childhood sexual trauma on later adjustment, longitudinal studies are needed to understand the developmental trajectories of childhood sexual trauma survivors, as well as the continuities or discontinuities that may influence the development of their children. For example, a key aspect of understanding the long-term consequences of childhood sexual trauma is identifying the pathways by which a mother’s traumatic experience may influence the development of her offspring (Noll, 2008). Understanding the psychological adjustment of mothers who have experienced childhood sexual trauma is important because of the essential nature of the mother’s family role in providing emotional support for her children (for a review, see Easterbrooks, Biesecker, & Lyons-Ruth, 2000). It seems likely that poor psychological adjustment or
psychopathology in the mother could affect the family unit and the psychological health of her children.

Similarly, prior research has documented that children of alcohol-and substance-using parents are at increased risk for a myriad of social, emotional, and behavioral problems (Hussong, Zucker, Wong, Fitzgerald, & Puttler, 2005; Poon, Ellis, Fitzgerald, & Zucker, 2000). Edwards, Eiden, Colder, and Leonard (2009) reported that children in families that had at least one alcoholic parent have higher levels of conduct problems over time than children in families with non-alcoholic parents. Likewise, children of substance-using parents are believed to be at risk for a number of poor developmental outcomes, including conduct problems (Wagner & Anthony, 2002). Moreover, studies have found direct associations between alcohol and substance use and antisocial behaviors like family violence (Schumacher, Feldbau-Kohn, Smith Slep, & Heyman, 2001), such that increases in alcohol and substance use were associated with significant increases in intimate partner violence (Moore, Stuart, Meehan, Rhatigan, Hellmuth, & Keen, 2007). This is an important consideration because exposure to intimate partner violence has been linked to a host of maladaptive outcomes for children, including conduct problems (Campbell & Lewandowski, 1997).

As the cumulative risk literature postulates, multiple risk factors, such as alcohol and substance use and intimate partner violence, may increase the probability of risk in children. However, despite robust findings linking family risk factors and child maladjustment, there is heterogeneity in behavioral outcomes in children from these challenging home environments (Rutter, 1990; Hughes & Luke, 1998). This has led some researchers to posit that factors in the child’s context may moderate the relationship between life experiences and conduct problem outcomes. With studies on the development of conduct problems from early childhood into late
adolescence indicating significant individual differences in the emergence of these symptoms over time (e.g., Deater-Deckard & Dodge, 1997; Asbury, Dunn, Pike, & Plomin, 2003), it becomes important to identify sources of individual difference affecting the developmental emergence of conduct problems. One explanatory mechanism for the heterogeneity in findings may be that in high-risk home environments where fathers are alcohol and substance users or exhibit violence, mothers may play a regulatory role by limiting the time fathers spend with their children, thereby limiting their direct influence on the children’s development. Although never empirically tested, it may be that mothers act as gatekeepers to moderate the relationship between family risk factors and child conduct problems.

1.3 Overview of Chapters

Recognizing the heterogeneity of findings in the development of conduct problems highlights the importance of clarifying the conditions under which some children develop conduct problems while others do not. This dissertation used a three-study design to explore the pathways by which family functioning may be related to child conduct problems in two understudied and not fully understood populations: children being raised by mothers who experienced childhood sexual trauma and children in homes with violent and alcohol-and substance-using fathers.

All data for this dissertation are drawn from the Family Life Project (FLP). The FLP is a longitudinal, multi-method, multi-respondent study of rural poverty that explores the ways in which child, family, and contextual factors shape child development over time. FLP used an epidemiological sampling frame to recruit a large sample of families residing in one of six poor rural counties. About 20% of children in the United States have been reported to live in rural communities, with child poverty rates higher than in urban communities. There are a number of
reasons why it is important to investigate conduct problems in low-income communities. Children growing up in neighborhoods characterized by poverty as well as those living in economically disadvantaged households have consistently been shown to be at heightened risk for behavioral problems (Feil, Walker, Severson, & Ball, 2000; Gross, Sambrook, & Fogg, 1999). Although the number of studies examining behavioral problems in children from families with low income is small, (see for example Qi and Kaiser, 2003 for a review) they suggest key processes by which poverty may be related to child conduct problems. For example, there is mounting evidence of the negative impact of economic disadvantage on the emotions and behaviors of parents or other caregivers (Conger, Wallace, Sun, Simons, McLoyd, & Brody, 2002; McLoyd, 1998) as evidenced by the heightened risk for intimate partner violence (Cunradi, Caetano, & Shafer, 2002; Tolman & Raphael, 2001) and increased alcohol and substance use (Cooper, Frone, Russell, & Mudar, 1995; Marcenko, Kemp, & Larson, 2000; Dew, Elifson, & Dozier, 2007) in low income communities. Stressful life events, which are often associated with poverty, may have an effect on the parents of young children and, directly and indirectly, an effect on their children’s behavior. The FLP provides a unique opportunity to extend previous research on the pathways by which children may develop behavior problems in low frequency but high-risk environments.

Studies 1 and 2 used a sample of women from the FLP who experienced childhood sexual trauma and a matched control group trauma history. The matched control group, also drawn from the FLP, was determined using propensity score matching procedures. Study 3, in contrast, uses a larger subsample of the FLP in which the child’s primary caregiver had a coresidential spouse or romantic partner when the family was assessed by the FLP at the 60-
month home visit (N=395) to consider parenting and child development in families varying in paternal alcohol/substance use.

To better understand how child development may be related to mothers’ trauma, it is important to first understand how mothers with trauma histories differ from mothers who have not experienced trauma. For example, prior research has documented that mothers with trauma histories differ from mothers without trauma histories in numerous domains of adult functioning, including their long-term psychological adjustment, relationship quality with their romantic partners, and parenting. Few studies examining these associations, however, have used adequate controls to better understand group differences (Putnam, 2003).

To this end, using a sample of propensity-matched controls, Study 1 explores long-term adjustment of women in terms of individual functioning, parenting behavior, and relationship quality as a function of childhood sexual trauma status. Study 2 explores the pathways by which mothers’ childhood sexual trauma may be related to their children’s development of conduct problems, including her depressive symptomatology, parenting behavior, and alcohol and substance use. Study 3 focuses on mothers’ adaptive parenting strategies in the prediction of conduct problems in her children in the context of a home environment with an alcohol-and substance-using father and intimate partner violence. Alcohol and substance use and intimate partner violence are mutually examined in this study because a large and growing empirical literature reveals a significant co-occurrence of relationship between alcohol and substance use and the co-occurrence of intimate partner violence (Foran & O’Leary, 2008). For example, the prevalence of intimate partner violence in a U.S. population survey was about three times higher for men who frequently drank alcohol as compared with alcohol-abstinent men (Cunradi, Caetano, & Schafer, 2002; Murphy, Winters, O'Farrell, Fals-Stewart, & Murphy, 2005). Study 3
aims to determine whether maternal adaptive parenting, more specifically maternal gatekeeping, plays a moderating role in the relationship between a father’s risky behavior (i.e. alcohol and substance use and intimate partner violence) and a child’s conduct problems.
CHAPTER 2: Study 1: An Exploration of Linkages between Reported Experiences of Childhood Sexual Trauma and Adult Psychological Well-Being and Interpersonal Functioning

2.1 Introduction

Finkelhor and Browne (1985) have suggested that early sexual trauma can profoundly “alter a child’s cognitive and emotional orientation toward the world…by distorting the child’s self-concept, world view, or affective capacities” (p. 531). Research supports this view with literature reviews noting general impairments in social and interpersonal functioning among female sexual trauma survivors (Davis & Petretic-Jackson, 2000; Polusny & Follette, 1995).

Studies have shown that the experience of childhood sexual trauma is related to numerous domains of adult functioning, including problems in the parental role, difficulties with adult relationships (Davis & Petretic-Jackson, 2000; Collishaw, Pickles, Messer, Rutter, Shearer, & Maughan, 2007) and higher levels of depression and anxiety (Neumann, Houskamp, Pollock, & Briere, 1996) compared to women without the experience of childhood sexual trauma. For example, Briere and Elliott (1994) reported that childhood sexual trauma survivors are more likely to divorce or separate from their spouses than are those without sexual abuse histories. Women with trauma histories report having less interpersonal trust, less satisfaction in their relationships, more maladaptive interpersonal patterns, and greater discomfort, isolation, and interpersonal sensitivity than their counterparts who have not experienced similar trauma (Briere and Elliott, 1994, p. 62). Linkages between childhood sexual trauma and subsequent alcohol and substance use have also been reported, such that childhood sexual trauma survivors tend to
engage in increased alcohol and substance use compared to those without a history of childhood sexual trauma (Simpson & Miller, 2002).

Due to the links between history of childhood sexual trauma and both mental health and parenting problems in adult survivors, developmental researchers have begun to explore more closely, the associations between mothers’ childhood sexual trauma and the development of her children. Researchers examining the ways that developmental risk may be transferred across generations, note that children of mothers with trauma histories are reported to have more problems with behavioral adjustment including conduct problems (Morrel, Dubowitz, Kerr, & Black, 2003). For example, Roberts and colleagues (2004) reported more externalizing behavior problems including conduct problems in children of mothers reporting childhood sexual trauma compared to the children of mothers who did not have the trauma history (Roberts, O’Connor, Dunn, & Golding, 2004).

Using retrospective reports of childhood sexual trauma, this study examines the associations between women’s report of sexual trauma at or before the age of 14 and their adult psychological well-being and interpersonal functioning. Despite concerns by researchers about the accuracy of retrospective reports (see for example, Berliner & Williams, 1994; Briere & Conte, 1993), much of what we understand about the nature and long-term consequences of childhood sexual trauma depends in large part on this mode of data collection (DiLillo and Damashek, 2003). One common concern is that when asked to recall childhood events, it is possible that respondents forget or choose not to report due to the considerable cultural stigma from reporting such events (Widom & Morris, 1997). It could also be an unconscious denial (or repression of childhood traumatic events) that prevents the recollection of childhood sexual trauma. Prior research however, supports the validity of using retrospective reports as can be seen in a study by
Widom, Luntz and Cottler (1999) who note that when compared to prospective analyses of documented cases of abuse, retrospective reports of childhood trauma were more likely to be associated with higher rates of drug abuse. More specifically, the authors highlight that prospectively, abused and neglected children were not at increased risk for drug abuse compared to non-abused children. In contrast, retrospective self-reports of childhood victimization were associated with robust and significant increases in drug abuse compared to those who self-reported no victimization.

The significance of the age or developmental stage at the onset of the trauma has also been the subject of concern among researchers. Some researchers (see for example, Roth and Lebowitz, 1988) have posited that when the trauma occurs to young children, they may have less refined coping strategies and less ability to control their environments, which may lead to feelings of helplessness. Others have suggested that when the abuse occurs during the early years in which identity and cognitive schemas about self and others are developing, the trauma may become a part of the victim’s internal representations of the self and self in relation to others (Toth, Maughan, Manly, Spagnola, & Cicchetti, 2002). Researchers have argued that in contrast, older children and adolescents may be able protect their own sense of self as separate from the experience of the trauma due to a more mature and complex sense of self and a more developed ability to think abstractly.

2.2 Limitations of Existing Research

Since the 1970s, when the sexual mistreatment of children was recognized as a widespread problem, professionals have wrestled with how to conceptualize and define childhood sexual trauma (Haugaard, 2000). This has led to the use of multiple definitions, making it difficult to reflect on and compare findings across studies. For the purposes of this
study, childhood sexual trauma is defined as “the engagement of a child in sexual activities for which the child is developmentally unprepared and cannot give informed consent” (Draucker & Martsolf, 2008, p. 1034). The focus of this study is on females who were forced to engage in physical sexual contact against their will at or under the age of 14.

In addition, sampling biases have characterized much of the work in this area; a significant proportion of studies have used small samples consisting of college students, individuals who have or are currently undergoing abuse-related psychological treatment, or convenience samples recruited from local communities (DiLillo, 2001). The reliance on relatively small, nonrandom sampling procedures has resulted in serious limitations on the external validity of results. These sampling methods lead to restrictions in the applicability of findings. For example, college students are typically younger, better adjusted, and less diverse in terms of ethnicity and social class than the general population. Moreover, larger samples are necessary for the execution of more sophisticated multivariate statistical analyses (Briere & Elliott, 1994). Furthermore, as reflected in much of the literature on family functioning, Polusny and Follette (1995) observed that ethnic minority groups have rarely been the focus of research on childhood sexual trauma.

As with much of the first generation of research on the sequelae of childhood sexual trauma and adult functioning, a lack of representative samples with appropriate comparison groups has made it difficult to perform comprehensive assessments across studies. For example, Browne and Finkelhor (1986) reviewed 15 studies based on samples of children and/or adolescents and found that 9 out of the 15 had no comparison group. In some cases when a comparison group was included, the social class of the comparison group was considerably higher than that of the maltreated group, making it difficult to determine causal pathways. This
is a significant flaw given the clear research evidence that many of the outcome measures of interest in the broader maltreatment research are adversely influenced by socioeconomic status (Putnam, 2003). The current study addresses these limitations of previous research by utilizing a representative community sample of rural women recruited at the birth of a child and their families from 6 poor rural counties to assess how childhood sexual trauma may be related to adult functioning. The FLP provides a unique opportunity to extend previous research on the sequelae of childhood sexual trauma in a representative sample of women and their families in one of six low-wealth, rural counties.

In recent years, propensity score methods (Rosenbaum & Rubin, 1983) have been increasingly used (see Thoemmes & Kim, 2011) to support causal inference in many disciplines, including public health (Fiebach, Cook, Lee, Brand, Rouan, Weisberg, et al., 1990), psychiatry (Lavori, Keller, & Endicott, 1995), and public policy (Foster, 2003; Hill, Waldfogel, & Brooks-Gunn, 2002) and developmental psychology (Hill, Brooks-Gunn, & Waldfogel, 2003). Although greater detail on matching procedures is provided in the methods section, the present study uses propensity score matching to create a sample of women who experienced childhood sexual trauma matched on childhood demographic variables from the family of origin with women who did not report experiencing childhood sexual trauma. Thus, propensity score matching is used to allow estimates of the effect of maternal sexual trauma on adult functioning by creating matched groups based on background characteristics that themselves might be related to adult functioning.

2.3 Childhood Sexual Trauma and Adult Psychological Well-being

Research suggests that women with a history of childhood sexual trauma suffer from emotional symptoms such as fear, anxiety, and depression at higher rates than women without a
history of childhood sexual trauma. Childhood sexual trauma victims are “more likely than non-abused individuals to report fear of men, anxiety attacks, and problems with anger” (Beitchman, Zucker, Hood, DaCosta, Akman, & Cassavia, 1992 p. 106). For example, an Australian study of 1,991 twin pairs found that in twins discordant for childhood sexual trauma, affected twins had significantly higher rates of major depression, anxiety and problems with alcohol dependence (Dinwiddie, Heath, Dunne, Bucholz, Madden, and Slutske, et. al., 2000).

Understanding the psychological adjustment of women with childhood sexual trauma histories is important because of the essential role that mothers play in family functioning (Easterbrooks, et al., 2000). It seems likely that maternal psychopathology could affect the family unit and the psychological health of children and prior research supports this view.

2.3.1 Depression

The literature on maternal depression is vast and continues to grow. Maternal depression has been identified as a powerful risk factor for a variety of negative developmental outcomes in children (see reviews by Goodman, 2007; Sroufe, Carlson, Levy, Egeland, 1999). It disrupts effective parenting, undermines intimate relationships, and reduces overall life satisfaction (Cummings & Davies, 1994; Rutter, 1990). Depression is one of the most commonly occurring and well-established outcomes for adult female survivors (Putnam, 2003, see reviews by Paolucci, Genuis, and Violato, 2001). According to Briere and Elliot (1994), adult survivors of childhood sexual trauma have four times greater lifetime risk of developing major depression than people who do not have a history of abuse.

There is some debate in the literature about whether it is childhood sexual trauma per se that causes mental health problems or whether depression is caused by a general level of family risk that allowed the trauma to occur in the first place (Kendall-Tackett, 2002; Courtois, 1988).
To test this hypothesis, Zuravin and Fontanella (1999) examined data from 513 low-income women, of whom 105 had experienced childhood sexual abuse. They compared measures of depression and 11 markers of family dysfunction in addition to sexual abuse, including four other types of maltreatment (verbal abuse, emotional neglect, physical abuse, and physical neglect). Their results indicate that women who had experienced childhood sexual abuse were three times more likely to be depressed than the non-sexually abused women in their sample. The researchers also reported that childhood sexual abuse made an independent contribution to the variance in depression that was above and beyond other adverse events in childhood.

2.3.2 Anxiety

Anxiety is often defined in the clinical literature as a theoretical construct used to describe a complex set of responses characterized by autonomic arousal, including increased heart rate, sweating, dryness of the mouth, and feelings of muscular weakness, with individuals expressing apprehension, tension, worry, and dread (Molnar, Buka, Kessler, 2001). Given that childhood sexual trauma is by nature threatening and disruptive, it is not surprising to learn that victims of this traumatic experience are prone to chronic feelings of fear or anxiety (Kendall-Tackett, Williams, & Finkelhor, 1993). Elevated anxiety has been documented in child victims of sexual trauma, with survivors having up to five times greater likelihood of being diagnosed with at least one anxiety disorder, including phobic disorders, panic disorder, and/or obsessive compulsive disorder than women without trauma histories (Briere & Elliot, 1994).

Researchers hypothesize that anxiety frequently has a conditioned component in that sexual trauma usually takes place in the context of human relationships where closeness and nurturance is expected, yet trauma, intrusion, betrayal, and/or pain occur. As a result, a learned association may form between various social or environmental stimuli and danger, such that an
otherwise relatively neutral interpersonal event elicits fear in the survivor (Briere & Elliott, 1994). For example, a child who has experienced sexual trauma by her father could be expected to experience subsequent feelings of fear and anxiety in his presence, particularly in situations similar to the ones in which the abuse occurred (e.g., when they are alone together). Over time, her fear could produce anxiety in the presence of other people (e.g., other males) or other stimuli (e.g., physical closeness, physical surroundings) similar to those associated with the abuse. Extending this line of thought, the trauma survivor may find intimate or close relationships, such as those with partners and children, to be anxiety-inducing.

2.3.3 Alcohol and Substance use

Women with a history of childhood sexual trauma are believed to be at an increased risk for alcohol and substance use and abuse than women without trauma histories (Filipas & Ullman, 2006; Kendler, Bulik, Silberg, Hettema, Myers, Prescott, 2000). In his review examining the outcomes of childhood sexual trauma, Putnam (2003) concluded that there was sufficient evidence to infer a causal relation between childhood sexual trauma and a number of adult psychopathologies including alcohol and substance dependence. In attempts to clarify the association between childhood sexual trauma and later alcohol and substance use, researchers have proposed a number of explanations including the use of substances as coping strategies. For example, Paone and colleagues (1995) suggest that women might use alcohol as self-medication to cope with the trauma or to combat impaired self-esteem arising from the traumatic experience.

2.4 Interpersonal Functioning and Relationship Quality

Childhood sexual trauma involves an intimate interpersonal violation and, therefore, it stands to reason that the interpersonal functioning in the intimate relationships of adult survivors may be affected by the trauma. According to Briere and Elliott (1994), sexual trauma survivors
typically report “having less interpersonal trust, less satisfaction in their relationships, and greater isolation” (p. 62). While childhood sexual trauma survivors report difficulties associated with relationships, the specific nature and course of the impact of childhood sexual trauma on interpersonal relationships is unclear. Some survivors are able to establish long-term, lasting, and healthy relationships with partners, while others struggle to establish and maintain lasting intimate relationships (Putnam, 2003; Davis, Petretic-Jackson, 2000). For example, early research by Sprei and Courtois (1988) noted that childhood sexual trauma victims tend to describe all of their relationships as “empty, superficial, conflicted or sexualized” (p. 276).

2.4.1. Intimate relationship quality.

Couples intimate relationships are a central feature of human association and may involve the most challenging interpersonal interactions for female survivors. Researchers hypothesize that difficulties with interpersonal trust and intimacy may contribute to the general relationship dissatisfaction survivors express. Using a developmental perspective, Cole and Putnam (1992) suggest that childhood sexual trauma undermines children's capacity to experience trust and safety with emotionally significant people, which manifests in distrust and insecurity in adult relationships. To add relevance to this line of thinking, survey data suggest that women with a history of childhood sexual trauma are significantly more likely than non-abused women to have difficulty confiding in and discussing personal concerns with their male partners (Mullen, Martin, Anderson, Romans, & Herbison, 1996). Numerous clinical studies have documented patterns of dysfunction in survivors’ marital and couple relationships (DiLillo, 2001). What can be gleaned from the existing literature is that women with a history of childhood sexual trauma, when compared to non-abused women, experience a set of intensely ambivalent feelings about
relationships in general (e.g., disillusionment, mistrust, idealization, devaluation, hostility) and more specifically towards men (Briere & Elliott, 2003).

2.4.2 Intimate partner violence (IPV).

Several studies have found that women with a history of childhood sexual trauma experience an increased risk of suffering additional interpersonal victimization as adults. In their prospective study of revictimization after childhood sexual trauma, Barnes and colleagues (2009) noted that women who had experienced childhood trauma were nearly twice as likely to also experience intimate partner violence in adulthood. Additional studies using clinical samples have confirmed these earlier findings. For example, in their study of dating violence among college undergraduates, Cry and colleagues (2006) found that women who had experienced childhood sexual trauma were significantly more likely to later pair with abusive partners.

2.5 Childhood Sexual Trauma and Subsequent Parenting Behaviors

The psychological distress and interpersonal difficulties that survivors of childhood sexual trauma experience as adults have the potential to interfere with their ability to parent their own children (DiLillo & Damashek, 2003). For example, in their study of infant attachment patterns of mothers with childhood experiences of physical or sexual abuse, Lyons-Ruth and Block (1996) found that the strongest correlate of affective withdrawal (less empathy and decreased nurturance for the infant), was the severity of childhood sexual trauma. Similarly, using a clinical sample, Douglas (2000) reported that women who had experienced childhood sexual trauma and were seeking mental health services reported being significantly more anxious about the intimate aspects of parenting their children then did women seeking mental health services who had not experienced such trauma.
While the findings are difficult to integrate because researchers used different samples and outcome measures, studies have reported at least some negative effects of childhood sexual trauma on later parenting attitudes and behaviors. Investigations targeting the relationship between childhood sexual trauma and subsequent parenting have identified various parenting difficulties, including discomfort with the emotional demands of motherhood (Cole, Woolger, Power, & Smith, 1992), less confidence in the parenting role (Armsworth & Stronck, 1999; Cole et al., 1992), being overly permissive (Kreklewetz & Piotrowski, 1998), employing physically abusive disciplinary strategies (Banyard, 1997; DiLillo et al., 2000), and boundary dissolution (Burkett, 1991; Alexander, Teti, and Anderson, 2000).

There are numerous reasons why parenting behaviors may be associated with childhood sexual trauma. First, childhood sexual trauma survivors are likely to have grown up in a dysfunctional family environment that provided them with inadequate exposure to effective models of parenting (Armsworth & Stronck, 1999; DiLillo, 2001). Therefore, some researchers have argued that the symptoms manifested in childhood trauma survivors may develop from the dysfunctional family of origin rather than from the abuse itself (Alexander, 1993). Second, prior research links maternal self-efficacy to her parenting behavior (Teti & Gelfand, 1991). The abuse experience and its associated symptoms (e.g., anxiety, depression) may diminish not only the survivors’ ability to manage the demands of parenting, but also their confidence in their own childrearing abilities (DiLillo, 2001).

2.5.1 Parenting efficacy

A number of reports reveal a general concern on the part of mothers with a history of childhood sexual trauma about their abilities to parent their children (Cole et al., 1992; Douglas, 2000). Cohen (1995) measured parenting beliefs on multiple dimensions and noted that mothers
with childhood sexual trauma histories compared to mothers without trauma histories felt more inadequate, negative, and incompetent as parents; had less appropriate perceptions of their child's need for autonomy, and had more unrealistic and rigid expectations for their child. These mothers also reported struggles with setting limits and following through on rules and consequences. Further, Banyard (1997) noted that a history of childhood sexual trauma was negatively related to satisfaction with oneself as a parent, over and above the effects of other adverse childhood experiences (e.g., physical abuse, negative relationships with caregivers) and maternal depression. In contrast however, Alexander et al. (2000) found no association between maternal childhood sexual trauma history and scores on the Parenting Stress Inventory (Abidin, 1995). Many of these earlier studies however did not control for demographic or other background variables including additional maltreatment, making it is difficult to evaluate the unique relationship between childhood sexual trauma and parenting efficacy (DiLillo & Damashek, 2003).

2.5.2 Sensitive and harsh intrusive parenting

Although a number of studies discussed previously have examined the impact of childhood sexual abuse on parenting, few have focused on the theoretical domains of maternal sensitivity and harsh intrusive parenting. The ways in which parents interact with children has been linked to child adjustment in multiple domains, as well as to the development and maintenance of psychopathology. Reviews of the childrearing literature have identified two pivotal aspects of parenting. The first of these factors refers to a parent’s ability to provide emotional nurturance and warmth and is referred to as parent sensitivity (Cox & Harter, 2003; Grolnick, et al., 2002). Maternal sensitivity is the ability to recognize and respond both effectively and promptly to the distress and needs of one’s child (Cox & Harter, 2003). In so
doing, the parent or caregiver helps the child develop his or her own self-regulation by responding to the child’s distress with support and sensitivity (Cassidy, 2008).

The second of these factors is parental control and harsh intrusiveness. Parents characterized as controlling, emphasize children’s compliance and the achievement of particular goals. In contrast, parents who foster children’s self-reliance and decision-making abilities support autonomy (Cox & Harter, 2003; Grolnick, et al., 2002). The distinction between intrusive and supportive control highlights that an appropriate level of parental control has been linked to positive child outcomes, while over-control and intrusiveness are thought to undermine children’s development of autonomy (Clark and Ladd, 2000).

With regard to harsh intrusive parenting, prior research has linked childhood sexual trauma to harsher discipline practices. For example, Burkett’s (1991) study of 40 mothers, half of whom reported childhood sexual trauma histories yielded several interesting findings. The qualitative and observational analyses revealed that mothers with trauma histories compared to control mothers used more messages that were belittling and blaming, and used fewer messages that communicated affirmation and affection. However, no study to my knowledge has examined the intrusive and controlling parenting behaviors of mothers with a history of childhood sexual trauma using observational assessments of mother-child interactions in a sample with matched controls. This is an important next step considering that controlling or intrusive parenting behavior may compromise a child’s sense of competence and interfere with a developmentally appropriate sense of autonomy (Barber, 1996).

2.5.3 Boundary dissolution

Boundary dissolution is defined in the literature as “a form of parent child relationship disturbance in which the typical parent and child roles become distorted or even reversed”
(Shaffer and Sroufe, 2005, p. 67). The concept is often interchanged in the literature with other terms including role reversal and parentification of children. Although these terms are not all interchangeable, what they do have in common is their shared characterization of a type of relationship disturbance whereby the parent assumes a child-like role and the child assumes more of an adult role, becoming the parent’s partner or caregiver. Researchers posit that although boundary dissolution may help the parent meet his or her own needs, it may undermine the child’s development (Alexander et al., 2000). Research in this area suggests that boundary dissolution interferes with the development of autonomy and self-concept in the early developmental stages because the child focuses more on the parent’s needs than on his or her own needs while, simultaneously, the parent seeks to keep the child dependent upon her (Macfie, Houts, McElwain, & Cox, 2005; Jacobvitz, Hazen, Curran, & Hitchens, 2004). In one of the first empirical studies to examine the association between childhood sexual trauma and later parenting, Burkett (1991) found that, compared to non-abused mothers, mothers with a history of childhood sexual trauma were more self-focused and dependent on their children for emotional support. Observation of children’s behavior revealed that children of women with a history of childhood sexual trauma were more parent-focused than children of mothers in the comparison group.

As Burkett noted, “the findings of both the videotaped observations and the interviews with mothers strongly suggest blurred boundaries between parent and child subsystems in families in which mothers experienced childhood sexual abuse” (Burkett, 1991, p. 9). Similarly, Alexander, et al., (2000), using a community sample of 90 mothers, of whom 19 were childhood sexual trauma survivors and 71 had no history of abuse, supported Burkett’s findings. For example, Alexander et al., (2000) reported that compared to mothers with childhood history of
Despite these linkages however, important limitations from previous research must be noted. Prior studies linking childhood sexual trauma to later parenting difficulties, such as boundary dissolution (Burkett, 1991; Alexander et al., 2000), have done so primarily using self-report measures or samples too small to run more powerful multivariate analysis to test group differences. For example, Burkett used a sample of 20 mothers who had been sexually abused prior to age 14 and compared it to a sample of 20 mothers who had not experienced similar abuse. Alexander et al.’s (2000) study also had several limitations, including the use of self-report measures to assess mother-child boundary dissolution. Given that boundary dissolution implies an unconscious interpersonal process, it would best be investigated using observational measures that would also allow an independent assessment of mother and child behavior.

2.6 Research Questions and Hypotheses

Exploratory in nature, the proposed study has several goals. One is to use a stringent and clear definition of childhood sexual abuse. Several researchers have addressed the need for clarity in the definition to allow for comparison across studies (Putnam, 2003). The present study uses mothers’ retrospective report of their own sexual trauma history at or before the age of 14. This study adds to the literature in multiple ways. In addition to using a clear and precise definition of sexual trauma, the present study uses a sample with matched controls to further our understanding of the long term associations of the sexual trauma experience and adult functioning in multiple domains including emotional intimacy, and intimate partner violence. In
addition, the use of observational data of parenting behaviors provides a more clear understanding of the associations between childhood sexual trauma and subsequent parenting.

Question 1: Are there group differences in adult psychological well-being defined as anxiety, depressive symptomatology, alcohol and substance use between women who report experiencing childhood sexual trauma and women who do not?

- Group differences are expected in adult psychological well-being, as defined by depression, anxiety, alcohol and substance use as a function of childhood sexual trauma such that women with a reported history of childhood sexual trauma are anticipated to have higher levels of depression, anxiety, and alcohol and substance use as compared to women who do not report experiencing childhood sexual trauma.

Question 2: Are there group differences in adult interpersonal functioning and relationship quality in terms of their emotional intimacy and intimate partner violence between women who report experiencing childhood sexual trauma and women who do not?

- Group differences are expected in adult relationship quality with romantic partners, as defined by emotional intimacy and intimate partner violence such that women with a reported history of childhood sexual trauma are anticipated to report lower levels of emotional intimacy and higher levels of intimate partner violence as compared to women who do not report experiencing childhood sexual trauma.

Question 3: Are there group differences in parenting behaviors of women in terms of their sensitive and harsh intrusive parenting and boundary dissolution between women who report experiencing childhood sexual trauma and women who do not?
• Group differences are expected in parenting behaviors, as defined by sensitive and harsh intrusive parenting and boundary dissolution such that women with a reported history of childhood sexual trauma are anticipated to show lower observed levels of sensitivity and higher observed levels of harsh intrusive parenting and boundary dissolution as compared to women who do not report experiencing childhood sexual trauma.

2.7 Sample

The sample for the proposed study is drawn from the Family Life Project (FLP). The FLP is a longitudinal, multi-method, multi-respondent study of rural poverty that explores the ways in which child, family, and contextual factors shape child development over time. The FLP is based on a developmental, epidemiological sampling design so as to recruit a representative sample of mothers who gave birth to a new child in the recruitment year, in three poor rural counties in Pennsylvania and three poor rural counties in North Carolina, with an oversampling of African American families in North Carolina. FLP families from the 6 counties experiencing the birth of a child during the 1-year recruitment period were recruited in person at hospitals and over the telephone using birth records. Eligibility criteria included residency in the target counties, English as the primary language spoken in the home and plans to stay in the area for the next three years. A total of 1,292 families enrolled in the FLP by completing the first home visit when the family’s infant was two months old. Of these, 144 women reported that they had experienced childhood sexual trauma at or before the age of 14. Using propensity score matching procedures, a contrast group was created based on carefully chosen covariates (the procedures for the propensity matching are described in greater detail in the analysis plan). Women who experienced childhood sexual trauma, (as assessed by the Trauma History Interview, Green, 1996), were matched on mothers’ childhood demographic variables to a group of women
(controls) who have not experienced childhood sexual trauma. Details of the matching procedure can be found in the analysis plan.

2.8 Procedure

The FLP used two trained research assistants to collect all data during home visits. The data for the proposed study were collected at varying waves of data collection. All caregivers reading at the 8th grade level or above independently completed the questionnaires, while those reading below the 8th grade level had the questionnaires read to them by home visitors. At each visit, caregivers completed questionnaires regarding demographic variables, as well as questionnaires relating to child behavior, relationship quality, and parenting. Data for study 1 are derived from the 2-, 24-, 36- and 60-month time points.

The covariates for the matching procedure were drawn from the 2-month interview. The trauma history data were collected at two different time points, either the 36 visit or the 60 month visit depending on time restrictions for the visit. Mothers only completed the trauma questionnaire once. At the 60-month visit, in addition to completing questionnaires, the primary caregiver and the child were filmed in a semi-structured 15-minute dyadic play activity. A team of four coders scored the DVDs for caregiver behavior.

2.9 Measures

Trauma History Questionnaire (THQ; Green, 1996): at either the 36- or the 60- month home visit, The FLP used the Trauma History Questionnaire, which is a 24-item self-report measure that examines experiences with potentially traumatic events, such as crime, general disaster, and sexual and physical assault, using a yes/no format. For each event endorsed, respondents were asked to provide the frequency of the event, their age at the time the event occurred, and the nature of their relationship with the abuser. For the purposes of the proposed study, we have
selected the item relating to sexual abuse/assault. The specific questions asked of respondents were, (1) “Has anyone ever done something sexual to you against your will, such as made you have intercourse, oral or anal sex, touched private parts of your body, or made you touch theirs, or otherwise forced you to have unwanted sexual contact?” If the respondent answered yes, they were asked, (2) “How old were you when this occurred?” Respondents were asked to rate on a 6-point Likert-type scale (where 1 = 0-4 years of age, 2 = 5-11 years of age, 3 = 12-14 years of age, 4 = 15-18 years of age, 5 = 19-25 years of age, and 6 = 26+ years of age). The subsample of women who reported experiencing sexual trauma at or before the age of 14 was used in this analysis.

Mothers’ family of origin information for propensity score matching: The variables for the propensity score matching were drawn from the 2-, 36- and 60-month interviews. At the 2-month interview, mothers were asked to respond with a “Yes”, “No” or “Don’t know” to the following question “When you were growing up (aged 0-18), did the family members you lived with receive [type of assistance]?” AFDC (Aid to Families with Dependent Children), food stamps, Medicaid or lived in public housing. They were also asked to respond to “What was the highest grade completed by the primary mother-figure that was in your home while you were growing up? “, with the scale ranging from 0 = no school to 22 = PhD, where values 0-11 indicate highest grade level completed, and values 12-22 include milestones such as obtaining a Graduate Equivalency Diploma (GED) (12), graduating from high school (14), completing a four year college degree (18), and obtaining a PhD (22). From either the 36- and 60-month interview additional traumas experienced in childhood (ex. being mugged or beaten, natural disasters such as tornadoes or hurricanes) were also be used in the matching procedure (i.e. Trauma History Questionnaire, Green, 1996).
Maternal depressive and anxiety symptoms. (Brief Symptom Inventory, BSI; Derogatis, 2000).

At the 24 month visit, mothers completed a 23-item self-report questionnaire regarding psychological distress. The 24-month time point was selected for this analysis because prior research has shown this to be an especially challenging time for mothers as most toddlers are highly mobile, actively engaged with the environment, and testing the limits imposed upon them as they strive for a new level of autonomy from the primary caregiver. For example, as children develop and acquire more abilities, they may also present a greater range of behaviors and situations that mothers find stressful. Respondents were asked to rate on a 4-point Likert-type scale (where 0 = not at all and 4 = extremely) how distressed they were by each symptom over the past seven days. The mean of the measure’s six-item depression subscale was used in the proposed study. An example item reads “[how much were you distressed by]” “feeling blue” and “feeling hopeless about the future.” The mean of the measure’s six-item anxiety subscale was used in the proposed study. Representative questions for the anxiety subscale include “[how much were you distressed by]” “nervousness or shakiness inside” and “suddenly scared for no reason”. Cronbach’s alpha =.80 for depression and .79 for anxiety in the FLP at 24 months.  

Mother’s Report of Alcohol and Substance Use: At the 36-month visit mothers completed The Alcohol, Smoking and Substance Involvement Screening Test, (The ASSIST) which was developed by an international group of substance abuse researchers for The World Health Organization (WHO ASSIST Working Group, 2002), and has been validated as a screening test for psychoactive substances in individuals who use a number of different substances including tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants (ATS), inhalants, sedatives, hallucinogens, opioids and ‘other drugs’. For this study, we used questions concerning life-time use of substances. For example, subjects responded “YES” or “NO” to questions such as, “Have
you ever used alcohol?” or “Have you ever used cocaine (crack, coke)?” and “Have you ever used opiates (heroin, methadone, morphine?” Total number of “Yes” answers, were summed to provide an overall score of alcohol and substance use. Cronbach’s alpha for our sample = 70. A full list of the psychoactive substances screened for is provided in Appendix 2, part A.

**Intimate Partner Violence (IPV).** To assess intimate partner violence, the Conflict Tactics Scale-Couple Form Revised (CTS-R; Straus & Gelles, 1990) was administered to all mothers at the 24-month time point. Mothers completed the scale twice, reporting on both her and her partner’s conflict style. The CTS-CF-R consists of 19 items exploring conflict and violence between the partner and the mother in the past 12 months. The CTS-CF-R contains three subscales: verbal discussion, verbal aggression, and physical violence. Scores on the 9-item physical violence subscale, which captures incidences of physical aggression and violence, was used to assess violence in the romantic relationship when the target child was 24 months old. Respondents were asked to rate, on a 7-point Likert-type scale (on which 0=never, 1=once, 2=twice, 3=3-5 times, 4=6-10 times, 5=11-20 times, and 6=more than 20), how often in the past 12 months they had engaged in specific behaviors. An example item reads “[How often in the past 12 months have you/your partner] kicked, bit, or hit him/her/you with a fist?” In the FLP, the majority of physically violent couples were classified as dual perpetrators (approximately 70% of the physically violent families in the larger FLP sample), a prevalence rate that is consistent with previous work with community samples, which suggests that physical violence in community samples is more commonly mutual (Archer, 2000; Caetano, Vaeth, & Ramisetty-Mikler, 2008). Thus, in an effort to more accurately capture the experience of the mothers in this sample, maternal reports of their own IPV and their report of their partners’ IPV were summed to create a score that represents the total amount of violence experienced by the mother. The rationale for
summing the violence comes from previously published reports (e.g. Leonard and Quigley, 1999; McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006) that if at least one of the respondents reported an instance of IPV, the couple was designated as having violence in the relationship. Cronbach’s alphas for the 18 item total scores for physical violence was .88 for 24-month time point.

*Intimacy in partner relationship.* (Assessing Intimacy: The Pair Inventory; Schaefer & Olson, 1981). For the FLP, this variable was composed of six items from the emotional intimacy subscale of the Personal Assessment of Intimacy in Relationships. This measure was administered at the 24-month visit. Example items included the following: “My spouse/partner listens to me when I need someone to talk to” and “I sometimes feel lonely when we’re together.” All items were measured on a 5-point Likert-type scale. A score of 1 indicated ‘‘strongly disagree’’ and a score of 5 indicated ‘‘strongly agree.’’ Cronbach’s alpha was .89.

*Parenting efficacy.* During the 58-month visit, mothers responded to an adapted shortened version of the Parental Beliefs Survey (PBS; Luster, Rhoades, & Hass, 1989). The FLP includes 7 items from the original Beliefs regarding Spoiling Subscale as well as 7 items identified by factor analyses (unpublished analyses from the Durham Child Health and Development Study) that load on a single Parental Efficacy factor. Mothers responded to such questions as “The way children turn out often has little to do with how their parents raise them”. All items were measured on a 6 point scale where 1 = “Strongly Disagree” and 6 = “Strongly Agree” with higher scores reflecting less parental efficacy. Cronbach’s alpha was .79.

*Observed maternal parenting behaviors.* When the children were 60-months old, mother-child dyads were presented with two developmentally appropriate activities. The tasks included (1) an activity involving the mother and child each building towers to match a model provided using
wooden blocks; and (2) a card game called ‘slap-jack’. For the tower building task, mothers were told that this was a task for the child to complete but that they could provide any assistance they deemed necessary. For the card task, mothers were instructed that when the card turned up was a ‘Jack’ both the mother and child slapped the pile. The first one to slap the pile won those cards. Mothers then taught the game to their child and the mother and child played the game. It was expected that this activity would provide an opportunity to observe expression of affect from the mother and the child as well as the child’s emotional regulation in a potentially exciting and/or frustrating situation. The two digitally recorded episodes lasted approximately 15 minutes in total. Six global rating scales of parent behavior (Cox and Crnic, 2002) were subsequently coded by trained coders observing the digital recordings. The codes included: sensitivity/responsiveness, intrusiveness, detachment/disengagement, stimulation of cognitive development, positive regard and negative regard. These scales were adapted from those used by the National Institute for Child Health and Human Development Study of Early Child Care and Youth Development (NICHD ECCRN, 1999). Coders rated parenting behaviors on a 7-point scale (on which 1 = not at all characteristic and 7 = very characteristic). Both frequency and intensity of behavior or affect toward the child are considered. The sensitivity/responsiveness scale, which was adapted from Ainsworth, Blehar, Waters, and Wall (1978), describes the degree to which the parent was aware of and responsive to the child’s bids and signals for attention and achieved synchrony with the child. A parent scoring low on this scale fails to provide supportive cues, she might be passive, uninvolved, aloof, or otherwise unavailable to the child. In contrast, a parent scoring high on this scale establishes herself as consistently supportive and encouraging toward the child and continues to provide high quality support when the child is in need. The intrusiveness scale rates the parent’s respect for the child as an individual and the extent to which
the parent understands and recognizes the child’s effort to gain autonomy and self-awareness. As such, a parent scoring low on intrusiveness exhibits behaviors that are child-centered, well-timed and tuned to the child’s signals. In contrast, a parent scoring high on intrusiveness represent behaviors that are more parent-centered than child-centered; the parent lacks respect for the child as an individual and fails to understand and recognize the child’s effort to gain autonomy and self-awareness. The detachment/disengagement scale describes the degree to which the parent was emotionally distant, uninvolved, or unaware of the child’s signals or needs for appropriate facilitation or care. Parents who receive a low score for detachment remain emotionally engaged with the child throughout the interaction. These parents can be sensitive or intrusive. In contrast, a parent receiving a high score for detachment remain disengaged and uninterested in the child even when the child makes a bid for interaction with the parent. The stimulation of cognitive development scale measures the degree to which the parent engaged in age-appropriate behaviors that foster cognitive and physical development of the child. A parent receiving a low score on the stimulation of cognitive development scale provides minimal stimulation, and any stimulation she provides is very poorly matched to the child's developmental level. In contrast, a parent receiving a high score for the stimulation of cognitive development scale is one that makes deliberate attempts to encourage the child’s development, achievement and learning consistently throughout the interaction. The positive regard scale rates the quantity and intensity of the parent’s expression of positive feelings toward the child, including praise, smiling, physical affection, playful behavior, and overall enjoyment. The negative regard scale rates the parent’s negative affect for the child including disapproving, harsh, or hostile vocalizations or facial expressions.
All coders were blind to other information about the families. Two criterion coders trained all other coders until excellent reliability (intraclass correlation > .80 for all composites) was maintained for each coder on each scale. Once reliability was met, two coders were assigned to each case. They completed independent codes (on which reliability was based) and then resolved any disagreements to arrive at a final code. Every coder also continued to code at least 20% of cases with a criterion coder to ensure continued reliability with the criterion/master coder.

To inform compositing of variables, exploratory factor analysis was conducted with an oblique rotation (i.e., promax). The orthogonal factor analysis suggested the presence of two distinct, relatively independent composites for parenting behavior. On the basis of these factors, the individual subscales were composited to obtain overall sensitive parenting and harsh intrusive parenting scores. Sensitive parenting consisted of the mean of the reverse score for the detachment/disengagement scale and the scores for sensitivity/responsiveness, positive regard, and stimulation of cognitive development scales. Accordingly, higher scores on the sensitivity subscale reflect parenting behaviors that are child-centered, engaged, warm, and stimulating. In contrast, lower scores on the sensitivity subscale reflect parenting behaviors where the parent rarely responds appropriately to the child's cues, and does not manifest an awareness of the child's needs. Harsh intrusive parenting scores were created by summing the mean of the harsh intrusiveness and negative regard scales. Thus, higher scores on the harsh intrusiveness subscale represent parenting behaviors that are parent-focused, harsh, and affectively negative. Low scores on the harsh intrusiveness represent parenting behaviors that are appropriately paced to needs of the child, foster autonomy or to facilitate the child’s exploration.
Coders also rated one dyadic variable: boundary dissolution (Jacobvitz, Morgan, Kretchmar, & Morgan, 1991). Boundary dissolution captures parenting behaviors whereby a parent begins treating the child as her/his contemporary rather than taking charge and setting the necessary limits. Instead of giving the child the firmness and the reassurance she needs, the parent may treat the child as a playmate, participating in distracting activities with the child. For example, the parent may stimulate the child or be charmed by his/her antics rather than redirecting him/her to the task at hand. In addition, the parent may treat the child as a partner (parentification), perhaps speaking in hushed, intimate tones, engaging in provocative teasing, or deferring to the child (i.e., letting him/her dictate the situation) when he/she needs the parent to take charge. Not only is the parent failing to maintain the parental role, but she is defining the relationship with the child as playmates or intimate partners.

In instances of physical boundary dissolution, a parent controls or manipulates the child using physical intimacy and sensuality. These behaviors are distinct from affectionate behaviors that are used to comfort, reassure, or share positive feelings. In interactions characterized by physical boundary dissolution, the parent may encroach upon the child’s personal space (i.e., leaning in closely while the child is working on the task) or may be persistent and intense in their demand of affection from the child by asking for hugs and kisses while the child is attempting to focus and work on the task at hand. For example, a more persistent and intense demand of affection may be “can I have kiss, please, a kiss, no? Oh, come and give mommy a hug or a kiss.”

In the FLP, the boundary dissolution scale captures the extent to which the caregiver solicits inappropriate attention, affection, intimacy, or support from the child, rather than maintaining her attention on following the child’s activities, cues, and directions. This code
allows for both psychological and physical boundary dissolution. The scores for boundary
dissolution were derived from a 7-point Likert-type scale ranging from 1 to 7, (on which 1 = not
at all characteristic and 7 = very characteristic). In the current sample, average inter-rater
reliability across pairs of coders was greater than .80 for sensitive and intrusive parenting as well
as for boundary dissolution.

Control variables. Although childhood demographic variables from the family of origin were
used in the propensity score matching, the present analysis uses current demographic information
as control variables. Covariates were included in the models on the basis of previous research.
For example, much of the literature on maternal parenting suggests that the quality of parenting
behavior is related to maternal education. In addition, at each visit, mothers reported information
on a variety of household demographic variables, including the total household income from all
possible sources and the number of individuals living in the home. Income-to-needs ratios were
calculated at each assessment time point by dividing the total household income from all possible
sources by the federally determined poverty threshold for the number of people living in the
household for that year. Income-to-needs ratios above 1.0 indicate that a family is able to provide
for basic needs, whereas values below 1.0 indicate that they are not. As income to needs ratios
were quite stable over time (correlations between ratios at the different time points ranged from
.70 to .81), income-to-needs ratios at the 6-month time point was used as a covariate in this
analysis.

3.0 Analysis Plan

Descriptive and correlational statistics were run for each variable of interest to examine
means, standard deviations, and univariate normality. Multivariate outliers were identified and
diagnostics conducted to ensure that the assumptions of the proposed analyses are met. Analysis
of the proposed study consists of propensity score matching (PSM) and multivariate analysis of variance (MANOVA). In the first step, a PSM procedure was conducted to control for pre-existing differences between the treatments (experienced sexual trauma) and the controls (no childhood sexual trauma). One of the major limitations of previous research on childhood sexual trauma has been the absence of control groups or control groups with different characteristics (Browne & Finkelhor, 1986), which can create problems in terms of comparability between groups and generalizability of findings. The goal of matching methods is to ensure that the distributions of observed covariates in the “treatment” and comparison groups are similar, replicating what would have occurred had the “treatment” been randomly assigned, at least with respect to the observed covariates (Rosenbaum & Rubin, 1983).

The propensity score is a balancing score that is conditional on the distribution of selected covariates being similar between “treated” and “untreated” subjects. Thus, in a sample of participants, all of whom have the same propensity score, the distribution of covariates will be the same between the “treated” and “untreated” subjects. Although regression is typically used to adjust for background differences and estimate causal effects in non-experimental studies, it relies heavily on modeling assumptions (e.g., linearity) that may not be valid and can be especially problematic if the treatment and comparison groups differ significantly with respect to background covariates, such as childhood demographic variables.

Propensity score matching in the current study involved several steps and followed “exact match” procedures, allowing for replacements. Matching with replacements allows a given control or comparison unit to be included in more than one matched set (Hill & Reiter, 2006). Matching with replacement minimizes the propensity score distance between the matched comparison units and the “treatment” unit by matching each unit to the nearest comparison unit,
even if the comparison unit is matched more than once. The benefit to this type of matching is that it reduces bias because we are not ‘forcing’ a match to comparison units that may be different in terms of the estimated propensity score (Dehejia and Wahba, 2002). For example, in the final sample, we have 105 women who experienced childhood trauma matched to 99 controls because 6 of the controls were a perfect match for more than one of the women in the group that reported experiencing childhood sexual trauma.

Propensity score matching for this study followed the method developed by Rosenbaum and Rubin (1983) and was conducted in several steps. The first step involved the selection of appropriate covariates from which to create the treatment and comparison samples. In the present study, childhood demographic information was defined by whether the participants family of origin received AFDC (Aid to Families with Dependent Children), food stamps, Medicaid or lived in public housing. Mothers’ education level from the family of origin, as well as additional trauma’s experienced in childhood (ex. being mugged or beaten, natural disasters such as tornadoes or hurricanes) were used as the matching variables. A key component to the credibility and reliability of the propensity score analysis hinges on the selection of proper covariates. The covariates for this study were chosen based on theoretical and empirical considerations. Previous research has identified factors that are associated with risk for child sexual trauma including demographic variables such as income and parental education (Brown, Cohen, Johnson, and Salzinger, 1995). In addition, Ethier, Couture, and Lacharit’ (2004) note that children who have experienced sexual trauma often come from home environments that can be characterized as having a lack of economic resources, parents with a low level of education, and adverse environmental conditions such as social isolation (Erickson & Egeland, 1996).
The next step of the analysis employs logistic regressions for each contrast to predict a propensity score for each individual, defined as the conditional probability of being selected into the targeted group given the individual's value on a full set of covariates. Once the logistic model is established, the predicted score of each subject can be calculated; this is called the propensity score (PS) with values ranging from 0 to 1. After estimation of the propensity score, the actual matching procedure commences. With the exact matching procedure, one individual from the comparison group is chosen as a matching partner for the individual in the sexual trauma group that is closest in terms of propensity score based on the preselected covariates.

The final step of PSM is to assess the quality of the match. The match is balanced if within the treatment and control groups the distributions of covariates are similar for matched units. Balance can be measured by a metric called “standardized bias” or “standardized difference in means”. This measure is calculated by determining the difference in means of the balancing score (such as a propensity score) for the two groups, then dividing this difference by the standard deviation of the treatment group (Stuart, 2010). The standardized difference in means should be calculated both before and after matching. Since this measure is similar to an effect size, Rubin (2001) indicates that the absolute standardized differences in means should be less than 0.25.

The next stage of the analysis plan for this study was to explore group differences between the women who reported having experienced childhood sexual trauma and the propensity matched sample of women who did not report experiencing childhood trauma while controlling for current maternal education and household income to needs. All hypotheses were tested using MANOVA to draw inferences about the correlation between the groups. An extension of ANOVA, MANOVA allows researchers to simultaneously analyze two or more
related dependent variables while controlling for the correlations among them. A main advantage
to using MANOVA rather than running a series of ANOVA analyses is that it “controls” or
adjusts for the increased risk of committing a Type 1 error from running multiple analyses. In the
present study, the MANOVA involved three sets of grouped variables that are expected to be
interrelated and correspond to the three hypotheses below. All tests were run with alpha = 0.05
and were performed using SPSS (v19.0); no post-hoc tests were needed as there were only two
levels of the independent variable.

The general assumptions of a MANOVA include: (1) The dependent variables should be
normally distributed, and outliers need to be assessed; (2) since there are multiple dependent
variables, their intercorrelations (covariances) are required to be homogeneous across the cells;
and (3) MANOVA assumes linear relationships between all dependent variables. Data for study
1 were derived from the 2-, 24-month, 36-month and 60-month time points.

3.1 Results

Preliminary Analyses

Matching Results and Balance Checking for Matched Sample. The PSM procedure yielded a
sample of 204 women; 105 who experienced childhood sexual trauma matched to 99 women
who did not. Tests were conducted to ensure the matching procedure was able to balance the
distribution of the relevant covariates in both the group with childhood trauma and the
comparison group. The results of balance checking are shown in the Appendix 1. The first
approach was to reduce the standardized mean difference with the matching covariates between
the two samples to examine how similar the matched treatment and comparison groups are to
each other. Standardized biases of less than 0.25 imply the groups are well matched (Rubin,
2001). As can be seen from Table 1A of the appendix, the matching methods performed well at
reducing the standardized mean difference with each covariate when compared to the unmatched data. This means that with regard to the covariates, the two groups are more similar to each other than with the larger sample (i.e. the full FLP sample from which the comparison group was drawn).

The second approach was regression on matched pairs. As can be seen in Table 2A of the appendix, the regression results show that there were no significant differences between the two groups with regards to the matching variables and trauma. This means that based on childhood family of origin variables, the two groups were statistically identical on childhood family of origin characteristics, leaving sexual trauma as the one differentiator.

**Descriptive Statistics.**

The present sample consisted of 105 women who reported a history of childhood trauma (CTH) at or before the age of 14 matched to 99 women without childhood sexual trauma history (NT). The CTH group was comprised of 57.1% European American and 42.9% African Americans whereas the NT group was comprised of 55.6% European American and 44.4% African Americans (Table 2.1). Independent sample t-tests were conducted to compare mean differences between the two groups with regards to descriptive information and found there was no significant difference between the two groups with regards to maternal age with mothers in the CTH reporting a mean age of 25.5 (sd = 5.2) and NT mothers reporting a mean age of 26.1 (sd = 5.4). There was also no significant difference between the two groups with regards to maternal education, with mothers in the CTH group reporting 14.1 years of education (sd = 2.9) and mothers in the NT group reporting 14.5 years (sd = 2.6) of education. There was however, a group difference noted with regards to mean family income-to-needs, (M = 1.40, sd = 1.13) and
(M = 2.1, sd = 2.56), t (204) = 2.53, p < .001, meaning that on average, the CTH group reported significantly less current household income compared to the NT group.

In addition, mean differences between groups were apparent for the two indices of relationship quality used in the present study, intimacy in the partner relationships and intimate partner violence, such that the CTH group reported lower levels of intimacy and greater levels of intimate partner violence than the NT group. Similarly, CTH group reported greater levels of depression and anxiety than the NT group. Compared to caregivers in the NT group, the caregivers in the CTH group were more likely to endorse having used alcohol and other substances. With regards to our parenting variables, the CTH group on average had lower mean ratings of parent sensitivity, and higher ratings of harsh intrusive parenting and boundary dissolution than the NT group.

Bivariate correlation among the variables of interest can be found in Table 2.2. Childhood sexual trauma was positively related to harsh intrusive parenting (r = .22, p < .01), and boundary dissolution (r = .21, p < .05), and inversely related to sensitive caregiving (r = -.23, p < .01). Childhood sexual trauma was positively related to depression (r = .25, p < .01), anxiety (r = .22, p < .01) and alcohol and substance use (r = .15, p < .05). In addition, emotional intimacy was inversely related to childhood sexual trauma (r= -.20, p < .05), whereas intimate partner violence was positively related to childhood sexual trauma (r = .16, p < .01).

**Multivariate analysis of variance.**

All tests were run with alpha = 0.05 and performed using SPSS (v19.0); no post-hoc tests were needed as there are only two levels of the independent variable. A one way multivariate analysis of variance was performed to investigate differences at multiple levels of functioning for
women who reported childhood sexual trauma compared to a group of controls who did not report such trauma.

In addressing hypothesis 1, which proposes significant group differences with regards to psychological wellbeing, two variables were considered: depressive symptoms and anxiety. Preliminary assumption testing found that the assumption of homogeneity of variance was violated, which means that the two groups, CTH and NT, have significantly different variances for the measures of interest, depressive symptoms and anxiety. In addition, closer inspection of the data found a number of outliers in the CTH group. Because prior research would suggest considerable variation for women with history of sexual trauma with regards to depressive symptoms and anxiety (Putnam, 2003; Dilillo & Damashek, 2003), this finding was not unexpected. So as to maintain the integrity of the full range of data and use all the data points, the sample was tri-chotomized to reduce the variance between groups, and the MANOVA reanalyzed. Using the tri-chotomized variables for depressive symptoms and anxiety, the overall model was significant, F (2, 185) = 4.6, p < .05; Wilkes Lambda = .95; Partial eta squared = .05.

Review of the findings revealed that Box’s test of equality of covariance matrices for this model was not significant (p > .05) and Levene’s test of equality of error variances was also non-significant for the two dependent variables, (depressive symptoms, p = .50, and anxiety, p = .55). When the results for the dependent variables were considered separately, both depressive symptoms and anxiety variables reached statistical significance; depressive symptoms, F (1, 191) = 6.8, p < .05, Partial eta squared = .04; and anxiety, F (1, 91) = 7.4, p < .05, Partial eta squared = .04. These findings suggest that the mothers who reported childhood sexual trauma compared
to mothers who did not report having the trauma experience, reported greater levels of depressive symptoms and anxiety.

A one way ANOVA was conducted to compare alcohol and substance use between groups. Results revealed a statistical difference between the CTH group and the controls (NT); F (1, 193) = 4.9, p < .05, indicating that the mean score was significantly greater for the CTH group (M = 2.10, SD = 1.8) than for the no trauma group (NT) (M = 1.64, SD = 1.23).

In order to test hypothesis 2, which examines group differences with regards to relationship quality, two dependent variables were used: intimacy in the relationship and intimate partner violence. The independent variable was group membership defined by childhood sexual trauma history. Preliminary assumption testing was conducted to check for normality, linearity, outliers and homogeneity of variance with no serious violations noted. Initial review of the findings revealed that Box’s test of equality of covariance matrices which determines whether the covariance in different groups is significantly different (and must not be significant if one wishes to demonstrate that the sample sizes in each cell are adequate was not significant (p > .05) and Levene’s test of equality of error variances was also non-significant for both dependent variables, (intimacy, p = .23 and intimate partner violence, p = .10). A nonsignificant Levene’s test suggests that the assumption of homogeneity of variances has not been violated.

The overall model for relationship quality revealed a statistically significant difference between women who reported childhood sexual trauma and those who did not (controls) on the dependent variables, F (2, 104) = 3.17, p < .05; Wilkes Lambda = .94; Partial eta squared = .06. When the results for the dependent variables were considered separately, the only difference to reach statistical significance was intimate partner violence, F (1, 109) = 4.06, p < .05, Partial eta squared = .04. Intimacy in the relationship = .06 did not reach significance at p = .06. Thus, there
was only partial support for hypothesis 2, meaning that although significant group differences were found for intimate partner violence; there was no significant difference in reported emotional intimacy between the two groups.

Hypothesis 3 stated that group differences would be expected for women with CTH compared to women in the NT group with regards to parenting efficacy and all three domains of parenting behaviors. The overall model for parenting variables (i.e. sensitive, harsh intrusive and boundary dissolution) was significant, $F(4, 139) = 3.5, p < .05$; Wilkes Lambda $= .91$; Partial eta squared $= .09$. Review of the findings revealed that Box’s test of equality of covariance matrices for this model was not significant ($p > .05$) and Levene’s test of equality of error variances was also non-significant for the four dependent variables, (parenting efficacy, $p = .10$, sensitivity, $p = .52$, intrusiveness, $p = .33$ and boundary dissolution, $p = .15$). When the results for the dependent variables were considered separately, only three of the parenting variables reached statistical significance; sensitive parenting $F(1, 147) = 4.15, p < .05$, Partial eta squared $= .03$; harsh intrusive parenting, $F(1, 147) = 5.56, p < .05$, Partial eta squared $= .04$; and boundary dissolution, $F(1, 147) = 5.19, p < .05$, Partial eta squared $= .04$. There were no significant differences between mothers who experienced childhood sexual trauma when compared to mothers who did not with regards to self-reports of parenting efficacy. These findings provide partial support for hypothesis 3. Despite no significant differences between groups with regards to parenting efficacy, the findings suggest that as a group, mothers with childhood sexual trauma histories were found to have lower scores on sensitivity and higher scores on harsh intrusiveness and boundary dissolution compared to mothers without childhood sexual trauma histories.

3.2 Discussion
The present study adds to the literature in several important ways. By using propensity matching to create a control group from within the same community sample and by controlling for additional maltreatment experienced by the victim, we are able to more closely isolate and examine the long term associations of childhood sexual trauma beyond the effects of other childhood adversities. The propensity score allows researchers to design and analyze an observational (nonrandomized) study so that it mimics some of the characteristics of a randomized controlled trial which are considered the gold standard for drawing causal inference in psychological research. The very nature of childhood sexual trauma and the use of retrospective data would make it impossible to use a randomized trial methodology to study the long term associations of early trauma. Thus, the use of propensity score matching may offer the most straightforward approach to drawing causal inferences from observational data relating to the long term effects of childhood sexual trauma (Lanza, Moore & Butera, 2013).

Specifically, the use of childhood demographic variables from the family of origin as matching covariates directly addresses an issue in the literature relating to whether the long term associations seen in women with sexual trauma histories are due to the general level of family risk that allowed the trauma to occur in the first place or to the trauma itself. As numerous researchers have noted, existing literature has been plagued with issues relating to appropriate control groups (DiLillo, 2001). By creating a control group matched on family of origin variables, the findings from the present study lend more confidence to the notion that it is not just dysfunction from the family of origin, but the experience of childhood sexual trauma itself that may impart unique effects on long term adjustment of survivors. This finding is in keeping with early work by Finkelhor and Browne (1985) that noted that because of the unique aspects of the abusive relationship, such as the secretive nature of the experience, betrayal of trust, and a sense
of powerlessness, childhood sexual trauma may impart its effects not only in the immediate but may last across the lifespan that go beyond problematic relationships with primary caregivers or other family level problems (e.g., income, chaos).

Further, although prior research has focused attention on the parenting behaviors of women with sexual trauma histories, no previous study has examined parenting outcomes using three domains of parenting derived from observational methods which allow for independent assessment of mother behavior while interacting with her child. Parenting observations offer the advantage of recording overt behavior, which may be less open to differing interpretations than are items on a self-report (Gardner, 2000). This is most notable with the parenting domain of boundary dissolution given that it is an unconscious interpersonal process. In addition, the present study uses a clear definition of sexual trauma thereby directly addressing a limitation in prior research (DiLillo, 2001).

The overall picture that emerges when women with childhood sexual trauma are compared with the matched comparison women is that females who experienced childhood sexual trauma are different (on average) across many domains of functioning. Even after controlling for the effects of current income, education, and race, the findings from this study reveal a statistically significant difference in self-reports of interpersonal functioning (i.e. depression and anxiety) for women with childhood sexual trauma compared to women without trauma histories. This finding is important because a large literature notes that the experience of living with a depressed mother has serious implications for children and increases their risk for a number of developmental and adjustment problems (Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Goodman, & Gotlib, 1999). The present study supports other research findings that women who experienced childhood sexual trauma differ from women without trauma experience
with regards to depressive symptomatology and anxiety. Browne and Finkelhor (1986) note that, “in the clinical literature, depression is the symptom most commonly reported among adults molested as children.” A variety of studies have documented greater depressive symptomatology among child victims, as well as adult survivors. Briere and Elliot (1994) reported that adult survivors of childhood sexual trauma have four times greater lifetime risk of developing major depression than people who do not have a history of abuse. Furthermore, findings from this study relating to anxiety are supported by a wide variety of other studies documenting greater anxiety in adults with sexual trauma histories when compared to adults with no trauma history. Child sexual trauma is, by its very nature, threatening and disruptive, and may interfere with the child’s developing sense of security and belief in a safe world. Thus, it should not be surprising that victims of such maltreatment are prone to chronic feelings of fearfulness or anxiety.

Given the significant differences between CTH and NT groups for depression and anxiety, it is not surprising to find significant differences between groups in the use of alcohol and other substances as prior research links both depression and anxiety with alcohol and substance use (Paone et al., 1995; Rohsenow, Corbett and Devine, 1998). Consistent with prior research, the women in our sample with trauma histories reported greater use of alcohol and other substances than the control group without trauma histories. Survivors of childhood sexual trauma may use alcohol and drugs as a means of alleviating the potent negative feelings related to the effects of the trauma self-medication. Self-medication, however, places the individual at high risk of addiction and may only reduce the emotional pain temporarily. As the survivor becomes more tolerant of the substance, more of the substance is needed to create the same effect. As tolerance level increases so does the risk of addiction (Alexander, 1993; Nobel, 1996). This is a point of much needed research with childhood sexual trauma survivors because very
little is known or understood about the rates of addiction or the potential for addiction among childhood sexual trauma survivors. Much of the research linking alcohol and substance use has been with college students who are not usually a representative group as they are typically younger, better adjusted, and less diverse in terms of ethnicity and social class than the general population.

Although prior research has linked childhood sexual trauma to lower emotional intimacy with romantic partners, our findings did not support this view. Compared to women with no trauma history, there was no significant difference between the two groups with regards to emotional intimacy. Finding significant group differences for IPV in a model that also supports a nonsignificant group difference for emotional intimacy, may be due to the high correlation of these variables in our sample (ex. $r = -0.45**$). This discordance of reporting may also be reflective of maladaptive coping strategies used by women with sexual trauma histories that include avoidance or denial of relationship difficulties despite also reporting violence with intimate partners. For a young child experiencing sexual trauma, it is likely that when she turned to those around her for assistance or a way out, she was confronted either with threats and further abuse or with neglect and formidable denial. It could be that denial of relational disturbances and difficulties become learned behaviors across the lifespan. Although quite limited, support for a maladaptive coping supposition comes from prior research that suggests that women with childhood trauma have been reported to use avoidance coping strategies such as distraction, disengagement, denial, and social withdrawal (Spaccarelli & Fuchs, 1997; Arata, 1999; Burt & Katz, 1988).

That we would find group differences for intimate partner violence was not surprising given the substantial literature that has accumulated in the past three decades linking childhood
sexual trauma and subsequent intimate partner violence. Our findings bolster past data suggesting that childhood sexual trauma may leave women at an increased risk for later intimate partner violence (IPV). Different explanations have been posited to explain the associations between childhood sexual trauma and subsequent IPV, including the mediating role of maternal anger unresolved from the trauma experience that spills over into intimate relationships (Dilillo et al., 2001). In addition, prior research findings suggest that the significant association between childhood sexual trauma and later IPV may be that women who are childhood sexual trauma survivors partner with men who are more violent (Banyard et al., 2008). Although partnering patterns and typologies of women with childhood sexual trauma was not the focus of this study, our findings suggest that understanding more about the men with whom trauma survivors partner is warranted given the burgeoning data highlighting the role of men and fathers to children’s development (Lamb, 2010).

Further, whereas previous investigations with childhood sexual trauma survivors have focused on man-to-woman aggression only, the present study finds that the overwhelming majority of couple violence is mutually inflicted. This is consistent with previous work with community samples, which suggests that physical violence in community samples is more commonly mutual (Archer, 2000; Caetano, Vaeth, & Ramisetty-Mikler, 2008). In the present analysis, because most of the violence reported involved both male to female and female to male, we followed the lead of these earlier studies with community samples and summed mother’s report of her own IPV and her report of her partner’s IPV to create a total score which represents the total amount of physical violence in the relationship. In the context of childhood sexual trauma, it could be that survivors may be more angry and hostile in their associations. It may be that women with childhood sexual trauma histories learn to use violence through their earlier
victimization; they may re-enact learned behaviors in a manner consistent with the ways they were previously victimized by an adult (Ehrensaft, Cohen, Brown, Smailes, Chen, & Johnson, 2003). However, the absence of detailed studies focusing primarily upon the relationships of childhood sexual trauma survivors with their partners and the characteristics of these relationships, as well as of men who partner and parent with trauma survivors, has resulted in a significant deficit in current knowledge of the impact of childhood sexual trauma on relationship functioning.

In addition, the mean differences between the two groups (i.e. CTH and NT) with regards to income-to-needs ratio, despite no significant differences in maternal age or educational level attained, may be suggestive of relationship instability and dysfunction. In our sample, at the 6 month visit, 61% of the NT group and 64% of CTH reported that the biological father lived in the household with the mother and child. By the grade 1 visit, however, only 30% of the biological fathers still resided in the household in the CTH group, whereas 55% of the biological fathers in the NT groups were still coresiding with the mother. Although the group differences were not significant at the 6 month time point, the difference between mothers with and without childhood sexual trauma who were still residing with the biological father at the grade 1 visit was significant, $\chi^2 (1, N = 188) = 4.30, p < .05$, such that on average, more mothers with trauma histories compared to mothers without similar history were no longer coresiding with the biological father of their common child.

With regards to parenting, our study did not find any significant differences between childhood sexual trauma group and the NT group with regards to parental efficacy but did find group differences with regards to observed parenting behaviors on all three domains of parenting that we measured: sensitive caregiving, harsh intrusiveness, and boundary dissolution. Our
findings differ from other studies on parenting efficacy and observed behaviors. For example, Fitzgerald, Shipman, Jackson, McMahon and Hanley (2005) reported significant differences between mothers’ reports of parenting efficacy but did not find difference with observed parenting behaviors defined as supportive presence and quality of assistance in a problem solving task.

One possible explanation for the difference in the findings from these earlier studies and the present study may be due to sampling issues with the earlier studies. For example, the study by Fitzgerald et al. (2005) used a relatively small sample of mothers (17 mothers with trauma history compared to 18 mothers with no trauma histories) and thus may have lacked power to detect differences between the groups. It could also be the case that sexual trauma history may be related to more subtle patterns of maladaptive interactive behavior, such as maternal withdrawal or detachment (Burkett, 1991; Lyons-Ruth & Block, 1996). Subscales of our parenting measures capture a broad range of maternal behavior, including detachment and disengagement which are key concepts of an avoidance coping strategy. Thus, although mothers may report feeling efficacious with regards to parenting, in interactions with their child in tasks that may be cognitively or emotionally challenging, and in which children may require greater parental support, mothers with trauma histories were found to be less sensitive and more intrusive in their caregiving than the mothers without similar trauma histories.

Given the limited studies on the associations between child sexual trauma on parental warmth and intrusiveness, this study is a contribution to the maltreatment and childrearing fields in that it examines the relationships between child sexual trauma and two well researched dimensions of parenting in the larger parenting literature, parental warmth and harsh intrusiveness, using a propensity matched comparison control group to isolate the effects of the
trauma beyond the effects of other childhood adversities (e.g., other maltreatment, low SES). As prior investigations targeting the relationship between childhood sexual trauma and subsequent parenting have noted, the trauma experience and its associated symptoms (e.g., anxiety, depression) may diminish the survivors’ ability to manage the demands of parenting (DiLillo, 2001). Although parental sensitivity is multifaceted, one key component is support for child needs and the ability to read signals from children related to what they may require from the caregiver. As these data and previous studies (Paolucci et al., 2001; Briere and Elliot, 1994; Kendall-Tackett et al., 1993) found greater levels of depression and anxiety among women with trauma histories, it may be that childhood sexual trauma and its negative consequences exacerbate the stresses of parenting and reduce available energy for parenting activities, thereby making the tasks of child-rearing especially challenging (Ruscio, 2001). Mothers with childhood sexual trauma may be struggling with their own regulatory processes and thereby be less responsive to their children’s bids compared to mothers without trauma history.

With regard to harsh intrusive parenting, although prior research has linked maternal sexual trauma to more punitive and harsh discipline practices, our study reveals that mothers with sexual trauma histories were also rated as being more intrusive and controlling in their interactions with their children than mothers without childhood sexual trauma. As with sensitive parenting, it is likely that mothers with trauma histories are struggling with their own regulatory processes and thereby more harsh in their interactions with their children. Harsh intrusive parenting is characterized as controlling behavior that emphasizes parent-centered behavior and children’s compliance with mothers’ agenda.

Confirming earlier reports (Burkett, 1991; Alexander et al., 2000) linking childhood sexual trauma to boundary dissolution in parent-child interactions, the findings from this study
reveal significant group differences for boundary dissolution. Mothers in the CTH group compared to mothers in the NT group, were found through observational assessment to assume a more a child-like role in parent-child interactions. Although this may provide emotional support for the mother, it can have detrimental long term effects on the child by interfering with child development. A key task for parents is to encourage autonomy/individuation and set limits to ensure both safety of the child and to teach compliance with social norms. This task may be especially difficult for a parent who seeks to keep the child dependent in order to meet her own needs rather than to foster autonomy/individuation (Howes & Cicchetti, 1993). From the child’s perspective, gaining autonomy, individuation and ultimately separation from the parent in adolescence or young adulthood may be harder for children if they also provide companionship and support to the mother.

Despite the many strengths of this study, there are some limitations. In the present study, we used retrospective reports of childhood sexual trauma. As numerous researchers investigating the long term effects of childhood sexual trauma have posited, the passage of time may alter participant's recollections of the past. It is, therefore, possible that within our control group, there may be women who experienced childhood sexual trauma but did not report it. In addition, the measure we used in the present study assessed only whether the mother reported a history of childhood sexual trauma. We did not consider such factors as the severity of the trauma, the length of the trauma, or whether there were factors in the victims’ context that may have exacerbated or ameliorated the effects of the trauma. Further, we did not consider if the participant was a first time parent. Becoming a parent for the first time is challenging for most mothers, and may be especially so for women with childhood sexual trauma histories. Future research will need to examine if childrearing behaviors vary for first time mothers with
childhood sexual trauma histories compared to first time mothers without childhood sexual trauma histories.

In addition, although age at time of abuse was reported, this factor was not taken into consideration during the matching procedure to allow us to get a sample large enough to examine group differences. Also, by summing mothers’ reports of their and their partners’ physical violence we did not make the distinction between mothers who were victims of intimate partner violence, those who committed violent acts against their partners, and those who were involved in mutually violent relationships. Given that mothers are affected by the overall tone of their romantic partner relationship, we felt that this compositing was appropriate for testing our research question. Future research, however, should explore the possibility that the perpetrator’s identity may moderate the aforementioned relationships.

In order to further understand the impact of child sexual trauma on parenting behavior, and ultimately the mechanisms by which a mother’s childhood sexual trauma may exert itself long term and influence the development of her offspring, additional rigorous studies need to be conducted that conceptually and empirically tease apart the effects of the trauma experiences, different aspects of parenting, and the larger context of the parent-child relationship, as well as the family system as a whole. In the current study, the use of observational variables contributed heavily to gaining more insight into this sample than to simply relying on parent reports alone.

Moving forward, it will become important to understand the pathways by which mothers with trauma histories differ in their parenting than mothers without trauma histories. Findings from this study reveal significant group differences with regards to multiple domains of parenting (i.e. sensitivity, harsh intrusiveness and boundary dissolution) as well as psychological wellbeing (i.e. depression and anxiety). Understanding how these factors may be related to
influencing and thereby impacting the development of the next generation is an important next step.

In addition, although earlier studies have been informative in advancing our understanding of the linkages between childhood sexual trauma and subsequent alcohol and substance use, there is much we still do not know. For example, although literature links the two events together (childhood sexual trauma and subsequent substance use), the mechanisms by which these events may be linked are still unclear. Future research, for example, will need to assess if there are attenuating or exacerbating factors that may moderate the linkages between childhood sexual trauma and subsequent substance use. It could be, for example, that a sensitive caregiver in childhood after the trauma has occurred or emotional support from other significant social partners, including romantic partners later in adulthood may be a pathway to attenuating the likelihood of subsequent alcohol and substance use. It could also be the case that harsh intrusive caregiving may exacerbate the effects of the trauma and make alcohol and substance use more likely later in the life course.

Looking ahead, research will need to examine biobehavioral outcomes of women with trauma histories in order to better understand the mechanisms by which some women with childhood sexual trauma histories/experiences have long term adjustment difficulties while others do not. For example, a number of investigations have examined the associations between childhood maltreatment and female hypothalamic-pituitary-adrenal (HPA) axis function later in life. Although the studies did not examine the effects of childhood sexual trauma per se, the results of these studies indicate that HPA axis dysregulation may influence the development of depression or stress in women with a childhood history of childhood maltreatment (Heim, Newport, Heit, Graham, Wilcox, Bonsall, R., ... & Nemeroff, 2000).
CHAPTER 3: Study 2: Mothers’ Childhood Sexual Trauma and Child Conduct Problems: Multiple Pathways of Influence

3.1 Introduction

The developmental psychopathology literature on child conduct problems has demonstrated that associations between risk factors and the development of problem behaviors often involve a complex set of interrelated risk processes including parenting and family functioning (Tolan, Dodge, & Rutter, 2013; Deater-Deckard & Dodge, 1997). These earlier studies suggested that complex models may be necessary to account for the interplay among risk factors in predicting child conduct problems (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001). This may be especially relevant to the study of conduct problems in children whose mothers experienced childhood sexual trauma because prior research documents that mothers with trauma histories are at risk for a number of difficulties in their own adjustment and interpersonal relationships which in turn could influence the behavioral development of their children (Roberts, et al., 2004). Although limited, existing research supports this supposition and has documented that the children of trauma survivors are at increased risk for behavior problems compared to children whose mothers do not have trauma histories (Roberts, et al., 2004). For example, researchers have noted that the children of childhood sexual trauma survivors score higher on the total score of the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983), as reported by mothers (Dubowitz et al., 2001), such that trauma survivors perceive their children as having more behavioral problems.
Despite indications that maternal childhood sexual trauma status may be related to child behavior problems, not all children of mothers with sexual trauma histories have poor behavioral outcomes (DiLillo & Damashek, 2003). Alexander et al. (2000) found no main or interactive effects of maternal childhood sexual trauma history on child behavior problems, as assessed by maternal responses to the CBCL. One reason for the heterogeneity of findings may be related to the lack of appropriate controls. As stated in study 1, a lack of representative samples with appropriate comparison groups has made it difficult to compare findings across studies. Findings are often compared across studies despite differences in samples (ex. clinical vs. community samples) making the associations between mothers’ sexual trauma and child behavior problems less clear. One clear direction moving forward will be the use of matched controls in understanding the behavioral development of children whose mothers experienced childhood sexual trauma in comparison to mothers who did not experience similar trauma. For example, some scholars have noted that it is difficult to determine if the behaviors documented in sexual trauma survivors (ex. parenting behavior) are related to the trauma per se or to other early life risk factors such as low income or additional traumas experienced (Alexander, 1993). Using a propensity matched sample that controls for early life adversity (i.e. childhood poverty) and additional trauma will be useful in developing a more nuanced understanding of the behavioral development of children raised by a mother reporting childhood sexual trauma.

In addition, the variability in findings regarding conduct problems may be due to the complex ways that the trauma may exert itself long term. A major problem for researchers in the area of long-term correlates of childhood sexual trauma is untangling the networks of causes and effects that may be related to the development of offspring; this endeavor forms the principal focus of study 2. Specifically, study 2 focuses attention on the pathways by which a mother’s
childhood sexual trauma may exert influence on her parenting behavior and thereby influence the behavioral development of her children.

3.2 Childhood Sexual Trauma and Conduct Problems in the Next Generation

Research interest in the intergenerational effects of childhood sexual trauma has been primarily concerned with transmission of abuse from one generation to the next (see Putnam, 2003 for a review). Theories of intergenerational transmission of trauma posit that mothers’ childhood trauma and its long term impact are passed on to children through children’s exposure to mother’s distress and limited psychosocial functioning (Schwerdtfeger & Goff, 2007; Thompson, 2007), such as maternal psychological distress (e.g., Dinwiddie, et. al., 2000), her parenting abilities (DiLillo & Damashek, 2003; Burkett, 1991). Lyons-Ruth and Block (1996) investigated associations between childhood trauma, maternal caregiving, infant affect, and attachment. Their study sample consisted of low income mothers, the majority (47%) of whom had experienced childhood sexual or physical abuse. The results revealed that higher rates of childhood abuse experiences were related to mothers being less emotionally responsive to their infants. Similarly, Clarke, Stein, Sobato, Marisi, and Hanna (1999) noted that individuals who had experienced childhood trauma (physical and sexual) were significantly more prone to themselves becoming adult victimizers, in contrast to those who did not experience childhood maltreatment.

In recent years, researchers have expanded earlier models by testing potential mediators in the association between maternal childhood sexual trauma and developmental outcomes in the next generation. Appleyard and colleagues (2011) found a significant mediated pathway from maternal childhood abuse history to child victimization in the next generation through maternal substance use. Roberts et al., (2004) reported that mother’s mental health mediated the pathway
from mothers’ history of childhood sexual trauma and child adjustment. Additional research links childhood sexual trauma history to less optimal parenting. Schuetzea & Das Eiden (2005) documented that maternal depression and intimate partner violence mediated the relation between childhood sexual trauma and punitive discipline.

These studies highlight that one way to examine the intergenerational expression of childhood sexual trauma is to study the influence of maltreatment experiences on later parenting behaviors. Extending models linking early trauma to subsequent parenting behavior may provide us with new knowledge on the intergenerational effects of childhood sexual trauma. Given the links from childhood trauma to less optimal parenting behaviors, and, given that parenting behaviors are a well-established pathway to child conduct problems, extending these models to examine parenting as a mediating pathway to child conduct problems will help to broaden our understanding of the intergenerational effects of childhood sexual trauma.

The construct of externalizing behavior refers to a grouping of behavioral problems that are manifested in children’s outward actions, such as whininess, disobedience, and aggression (Mullin & Hinshaw, 2007; Campbell, et al., 2000). These behaviors have been linked to such problems as delinquency, peer rejection, academic failure, and substance abuse (Miner & Clarke-Stewart, 2008). Within this larger classification of externalizing behavior are conduct problems (Campbell, et al., 2000). Conduct problems involve behaviors that go against social norms and values such as lying, stealing, and disobeying adults. Research also suggests that such behaviors early in childhood are related to antisocial tendencies, substance abuse, and dependencies in adolescence and early adulthood (e.g., Kuperman, Schlosser, Bucholz, Hesselbrock, Reich, et al., 2001).
Externalizing behaviors including conduct problems fall under the larger developmental umbrella of emotional self-regulation. Emotional self-regulation, a major stage-salient developmental task, is often defined in the literature as the factors within an individual and the environment that redirect, control, modulate, and modify emotional arousal so that successful interpersonal functioning is possible (Fox and Culkins, 2003). Researchers posit that parenting behaviors are essential in laying the groundwork for children’s development of self-regulation, and a large body of research relates aspects of parent-child interactions, such as sensitive parenting, to child behavioral adjustment (Grolnick, et al., 2002). Sroufe, et al., (2005) noted that children whose parental interactions are characterized by sensitive, responsive care from the parent are better able to handle frustration and are less hyperactive than those receiving over-stimulating, intrusive care. In contrast, parents’ indifferent, unresponsive caregiving is associated with children’s behavioral problems, including conduct problems (Campbell, et al., 2000; Yates, Obradović, & Egeland, 2010).

Childhood sexual trauma and its negative consequences may exacerbate the stresses of parenting and reduce available energy for parenting activities, thereby making the tasks of child-rearing especially challenging (Ruscio, 2001). Mothers may be struggling with their own regulatory processes and thus be less responsive to their children’s bids for attention and care. Very few studies have examined the association between mothers’ trauma history and their children’s behavioral outcomes. Given the long-term implications of problem behaviors, understanding the pathway by which mothers’ sexual trauma history promotes or deters the development of behavioral problems among the next generation of children is critical.
3.3 Conceptual Framework

Among the factors most often linked to children’s conduct problems is parenting behavior, such that sensitive caregiving is inversely related to child behavior problems (Webster-Stratton, 1998; Ge, Best, Conger, & Simons, 1996). Despite the linkages between child conduct problems and parenting, a key component that is still unclear in the trauma literature is how childhood sexual trauma may be linked to subsequent parenting behavior. While many previous studies have focused on establishing the frequency with which survivors of childhood sexual abuse experience parenting difficulties, only recently have scholars begun to incorporate an analysis of how or why the experience of childhood sexual trauma may affect later parenting behaviors and thereby influence the development of children whose mothers have trauma histories. Building upon previous research, the present study examines the extent to which mothers’ depressive symptomatology, alcohol and substance use, intimate partner violence, and parenting behaviors mediate the relationship between the childhood sexual trauma of the mother and subsequent behavioral adjustment in her children (see Figure 3.1).
3.4 Pathways to Parenting and Child Adjustment

Considering the multiple demands of parenting and the impact of childrearing practices on children, it is critical to gain a better understanding of the relationship between childhood sexual trauma and subsequent parenting practices. The trauma experience and its associated symptoms (e.g., depression, anxiety) may diminish not only the survivor’s ability to manage the demands of parenting, but also their confidence in their own child rearing abilities (DiLillo, 65)
Other researchers note (see, for example, Ruscio, 2011) that the sequelae associated with a history of childhood sexual trauma might decrease the energy needed for parenting and also intensify the pressures of parenting. Despite documented evidence that childhood sexual trauma is related to later parenting there is still much we do not understand about the mechanisms by which the early trauma may impact subsequent parenting.

In terms of parenting behaviors, childhood researchers typically examine sensitive and harsh intrusive caregiving. Low levels of parental sensitivity/responsiveness, including untimely and inappropriate responses to child signals, interfere with emotion regulation development, placing children at risk for increased behavior problems (Campbell et al., 2000). In contrast, harsh intrusive parenting is defined as a constellation of insensitive, interfering parenting behaviors rooted in the mothers’ lack of respect for their child’s autonomy. Research highlights that children of harsh intrusive parents are not only denied structured opportunities to learn to regulate their emotions, but displays of parental hostility can also result in children becoming over aroused, thereby undermining their ability to regulate their own emotions (Thompson & Calkins, 1996).

Research further highlights that some mothers with trauma histories rely on children for emotional support. Referred to as boundary dissolution, this form of atypical parenting behavior suggests a relationship disturbance in which the parent may abdicate from the parental role and expect a child to meet the parent’s needs. Research highlights that mothers engaged in boundary dissolution with their children are less likely to provide appropriate support, guidance, and limit setting (Kerig, 2005). Additional findings suggest that young children who fulfill their parents' need for emotional support have difficulty regulating their own behavior and emotions (Carlson, Jacobvitz, and Sroufe 1995; Macfie, et al., 2005).
Family systems theorists have long noted that parenting is a complex multidimensional process that is vulnerable to a variety of influences, such as relationship quality with the partner, as well domains of functioning, such as depression and substance use (Erel & Burman, 1995; Briere & Elliott, 1994; Mullen et al., 1996). The few studies that have examined the role of intervening variables have found that at least a portion of the relationship between childhood sexual trauma and subsequent parenting is accounted for by these factors, including depressive symptomatology (Mapp, 2006; Banyard, Williams, & Siegel, 2003), and intimate partner violence (Noll, 2003). Such findings suggest that the linkages between childhood sexual trauma and subsequent parenting are not direct and may be contingent on the presence or absence of other factors. However, as stated in study 1, much of the early work addressing the long-term correlates of childhood sexual trauma used either clinical samples or samples of convenience, making them less generalizable. In addition, nearly all of the existing studies on the parenting of mothers with trauma histories have used self-report measures of parenting behavior, which typically capture constructs such as parenting stress or competence but don’t provide key information about mothers’ actual behavior, making the use of observational assessments of parenting an important next step.

3.4.1 Maternal Depressive Symptoms and Parenting

A large body of literature links childhood sexual trauma and adult depression (Dinwiddie et al., 2000; Paolucci et al., 2001; see Putnam, 2003, for a review). As stated in study 1, numerous reports have suggested that women who experienced childhood sexual trauma are at increased risk for depressive symptomatology as compared to women who did not experience such trauma (Briere & Elliot, 1994; Kendler et al., 2002). Similarly, a substantial amount of literature suggests that maternal depressive symptomatology has significant and
largely negative implications for children's development (see Goodman & Gotlib, 1999). For example, children of depressed mothers are more likely to have insecure patterns of attachment, to react more negatively to stress, to be less socially competent, and to suffer from externalizing problems (Cummings & Davies, 1994; Gotlib & Goodman, 1999).

One pathway believed to link maternal depressive symptomatology to child outcomes is parenting (Cummings & Davies, 1994). Previous parenting research with childhood sexual trauma survivors highlights the significance of maternal depressive symptomatology as a risk factor for problems in caregiving. This body of research argues that maternal depressive symptomatology contributes to poor parenting, although it is still unclear to which specific aspects of poor parenting maternal depressive symptomatology may contribute. For example, Schuetze and Eiden (2005) found that depressive symptomatology is an important mediating variable between childhood sexual trauma and harsh disciplinary parenting practices. By using multiple domains of parenting, this study proposes to test whether maternal depressive symptomatology associated with childhood sexual trauma is linked to poor parenting characterized by low sensitivity, high harsh intrusiveness, and the presence of boundary dissolution and whether diminished parenting behavior leads to the development of child conduct problems in the offspring of women with trauma history.

3.4.2 Alcohol and Substance Use and Parenting

There is consistency across studies indicating greater risk for alcohol and substance use among females who have experienced childhood sexual trauma compared to those who have not experienced childhood sexual trauma (Simpson & Miller, 2002). A large literature also links parental substance abuse with adverse developmental outcomes for children (See for example, Eiden, Edwards, & Leonard, 2007; Hussong, Wirth, Edwards, Curran, Chassin, & Zucker, 2007).
Existing research characterizes substance-using mothers as more likely to be harsh and punitive toward their children compared to those without substance use histories (Miller, Smyth, & Mudar, 1999). Similarly, substance-using mothers have been found to rely on more severe disciplinary practices including verbal criticism and harsh and coercive discipline (Hien & Honeyman, 2000). Additional studies have shown that children of alcohol-using parents receive less emotional support from their parents compared to children whose parents are not alcohol users (Rutherford, Cacciola, Alterman, McKay, & Cook, 1997).

Children of alcohol- and substance-using mothers have an elevated risk for the development of externalizing behaviors such as conduct problems, oppositional disorder, delinquency, and attention deficit disorder (Christensen & Bilenberg, 2000; Merikangas, Dierker, & Szatmari, 1998; Sher, Walitzer, Wood, & Brent, 1991). Researchers hypothesize that a potential explanation for the link between parental alcohol and substance use and negative child outcomes is that the use of these substances may lead to less optimal parenting behaviors by impairing the mothers’ awareness of and sensitivity to children’s bids for attention (Mayes & Truman, 2002; Marcenko, Kemp, Larson, 2000). Survivors of childhood sexual trauma may use alcohol and other substances as a means of alleviating the potent negative feelings related to the effects of the trauma, which in turn may make them less available to their children. Given the higher rates of alcohol and substance use among childhood sexual trauma survivors and the relationship between substance abuse and impaired parenting, understanding whether this is a mechanism by which mothers’ childhood sexual trauma is related to their children’s behavior is essential.
3.4.3 Parenting and Intimate Partner Violence (IPV)

As discussed in study 1, numerous studies have found that women with a history of childhood sexual trauma experience an increased risk of encountering additional interpersonal victimization as adults, including intimate partner violence (DiLillo & Long, 1999). DiLillo, Giuffre, Tremblay, and Peterson (2001) found that women who had a history of childhood sexual trauma were more likely to report that their intimate relationships involved severe forms of physical aggression and violence, including pushing, hitting, kicking, and beating, than those who did not have such a history.

A substantial body of literature has documented the harmful effects of intimate partner violence on numerous child outcomes (Grych & Fincham, 2001; Kitzmann, Gaylord, Holt, & Kenny, 2003). Hostile aggression among parents has consistently been associated with negative consequences for children, including direct effects on child difficulties in managing emotions and acquiring self-regulatory skills (Crockenberg & Langrock, 2001; Cummings & Davies, 2010; Raver, 2004) and indirect effects through parenting behaviors (Cox, Paley, & Harter, 2001; Cummings & Davies, 2002). Intimate partner violence is associated with lower levels of warm, sensitive, and supportive caregiving, as well as higher levels of parental violence toward children (Levendosky, Huth-Bocks, Shapiro, & Semel, 2003). Because mothers who have experienced childhood sexual trauma may have increased problems in parenting and because many survivors report intimate partner violence with their partners, it is important to simultaneously consider violence and parenting in investigations of the adjustment of children of trauma survivors.
3.5 Research Questions and Hypotheses

Question 1: Is there an association between mother’s sexual trauma history and subsequent development of child behavior problems defined as conduct problems?

- There will be an association between children’s behavior problems as defined by conduct problems and mother’s childhood sexual trauma status. SEM allows for the simultaneous estimation of the relationship between mother’s childhood sexual trauma and conduct problems for all of the proposed hypotheses. A statistically significant, positive parameter estimate for mother’s childhood sexual trauma predicting conduct problems will be interpreted as support for Hypothesis 1.

Question 2: Is the association between mothers’ sexual trauma history and subsequent development of child behaviors problems mediated by maternal depressive symptoms, mothers’ alcohol and substance use, or intimate partner violence?

- It is expected that the association between mother’s sexual trauma history and child behavior problems when the target child is in 1st grade will be mediated by maternal depressive symptoms, IPV and mother’s alcohol and substance use. A statistically significant, positive parameter estimate for mother’s sexual trauma history and maternal depressive symptoms, IPV and mother’s alcohol and substance use predicting conduct problems at 1st grade will be interpreted as support for this hypothesis.

Question 3: Are these processes further mediated by parenting such that the association between mother’s sexual trauma history, depressive symptomatology, IPV, alcohol and substance use and child behavior is through mothers’ parenting behavior as defined by sensitivity, harsh intrusiveness and boundary dissolution?
It is expected that parenting behavior as defined by sensitive parenting, harsh intrusive parenting and boundary dissolution will further mediate the association between mother’s sexual trauma history and child behavior.

- This hypothesis posits a second level of mediation such that mother’s depressive symptomatology, alcohol and substance use and IPV are related to child behavior problems through maternal parenting. As previously stated, each of the three domains of parenting, sensitive, harsh intrusive and boundary dissolution will be run in separate models due to high correlation between the parenting variables, (for example, \( r = .7 \) for sensitive and harsh intrusive parenting).

### 3.6 Sample

The sample for the current study is the propensity matched sample described in study 1. Because much of our current knowledge of adult outcomes of childhood sexual trauma comes from research that has used samples of convenience (i.e. college students) or clinical samples, there is still a great deal we do not understand. The use of propensity matched controls, drawn from a community sample is an important direction to further our understating of the long term correlates of childhood sexual trauma and how they may be related to subsequent parenting behavior and child outcomes in the next generation.

### 3.7 Procedure

For the FLP, two trained research assistants collected all data during home visits. All data for the present study were collected when children were on average 2-, 6-, 15-, 24-, 36- and 60-months of age and 1st grade.
3.8 Measures

*Trauma History Questionnaire* (THQ; Green, 1996): At either the 36- or the 60-month home visit, the FLP used the Trauma History Questionnaire, which is a 24-item self-report measure that examines experiences with potentially traumatic events, such as crime, general disaster, and sexual and physical assault, using a yes/no format. For each event endorsed, respondents were asked to provide the frequency of the event, their age at the time of the event, and the nature of their relationship with the abuser. For the purposes of the study, we have selected the item relating to sexual abuse/assault. The specific questions asked of respondents was, (1) “Has anyone ever done something sexual to you against your will, such as made you have intercourse, oral or anal sex, touched private parts of your body, or made you touch theirs, or otherwise forced you to have unwanted sexual contact?” If the respondent answered yes, they were asked (2) “How old were you when this occurred?” Respondents were asked to rate on a 6-point Likert-type scale (where 1=0-4 years of age, 2 = 5-11 years of age, 3 = 12-14 years of age, 4 = 15-18 years of age, 5 = 19-25 years of age, and 6 = 26+ years of age). The subsample of women who reported experiencing sexual trauma at or before the age of 14 was used in this analysis.

Cronbach’s alpha for the whole sample (before propensity score matching) of women reporting childhood sexual trauma at or before the age of 14, (N=144) was .89.

*Maternal depressive symptomatology.* (Brief Symptom Inventory, BSI; Derogatis, 2000). At the 6-, 15-, 24-, 36-, and 60-month time points, mothers completed a 23-item self-report questionnaire regarding psychological distress. In contrast to study 1 that used this measure at only one time point (i.e. 24 months), the present study used multiple assessments of maternal depressive symptomatology. Respondents were asked to rate on a 4-point Likert-type scale (where 0=not at all and 4=extremely) how distressed they were by each symptom over the past
seven days. The measure’s six-item depression subscale is used in this study. Due to high correlations between depression scores at each time point (r's=0.83-0.88), the means from the depression subscales were summed across all 5 time points. Representative questions from the subscale included “[how much were you distressed by]” “feeling hopeless about the future”, and by “feelings of worthlessness?”

*Mother’s Report of Alcohol and Substance Use:* The Alcohol, Smoking and Substance Involvement Screening Test, (The ASSIST), completed at the 36-month visit was used to assess maternal alcohol and substance use. For the present study, we used questions concerning lifetime use of substances. For example, subjects responded “YES” or “NO” to questions such as, “Have you ever used alcohol?” or “Have you ever used cocaine (crack, coke)?” and “Have you ever used opiates (heroin, methadone, morphine?” Cronbach’s alpha for our sample =.70. A full list of the psychoactive substances assessed is provided in Appendix 2, part A.

*Intimate partner violence (IPV).* To assess intimate partner violence, the Conflict Tactics Scale-Couple Form Revised (CTS-R; Straus & Gelles, 1990) was administered to all mothers when their children were 6, 15, 24, 36 and 60 months old. In contrast to study 1 that used this measure at only one time point (24 months), the present study used multiple assessments of IPV. Scores on the 9-item Physical Violence subscale of this measure (which captures incidences of physical aggression and violence) from each of the five time points were used in this study. An example item reads “How often in the past 12 months have you/your partner kicked, bit, or hit him/her/you with a fist?” In an effort to more accurately capture the experience of the mothers in this sample across the five assessments when the target child was 6, 15, 24, 36 and 60 months old, a latent variable for IPV was created using maternal reports of their own IPV and their report
of their partners’ IPV across the five time points. Cronbach’s alphas for the 18-item total scores were for physical violence ranged from .74 - .88 in our sample for the five time points.

*Maternal parenting behaviors.* As described in study 1, maternal parenting behaviors were assessed using mother-child interactions when the target child was 60 months old. Parenting behaviors defined by sensitive, harsh intrusive and boundary dissolution are used in the present study. Details of these subscales can be found in study 1. I examine parenting behavior at 60 months because a growing body of evidence has emerged suggesting that parental socialization is an important antecedent to school readiness (See for example, Rimm-Kauffman & Pianta, 2000) and for many children, 60 months (i.e. age 5) represents a time for school entry. A central challenge for school entry is to be able to function in a classroom. Thus, acquiring the skills necessary to confront the new challenges of a classroom setting represent the developmental challenge for children of this age and understanding parenting behavior at this key stage of childhood may be useful to understanding child behavioral problems.

*Child conduct problems.* Child behavior problems were assessed using mother’s report of the Strengths and Difficulties Questionnaire in the first grade. The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) is a 25-item parent report screening questionnaire for use with children 3-16 years of age. Items are rated on a 3-point Likert scale (0 = not true, 1 = somewhat true, 2 = certainly true). Items are combined to form five, five-item subscales including emotional symptoms (e.g., many fears, easily scared), conduct problems (e.g., can be spiteful to others), hyperactivity/inattention (e.g., easily distracted, concentration wanders), peer relationship problems (e.g., picked on or bullied by other children), and prosocial behavior (e.g., often offers to help others). The subscale for conduct problems is used in this analysis. Prior studies document that due to a variety of factors including the greater amount of time mothers
typically spend with their children compared to other informants such as fathers and teachers, mothers may be more accurate in reporting behavior problems than other informants (Phares, 1997). Thus, mother’s reports of child behavior were used in this analysis. Cronbach’s alpha for the first grade time point is .74 for conduct problems.

**Control variables.** Current demographic information provided by mothers is used in the present analysis. Poverty status, maternal education, ethnic minority status, and child sex have each been identified as important correlates of parenting (See Conger, Conger, & Martin, 2010, for a review) and thus the family’s income-to-needs ratio, maternal education and the race and sex of the target child were included as covariates in this model. Because the family’s income-to-needs ratio and maternal education showed stability over time, the 6 month assessment of these two variables was used in this analysis. The data collection site (Pennsylvania vs. North Carolina) was also included as a control variable.

**3.9 Analysis Plan**

Descriptive and correlational statistics were run for each variable of interest. These analyses examined means, standard deviations, and univariate normality. Structural equation modeling (SEM) was used to test the proposed models (Schumacker & Lomax, 1996). Models were parameterized using the Mplus 6.0 software package (Muthén & Muthén, 2006), using the robust maximum likelihood estimator. Full information maximum likelihood (FIML) was used as the missing data technique (Arbuckle, 1996). FIML estimation uses all available observations and provides unbiased estimation of model parameters in the presence of missing data. Model fit was examined using a number of fit indices, including the comparative fit index (CFI; Bentler, 1990), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the root mean squared error of
approximation (RMSEA; Browne & Cudeck, 1993). CFI and TLI values above .90 and RMSEA values below .05 indicate excellent model fit.

All of the research questions were addressed by testing several structural equation models (SEM). To address the study hypotheses, several models testing for mediation were run as shown in Figure 3.1. In a mediation relationship, there is a potential direct effect between an independent variable and a dependent variable. There are also potential indirect effects between an independent variable and a mediator variable, and between a mediator variable and a dependent variable. The degree to which the direct effect changes as a result of including the mediating variable is referred to as the mediational effect (MacKinnon, Warsi, & Dwyer, 1995).

SEM allows researchers to use latent variables to model measurement error. In addition, SEM allows for the testing of relationships between one or more observed dependent or latent variables and one or more observed independent or latent variables (Schumacker & Lomax, 1996). Simultaneous regression equations can be examined and the overall model fit for all pathways can be evaluated. While regression does allow for the testing of multiple independent variables, only one dependent variable can be tested at a time. This type of framework can be limiting, however, given the complexity of many developmental models.

The first component of the model posits that childhood sexual trauma has both direct and indirect effects on child behavior, with indirect effects mediated through maternal depressive symptoms, IPV, and alcohol and substance use (see Figure 3.1). The second component of the model posits that the impact of maternal depressive symptoms, IPV, and alcohol and substance use on child conduct problems is further mediated through maternal parenting (e.g. sensitive caregiving, harsh intrusive caregiving and boundary dissolution). In order to test the hypotheses of this study, child conduct problems were regressed upon the exogenous variable of childhood
sexual trauma. After establishing this link, mothers’ alcohol and substance use and the latent variables, IPV and maternal depression are added to the model as mediators of the relation between childhood sexual trauma and child behavioral development.

The next step after establishing this link is to determine if these associations are further mediated by parenting as defined by sensitive caregiving, harsh intrusive caregiving and boundary dissolution. To test the second level of mediation, the latent variables sensitive parenting, harsh intrusive parenting, and boundary dissolution are added to the model in 3 separate analyses, for each of the three domains of parenting (i.e. sensitive, harsh intrusive, and boundary dissolution). As depicted in Figure 3.1, each of the three domains of parenting were run in separate models due to high correlation between the parenting variables, (for example, \( r = -0.7 \) for sensitive and harsh intrusive parenting in the FLP). Poverty status, ethnic minority status, and child sex have each been identified as important correlates of child behavior problems (Lahey, Schwab-Stone, Goodman, Waldman, Canino, Rathouz, et al., 2000; Hinshaw, 1992), and maternal education has been linked to parenting behaviors (Brody and Flor, 1998), and therefore, the family’s income-to-needs ratio, the race and sex of the target child, as well as maternal education, were included as covariates in this model.

4.0 Results

Preliminary Analyses

*Matching Results and Balance Checking for Matched Sample.* As noted in study 1, The PSM procedure yielded a sample of 204 women; 105 who experienced childhood sexual trauma matched to 99 women who did not. Results from the testing procedures to check for adequate matching can be found in Appendix 1. Briefly, the matching methods performed well at reducing the standardized mean difference with each covariate when compared to the unmatched
data suggesting that with regards to the covariates, the two groups are more similar with each other than with the larger FLP sample from which the control sample was drawn.

*Descriptive Statistics.* The group with childhood sexual trauma (CTH) was comprised of 57.1% European American and 42.9% African Americans whereas the NT group was comprised of 55.6% European American and 44.4% African Americans. Descriptive statistics and bivariate correlations are presented in Table 3.1. The associations between the variables were largely as expected (see Table 2). Childhood sexual trauma was positively related to child conduct problems, \( r = .24, p < .01 \) and harsh intrusive parenting \( r = .22, p < .01 \), boundary dissolution \( r = .21, p < .05 \), and inversely related to sensitive caregiving \( r = -.23, p < .01 \). Childhood sexual trauma was positively related to depression \( r = .25, p < .01 \) and alcohol and substance use \( r = .15, p < .05 \). In addition, childhood sexual trauma was related to intimate partner violence at all five time points 6-, 15-, 24-, 36-, 60 months, \( r = .15, p < .05 \), \( r = .18, p < .01 \); \( r = .16, p < .05 \), \( r = .21, p < .05 \), \( r = .18, p < .01 \).

There were several significant associations between controls and the other predictors and outcomes that justify their inclusion in the proposed analyses. Income-to-needs ratio was related to childhood sexual trauma, \( r = -.19, p < .01 \) and maternal depression \( r = -.17, p < .05 \), maternal sensitivity \( r = .28, p < .01 \), and harsh intrusive parenting \( r = -.35, p < .01 \), as well as numerous indicators for intimate partner violence. Maternal education was related child conduct problems \( r = -.32, p < .01 \), as well as multiple timepoints of intimate partner violence.

*Hypothesis 1*

The first hypothesis of this study stated that there would be significant associations between maternal childhood sexual trauma and child conduct problems. To determine if an association between mother’s sexual trauma history and conduct problems in her child could be found,
conduct problems were regressed on maternal childhood trauma. The estimated path was significant; indicating that even after controlling for the family’s income-to-needs ratio, the child’s race and sex, maternal education, and the data collection site, maternal childhood sexual trauma is still related to conduct problems at 1st grade ($\beta = .19$, $p < .001$).

Hypothesis 2

The second hypothesis of this study stated that the association between mother’s sexual trauma history and child behavior problems when the target child is in 1st grade will be mediated by maternal depressive symptoms, IPV and maternal alcohol and substance use. To test this hypothesis, a composite variable for depressive symptoms across five time points, mothers’ self report of alcohol and substance use at 36 months and the latent variable of IPV and were added to the previous model as potential mediators of the relationship between maternal childhood sexual trauma and conduct problems. Table 3.2 provides parameter estimates and p values for all variables including covariates for this analysis.

This model fit the data well, $\chi^2 (36, N = 204) = 56.5$, $p = .02$, CFI = .92, TLI = .88, RMSEA = 0.05. As can be seen in Figure 3.2, in a model with three mediating pathways between childhood sexual trauma and child conduct problems (i.e. maternal depression, maternal alcohol and substance use and IPV), and, after controlling for the family’s income-to-needs ratio, the child’s race and sex, maternal education, additional maltreatment experienced in childhood, and the data collection site, the direct effect of childhood sexual trauma to conduct problems is still significant ($\beta = .44$, $p < .01$). Further, there was a main effect of maternal childhood trauma on maternal depression ($\beta = .40$, $p < .01$), which in turn was related to child conduct problems ($\beta = .27$, $p < .001$). Childhood trauma was also related to the latent variable, IPV ($\beta = .33$, $p < .001$), which in turn was related to child conduct problems ($\beta = .26$, $p < .01$). The association between
and childhood sexual trauma and maternal alcohol and substance use was near significant at (p = .06), which in turn was not related to child conduct problems (p = .7). Intimate partner violence was related to household income (β = -.35, p < .01), race (β = -.33, p < .01), and maternal education (β = -.35, p < .05). Further, in addition to the direct effect of childhood sexual trauma on child conduct problems, there were two indirect pathways from maternal childhood trauma to conduct problems; trauma → maternal depressive symptoms → child conduct problems, (β = .06, p < .01), and; trauma → IPV → child conduct problems, (β = .11, p < .05). The model explains 17% of the variance in child conduct problems at 1st grade in this sample. Table 3.3 provides a summary of all direct and indirect paths to child conduct problems.

Figure 3.2

The mediating role of maternal depressive symptoms, alcohol and substance use and IPV in associations between maternal sexual trauma and child conduct problems at 1st grade.
Hypothesis 3A: Sensitive Parenting

The next hypothesis posits a second level of mediation such that mother’s depressive symptomatology, alcohol and substance use, and IPV are related to child behavior problems through maternal parenting. Testing the second level of analysis involved adding parenting variables to the previous model. Due to high correlations between the parenting variables, particularly among sensitive and harsh intrusive caregiving ($r = .74$), each of the parenting variables were included in separate models. The analyses reported in Figure 3.3 simultaneously considers the associations between childhood sexual trauma, maternal depressive symptom, maternal alcohol and substance use, the latent variable IPV, maternal sensitivity and conduct problems. Table 3.4 provides the parameter estimates and $p$ values for all variables including covariates in this analysis.

The model fit the data well, $\chi^2 (42, N = 204) = 62.3, p = .06$, CFI = .93, TLI = .89, RMSEA = 0.06. As can be seen in Figure 3.3, adding maternal sensitive parenting to the model did not remove the previously significant direct effect of maternal childhood sexual trauma on childhood conduct problems at 1st grade ($\beta = .13$, $p < .05$). We further found the main effect of childhood trauma on depressive symptoms ($\beta = .31$, $p < .001$), which in turn was related to conduct problems ($\beta = .25$, $p < .01$) and maternal sensitivity ($\beta = -.06, p < .05$). Childhood sexual trauma was positively related to the latent variable IPV ($\beta = .29, p < .01$) which in turn was related to child conduct problems ($\beta = .22, p < .01$), and maternal sensitivity ($\beta = -.38, p < .001$).

Childhood sexual trauma was related to maternal sensitivity ($\beta = -.61, p < .05$) which was related to child conduct problems ($\beta = -.18, p < .05$). The association between childhood sexual trauma and maternal alcohol and substance use was a trend, $p = .06$. Moreover, there were significant indirect pathways from maternal childhood sexual trauma and child conduct problems. One
pathway was through maternal depressive symptoms (childhood sexual trauma → maternal depressive symptoms → child conduct problems, β = .05, p < .05); a second pathway from (childhood sexual trauma → maternal sensitive parenting → conduct problems = .07, p < .05). A third pathway was from (childhood sexual trauma → IPV → sensitive parenting → child conduct problems = -.02, p < .05).

The addition of sensitive parenting confirms partial mediation. This indicates that after controlling for the family’s income-to-needs ratio, the child’s race, sex, maternal education, and the data collection site, maternal depressive symptoms, IPV and maternal sensitive parenting behaviors at age 60 months mediates the relation between childhood sexual trauma and child conduct problems at 1st grade and accounted for 22% of the variance in child conduct problems.
Hypothesis 3B: *Harsh Intrusive Parenting*

The next step in the analysis to test hypothesis 3, was to repeat the previous model using harsh intrusive parenting in place of sensitive parenting. The results reported in 3. 5 simultaneously considers the associations between childhood sexual trauma, maternal depressive symptom, maternal alcohol and substance use, the latent variable IPV, maternal harsh intrusive parenting and conduct problems. Table 3.5 provides parameter estimates and p values for all variables in this analysis.

The model fit the data well, $\chi^2 (43, N = 204) = 61.9, p = .03$, CFI = .93, TLI = .88, RMSEA = 0.04. As can be seen in Figure 3.4, when considered in a model with harsh intrusive
parenting, the relation between maternal childhood sexual trauma and child conduct problems is still significant ($\beta = .17, p< .01$). There was also the main effect of childhood trauma on depressive symptoms ($\beta = .39, p< .01$), which in turn was related to conduct problems ($\beta = .28, \ p< .01$). Childhood sexual trauma was positively related to the latent variable IPV ($\beta = .22, p< .01$) which in turn was related to conduct problems ($\beta = .26, p< .05$) and harsh intrusive parenting ($\beta = .29, p< .05$). Childhood sexual trauma was related to harsh intrusive parenting ($\beta = .54, p< .01$) which was related to child conduct problems ($\beta = .11, p< .05$). The association between childhood sexual trauma and maternal alcohol and substance use did not reach significance. Moreover, there were three significant indirect pathways from maternal childhood sexual trauma to child conduct problems. One pathway was through harsh intrusive parenting (childhood sexual trauma $\rightarrow$ harsh intrusive parenting $\rightarrow$ child conduct problems $= .14, p < .05$) and a second pathway through maternal depressive symptoms (childhood sexual trauma $\rightarrow$ maternal depressive symptoms $\rightarrow$ child conduct problems $= .05, p < .05$). We further found a mediation through IPV and harsh intrusive parenting (childhood sexual trauma $\rightarrow$ IPV $\rightarrow$ harsh intrusive parenting $\rightarrow$ child conduct problems $= \beta = .12, p < .05$).

The addition of harsh intrusive parenting confirms partial mediation. This indicates that after controlling for the family’s income-to-needs ratio, the child’s race, sex, maternal education, and the data collection site, maternal depressive symptoms, IPV, and harsh intrusive parenting behaviors at age 60 months partially mediate the relation between childhood sexual trauma and child conduct problems at 1st grade, and accounted for 22.9% of the variance in child conduct problems.
The mediating role of maternal depressive symptoms, alcohol and substance use, IPV and maternal harsh intrusive parenting in the associations between maternal sexual trauma and child conduct problems at 1st grade.

**Hypothesis 3C: Boundary Dissolution**

The final model simultaneously considers the associations between childhood sexual trauma, maternal depressive symptom, maternal alcohol and substance use, the latent variable IPV, maternal boundary dissolution and conduct problems. Table 3.6 provides parameter estimates and p values for all variables included in the analysis. There was adequate fit to the data, $\chi^2 (43, N = 204) = 65.7, p = .01$, CFI = .91, TLI = .89, RMSEA = 0.05. As can be seen in Figure 3.5, when considered in a model with boundary dissolution, the relation between maternal childhood sexual trauma and child conduct problems remains significant ($\beta = .24, p < .01$). There was a
main effect of childhood trauma on depressive symptoms ($\beta = .38, p< .01$) which in turn was related to child conduct problems ($\beta = .26, p< .001$) and boundary dissolution ($\beta = .05, p< .01$). Childhood sexual trauma was related to the latent variable IPV ($\beta = .34, p< .05$) which was related to child conduct problems ($\beta = .17, p< .05$) but was not related boundary dissolution. The association between childhood sexual trauma and maternal alcohol and substance use was a trend, $p = .06$. Further, in a model with childhood sexual trauma, maternal depressive symptom, maternal alcohol and substance use, the latent variable IPV, maternal boundary dissolution and conduct problems, the only indirect pathway to reach significance was (childhood sexual trauma $\rightarrow$ maternal depressive symptoms $\rightarrow$ child conduct problems $= .05, p< .05$). This model accounted for 18.6% of the variance in conduct problems.
4.1 Discussion

This study adds to the literature on intergenerational effects of childhood sexual trauma by examining the relations between caregivers’ trauma histories and children’s behavioral development. The strengths of this current study include the use of a clear definition of childhood sexual trauma, a propensity matched sample with appropriate controls, and a longitudinal design to study the extent to which a mother’s childhood trauma history extends itself across time to influence the development of her child. As many scholars have noted, a major limitation to creating a comprehensive assessment about the long term effects of childhood sexual trauma has been the use of multiple definitions of abuse (DiLillo, 2001). The current
study addresses this issue by using a clear, unambiguous definition of childhood sexual trauma. Further, the use of a longitudinal design in examining specific adult outcomes for women who reported experiencing childhood sexual trauma (i.e. depression, IPV, alcohol and substance use and parenting behavior), allows for a better understanding of how developmental risk may be transferred across generations by examining conduct problems in children of women who have and have not reported trauma histories. In addition, using propensity score matching to create a control group from within the same community sample and by controlling for additional maltreatment experienced by the victim, and family of origin variables, the present study attempted to isolate the effects of childhood trauma above and beyond the effects of family of origin and other traumas experienced in childhood.

Although past research has provided suggestive evidence to support these models, this study is, to the best of the author’s knowledge, the first to explicitly test the relation between maternal childhood sexual trauma, maternal characteristics (i.e. depressive symptoms, alcohol and substance use and IPV), three domains of parenting and children’s conduct problems. Consistent with expectations, this study found support for the idea that mothers’ childhood sexual trauma is related to the behavioral development of the next generation. More specifically, the current study found that even after controlling for the family’s income-to-needs ratio, the child’s race, and sex, maternal education and the data collection site, there were multiple significant pathways by which maternal childhood sexual trauma was related to conduct problems in the next generation. Specifically, several models were tested, three of which considered a different domain of parenting (i.e. sensitive, harsh intrusive and boundary dissolution) in the context of maternal depressive symptoms, alcohol and substance use and IPV. Our study findings highlight that maternal characteristics and the home environment (i.e. early}
trauma, depressive symptoms, and IPV) and her parenting are closely linked when examining the development of conduct problems in the next generation.

The findings from the current study reveal that maternal depressive symptomatology is a significant mediating pathway to child conduct problems in a model with maternal alcohol and substance use and IPV. This indirect pathway remained significant even after the inclusion of each of the parenting variables. This suggests that maternal depressive symptoms have an independent effect on child conduct problems above and beyond the effect of parenting for mothers with childhood sexual trauma. This is not surprising given previous findings linking childhood sexual trauma, depression and parenting behavior (Roberts et al., 2004; Banyard, 1997).

The addition of sensitive caregiving to the model with maternal depressive symptoms, alcohol and substance use and IPV provided key information on the mediating pathways by which parenting may be related to child behavioral development. Specifically, in addition to the pathway from childhood sexual trauma to conduct problems through maternal depression, the findings of the current study reveal that maternal childhood sexual trauma affects child conduct problems through its influence on mothers’ sensitive parenting behavior specifically by limiting children’s exposure to warm, guided opportunities to learn emotion regulatory skills. Given previous research findings that suggest that parenting behaviors are essential to laying the groundwork for children's development of self-regulation, it may be that mothers with childhood sexual trauma struggle with their own regulatory processes and are thus less responsive to their children’s bids for attention and care (Ruscio, 2001). By definition, maternal sensitivity is the ability to recognize and respond effectively to the signals of distress and needs of one’s child.
(Cox & Harter, 2003). A mother who is focused on her own needs is less likely to be emotionally attuned to the needs of her child.

We found a similar pattern of associations with harsh intrusive parenting such that maternal childhood trauma was related to children’s conduct problems through higher levels of hostile and controlling parenting behaviors. Although prior studies did not examine harsh intrusive parenting per se with observational assessments, the findings from this study extend previous reports that women with childhood sexual trauma histories engage in harsh parenting practices (Banyard, 1997; Lyons-Ruth & Block, 1996). Our findings extend previous reports such as those by Banyard (1997) who highlighted that maternal childhood sexual trauma history predicted the use of harsh parenting as a tactic for dealing with parent-child conflicts, an association that remained when the effects of physical abuse and other negative family-of-origin experiences were partialled out. Specifically, harsh intrusiveness represents parenting behaviors that are parent-centered rather than child centered, whereby parents push their own agenda, often with power assertive techniques as a means to get the child to comply. As with sensitive caregiving that requires being attentive to the needs of children, it may be that as mothers are struggling with their own regulatory skills, they may demand greater compliance to set rules and behaviors from their children. This may become increasingly difficult for mothers struggling with depressive symptoms related to their childhood sexual trauma, as their children grow and demand greater autonomy.

That we found significant indirect pathways from childhood sexual trauma to conduct problems through IPV and two domains of parenting suggests that IPV may be a central component in this rural sample of women reporting childhood sexual trauma and behavioral development of their offspring. These significant pathways can be interpreted in the light of the
current knowledge about the long-term sequelae of childhood sexual trauma. In our conceptualization of IPV, we included both mothers’ report of her violence and her report of partner’s violence to capture the total violence reported in the home. Given that one of the most pervasive emotional consequences of sexual abuse is anger (Dilillo et al., 2000; Briere, 1992; Courtois, 1988), it may be that mothers with trauma histories in this sample have difficulties managing anger and frustration arising from the trauma experiences that spill over into their interactions with their intimate partners and their children. For example, Trickett, et al., (2011) noted that the process or experience of intimate partner violence may be complex for women with sexual trauma histories because some sexually abused females may have a propensity to enact subtle or mild forms of aggression towards their partners as a means of expressing anger resulting from the trauma itself. Only one other study has examined the role of anger in the association between childhood sexual trauma and subsequent parenting. In their study examining the association between childhood sexual traumas and later parenting characteristics, Dilillo et al., (2001), noted that maternal anger mediated the relationship between early trauma and subsequent child abuse potential.

Despite group differences with regards to the parenting domain of boundary dissolution, we did not find a significant association between maternal depressive symptoms, IPV, substance use and boundary dissolution in the prediction of child conduct problems. In this analysis we found an association between maternal childhood sexual trauma and boundary dissolution which in turn was related to child conduct problems at 1st grade. It may be however, that despite robust findings for pathways to child conduct problems through the parenting domains of sensitive and harsh intrusive parenting, the subtle nature of boundary dissolution may require a larger sample to power an analysis to determine pathways to child behavior with boundary dissolution.
Although previous studies have linked maternal alcohol and substance use with parenting in women with sexual trauma histories, our study did not support this view. Findings from study 1 revealed significant group differences among women who did and did not report childhood sexual trauma. In a model considered with additional variables including maternal depressive symptoms and IPV however, maternal alcohol and substance use was not a significant predictor of conduct problems.

Given that previous studies have primarily focused on establishing the frequency with which survivors of childhood sexual trauma experience parenting difficulties, the current study extends our understanding of the impact of maternal childhood sexual trauma on children’s emotional functioning in an understudied population of rural families. The longitudinal nature of the data allowed us to look at these relationships over a relatively large span of time (across the first six years of the child’s life), giving a better understanding of the long-term effects of maternal sexual trauma on the behavioral development of the next generation by examining multiple pathways by which maternal history of childhood trauma influences the development of children. Building upon previous research, the present study examined the extent to which mothers’ depressive symptomatology, alcohol and substance use, intimate partner violence, and parenting behaviors mediate the relationship between the childhood sexual trauma of the mother and subsequent behavioral adjustment in her children.

Despite the strengths of the present study, several limitations warrant attention. As with most studies of childhood sexual trauma, the current study relies on a self-reported measure of sexual trauma as recalled years after the event. Researchers have expressed concern that the passage of time may distort recollections of the experience. For example, if an individual who has experienced sexual trauma is assigned to a non-trauma control group while someone who did
not experience the trauma is classified as having the trauma, then these false negatives and false positives will obscure distinctions between women who have and have not experienced childhood sexual trauma (Briere, 1992; Polusny & Follette, 1995).

Also, using mother report of her sexual trauma, depressive symptoms, alcohol use, IPV and child conduct problems brings to bear the issue of single source reporting and the possibility of shared method variance that could inflate some of the associations detected. However, as previously noted, due to the longitudinal nature of the study, data for this study was collected with considerable time intervals of time between them (e.g., from 6 months to the time the child entered grade 1) and as such are unlikely to be subject to shared variance as might arise, for example, from current psychological state.

Moving forward, vigilance to definitional issues relating to what constitutes childhood sexual trauma will allow researchers to compare and assess findings across studies and create a cohesive and organized body of work which could provide practitioners avenues for targeted interventions. In order to get a fuller conceptualization of the impact of child sexual trauma on parenting behavior, and to ultimately understand the mechanisms by which a mother’s childhood sexual trauma may exert itself long term and influence the development of her offspring, additional studies testing moderating and mediating relationships among a variety of variables that may impact childrearing would greatly increase knowledge.

This is one of the first studies to examine the influence of caregivers' histories of childhood sexual trauma on children’s behavioral development using multiple domains of parenting. Looking ahead, additional research is needed on how caregivers’ histories of trauma affect the way they cope with stressors, the way they parent, and subsequent outcomes of their children. Clinically, this area of study has important implications for intervening with parents.
who have childhood abuse histories and understanding the impact of caregiver histories and family stressors on children. Further, characteristics of the child such as sex may play an important role in moderating the effects of caregiver trauma histories on children.

In addition, although gene-environment interaction studies in psychology are relatively new, initial findings are intriguing and highlight the complex interplay between an individual’s genetic endowment and their environment. For example, a growing body of research suggests a gene-environment interaction as being key to the expression of mental health symptoms in children who were exposed to maltreatment. For example, Bradley and colleagues found that a gene by environment (history of child maltreatment) interaction is a key factor in the expression of depressive symptomatology in adults (Bradley, Binder, Epstein, Tang, Nair, Liu et al., 2008). Caspi and colleagues reported that a functional polymorphism in the gene encoding the neurotransmitter-metabolizing enzyme monoamine oxidase A (MAOA) was found to moderate the effect of maltreatment such that maltreated children with a genotype conferring high levels of MAOA expression were less likely to develop antisocial problems (Caspi, McClay, Moffitt, Mill, Martin, Craig et al., 2002). Such findings highlight the need to expand the current model to include biological and genetic factors as possible pathways to adjustment and may prove useful in determining the strength of the relationship between childhood sexual trauma and subsequent functioning.
CHAPTER 4: Study 3: Fathers’ Alcohol and Substance Use, Intimate Partner Violence, Maternal Gatekeeping, and Child Conduct Problems

4.1 Introduction

Research and theory on the etiology of conduct problems have emphasized the role of the family. In particular, a constellation of interrelated parental attributes such as ineffective parenting (Loeber & Farrington, 2000), poor parental supervision and discipline (Frick et al., 1993; Loeber & Dishion, 1983), and parental conflict and divorce (See Amato, 2001, for a review), have all been linked to childhood behavior problems. Much of this research, however, has been with samples of convenience (ex. Head Start samples) or clinical samples rather than in samples chosen because they represent their communities more broadly. Studies conducted using clinical samples of individuals seeking or undertaking treatment or samples drawn because they are convenient may produce results that differ from studies that use representative community samples (McGrath, Watson, & Chassin, 1999). Moreover, few studies have used samples from high-risk home environments. One high-risk home environment that may put children at risk for the development of conduct problems is one with an alcohol- and substance-using (ASU) parent (Chassin, Rogosch, and Barrera, 1991; Reich, Earls, Frankel & Shayka, 1993; Stover, Easton, & McMahon, 2013). In the current study, a representative sample of all children born in 6 nonurban poor counties and their families was enlisted at children’s births and followed over time. A variety of information was obtained including the parents’ ASU and observed parental behavior.

It is important to focus on the implications of parental ASU for parenting and the development of conduct disorder in children because correlational studies identify fathers’ and
mothers’ ASU as a significant risk factor for child behavior problems. Numerous studies that have linked maternal alcohol and substance use to child conduct problems (See for example, Bailey, Hill, Oesterle, & Hawkins, 2009; Burstein, Stanger, Kamon, & Dumenci, 2006; Conners-Burrow, McKelvey, Pemberton, Lagory, Mesman, & Whiteside-Mansell, (2013). Relative to studies highlighting the effects of maternal substance use on child outcomes, fewer studies have explored the role of father’s alcohol and substance use on children’s development. In recent years, there has been burgeoning data highlighting both the positive and negative influence of father’s involvement on children’s development. As this interest has developed, so has the literature highlighting the factors that may influence father’s caregiving including his economic resources (Cabrera, Ryan, Mitchell, Shannon, & Tamis-LeMonda, 2008) and his psychopathology (McMahon & Rounsaville, 2002).

While increasing interest in fathers’ impact on child development has prompted some studies, few of these studies provide information regarding how fathers’ substance abuse may serve to heighten child risk for conduct problems (McMahon & Rounsaville, 2002). It appears likely that fathers’ ASU may influence child risk through multiple pathways and in ways that may affect other risk and protective factors. One such pathway that has been well documented in the literature is through parent’s caregiving behaviors. Studies by Eiden and colleagues (1999) have found that in comparison with non-alcoholic fathers, alcoholic fathers are less sensitive and show higher levels of negative affect toward their child (e.g., Eiden, Chavez, & Leonard, 1999; Eiden, Edwards, & Leonard, 2002). Fals-Stewart, Kelley, Fincham, Golden, & Logsdon (2004) found in a sample of children in elementary and middle school that substance-using fathers self-report more problematic disciplinary practices and less monitoring of their children. Fals-Stewart and colleagues (2004) further noted that drug-abusing fathers demonstrated the most negative
parenting behaviors compared to both alcoholic fathers and fathers with no history of alcohol or drug use.

Additional pathways to heightened child risk for conduct problems may be through the parental dyad. For instance, fathers’ ASU may play a key role in the functioning of the couple relationship and the parenting of the mother. There is evidence that fathers’ substance use may be linked to the initiation and increase of maternal substance abuse (Brady & Randall, 1999; Amaro & Hardy-Fanta, 1995; Barnett & Fagan, 1993), which in turn has been linked to less optimal maternal caregiving behaviors (e.g. Connell & Goodman, 2002; Christensen & Bilenberg, 2000). Maternal alcohol and substance abuse may negatively impact her parenting especially in terms of harsh, controlling parenting and increased parenting stress (Burlew, Johnson, Smith, Sanders, Hall, Lampkin, & Schwaderer, 2012; Kelley, 1998), coercive control and discipline strategies (Pears, Capaldi, & Owen, 2007; Kandel, 1990; Tarter, Blackson, Martin, Loeber, & Moss, 1993) and greater levels of negative control and lower dyadic synchrony in interactions with their children (Spieker, Gillmore, Lewis, Morrison, & Lohr, 2001; Jacob, Haber, Leonard, & Rushe, 2000; Whipple, et al., 1995). These problems in parenting, in turn, would be expected to influence child development, particularly with regard to the development of behavior problems.

Similarly, a large literature links fathers’ ASU with intimate partner violence (Moore, et al., 2007; Bennett & Lawson, 1994), and there is considerable evidence that intimate partner violence (IPV) is related to maternal parenting behaviors (e.g., Gustafsson, Cox, Blair, & the FLP Key Investigators, 2012). However, despite these linkages to maternal parenting, it could also be the case that fathers’ substance use may influence mothers’ behavior in other ways that may insulate a child against risk. For example, a mother who believes her child to be at risk
from the influence of an ASU father may attempt to limit the father’s access to the child. Mothers may engage in “protective gatekeeping behaviors” in response to fathers’ risk behaviors (Waller & Swisher, 2006). As researchers in the father parenting literature have suggested, mothers may engage in maternal gatekeeping for a variety of reasons, including a pessimistic assessment of fathers’ competence in child care (Fagan & Barnett, 2003), by restricting or regulating access to their children in the context of fathers who exhibit risky behaviors. As reported by Roy and Dyson (2005), mothers’ assessment of fathering behavior can be expressed directly through maternal gatekeeping behavior as either encouragement or discouragement of men’s involvement with their children.

Despite the literature linking fathers’ substance use with child conduct disorders, children of alcohol- and substance-using fathers constitute a heterogeneous population showing substantial variability in outcomes (Johnson & Jacob, 1995). Several explanations can account for the heterogeneity, including the samples used in the various studies, such as clinical vs. community samples. A second explanation for the heterogeneity in outcomes may be due to the use of self-reports versus the observation of parenting behavior. Parental self-reports have the potential to be biased in that parents may present in a socially desirable manner (Miller-Perrin & Perrin, 1999). Parents may try to minimize negative behaviors or, less frequently, exaggerate their problems (Milner & Crouch, 1997). The use of observational methods in assessing parenting behavior may be a useful tool moving forward because observational measures offer the advantage of an independent assessment of behavior, which may be less open to differing interpretations than are items on a self-report (Gardner, 2000). Finally, some researchers have speculated that an explanation for the heterogeneity of findings may be that there are factors in the child’s context that moderate the association between parents’ alcohol and substance use and
conduct problem outcomes (Turner, Hartman, Exum, & Cullen, 2007). For example, Edwards, Eiden, and Leonard (2006) reported an association between a father’s substance use and child behavior problems only in the absence of a secure attachment to the mother, suggesting that a secure mother-child attachment acts to moderate the relationship. Similarly, Eiden, Colder, Edwards, and Leonard (2009) reported lower social competence among young children of fathers with substance use problems, but only in the presence of low maternal warmth. Such findings provide evidence of the key role that mothers may play in moderating the association between a father’s alcohol and substance use and child behavioral outcomes.

The principal focus of Study 3 is to further clarify the associations between mothers’ and fathers’ alcohol and substance use, IPV, parenting behavior and conduct problems in young children by examining the moderating role of mothers’ gatekeeping behavior (i.e. variation in mother’s encouragement of interaction between the father and the child). The current study is guided by family a system perspective (Cox & Paley, 2003) which emphasizes the importance of considering the dynamic interplay between multiple relationships in the family to better understand development. According to family systems theory, each family relationship (e.g., the parent-child relationship) is embedded in a network of other family relationships (e.g., the adult romantic relationship), and a better understanding of the functioning and development of any given system within the family can be gained by considering the interdependence of these relationships and their mutual influence.

In the context of Study 3, this theory would posit that one can obtain a more comprehensive understanding of the relations among parental alcohol and substance use and child conduct problems by simultaneously considering various relationships in the child’s context. Thus, in addition to a father’s alcohol and substance use, mother’s ASU is also included
as a control in this analysis due to the high incidence of partner and spouse co-involvement with alcohol and substance use (Yaffe, Jenson, & Howard, 2013) and the findings from the literature that mother’s ASU can similarly affect the parenting children experience from the mother (Burlew et al., 2012). Due to the significant comorbidity of substance use and intimate partner violence (Moore et al., 2007; Stover, et al., 2013; Schumacher, et al., 2001), and the link between IPV and mother’s parenting and child development (Gustafsson, et al., 2012), the present study also considers the role of IPV in these associations. The proposed full model is shown in Figure 4.1. As can be seen in the proposed full model, the present investigation examines the relationships between maternal and paternal alcohol and substance use, their parenting behavior, and intimate partner violence with respect to conduct problems as well as the extent to which mothers’ level of encouragement of paternal access to children provides a protective buffer against the adverse effects of fathers’ harsh intrusive parenting.
4.2 Fathers’ Parenting as a Mediator of the link between fathers’ ASU and Child Conduct Problems

Parenting provides a central context for healthy child development and has been hypothesized to be one pathway linking fathers’ alcohol and substance use to conduct problems in children (e.g., Eiden et al. 2007; Magura & Laudet, 1996). Supporting this hypothesis are studies that suggest that alcohol- and substance-using fathers and their partners engage in suboptimal parenting practices (see Zahn-Waxler, Duggal, & Gruber, 2002, for a review). Alcohol-and substance-using parents tend to have more negative affect in interactions with their children (Eiden, et al., 2007; Edwards, Eiden, and Leonard 2006) when compared to their non-substance using counterparts, display more coercive and harsh discipline strategies (Pears et al., 2007; Kandel, 1990; Tarter et al., 1993; Coley, Carrano, and Lewin-Bizan, 2011) and tend to use
greater levels of harsh, negative control (Finger, Kachadourian, Molnar, Eiden, Edwards, & Leonard, 2010; Jacob, et al., 2000; Whipple, et al., 1995). Moreover, theories of the intergenerational transmission of alcohol and substance use disorders often include impaired parenting practices as a mechanism by which alcoholism risk is conferred (Bailey, et al., 2009; Sher, 1991).

Similarly, studies have found direct associations between substance use and antisocial behaviors such as intimate partner violence (Schumacher, Feldbau-Kohn, Smith Slep, & Heyman 2001; Caetano, Schafer, & Cunradi, 2001), in that increases in substance use have been linked to significant increases in intimate partner violence (Moore, et al., 2007). These associations have been observed in clinical samples as well as large random samples of the general population (O’Leary & Schumacher, 2003). Although there likely is a direct link between IPV and child outcomes (Cummings & Davies, 2010), the effect of IPV on children can also be explained by disturbances in parenting behaviors as evidenced by increases in parental negativity (DeVoe & Smith, 2002; Levendosky & Graham-Bermann, 2001). Although extant research has demonstrated that emotions from the adult relationship “spill over” into the parenting domain for mothers and fathers, prior research suggests that paternal parenting behaviors may be more closely related to marital and partner relations than maternal parenting behaviors (Belsky, Youngblade, Rovine, & Volling, 1991; Krishnakumar & Buehler, 2000; Parke, 1996). For example, in a review of associations between marital and parenting processes, Coiro and Emery (1998) concluded that marital quality and conflict are often related to the parenting of both parents; however, when there are sex differences in the links between marital quality and parenting, the parenting of fathers is most affected. This suggests that the anger and hostility from the IPV may have significant implications for fathers’ parenting behaviors.
Similar to the research examining the associations between parental substance use and children’s behavioral adjustment, a wealth of literature suggests an indirect pathway from IPV to child conduct problems through parenting behaviors (for reviews, see Margolin & Gordis, 2000; Kitzman, et al., 2003). Support for this hypothesis comes from research that suggests that the stress, anger, and hostility in the adult relationship may lead to increased harsh, controlling parenting behaviors and higher rates of child-directed aggression (Cox, et al., 2001; Levendosky, et al., 2003; Slep & O’Leary, 2005; Gustafsson, et al., 2012). Similarly, empirical studies linking fathers' alcohol and substance use with parenting have observed that alcohol and substance using fathers are more negative with their young children compared with fathers who don’t use alcohol and other substances (Eiden, Chavez, & Leonard, 1999; Eiden, Leonard, Hoyle, & Chavez, 2004). Eiden and colleagues (2007) reported that alcohol using fathers, when compared to non-alcohol using fathers, were found to have more negative affect (defined in their study as angry/hostile tone of voice, disapproval, and criticism) with their young children. Harsh intrusive parenting in turn has been linked to more detrimental effects on child adjustment. Intrusive parenting is characterized by behaviors that are overly controlling and coercive, harsh, and more parent-centered rather than child-centered (Propper, Willoughby, Halpern, Carbone, & Cox, 2007; Barber, 1996). Intrusive parenting is believed to undermine children's sense of autonomy, thereby putting children at risk for a variety of emotional and behavioral problems, including conduct problems (Pettit, Laird, Dodge, Bates, & Criss, 2001).

Despite these robust findings, however, much of the existing research has been conducted with either younger children (e.g., preschool aged) or older children (e.g., adolescents). Thus, it remains unclear to what extent these findings extend to the functioning of children in middle childhood (e.g., ages 6-8). Given that conduct problems may be more
normative among young children, it is important to consider conduct problems in middle childhood when the persistence of problems would perhaps have more serious implications given the stable nature of conduct problems from middle childhood to later time periods (Frick and Loney 1999; Moffitt et al. 2002).

4.3 The Moderating Role of Maternal Gatekeeping

Due to the considerable heterogeneity of findings noted in studies that consider the link between fathers’ ASU and children’s conduct problems, researchers have sought to explain the factors that may account for the variation in findings and have noted that factors in the family context may act to moderate this association. In recent years, a number of moderators have been tested, including parenting behaviors (Edwards et al., 2006). Less research, however, has considered mothers’ adaptive parenting strategies that may moderate the relation between paternal substance use and conduct problems. Emerging literature on incarcerated fathers suggests that mothers may use protective gatekeeping to limit fathers’ involvement with the child in response to a perceived risk (Roy & Dyson, 2005). It may be the case that some mothers similarly use protective gatekeeping with fathers who use alcohol and abuse substances.

Maternal gatekeeping is used in the literature primarily as a concept to identify mothers’ efforts to shape fathers’ involvement with their children through encouraging or discouraging contact between father and child. The use of gatekeeping by mothers as a means of regulating access to their children may have particular importance when fathers are alcohol users or exhibit violence. Whether due to the incapacitation or impaired judgment secondary to alcohol use, if a mother’s assessment is that a father’s competence is compromised, it is unlikely that she will encourage his participation in child care. This may also be true in the context of a violent environment. If a mother feels that her child’s well-being is in jeopardy, it is unlikely she will
“open the gate” to greater contact between the father and child. Because a "gatekeeper" can both close and open a gate, gatekeeping is conceptualized in this study as a facilitative construct whereby a mother uses encouragement to increase a father’s involvement with his children when she perceives greater competence in his caregiving abilities, and she withholds encouragement when she perceives less paternal competence in the face of alcohol and substance use or violent behavior due to concerns about the fathers’ contact posing a risk to the child. Thus, the main effect of being a child of an alcohol- and substance-using father may be modified such that the association between the father’s alcohol and substance use and the child’s behavior problems may vary as a function of maternal encouragement.

4.4 Research Questions

Question 1: Are there direct associations between fathers’ alcohol and substance use and child conduct problems?

Question 2: Are there direct associations between intimate partner violence and child conduct problems?

Question 3: Are there direct associations between mothers’ alcohol and substance use and child conduct problems?

Question 4: Are there direct associations between fathers’ and mothers’ harsh intrusive parenting and child conduct problems?

Question 5: Is the association between alcohol and substance use and intimate partner violence and child conduct problems mediated by fathers’ harsh intrusive parenting?

Question 6: Does greater maternal gatekeeping (i.e. the degree to which fathers’ involvement with the child is encouraged or discouraged) moderate pathways from risky father behavior to child outcomes such that the link between father’s behaviors and children’s development of
conduct problems is reduced or eliminated when mothers do not encourage interaction between the father and child?

4.5 Sample

In contrast with studies 1 and 2 which used the propensity matched sample, this investigation uses a subsample of the larger Family Life Project in which the child’s primary caregiver had a spouse or romantic partner living in the household when the family was assessed by the FLP at the 60-month home visit (N= 394). In addition, at each of the assessments, mothers reported if the secondary caregiver had remained the same as the previous time point. Therefore, we were able to determine that across the five assessments of intimate partner violence, the father was the same individual. For this study, we include both biological fathers and mother’s romantic partners who are coresidential, because prior research has documented that when a father who uses alcohol resides in the home, children have an increased risk of developing behavior problems (Jaffee, Moffitt, Caspi, & Taylor, 2003), as compared to children who do not live with their alcohol using father. Descriptive statistics and bivariate correlation for study 3 are presented in Table 4.1. The sample was comprised of coresiding couples with 71% married; 22.7% African American and well balanced with 50.8% male children. Women in this sample reported 15.2 years (sd = 2.6) of education whereas the men reported 15.1 (sd = 2.7) years.

4.6 Procedure

Couples were recruited for the Family Life Project in the hospital or by phone after the birth of the target child. Eligible families participated in the first round of data collection when the infant was 2 months of age. Subsequent data collection occurred in the home setting when
the child was aged 6-, 15-, 24-, 36-, and 60- months and in the 1st grade. This study utilizes data from all six time points.

4.7 Measures

*Mother and father alcohol and substance use.* The ASSIST (WHO ASSIST Working Group, 2002), was used to assess maternal and paternal alcohol and substance use. In addition to reporting on their own alcohol and substance use, mothers also reported on their partners’ use. Mothers reported on their own use responding “YES” or “NO” to questions such as, “Have you ever used alcohol?” or “Have you ever used cocaine (crack, coke)”? and “Have you ever used opiates (heroin, methadone, morphine)?” Responses were summed to get an overall measure of use, with higher values indicating having used more substances. Cronbach’s alpha for our sample = .70 for mothers’ report of her own use and .65 for mothers’ report of partners use. Full list of substances assessed for mothers lifetime use can be found in Appendix 2.

In addition to reporting on their alcohol and substance use, mothers also reported on partners’ alcohol and substance use (i.e. The ASSIST). The four items relating to partners’ use were used to determine fathers’ alcohol and substance use. Mothers responded to questions regarding partners’ ASU with representative questions such as, “I believe my partner to drink alcohol” and “I believe my partner to use Meth (Methamphetamine)” on Likert type scale with responses ranging from 0 (‘not at all’) to 4 (‘used seriously enough to warrant treatment’). Responses were summed to get an overall measure of substance use, with higher scores indicating greater levels of use.

*Intimate partner violence (IPV).* To assess intimate partner violence, the Conflict Tactics Scale-Couple Form Revised (CTS-R; Straus & Gelles, 1990) was administered to all mothers when their child was 6-, 15-, 24-, 36- and 60- months old. As described in studies 1 and 2,
maternal reports of their own IPV and their report of their partners’ IPV were summed to create a total score that represents the total amount of violence experienced by the mother. Additional details regarding the construction of the latent variable for IPV can be found in study 2. Scores on the 9-item physical violence subscale, which captures incidences of physical aggression and violence, was used to assess violence in the romantic relationship at each of the five time points. Respondents were asked to rate, on a 7-point Likert-type scale (on which 0 = never, 1 = once, 2 = twice, 3 = 3-5 times, 4 = 6-10 times, 5 = 11-20 times, and 6 = more than 20) how often in the past 12 months they had engaged in specific behaviors. Cronbach’s alphas for the 18-item total scores were for physical violence ranged from .74 - .88 in our sample for the five time points.

Maternal parenting behaviors. When the children were 60 months old, mother-child interactions were digitally recorded and subsequently coded to assess the levels of mothers’ sensitivity, detachment, intrusiveness, positive regard and negative regard while interacting with the child (NICHD Early Child Care Research Network, 1999). A number of published reports have effectively used maternal-child interaction data from the Family Life Project to predict child outcomes, (See for example, Barnett, Deng, Mills-Koonce, Willoughby, & Cox, 2008; Blair, Granger, Willoughby, Mills-Koonce, Cox, Greenberg ... & Fortunato, 2011). Mother-child dyads were presented with two developmentally appropriate activities of increasing difficulty. Mothers were told that this was a task for the child to complete but that they could provide any assistance they deemed necessary. The tasks included: (1) an activity involving the child building a replica of a tower using similar blocks of different shapes and sizes and the mother giving assistance as needed, and (2) a card game in which mothers and children compete to try to win the most cards in the deck. It was expected that this activity would provide an opportunity to observe expression of affect from the mother and the child as well as the child’s emotional
regulation in a potentially exciting and/or frustrating situation. The combined tasks lasted approximately 15 minutes. Both frequency and intensity of behaviors directed toward the child are considered.

Only the harsh intrusive parenting composite (the mean of intrusiveness and negative regard) was used in these analyses. Parents given a score of 7 (the highest possible score) on the intrusiveness subscale consistently displayed behaviors that showed a lack of respect for the child as an individual. These mothers frequently interfered with the child’s needs, desires, and interests, and they denied almost all of the child’s attempts at autonomy, often persisting with their own desires or agenda despite strong child defensive behavior (e.g., crying, withdrawing, verbalizing that they would like her to stop). Example behaviors include physically manipulating the child’s hands or body, denying the child the opportunity to select the toys/pieces to use or the opportunity to try to interact with the toys or complete the task themselves, and verbally directing the child at a pace and in a context that was not appropriate to the child’s cues, as compared to mothers who do not impose directives on the child unless it is clear that the child needs direction. The negative regard subscale captured the amount of negative and hostile behaviors that were directed toward the target child during the activity. In contrast to mothers who do not evidence anger, frustration, or impatience toward their child, mothers high in negative regard reflect behaviors that reflect disapproval through irritated or harsh comments and/or vocal tone, tense facial muscles or posture meant to communicate a threat or disapproval, threatening or punishing the child without explanation, or calling the child unflattering names. Inter-rater reliability was greater than .80 across pairs of coders.

*Observed fathers’ parenting behavior.* Similar to the mother-child interactions described above, father and child interactions were videotaped while the dyad engaged in two structured tasks at
the 60-month home visit in order to assess parenting quality in the context of the father-child dyad. A number of published reports have effectively used these father-child interaction data from the Family Life Project to predict child outcomes, (See for example, Mills-Koonce, Garrett-Peters, Barnett, Granger, Blair, & Cox, 2011; Goodman, Crouter, Lanza, & Cox, 2008). The first activity was to build a tower as high as the child can build using brightly colored blocks. The father was told that this was a task for the child to do but he could help in any way that he thought was necessary. The second task was called “hot hands”. For this task, one player holds their hands open in front of them with palms facing up. The other player places his hands palm down, hovering above the other player's hands, with the two players' hands barely touching each other. The player whose hands are on the bottom attempts to bring his hands over to slap the backsides of his opponent's hands. This must be done with sufficient speed because the goal of the player whose hands are above with palms facing down is to pull his hand away and out of the area where the hands overlap in order to avoid the slap. These activities provided a context for observing the father's support for the child in activities that could be fun and frustrating and provide an opportunity to observe expressions of affect from the father. These interactions were videotaped for later coding of parenting behaviors using global 7-point scales as has been previously described for mother-child interactions in study 1. As with observed mothers-child parenting behavior, only the harsh intrusive paternal parenting composite (the mean of intrusiveness and negative regard) was used in these analyses.

**Maternal Gatekeeping Behavior.** At the first grade visit, mothers were given the Maternal Encouragement Questionnaire. The maternal encouragement of father involvement is a two-item structured interview, adapted from the Parental Gatekeeping Inventory (Van Egeren, 2003), addressing the degree to which fathers’ involvement is encouraged or discouraged. The scale
consists of items with a response range from strongly disagree to strongly agree (from 0 to 5) to such questions as “I want the child’s father involved in his upbringing” and “I encourage the father to spend time alone with the child.” A total score was obtained by summing across the two items from both parents, with higher scores reflecting greater encouragement. Cronbach’s alpha is .73 for this sample.

Child conduct problems. Child behavior problems were assessed using mother reports of the Strengths and Difficulties Questionnaire in the first grade. Only the subscale for conduct problems was used for this study. The SDQ has normative data available by sex and age which was obtained from the National Health Interview Survey. Cronbach’s alpha for this sample is .74.

Control variables. This study includes child sex, race, family’s income-to-needs ratio and maternal and paternal education as control variables because each of these variables has been established as a predictor of parenting behaviors (See Conger, et al., 2010, for a review). As control variables, we also include mother’s alcohol and substance use and maternal harsh intrusive parenting.

4.8 Analysis Plan

Data analysis was conducted in several steps. Preliminary analyses included examining intercorrelations of all study variables. Structural equation modeling (SEM) was used to test the proposed models (Schumacker & Lomax, 1996). Models were parameterized using the Mplus 6.0 software package (Muthe´n & Muthe´n, 1998-2010), and robust maximum likelihood estimation. Full information maximum likelihood (FIML) was used as the missing data technique (Arbuckle, 1996). FIML estimation uses all available observations and provides unbiased estimation of model parameters in the presence of missing data. Model fit was
examined using a number of fit indices, including the comparative fit index (CFI; Bentler, 1990), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the root mean squared error of approximation (RMSEA; Browne & Cudeck, 1993). CFI and TLI values above .90 and RMSEA values below .05 indicate excellent model fit.

This study proposed a mediation followed by moderation hypothesis. In the first step, a mediational pathway between fathers’ Alcohol and Substance Use, IPV, fathers’ harsh intrusive parenting, and child conduct disorders was tested. In a mediation relationship, there is a potential direct effect between an independent variable (e.g. IPV and ASU) and a dependent variable (e.g. conduct problems). There are also potential indirect effects between an independent variable and a mediator variable (e.g. fathers’ harsh intrusive parenting), and between a mediator variable and a dependent variable. The degree to which the direct effect changes as a result of including the mediating variable is referred to as the mediational effect (MacKinnon, et al., 1995). The first component of the model posits that IPV and fathers’ ASU have both direct and indirect effects on child conduct problems, with indirect effects mediated through fathers’ harsh intrusive parenting (see Figure 4.1).

The second component of the model posits that the impact of fathers’ harsh intrusive parenting on child conduct problems is moderated by maternal gatekeeping (maternal encouragement of fathers spending greater as compared to less time with their children). This model posits that the magnitude of effect of fathers’ harsh intrusive parenting on child conduct problems may vary with levels of maternal encouragement, which is plausible, because fathers’ parenting may be related to child outcomes with varying intensity depending on the amount of interaction (as determined by maternal encouragement) that fathers have with their children. In the present study, maternal encouragement is proposed to affect the direction and/or strength of
the relation between conduct problems, and, fathers’ harsh intrusive parenting, such that the
effect of fathers’ harsh intrusive parenting on conduct problems varies by the level of maternal
encouragement. Therefore an interaction is proposed between fathers’ parenting and maternal
gatekeeping in the prediction of child conduct problems.

Two sets of analyses were conducted to address the goals of the study. First, an SEM
model was estimated that examines the main effects and mediation hypothesis addressed in study
questions 1 - 5. This initial model examines the association between fathers’ alcohol and
substance use, mothers’ and father’ harsh intrusive parenting and intimate partner violence on
child conduct problems. The relation between mothers’ alcohol and substance use on child
functioning was also simultaneously assessed because a considerable literature has amassed that
suggests an independent influence of mothers’ alcohol and substance use on child conduct
problems (Chatterji & Markowitz, 2001). In addition to maternal harsh intrusive parenting and
maternal ASU, additional covariates included in the model were child race, sex, household
income, maternal and paternal education, and data collection site.

In the second component of the analysis, following recommendations by Preacher et al.,
(2007), the model included measures of intimate partner violence, maternal and paternal alcohol
and substance use, mothers’ and fathers’ harsh intrusive parenting, maternal gatekeeping and the
interaction term for maternal gatekeeping by fathers’ harsh intrusive parenting as predictors of
child conduct problems. The interaction was probed using online computation tools developed
to child conduct problems were obtained for three levels of maternal gatekeeping (1 Standard
deviation (SD) above the mean, at the mean, and 1 SD below the mean).

4.9 Results
All hypotheses were tested using MPLUS Version 6.0 software package (Muthén & Muthén, 2007). Mplus was chosen for multiple reasons. First, it has the capability to test structural equation models and combine both observed and latent variables into a single model. Second, Mplus handles missing data using full information maximum likelihood (FIML), which produces less biased parameter estimates than those yielded by procedures such as listwise deletion (Schafer & Graham, 2002). FIML maximizes the sample size for the study by using all available data in an iterative process used to generate the parameters that most likely fit the data. In addition, unlike listwise deletion, which assumes that the data is missing completely at random (MCAR; cases are truly missing at random and missingness is not a function of other observed measures), FIML assumes data are missing at random (MAR; missing is a function of observed measures), which is often the case with longitudinal data. In addition, SEM allows for the testing of a set relationship between one or more observed dependent or latent variables and one or more observed independent or latent variables (Schumacker & Lomax, 2004). Model fit was examined using a number of fit indices including the comparative fit index (CFI; Bentler, 1990), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the root mean squared error of approximation (RMSEA; Browne & Cudeck, 1993). CFI and TLI values above .90 and RMSEA values below .05 indicate excellent model fit.

**Preliminary Analyses and Descriptive Statistics**

Associations among the study variables were largely expected. Child conduct problems were positively related to fathers and mothers’ harsh intrusive parenting ($r = .20, p < .01$) and ($r = .29, p < .01$), respectively, suggesting that higher levels of harsh intrusive parenting for both mothers and fathers were associated with higher levels of conduct problems. Child conduct problems were positively related to the various assessments of IPV, 6 months, 15 months, 24
months, 36 months and 60 months (r = .25, p < .01; r = .24, p < .01; r = .16, p < .01; r = .18, p < .05; r = .26, p < .01), respectively, suggesting that greater levels of IPV are related to greater levels of child conduct problems. There were several significant associations between controls and outcome variable that justify their inclusion in the proposed analyses. Higher levels of income and father’s and mother’s education were associated with lower levels of conduct problems (r = -.20, p < .01; r = -.18, p < .01; r = -.19, p < .01).

**Hypothesis Testing**

For the first part of the analysis, an SEM model was estimated that simultaneously considered the associations between the latent variable IPV, mother’s report of partner’s alcohol and substance use, maternal alcohol and substance use and mother’s and father’s harsh intrusive parenting and 1st grade child conduct problems. The model fit the data well, $\chi^2 (72, N = 394) = 130.4, p = .00, CFI = .94, TLI = .92, RMSEA = 0.04, SRMR = .08$. Figure 4.2 presents the findings for the first five hypothesis of this analysis.

The first hypothesis sought to find an association between mother’s report of father’s alcohol and substance use and 1st grade child conduct problems. There was no support for this hypothesis ($p > .05$). See Table 4.2 for parameter estimates for the structural equation model. The second hypothesis of this study related to whether mother’s report of IPV predicted father’s harsh intrusive parenting at 60 months and child conduct problems at 1st grade. The findings from this model reveal that the latent variable IPV is associated with fathers’ harsh intrusive parenting ($\beta = .27, p < .01$) and child conduct problems ($\beta = .15, p < .01$). The positive parameter estimates suggest that higher levels of IPV are related to greater levels of fathers’ harsh intrusive parenting and higher levels of conduct problems. With regard to mother’s alcohol and substance use, no significant association was found between mother’s alcohol and
substance use and child conduct problems. Hypothesis 4 stated that father’s and mothers’ harsh intrusive parenting would predict child conduct problems at 1st grade. As expected, the findings reveal that father’s and mother’s harsh intrusive parenting predicts child conduct problems at 1st grade ($\beta = .16$, $p < .01$) and ($\beta = .18$, $p < .01$), respectively. The positive parameter estimate suggests that the variables progress in the same direction, such that with increases in harsh intrusive parenting, we would expect to see higher levels of conduct problems.

Although hypothesis 5 posited that fathers’ harsh intrusive parenting would mediate the relations between fathers’ alcohol and substance use and IPV and child conduct problems at 1st grade, only partial support for this hypothesis was found. There was no indirect effect of fathers’ alcohol and substance use on conduct problems through fathers’ harsh intrusive parenting. In addition to the main effects, the findings however, did reveal a significant indirect pathway from IPV and child conduct problems through father’s harsh intrusive parenting ($IPV \rightarrow \text{harsh intrusive parenting} \rightarrow \text{child conduct problems} = .02, p < .05$). This indicates that after controlling for the child sex, race, family’s income-to-needs ratio, maternal and paternal education, maternal ASU and parenting, and the data collection site, fathers’ harsh intrusive parenting partially mediates the relation between IPV and child conduct problems at 1st grade, and accounted for 14% of the variance in child conduct problems.
Figure 4.2

Initial model relating IPV, fathers’ alcohol and substance use, and parenting to child conduct problems in the 1st grade

The final goal of this analysis which addresses the sixth hypothesis was to determine if the effect of fathers’ parenting on child conduct problems was moderated by maternal gatekeeping. Given that maternal gatekeeping is conceptualized in the present study as the degree to which the mother’s encourage father’s involvement with his child, gatekeeping will be referred to as encouragement henceforth. To address the moderation hypotheses, a continuous variable of the proposed moderator (i.e. maternal encouragement), along with the interaction between fathers’ harsh intrusive parenting and maternal encouragement (fathers’ parenting X
maternal encouragement) were entered into the main effects model. The model fit the data well
\( \chi^2 (72, \ N = 394) = 229, \ p = .00, \ CFI = .91, \ TLI = .89, \ RMSEA = 0.07, \ SRMR = .09 \). The results
for the analyses examining the moderating role of maternal encouragement in the association
between father’s harsh intrusive parenting and child conduct problems at 1st grade revealed a
significant interaction between paternal parenting and maternal encouragement. These results
suggest that the effect of fathers’ harsh intrusive parenting on child conduct problems depended
on the level of maternal encouragement, (\( \beta = .01, \ p < .01 \)). To better understand the nature of this
interaction, regression coefficients and covariance matrices estimated in MPLUS for the
interaction model were used in online calculators to obtain simple slopes for high and low levels
of maternal encouragement. Simple slopes for the association between fathers’ harsh intrusive
parenting and child conduct problems were probed by testing the simple slopes for maternal
encouragement at 1 SD below the mean, at the mean, and 1SD above the mean. The two-way
interaction plot (Figure 4.3) indicates that the association between father’s harsh intrusive
parenting and child conduct problems is moderated by mothers’ encouragement, such that
father’s harsh intrusive parenting is related to greater child conduct problems in the context of
high maternal encouragement.
Figure 4.3
Maternal encouragement moderates the relation between father’s harsh intrusive parenting and child conduct problems

5.0 Discussion

Few studies have examined the complex processes involved in the link between children’s conduct problems and intimate partner violence, parental alcohol and substance use, and parenting and even fewer have done so employing rigorous longitudinal tests. Much of the research on the associations between parenting, intimate partner violence and children’s adjustment have been conducted with maternal caregiving and, as such, little is known or understood about the parenting of men from homes with IPV (Holden, Stein, Ritchie, Harris, & Jouriles, 1998). Likewise, the burgeoning literature examining the associations between
fathers’ parenting and child development has focused less attention on the parenting of men in the context of intimate partner violence.

Furthermore, this report is unique in considering multiple family contexts to better understand conduct problems in young children, including intimate partner violence, fathers’ and mothers’ alcohol and substance use, parent-child relationships, as well as testing a complex chain of events involving these processes. In addition, this study is the first to test the moderating role of mother’s encouragement of interaction between the father and the child and how this may be related to child conduct problems.

Consistent with the principles of a developmental psychopathology approach to evaluating children’s risk for conduct problems, the findings from the present study highlight the importance of understanding the roles of multiple family processes and the unfolding of pathways of children’s development over time. Complex pathways between fathers’ ASU, intimate partner violence and children’s conduct problems were supported. First, intimate partner violence was associated with increased paternal harsh intrusive parenting, which in turn was related to children’s conduct problems. These effects were evident even after accounting for mother’s parenting. Before the addition of the moderating variables, in addition to the main effects, the present study revealed a significant indirect effect from IPV to child conduct problems at 1st grade through fathers’ harsh intrusive parenting. Although various indicators of interparental conflict have been shown to be related to both child and family functioning, IPV has been shown to be particularly detrimental for children’s development (Jouriles, McDonald, Smith Slep, Heyman, & Garrido, 2008; Margolin & Gordis, 2000). Repeated exposure to IPV has been linked to numerous problematic developmental outcomes for children including child
behavior problems (Evans, Davies, & DiLillo, 2008; Sternberg, Lamb, Guterman, & Abbott, 2006).

Consistent with past work (see for example, Zahn-Waxlet, et al., 2002; Chassin, et al., 1999) showing that paternal alcohol and substance use is related to child adjustment difficulties, the present study found a direct association of paternal ASU to fathers’ harsh intrusive parenting above and beyond the associations of intimate partner violence on paternal parenting. Although evidence exists that paternal ASU and intimate partner violence are related, such that increases in alcohol use were associated with significant increases in inter-adult violence (Moore, et al., 2007; Appel & Holder, 1998; Edelsen, 1999), this study highlights that ASU has an independent effect on father’s harsh intrusive parenting, above and beyond the effect of violence between parents. Harsh intrusive parenting represents parenting that is parent-centered and characterized by behaviors that are overly controlling and negative (Propper et al., 2007). Intrusiveness describes the degree to which parents’ behavior dominates the parent-child interaction in such a way that the child is not allowed to follow his or her own interests, needs, and desires. It may be that the intoxication due to alcohol and drug use may make the demands of parenting especially difficult, making parents more rigid and negative in their interactions, and less able to provide children with warm, sensitive care.

The results of this study suggest that IPV across the child’s first five years among co-residential parents was linked with their child’s conduct problems in 1st grade. More specifically, the current study found that even after controlling for maternal parenting, the family’s income-to-needs ratio, the child’s race and sex, maternal and paternal education and the data collection site, there was a significant pathway by which IPV was related to conduct problems in the next generation through father’s harsh intrusive parenting. Given that much of
what we know and understand about the long term associations of IPV and child adjustment has been with research models using maternal parenting, the findings from this study provide important information for examining the broader family context to understanding child conduct problems, particularly fathers’ parenting.

The picture that emerges when examining the mediating role of father’s parenting in the associations between IPV and child conduct problems is that the negative, hostile, angry, and aggressive behaviors often associated with IPV may carry over into a father’s interactions with his child. The “spillover hypothesis,” which is the transfer of moods, emotions, or behavior from one setting to another, postulates that IPV has implications for child adjustment by undermining the childrearing practices of the parents (Erel and Burman, 1995; Katz and Gottman, 1996), and has been a key framework to understanding the long term developmental consequences of IPV on children’s adjustment. The primary assumption of the spillover hypothesis is that anger, frustration, and distress rooted in the IPV disrupts parental abilities to be warm, attentive caregivers. A substantial amount of research regarding the relationship between IPV and parenting behaviors supports the spillover process, with findings highlighting that parents exhibit more harsh and hostile parenting behaviors and decreased attention and warmth toward children in the context of IPV (Gustafsson et al., 2012; Cooper, 2002; Erel & Burman, 1995; Huang et al., 2010).

A novel component of the present study was to examine the moderating role of maternal gatekeeping conceptualized as maternal encouragement (gate opening) in the associations between fathers’ harsh intrusive parenting and child conduct problems. The findings of this study reveal problematic outcomes for children when mothers encourage fathers high in harsh intrusive parenting to spend more, rather than less, time with their children. The probing of the significant
interaction between fathers’ harsh intrusive parenting, maternal encouragement, and child conduct problems found that at higher levels of maternal encouragement (i.e. spending greater amounts of time with fathers) harsh intrusive fathering was related to more conduct problems. This was not the case at lower levels of maternal encouragement. This finding is in keeping with previous reports (e.g. Jaffee, et al., 2003) that noted that the association between fathers’ antisocial behavior and child conduct problems was related to residential status. For example, Jaffee et al. (2003) reported that the less time fathers lived with their children, the more conduct problems their children had, but only if the fathers engaged in low levels of antisocial behavior. In contrast, when fathers engaged in high levels of antisocial behavior, the more time they lived with their children, the more conduct problems their children had.

Given the main effect of father’s alcohol and substance use, harsh intrusive parenting of both mothers and fathers and the significant direct and indirect pathway from IPV to child conduct problems, this study further highlights the importance of examining multiple family contexts in order to understand conduct problems in young children (Youngblade & Theokas, 2006). Moreover, the significant interaction with maternal encouragement and fathers’ parenting provides evidence that when children spend greater amounts of time with a harsh intrusive father, they may be at greater risk for conduct problems compared to children who spend less time with their intrusive fathers. These findings highlight the need for further research examining these mechanisms including gene-environment correlations with recent reports indicating that both genetic and environmental influences are important for explaining individual differences in child behavioral development (see Moffitt, 2005, for a review). Fathers may transmit to their child a genetic liability for behavioral problems and simultaneously provide an environment of violent, hostile behavior.
Although we found familial environmental risk factors (i.e. IPV, paternal caregiving, maternal encouragement) associated with children’s behavioral problems, it is also important to highlight that these children may develop and manifest psychosocial maladjustment because they are at genetic risk as well. Children’s behavioral problems are moderately heritable; for example, 40%-80% of the variance in children’s antisocial behavior can be accounted for by genetic factors (e.g., Rhee & Waldman, 2002). Because genetic risks were not examined in this study, it would be an important direction for future studies. Future research should also consider the directionality of the relationship between parenting and child conduct problems given children contribute to the environment by influencing parenting. For example, in their meta analysis of 32 twin studies of parenting, Avinun and Knafo (2014) noted that genetically influenced behaviors of the child affect and shape parental behavior.

There were no significant associations detected between maternal alcohol and substance use and child conduct problems. These findings, however, should not be interpreted as evidence that maternal alcohol and substance use do not impact child functioning because previous reports have found associations between maternal alcohol and substance use and poor child developmental outcomes (Barrera, Li & Chassin, 1995; El-Sheikh & Flanagan, 2001). With regards to mother’s alcohol and substance use, the measure we used in the present study was a measure of lifetime use of a variety of substances including tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants (ATS), inhalants, sedatives, hallucinogens, opioids and ‘other drugs’. Therefore, it is possible that we did not capture concurrent use by mothers, which may have resulted in our null findings. Although we asked mothers to report on their current use of alcohol and other substances, many of the mothers in this study were either unable or unwilling to provide information on current or recent use. They did, however report on their partner’s
current or recent use of alcohol and other substances. Because we didn’t believe that maternal responses to their own current use were missing at random, we were not able to use missing data procedures.

Despite the many strengths of this study, some limitations are noteworthy. Although this was a moderately diverse sample, the findings from this study are only generalizable to co-residential parents living in rural communities. Future research should examine these relationships among other family structures. For example, given that this sample had residential fathers who had been in the home since the birth of a child; these findings may differ for single mother households or one with residential non-biological fathers.

Further, we summed mothers’ report of her and her partner’s physical violence, without consideration of the person committing the IPV, a distinction which likely is important. Because of the large number of couples in our sample for whom the IPV was mutual, we were unable to make this distinction in the current study. As previously reported by Gustafsson and Cox (2012), the majority of physically violent couples in the Family Life Project were classified as dual perpetrators (approximately 70% of the physically violent families), a prevalence rate that is consistent with previous work with community samples, which suggests that physical violence in community samples is more commonly mutual (Archer, 2000; Caetano et al., 2008). Future research, however, should make this distinction as it may provide additional information to understanding the differential influence of maternal and parental IPV on children’s development.

Despite the growing literature on the benefits of father’s involvement in child care, findings from our study demonstrate that some mothers may be justified in their concerns about the negative influence some fathers may exert over their children's adjustment. The relationships found among IPV, parenting, and the moderating role of maternal encouragement provide
important knowledge for researchers and clinicians who focus on child conduct problems because they suggest that encouraging contact between high risk fathers and their children may put children at risk for poor adjustment. These findings may be relevant to clinicians and policy makers alike because they suggest that the benefits of having father’s care may decrease when the father has antisocial behavior. Further, given that prior research links fathers’ antisocial behavior and child maltreatment, the findings from this study would suggest that targeting interventions that focus on the quality of care between antisocial fathers and children would be beneficial.

In addition, getting a clearer picture of the characteristics of the mothers who encourage contact between harsh intrusive fathers and their children will inform practitioners on how to serve children in homes with IPV and alcohol and substance use. For example, although maternal depression was not a focus of this study, it could be that mothers who encouraged contact between harsh intrusive fathers and their young children may have been struggling with their own regulatory processes (as a result of the IPV or partner substance use) and less able to buffer young children from exposure to violence and father’s harsh parenting behaviors.
CHAPTER 5: General Conclusions

Prior research has linked childhood conduct problems to a myriad of detrimental outcomes that carry forth into adolescence and adulthood. Broadly, this dissertation contributes to the literature by examining multiple family factors that are related to child conduct problems. The findings from the study emphasize the complexity of associations between maternal and paternal characteristics, including maternal childhood sexual trauma, depression, relationship quality and parenting behaviors and child conduct problems. Importantly, this dissertation highlights that data on fathers, as well as mothers, are crucial for understanding the effects of family functioning on children's outcomes. Specifically, Studies 1 and 2 add to the growing literature on the consequences of childhood sexual trauma by using a propensity matched sample to isolate the effects of trauma on adult functioning. The results from this dissertation confirm and extend findings reported elsewhere of associations with psychological impairment, relationship difficulties, and parenting problems. In addition, much of the literature on intergenerational effects of childhood sexual abuse is related to perpetuating abuse in the next generation. This dissertation extends this previous research by reporting on conduct problems in the children of survivors of childhood sexual trauma, rather than focusing on whether the same form of abuse occurs in the next generation.

Extending previous models of intimate partner violence and maternal caregiving in predicting child behavior, study 3, focuses on fathers’ harsh intrusive parenting and child conduct problems in a large sample of rural families. As with study 2, the findings from this dissertation highlight the role of parenting as a key mediating pathway to conduct problems. Further, this study found evidence that spending greater as compared to less time with a harsh intrusive father may be especially detrimental for children’s behavioral development.
Several important clinical implications emerge from the findings of this dissertation. Most importantly, this study highlights the powerful effect that childhood sexual trauma plays in the relationship between maternal psychopathology and child conduct problems. In every model tested, maternal depression was a mediating pathway from maternal childhood trauma and conduct problems in her children. Similarly, maternal caregiving was a mediating pathway from maternal childhood trauma and conduct problems in the next generation. Targeting interventions to help mothers cope with the depression and anxiety related to the trauma may indirectly help children by providing mothers with strategies to deal with the stress of parenting. Given the intergenerational transmission cycle found, efforts to raise awareness about the long-term consequences of childhood maltreatment on parenting behaviors are well warranted.

Finally, in recent years, there has been a policy move towards promarriage initiatives suggesting that children benefit from have two parents in the household. The findings from this study reveal that children do not always benefit from growing up in two-parent families, especially with a harsh intrusive father. Findings from this dissertation indicate that mothers who encourage harsh intrusive fathers to spend greater time with their young children put their children at risk for behavior problems. Therefore, interventions aimed at protecting children may benefit from identifying these high risk dyads, harsh intrusive fathers and mothers encourage greater access to children.
Table 2.1

*Descriptive statistics for childhood sexual trauma (CST) group and matched no trauma controls (NT) on key variables*

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Table 2.2
Bivariate Correlation among Model Covariates for Study 1

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Note: * p < .05, ** p < .01
Table 3.1
Descriptive Statistics and Correlations among Variables for Study 2

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Mean (sd)                     | .39   | 1.8   | 1.9   | 4.9   | 5.8   | 6.9   | 6.8   | 5.8   | 3.3   | 3.8   | 2.5   | 14.4  | 1.8   |       |       |       |

Note: * p < .05, ** p < .01
Table 3.2

Standardized Parameter Estimates for the Structural Equation Model with Depressive Symptoms, Intimate Partner Violence and Alcohol Use Mediating the Association between Maternal Childhood Sexual Trauma and Child Conduct Problems

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**Summary of All Significant Direct and Indirect Pathways from Study 2 (N=204)**

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*Note^: χ² (36, N = 204) = 56.5, p = .02, CFI = .92, TLI = .88, RMSEA = 0.05
*Note^^: χ² (42, N = 204) = 62.3, p = .06, CFI = .93, TLI = .89, RMSEA = 0.06
*Note^^^^: χ² (43, N = 204) = 61.9, p = .03, CFI = .93, TLI = .88, RMSEA = 0.04
*Note^^^^^: χ² (43, N = 204) = 65.7, p = .01, CFI = .91, TLI = .89, RMSEA = 0.05
Table 3.4
*Standardized Parameter Estimates for the Structural Equation Model with Depressive Symptoms, Intimate Partner Violence and Alcohol Use and Sensitive Parenting Mediating the Association between Maternal Childhood Sexual Trauma and Child Conduct Problems*

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Table 3.5  
**Standardized Parameter Estimates for the Structural Equation Model with Depressive Symptoms, Intimate Partner Violence and Alcohol Use and Harsh Intrusive Parenting Mediating the Association between Maternal Childhood Sexual Trauma and Child Conduct Problems**

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Table 3.6
Standardized Parameter Estimates for the Structural Equation Model with Depressive Symptoms, Intimate Partner Violence and Alcohol Use and Boundary Dissolution Mediating the Association between Maternal Childhood Sexual Trauma and Child Conduct Problems

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Notes: * \( p < .05 \), ** \( p < .01 \).
APPENDIX 1: BALANCE CHECKING OF PROPENSITY MATCHED SAMPLE

Table A1:

Balance checking before and after propensity matching for abused and not abused sample

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Notes: SMD: Standardized mean difference
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A. Life time Alcohol and Substance Use

1. Have you ever used tobacco products (cigarettes, chewing tobacco or cigars)?
   0: No: "
   1: Yes: "

2. Have you ever drunk alcoholic beverages (beer, wine, liquor)?
   0: No: "
   1: Yes: "

3. Have you ever used cannabis (marijuana, pot, grass hash)?
   0: No: "
   1: Yes: "

4. Have you ever used cocaine (crack, coke)?
   0: No: "
   1: Yes: "

5. Have you ever used opiates (heroin, methadone, morphine)?
   0: No: "
   1: Yes: "

6. Have you ever used pain pills (Oxycontin, Oxycodone, or Vicadin)?
   0: No: "
   1: Yes: "

7. Have you ever used amphetamines (meth, crystal, speed, diet pills)?
   0: No: "
   1: Yes: "

8. Have you ever used inhalants (nitrous, glue, paint thinner)?
   0: No: "
   1: Yes: "

9. Have you ever used sedatives or tranquilizers (sleeping pills, seconal, valium,
10. Have you ever used hallucinogens (LSD, acid, PCP, ecstasy)?

0: No: "
1: Yes: "

B. Report of Partners Alcohol and Substance Use

1. I believe my partner to drink alcohol
   0: NotAtAll: 'Not at all'
   1: Occasionally: 'Occasionally used'
   2: Regularly: 'Used regularly (daily or almost daily)'
   3: Heavily: 'Used heavily (several times each day)'
   4: Seriously: 'Used seriously enough to warrant treatment'

2. I believe my partner to use marijuana
   0: NotAtAll: 'Not at all'
   1: Occasionally: 'Occasionally used'
   2: Regularly: 'Used regularly (daily or almost daily)'
   3: Heavily: 'Used heavily (several times each day)'
   4: Seriously: 'Used seriously enough to warrant treatment'

3. I believe my partner to use Meth (Methamphetamine)
   0: NotAtAll: 'Not at all'
   1: Occasionally: 'Occasionally used'
   2: Regularly: 'Used regularly (daily or almost daily)'
   3: Heavily: 'Used heavily (several times each day)'
   4: Seriously: 'Used seriously enough to warrant treatment'

4. I believe my partner to use other illegal drugs (hallucinogens, cocaine, opiates)
   0: NotAtAll: 'Not at all'
   1: Occasionally: 'Occasionally used'
   2: Regularly: 'Used regularly (daily or almost daily)'
   3: Heavily: 'Used heavily (several times each day)'
   4: Seriously: 'Used seriously enough to warrant treatment'
REFERENCES


McMahon, T. J., & Rounsaville, B. J. (2002). Substance abuse and fathering: adding poppa to the research agenda. *Addiction, 97*(9), 1109-1115.


