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Parent Childhood Abuse and Neglect and Offspring Mental Health: An Examination of Potential Mediators

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PARENT CHILDHOOD ABUSE AND NEGLECT AND OFFSPRING MENTAL HEALTH: AN EXAMINATION OF POTENTIAL MEDIATORS

by

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ABSTRACT

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by

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Child maltreatment has been associated with difficulties in parenting (Bailey, DeOliveira, Wolfe, Evans, & Hartwick, 2012) and children of abused mothers have been found to be at risk of more negative emotional and behavioral mental health outcomes compared to children of mothers with no abuse history (Collishaw, Dunn, O'Connor, & Golding, 2007; Delker, Noll, Kim, & Fisher, 2014). However, research is limited in terms of studies that investigate mediators in the relationship between parental abuse and child psychopathology. In addition, the majority of past research has focused only on self-reported, maternal histories of abuse and on limited offspring outcomes (i.e. internalizing and externalizing symptoms). The current study examines the mediational role of parental psychopathology on offspring psychopathology in a sample of parents (mothers and fathers) with documented histories of childhood abuse and neglect. Using a prospective cohort design, parents with documented histories of childhood abuse and neglect during 1967–1971 were matched with non-maltreated parents. Potential mediators (parent Major Depressive Disorder [MDD], parent Dysthymia, parent Generalized Anxiety Disorder [GAD], parent Posttraumatic Stress Disorder [PTSD], parent Alcohol Abuse/Dependence, and parent Drug Abuse/Dependence) were assessed in young adulthood, approximately 22 years after incidents of abuse and neglect. In 2009 and 2010, the parents' offspring (Mage = 22.3) were

assessed for Depression, Anxiety, PTSD, Alcohol Abuse/Dependence, and Drug Abuse/Dependence with standardized assessment techniques. Logistic regression was used to test bivariate relationships and the Sobel test was used to test the significance of mediation effects. The results of the current study indicated that there was a differential impact of parent history of childhood abuse and neglect and parent psychopathology on child versus adult offspring psychopathology. In child offspring, parent childhood abuse and neglect overall, parent childhood sexual abuse, and parent childhood neglect all predicted multiple forms of child offspring psychopathology. However, there were no statistically significant findings for adult offspring psychopathology. In parents of adult offspring, there was a pervasive impact of parent childhood abuse and neglect on parent psychopathology. However, in parents of child offspring, parent childhood abuse and neglect only predicted increased parent Major Depressive Disorder (MDD). In addition, there was evidence of differential effects of a parent's gender. Female parents' histories of childhood abuse and neglect and female parents' psychopathology had a more widespread effect on offspring psychopathology than male parents'. Lastly, the results of mediation analyses indicated that parent history of childhood neglect, specifically, increased clinically significant symptoms of depression among child offspring through its effect on increased parent MDD. This type of prospective longitudinal data can help increase understanding of the long-term and intergenerational effects of childhood abuse and neglect. This examination of parental psychopathology as a potential mediator may help in the identification of important intervention and treatment targets that may help decrease negative outcomes in parents with histories of abuse and neglect and their offspring.

Keywords: Child Maltreatment, Childhood Abuse and Neglect, Parent Psychopathology, Offspring Psychopathology, Offspring Mental Health

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Parent Childhood Abuse and Neglect and Offspring Mental Health: An Examination of Potential Mediators

Childhood abuse and neglect can have detrimental effects on an individual's social, cognitive, and emotional development, with several studies showing these effects persist into adulthood (Perez & Widom, 1994; Sperry & Widom, 2013; Widom, DuMont, & Czaja, 2007). Longitudinal studies have shown that children with a history of childhood abuse and neglect are more likely to report low social support, demonstrate low IQ and low academic achievement, experience symptoms of psychiatric disorders, have contact with the criminal justice system, and be diagnosed with personality disorders compared to individuals with no abuse history (Allwood & Widom, 2013; Fergusson, Boden, & Horwood, 2008; Lansford et al., 2002; Luntz & Widom, 1994; Perez & Widom, 1994; Sperry & Widom, 2013). Other research demonstrates that individuals with childhood abuse histories are more likely to have difficulties in their adult relationships compared to individuals with no abuse history (Hill et al., 2001; Nelson, Lynskey, Heath, Madden, & Martin, 2010; White & Widom, 2003). One type of adult relationship hypothesized to be significantly influenced by childhood maltreatment is the parent-child relationship.

Prospective evaluations suggest that children of abused mothers have a poorer prognosis in both emotional and behavioral mental health outcomes compared to children of mothers with no abuse history (Collishaw et al., 2007; Delker et al., 2014; Enlow, Englund, & Egeland, 2016; Miranda, de la Osa, Granero, & Ezpeleta, 2011, 2013). In order to understand the mechanisms in this relationship, it is important to briefly discuss some literature on the etiology of offspring psychopathology. In examining the link between parent psychopathology and offspring psychopathology, research suggests exposure to parental psychopathology may play a role in the

development of offspring psychopathology via negative parenting practices or social learning processes (Barnard & McKeganey, 2004; Burstein, Ginsburg, & Tein, 2010; Goodman et al., 2011; Leen-Feldner et al., 2013). Second, exposure to some forms of offspring psychopathology may increase parent psychopathology if the challenges of parenting a child with psychopathology impact the mental health of a parent (Tan & Rey, 2005; Wilkinson, Harris, Kelvin, Dubicka, & Goodyer, 2013). Third, parental psychopathology and offspring psychopathology may share a common genetic etiology (Duncan et al., 2017; Shimada-Sugimoto, Otowa, & Hettema, 2015; Sullivan, Neale, & Kendler, 2000; Wang, Kapoor, & Goate, 2012), confounding the findings that stress the importance of environment in the development of offspring psychopathology. However, researchers have found that associations between parent psychopathology and offspring psychopathology remain after accounting for shared genes (McAdams et al., 2015; Shimada-Sugimoto et al., 2015; Stein, Jang, Taylor, Vernon, & Livesley, 2002; Wang et al., 2012). Therefore, heritability of psychopathology is an important factor, but it is also important to understand the environmental factors that impact the development of offspring psychopathology.

One potential mechanism in the association between parental childhood abuse and offspring psychopathology may be intergenerational continuities in offspring abuse (Brent et al., 2004). However, the majority of individuals abused in childhood do not go on to abuse their own children (Berlin, Appleyard, & Dodge, 2011; Widom, Czaja, & DuMont, 2015). Therefore, the impact of parental abuse and neglect and the potential for harm to offspring may extend beyond their risk for being abused or neglected. It has been proposed that the experience of psychopathology related to a parent's abuse history could have a harmful effect on their children's psychological well-being. Therefore, this dissertation begins with a brief review of

the effect of parental childhood maltreatment on offspring psychological outcomes with a focus on an examination of the literature that addresses parental psychopathology as a possible mechanism that may explain children's mental health problems. The next section describes the current study that was designed to examine the impact of parental psychopathology on offspring psychopathology in a sample of parents with documented cases of childhood abuse and neglect and matched controls (see Figure 1). Both groups were followed over time from childhood into adulthood and a sample of their offspring was assessed in 2009-2010.

Brief Review of the Literature

The Impact of Parental History of Child Abuse and Neglect on Psychological Outcomes in Offspring

Several cross-sectional and longitudinal studies following offspring from the first year of life into adolescence have provided empirical support for the relationship between self-reported maternal childhood physical, sexual, and emotional abuse history and negative psychosocial outcomes (e.g. poor self-regulation, internalizing and externalizing behavior problems) in offspring (Collishaw et al., 2007; Delker et al., 2014; Madigan, Wade, Plamondon, & Jenkins, 2015; Miranda et al., 2011, 2013; Morrel, Dubowitz, Kerr, & Black, 2003; Myhre, Dyb, Wentzel-Larsen, Grøgaard, & Thoresen, 2014; Plant, Jones, Pariante, & Pawlby, 2017; Rijlaarsdam et al., 2014; Roberts et al., 2015; Roberts, O'Connor, Dunn, & Golding, 2004).

Within as early as the first year of life, offspring of mothers with reported histories of physical, sexual, and/or emotional abuse have been observed to show deficits such as difficulty recovering from distress (Lang, Gartstein, Rodgers, & Lebeck, 2010) and difficulties with selective attention, response control, behavioral regulation, and externalizing symptoms (Delker et al., 2014). However, most of the research has focused on school-aged children and

adolescents and has consistently found increased internalizing and externalizing behavior problems in offspring of self-reported physically, sexually, and/or emotionally abused mothers (Dubowitz et al., 2001; Koverola et al., 2005; Madigan et al., 2015; Min, Singer, Minnes, Kim, & Short, 2013; Miranda et al., 2011, 2013; Morrel et al., 2003; Myhre et al., 2014; Plant et al., 2013, 2017; Rijlaarsdam et al., 2014; Roberts et al., 2004). For example, in a study of 5,619 families, pregnant mothers retrospectively reported their abuse history and then follow-up interviews assessed their offspring's adjustment at 4 and 7 years old (Collishaw et al., 2007). The researchers found that maternal physical, sexual, and emotional abuse history were each associated with increased offspring conduct problems, hyperactivity, emotional symptoms, and peer relationship problems at both age 4 and age 7 (Collishaw et al., 2007). Similarly, Thompson (2007) found that maternal physical abuse history reported when offspring were 6 to 18 months predicted increased social withdrawal, somatic complaints, anxiety and depression symptoms, and delinquent and aggressive behavior in their children at age 4.

One recent study provides preliminary evidence that the adverse effects of maternal childhood abuse on offspring mental health persist well into adulthood (Roberts et al., 2015). The offspring of a sample of mothers were assessed for depression symptoms at 5 time points between the ages of 12 and 31. Offspring of mothers who retrospectively reported severe childhood physical, emotional, and/or sexual abuse at ages 37 to 54, determined by the number of abuse items endorsed and frequency of abuse reported, were more likely to display high depressive symptoms and persistent high depressive symptoms compared to offspring of mothers who experienced no childhood abuse (Roberts et al., 2015).

Type of Parent Abuse and Offspring Psychological Outcomes. There is limited evidence that type of parent abuse may differentially predict type of offspring psychopathology.

Parents who were physically abused and exposed to violent caregiving may be more likely to be violent and aggressive with their offspring due to factors such as social learning (Ammerman et al., 2012). Past research with low-income, urban, and rural samples of mothers has found that individuals reporting a history of physical abuse tend to report relying more on the use of physical discipline (Banyard, 1997; Dubowitz et al., 2001; Schuetze & Eiden, 2005), *report* feeling increased anger toward their children (for a review see DiLillo & Damashek, 2003), and have been *observed* to display increased anger toward their children compared to mothers with no reported abuse history (Lyons-Ruth & Block, 1996). Therefore, offspring of parents who were physically abused may be more likely to develop PTSD and anxiety due to exposure to anger and physical discipline (Margolin & Vickerman, 2011).

Parents who were sexually abused are likely to make attempts to avoid re-experiencing fear, helplessness, and anger associated with earlier sexual trauma (Lyons-Ruth & Block, 1996). Therefore, their parenting style many be withdrawn or uninvolved (Ruscio, 2001; Seltmann & Wright, 2013). An observational study conducted by Burkett (1991) found that mothers with a history of childhood sexual abuse were more self-focused and less child-focused compared to the mothers without sexual abuse histories. Lyons-Ruth and Block (1996) observed low income mother-child interactions and found that mothers with self-reported histories of sexual abuse displayed low levels of maternal involvement as evidenced by time spent with child and disengagement and flat affect while interacting with their child compared to mothers with histories of neglect and mothers with no abuse history. In a longitudinal study of low-income, rural families, Zvara et al. (2015) also found that mothers with reported sexual abuse histories exhibited less sensitive parenting, including lack of awareness and responsiveness to child's bids for attention, being emotionally distant, uninvolved, detached, and disengaged, and lack of

expression of positive feelings toward the child, compared to matched controls. This lack of responsiveness and support of offspring emotional development could lead to emotion regulation difficulties that may result in depression or substance abuse problems in offspring.

Parents who were neglected have been observed to display increased hostility in mother-child interactions (Bailey et al., 2012). Researchers have proposed social and emotional deficits as a mechanism linking neglect to hostile parent-child interactions as this type of abuse has been uniquely associated with social withdrawal, limited social acceptance, and internalizing problems (Hildyard & Wolfe, 2002). Therefore, offspring of neglected parents may be more likely to develop symptoms of depression and anxiety particularly if they internalized hostile, critical messages from their caregiver.

Given recent findings that suggest the significance and persistence of negative outcomes for offspring of mothers with abuse histories and the possibility that type of parent abuse may differentially predict type of offspring psychopathology, it is important to continue to explore the specific developmental pathways that link parental childhood abuse history and their offspring's subsequent negative psychosocial outcomes.

Parental Psychopathology as a Pathway between Parental Childhood Abuse and Neglect and Offspring Psychological Development

Childhood maltreatment has been associated with a number of forms of psychopathology in adulthood, including major depressive disorder, anxiety disorders, substance abuse disorders, and personality disorders (Fergusson, Boden, & Horwood, 2008; Gilbert et al., 2009; Lansford et al., 2002). Several researchers have proposed that the experience of psychopathology related to the parent's abuse history could have a harmful effect on their children's psychological well-being. Psychopathology in a parent may lead to mood changes, modeling of ineffective

behaviors, or offspring exposure to stress that could have a harmful effect of their child's psychological development. Although there is a substantial body of literature that supports the relationship between parental psychopathology and subsequent offspring psychopathology (Barnard & McKeganey, 2004; Burstein, Ginsburg, & Tein, 2010; Goodman, 2007; Goodman et al., 2011; Leen-Feldner et al., 2013), this dissertation focuses on the influence of parental childhood abuse and neglect on child psychopathology (see Figure 1 for the hypothesized model of focus in this dissertation).

Most theories postulating explanations for how parental childhood abuse and neglect influences offspring psychosocial outcomes have focused on the personal psychological resources of parents. Specifically, it is theorized that childhood abuse and neglect in parents leads to negative cognitive schema (Beck, 1976; Bowlby, 1988; Riggs, 2010; Roisman, Madsen, Hennighausen, Sroufe, & Collins, 2001), social information processing deficits (Briere, 2002; Lyons-Ruth & Spielman, 2004), and emotion regulation deficits (Barrett & Fleming, 2011; Schechter et al., 2008) that ultimately result in mental health problems (DiLillo & Damashek, 2003). These deficits in parents may increase risk for offspring emotional and behavioral problems by negatively influencing various aspects of the caregiving context (Noll, Trickett, Harris, & Putnam, 2009).

Influence on Cognitive Schema. Several theorists have described how childhood experiences may influence cognitive schema in adulthood regarding self and others (Beck, 1976; Bowlby, 1988; Riggs, 2010; Roisman et al., 2001). Research suggests that maltreatment can lead to abuse-related negative ways of thinking such as negative inferential styles (i.e. the tendency to make internal, stable, and global attributions about the causes of negative life events), dysfunctional attitudes (e.g. perfectionistic performance standards, expectations of

control, rigid ideas about the world, etc.), and low self-esteem (Alloy, Abramson, Smith, Gibb, & Neeren, 2006; Gibb, 2002; Jacobs, Reinecke, Gollan, & Kane, 2008; Michl, Handley, Rogosch, Cicchetti, & Toth, 2015). For example, the experience of repeated abuse as a child may cause the individual to adopt a critical view of themselves through modeling the behavior of their abuser and internalizing the attitudes of their abuser (Glassman, Weierich, Hooley, Deliberto, & Nock, 2007).

Maltreatment is also believed to lead to cognitive schemas where others are viewed as dangerous (Briere, 2002; Courtois, 2010; Gibb, 2002; Young, Klosko, & Weishaar, 2003). For example, Messman-Moore and Coates (2007) found a relationship between self-reported history of psychological abuse and mistrust/abuse cognitive schema in college women. The mistrust/abuse schema involves the expectation that others will harm, abuse, cheat, lie, manipulate, or take advantage (Young et al., 2003).

Schema theory suggests that individuals with maladaptive cognitive schema may develop different types of psychological disorders and engage in a continuum of dysfunctional behaviors (Young et al., 2003). For example, there is evidence that early maladaptive schemas predict emotional problems in general and mood and anxiety disorders in particular (Halvorsen, Wang, Eisemann, & Waterloo, 2010; Hawke & Provencher, 2013; Leung & Poon, 2001). It follows that these cognitive schemas may impact the caregiving context. Distrust and suspiciousness may be an obstacle when abuse survivors are tasked with promoting their child's age appropriate independence (Bailey et al., 2012). Rigid, perfectionistic standards may make it difficult for an abuse survivor to tolerate aggressive behavior from a toddler during a tantrum as normative in the context of a parent-child relationship and, as a result, he/she may respond in a manner that is inappropriately punitive or excessively harsh (Schechter et al., 2008). Or a parent may hold

negative, age-inappropriate, or maladaptive cognitive schema and make negative attributions of their child's personality, intentions, and behavior (Schechter et al., 2015). In support, one study found that mothers with PTSD related to interpersonal violence in childhood and/or adulthood evidenced a greater degree of negativity in attributions towards their preschool age children compared to non-PTSD controls (Schechter et al., 2015).

Influence on Social Information Processing. Maltreatment can also lead to other social information processing difficulties, such as conditioned associations between abuse stimuli and emotional distress, cognitions/memories of maltreatment events triggered by unpleasant environmental stimuli, and hostile and aggressive response biases (Berlin et al., 2011; Briere, 2002; Dodge, Pettit, & Bates, 1995; Pollak & Tolley-Schell, 2003). These deficits have been found to predict anxiety, depression, externalizing problems (Lansford et al., 2006; Luebbe, Bell, Allwood, Swenson, & Early, 2010) and may influence parents, having a negative impact on the caregiving context. These social information processing deficits lead to difficulty responding appropriately to a child's bids for comfort, protection, and closeness because they are biased to interpret these overtures as aggressive or hostile or the overtures evoke painful memories of the violation of trust they experienced as well as the associated negative emotions (Briere, 2002; Lyons-Ruth & Spielman, 2004).

Some research has found support for aggressive response bias, unrealistic perceptions, and negative attributions as mediators in the relationship between parental abuse history and offspring abuse (Berlin et al., 2011; Dixon, Hamilton-Giachritsis, & Browne, 2005). For example, in a prospective study of 499 mothers and infants followed over the infants' first two years of life, the researchers found that mothers' social isolation and aggressive response bias mediated the relationship between the mothers' self-reported history of physical abuse and

documented offspring maltreatment (Berlin et al., 2011). In addition, it has been suggested that the emotional distress resulting from social information processing deficits may cause survivors to avoid the traumatic memories and this might lead to unintended consequences of significantly impairing their capacity to perceive, understand, and respond appropriately to their child's emotional needs (Lyons-Ruth & Block, 1996). Hildyard and Wolfe (2007) found that neglectful mothers were more likely to display biased social information processing patterns than non-neglectful mothers and were more likely to misperceive infant emotions on a picture task, make internal, stable attributions of children's behavior in vignettes where a child may be at risk for harm (e.g., child cannot be soothed, which may or may not suggest pain or illness), and show poor recall on a passage recall task.

Influence on Emotion Regulation. Some research suggests that emotion regulation abilities may be particularly impacted by maltreatment in childhood (Shipman & Zeman, 2001). Emotion regulation includes adaptive ways of responding to emotions that lead to behavioral control and the functional use of emotions as information (Gratz & Roemer, 2004). Theorists postulate that inconsistent, harsh, or neglectful caregiving may not provide sensitive, responsive, supportive interactions that are necessary to help the child understand their emotions and learn constructive strategies to regulate their emotional states (Kim & Cicchetti, 2010). Increasingly, models of psychopathology are incorporating emotion regulation as an important component (Berenbaum, Raghavan, Le, Vernon, & Gomez, 2006; Greenberg, 2011; Kring & Bachorowski, 1999; Mennin & Farach, 2007). In fact, disorders such as depression and anxiety are widely viewed as the result of difficulties in regulating emotions (Campbell-Sills & Barlow, 2007; James J. Gross & Muñoz, 1995; Mennin, Holaway, Fresco, Moore, & Heimberg, 2007).

Evidence suggests that these deficits in regulating emotions can extend into adulthood in

some cases and may impact the caregiving context (Barrett & Fleming, 2011; Schechter et al., 2008). Emotion regulation abilities are important for optimal parenting because they allow an individual to be perceptive, responsive, and flexible in parent-child interactions (Crandall, Deater-Deckard, & Riley, 2015). For example, parents must be able to regulate their emotional state in order to respond appropriately to stress and challenging child behavior (Barrett & Fleming, 2011). Low emotion regulation ability has been found to be related to ineffective parenting behaviors such as increased maternal rejection, decreased maternal warmth and supportiveness, lax discipline, and over-reactive discipline (Hughes & Gullone, 2010; Lorber, 2012; Sarıtaş, Grusec, & Gençöz, 2013). In sum, parents that are not able to regulate their own emotions may have difficulty providing the support necessary to teach their children emotion regulation skills leaving the child vulnerable to negative psychosocial outcomes.

Indirect Influences. Childhood maltreatment may also influence the caregiving context indirectly when survivors experience difficulty parenting as they struggle with their own recovery. DiLillo and Damashek (2003) have suggested that psychopathology may diminish an individual's ability to manage the demands of parenting by exacerbating the stresses of parenting and reducing available energy for parenting activities. For example, a parent struggling to manage his or her emotions and behavior may experience difficulty being sensitive and responsive to the needs of their child (Zvara et al., 2015). Studies have shown that mothers who retrospectively report more severe experiences of childhood trauma also report more depression symptoms (Schoedl et al., 2010) and have been observed to be less responsive to their children than mothers with less severe experiences (Lyons-Ruth & Block, 1996). This suggests that mothers with more severe experiences may be diverting more resources towards their own recovery and away from parenting.

Offspring Age. According to a developmental perspective of psychopathology, offspring may vary in how susceptible they are to risk factors related to their parent's abuse history or their parent's psychopathology across different parts of the life span. It has been suggested that these age differences may be due to sensitive periods, in which specific risk factors have especially strong influences. In addition, each development period is accompanied by specific developmental tasks and specific needs from the caregiving environment (Cicchetti 1993). For example, during the early phases of development, there is an exclusive reliance on the caregiver by the child to help the child modulate arousal (Calkins, Propper, & Mills-Koonce, 2013). Therefore, inadequate emotional support from a caregiver may have a more detrimental impact on the child outcomes during early development than later in life. In support, research suggests that children may be most vulnerable to parental depression during childhood and adolescence (Cummings & Davies, 1994; Gelfand & Teti, 1990).

From this developmental perspective, it appears that childhood and adolescence are a sensitive period for the development of psychopathology as many psychiatric disorders originate during these periods (Kessler et al., 2005; Merikangas et al., 2010) and the risk for psychopathology is at its highest in adolescence (Fairchild, 2011). It has been suggested that this is due to the marked developmental changes that occur during adolescence that result in an increased potential for both internal and external conflict (Spear, 2000a, 2000b). In addition, adolescents have been found to be more sensitive to family distress and they face especially large number of stressful events (Davies & Windle, 1997). Thus, consideration of the developmental capacities of offspring is essential for understanding the impact of parent abuse history and parent psychopathology on offspring psychological outcomes (Cicchetti & Rogosch, 2002).

Parent Gender. The impact of parent abuse history and parent psychopathology on

offspring psychopathology may be different depending on parent gender. Unfortunately, the existing literature is overwhelmingly focused on the influence of maternal abuse history. Several methodological factors have been identified that make the study of fathers more difficult than the study of mothers such as assumptions about mothers being more willing to participate in research (Connell & Goodman, 2002), divorce rates leading to more children living with single mothers (Mason, 2000), and the higher likelihood that women with a psychological disorder will marry and have children compared to men (Power et al., 2013). In addition, depression is the most commonly studied psychological disorder and there is an increased prevalence of depression in women (Connell & Goodman, 2002). Other influences like sociocultural norms and theories of child development that emphasize maternal influences may also impact inclusion of fathers in research (Connell & Goodman, 2002). These barriers are problematic in light of emerging research that suggests that paternal abuse history may have lasting effects on parenting behavior (Ehrensaft, Knous-Westfall, Cohen, & Chen, 2015; Zanoni, Warburton, Bussey, & McMaugh, 2014) and paternal psychopathology may impact offspring psychopathology (Connell & Goodman, 2002).

Empirical Research: Parental Psychopathology as a Mediator between Parental Abuse History and Offspring Psychological Development

Overall, the research findings investigating parental psychopathology as a mediator in the relationship between parental abuse history and child psychological outcomes have been somewhat inconsistent. In a longitudinal study of 206 children (ages 4 to 6) of low-income families, Morrel et al. (2003) found that self-reported maternal depression symptoms partially mediated the relationship between maternal retrospective reports of any type of childhood victimization and maternal reports of child internalizing and externalizing behavior problems. In

a study of Norwegian mothers, the association between mother's childhood abuse experiences and increased parent-reported offspring externalizing behavior at age 36 months remained statistically significant, but was substantially attenuated when maternal mental health was entered into the model (Myhre et al., 2014). A study by Roberts et al. (2015) found that maternal anxiety and depression were mediators in the relationship between maternal abuse history and self-reported offspring high depressive symptoms in adolescent (ages 9 to 14) and adult (ages 23-28) offspring of abused women. However, a study of low-income urban mother-child dyads that investigating mediators between maternal abuse history and child outcomes did not find support for maternal depression as a mediator between maternal childhood victimization and child behavior problems at age 4 (Thompson, 2007). Similarly, in a study of Dutch families, the association between maternal maltreatment history and parent-reported offspring externalizing problems at age 6 was not mediated by parental psychological distress (Rijlaarsdam et al., 2014).

One research group reported conflicting findings with maternal psychopathology as a mediator, based on samples of Spanish outpatients. In one paper, mothers' mental health did not mediate the relationship between self-reported maternal childhood abuse and parent- and child-rated emotional/behavior problems in offspring ages 8 to 17 (Miranda et al., 2011); however, maternal depression did act as a mediator in this relationship in two subsequent studies using only parent-rated measures of offspring emotional/behavior problems at ages 7 to 18 (Miranda et al., 2013a, Miranda et al., 2013b).

In addition, using data from the Avon Longitudinal Study of Parents and Children (ALSPC), Roberts et al. (2004) found that self-reported maternal anxiety, but not maternal depression, was a partial mediator in the relationship between maternal reports of sexual abuse history and parent rated offspring adjustment problems at age 47 months. However, using the

ALSPC sample, Collishaw et al. (2007) expanded on the work of Roberts et al. (2004) by including mothers with physical, emotional, and/or sexual abuse histories and investigating parent and teacher ratings of offspring adjustment trajectories at ages 4 and 7 and found that maternal affective symptoms (i.e. anxiety, depression, and somatic complaints) partially mediated the effect of maternal childhood abuse on offspring adjustment prognosis. Also in the ALSPC sample, maternal antenatal depression and maternal postnatal depression were observed to significantly mediate the association between maternal history of childhood maltreatment and parent-reported offspring internalizing and externalizing difficulties assessed at ages 10, 11, and 13 (Plant et al., 2017).

Interestingly, Plant et al. (2013) conducted an earlier study in a sample of working-class mothers in London and found that offspring of mothers who retrospectively reported experiencing both childhood maltreatment and antenatal depression exhibited significantly higher levels of parent- and child-reported adolescent antisocial behavior at age 11 and 16 compared with offspring of controls. However, offspring of mothers who experienced only childhood maltreatment or only antenatal depression were no more at risk of having psychopathology suggesting that only the co-occurrence of both maternal problems increases risk for offspring antisocial behavior (Plant et al., 2013).

Reasons for the inconsistent results with maternal psychopathology as a mediator between maternal childhood abuse and offspring psychopathology remain unclear. One possible reason is that the studies differ in sources of information for offspring outcomes. Offspring outcomes are often based on parental reports which may be negatively skewed if parents are experiencing psychopathology (Richters, 1992). For example, one study examining maternal psychological distress as a mediator linking maternal childhood trauma to both maternal and

child-reported offspring behavior at age 9 found that offspring behavior ratings in a sample of poor, urban, African American mothers were informant dependent (Min et al., 2013). Maternal childhood trauma influenced maternal ratings of her offspring's behavior, with some effects mediated through psychological distress. However, maternal psychological distress did not mediate the relationship between maternal childhood trauma and children's self-perception of behavior (Min et al., 2013). One longitudinal study (Koverola et al., 2005) found support for the mediating role of maternal depression symptoms in the relationship between self-reported maternal childhood abuse and maternal report of child internalizing and externalizing behavior problems. However, there were no effects based on child-report or teacher report of child's behavior problems at age 4 and 8 (Koverola et al., 2005). Nevertheless, other studies reviewed here have found effects based on child-report (Plant et al., 2013; Roberts et al., 2015) and teacher-report (Collishaw et al., 2007) of offspring behavior problems, so informant dependent outcomes may only be a partial explanation for the inconsistent results with maternal psychopathology as a mediator between maternal childhood abuse and offspring psychopathology.

Another likely explanation is that there are other important factors besides parental psychopathology influencing the relationship between maternal childhood abuse and offspring psychopathology. For example, it could be that parental childhood maltreatment leads to parenting problems, which in turn, leads to offspring adjustment problems only when the parent is struggling with mental health problems. There is a large body of literature outside the scope of this review, which is focused on the effects of parental childhood abuse and neglect, that suggests parental depressive symptoms (Callender et al., 2012; Elgar, Mills, McGrath, Waschbusch, & Brownridge, 2007; Hoffman, Crnic, & Baker, 2006; Lim, Wood, Miller, &

Simmens, 2011; Reising et al., 2013) and parental anxiety symptoms (Borelli, Margolin, & Rasmussen, 2014; Waters, Zimmer-Gembeck, & Farrell, 2012; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002) exert their effect on child adjustment problems through parenting behavior.

To my knowledge, only one study has been conducted to longitudinally examined the influence of parental childhood maltreatment on parental psychopathology, parenting behavior, and offspring adjustment at separate time points in order to capture cascade effects (Madigan et al., 2015). These researchers hypothesized that parental maltreatment would lead to parental psychopathology and that this would impact parenting behavior, which in turn, would be related to offspring adjustment. They found that self-reported maternal physical abuse history (assessed at Time 1 when their offspring were 2 months old) was associated with postnatal depressive symptoms, which were in turn, associated with offspring internalizing behavior problems at 36 months of age. However, this relationship was not further mediated by responsive parenting when the child was 18 months of age, despite physical abuse history being indirectly associated with responsive parenting through maternal depressive symptoms (Madigan et al., 2015). In addition, after controlling for physical abuse history, sexual abuse history was not associated with child internalizing behavior problems. Based on these results, these authors concluded that depressive symptoms resulting from a mothers' physical abuse history increase risk for parenting deficits and offspring internalizing behavior problems. They suggested that the lack of support for the hypothesized cascade effects might have occurred because the domain of responsive parenting might not have adequately represented the construct of parenting. In particular, they noted that harsh, intrusive, and/or hostile parenting behaviors were not assessed and may be especially likely to disrupt emotional development in children (Madigan et al., 2015).

Taken together, the studies reviewed here suggest that maternal history of childhood abuse likely impacts offspring adjustment indirectly through maternal psychopathology, but the nature of the effects remain unclear.

Limitations of Existing Literature

Several limitations of the existing literature should be noted. The first limitation concerns the methods of data collection. The majority of the research reviewed here relies on retrospective reports of childhood abuse and neglect, which may be prone to memory errors due to the passage of time, natural forgetting, and/or confusion of details from different sources (Hardt & Rutter, 2004). Second, the method of data collection in measuring offspring outcomes is also problematic in the existing literature. Offspring outcomes are often based on parental reports which may be negatively skewed if parents are experiencing psychopathology (Richters, 1992). For example, parents with depression may be more likely to view their child's behavior in an overly negative way or have unrealistic expectations of their child's behavior due to cognitive distortions, which are a symptom of the parent's depression rather than an accurate report of the child's behavior.

A third important limitation of the existing literature concerns the offspring outcomes that have been assessed. With the exception of a few studies, the existing literature has explored offspring outcomes in children 8 years of age and younger, which has led to an almost exclusive focus on internalizing and externalizing categories in assessing psychiatric symptoms. This does not take into account the longer-term psychological consequences of parental childhood maltreatment on offspring into adulthood and consideration of types of psychiatric disorders for which these individuals may be at increased risk.

The fourth limitation involves the failure to account for other adverse experiences that

may co-occur with childhood maltreatment. The majority of this research has not taken into account the experience of different types of maltreatment other than physical and sexual abuse, and should include multiple types of abuse and neglect, abuse severity, or other adverse experiences that often co-occur with exposure to childhood maltreatment (e.g. family dysfunction, poverty, witnessing intimate partner violence, substance abuse, heightened risk for experiencing other traumatic life events, etc.).

Lastly, the existing literature is limited in its almost exclusive focus on the influence of maternal abuse history on offspring outcomes to the exclusion of the influence of paternal abuse history.

Current Study

The existing literature suggests that the association between parental childhood maltreatment and offspring outcomes is not simple or direct and parental abuse history may exert its effects on offspring development in a variety of ways. This research was designed to examine the influence of parental childhood physical and sexual abuse and neglect on parental psychopathology and, in turn, the influence of parental psychopathology on offspring psychopathology. This study improves on past research by examining this model using data from a prospective longitudinal study that has extended over 38 years in order to follow offspring into adulthood and capture the temporal sequence of factors linking parental maltreatment experiences with their offspring's psychological problems. Physical abuse, sexual abuse, and neglect are examined as separate predictors as little research has examined the independent contributions of these experiences on child outcomes. In addition, offspring anxiety, depression, PTSD, and substance use problems are examined separately in order to determine if offspring of parents abused in childhood are at increased risk for specific

psychopathological profiles. This study will also extend past work that has focused mainly on mothers and will include fathers.

Hypotheses

Hypothesis 1. Offspring of parents with a history of childhood maltreatment will report higher rates of diagnoses or clinically significant symptoms (i.e. symptoms that exceed recommended cutoffs for clinical significance) of depression, anxiety, substance abuse, and post-traumatic stress disorder (PTSD) compared to offspring of matched controls.

1a. It is hypothesized that offspring of parents who were physically abused may be more likely to develop PTSD and anxiety due to exposure to anger and physical discipline.

1b. Offspring of parents who were sexually abused may be more likely to develop depression or substance abuse problems due to inadequate parent support of their emotional development and emotion regulation abilities.

1c. Offspring of neglected parents may be more likely to develop symptoms of depression and anxiety due to internalizing hostile, critical messages from their caregiver.

Hypothesis 2. Empirical research has only included overall parent psychopathology, parent anxiety, and parent depression as mediators in the relationship between parental childhood abuse and neglect and offspring psychosocial outcomes. However, the theories reviewed here suggest a general impact for parent childhood abuse and neglect on psychological resources of parents that negatively influences various aspects of the caregiving context. Therefore, it is hypothesized that all types of parent psychopathology (MDD, Dysthymia, GAD, PTSD, Alcohol and Drug Abuse) will partially mediate the relationship between parental childhood abuse and neglect and offspring psychopathology (see Figure 1), controlling for offspring age, sex, and race.

Methods

Overview

The data are from a prospective cohort design study in which abused and neglected children were matched with non-abused, non-neglected children and followed into adulthood and are used with permission of Dr. Widom. Because of the matching procedure, individuals in the original study are assumed to differ only in the risk factor (i.e., having experienced childhood sexual or physical abuse or neglect). Because it is not possible to assign people to groups randomly, the assumption of equivalency for the groups is an approximation. The control group may also differ from the abused and neglected group on other variables associated with abuse or neglect. For complete details of the study design and subject selection criteria, see Widom (1989a).

The initial phase of the study compared the abused and/or neglected children to the matched comparison group (N = 1,575) on juvenile and adult criminal arrest records (Widom, 1989a, 1989b). The second phase involved tracking, locating, and interviewing both groups during 1989-1995, approximately 22 years after incidents of abuse and neglect (N = 1,196). This interview consisted of a series of structured and semi-structured questionnaires and rating scales, including the National Institute of Mental Health (NIMH) Diagnostic Interview Schedule-Revised (DIS-III-R), a standardized psychiatric assessment that yields Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) diagnoses (Robins, Helzer, Cottler, & Goldring, 1989). Subsequent follow-up interviews were conducted in 2000-2002, 2003-2005, and in 2009-2010. Additionally, in 2009-2010, interviews consisting of structured and semi-structured questionnaires were conducted with the offspring of both groups. The current study uses information collected during all four interviews.

Participants and Design

The original sample of abused and neglected children (N = 908) was made up of court-substantiated cases of childhood physical and sexual abuse and neglect processed from 1967 to 1971 in the county juvenile (family) or adult criminal courts of a Midwestern metropolitan area. Cases of abuse and neglect were restricted to children 11 years of age or less at the time of the incident. A control group of children without documented histories of child abuse or neglect (N = 667) was matched with the abuse/neglect group on age, sex, race/ethnicity, and approximate family social class during the time that the abuse and neglect records were processed.

The control group represents a critical component of the study design. Children who were under school age at the time of the abuse and/or neglect were matched with children of the same sex, race, date of birth (±1 week), and hospital of birth through the use of county birth record information. For children of school age, records of more than 100 elementary schools for the same time period were used to find matches with children of the same sex, race, date of birth (±6 months), class in elementary school during the years 1967-1971, and home address, preferably within a five-block radius of the abused/neglected child. Overall, matches were found for 74% of the abused and neglected children. Non-matches occurred for a number of reasons. For birth records, non-matches occurred in situations when the abused and neglected child was born outside the county or state or when date of birth information was missing. For school records, non-matches occurred because of lack of adequate identifying information for the abused and neglected children or because the elementary school had closed and class registers were not available. Of the original sample, 83% were located, and 1,196 (76%) participated in the 1989-1995 interview. Of those, 896 completed the second interview (2000-2002) and 808 completed the third interview (2003-2005). Interviews were conducted in 2009 and 2010 with

649 of the original participants (mean age 47.0) and a subset of the participants' offspring (*n*= 697, mean age 22.3). The composition of the sample at the various waves of interviews has remained about the same. There were no significant differences in sex, race, age at initial abuse/neglect petition, or proportion who experienced abuse and/or neglect or any specific type of abuse or neglect across the four waves.

The 697 children and the parent (*n* = 454) that completed the 2009-2010 interviews were included in the current study. The parents were 37.4% male. Race/ethnic composition was 58% White, non-Hispanic and 42% non-White, non-Hispanic. The overall abuse and neglect group represented 52.7% (*n* = 367) of the sample [physical abuse 7.9% (*n* = 55), sexual abuse 8.3% (*n* = 58), and neglect 41.8% (*n* = 291)]. These numbers add up to more than 367 because some participants had experienced more than one type of abuse or neglect. The offspring were 50.4% male and the racial/ethnic composition was 54.5% White, non-Hispanic and 45.5% non-White, non-Hispanic. There were 158 offspring under age 18 (range = 8 to 17, Mean age = 13.58) and 539 offspring 18 years old or older (range = 18 to 38, Mean age = 24.83). Table 1 presents the demographic characteristics of the sample.

Procedure

Participants completed the interviews in their homes or, if preferred, another place appropriate for the interview. The interviewers were blind to the purpose of the study and to the inclusion of an abused and/or neglected group. Participants were also blind to the purpose of the study and were told that they had been selected to participate as part of a large group of individuals who grew up in the late 1960s and early 1970s. Institutional Review Board approval was obtained for the procedures involved in this study, and participants who participated gave written, informed consent. For individuals with limited reading ability, the consent form was

presented and explained verbally.

Measures

Independent variable.

Parent childhood abuse and neglect. Parental childhood physical and sexual abuse and neglect were assessed through review of official records processed during the years 1967-1971. Physical abuse cases included injuries such as bruises, welts, burns, abrasions, lacerations, wounds, cuts, bone and skull fractures, and other evidence of physical injury. Sexual abuse charges included felony sexual assault, fondling or touching, sodomy, incest, and rape. Neglect cases reflected a judgment that the parents' deficiencies in childcare were beyond those found acceptable by community and professional standards at the time and represented extreme failure to provide adequate food, clothing, shelter, and medical attention to children. For the current study, abuse/neglect is coded (0 = no abuse history, 1 = history of physical, sexual abuse, and/or neglect). Any physical abuse is coded (0 = no physical abuse history, 1 = history of physical abuse). Any sexual abuse is coded (0 = no sexual abuse history, 1 = history of sexual abuse). Any neglect is coded (0 = no neglect history, 1 = history of neglect). The specific type of abuse or neglect is coded as present, regardless of whether or not the person had experienced other types of abuse as well.

Outcome variables.

Offspring Psychopathology. All measures assessing offspring psychopathology were administered during the 2009-2010 in-person interviews.

Anxiety. The Revised Children's Manifest Anxiety Scale (RCMAS; (Reynolds & Richmond, 2000), a 37 item self-report instrument designed to measure anxiety in children and adolescents, was administered to offspring under the age of 18 (e.g. "I worry a lot of the time," "I

am nervous."). Each item is rated on a yes/no scale (Yes = *item is descriptive of the subject's feelings or actions,* No = *item is generally not descriptive*). A Total Anxiety score is computed based on 28 items, which are divided into three anxiety subscales: 1) physiological anxiety (10 items about somatic manifestations of anxiety), 2) worry/oversensitivity (11 items measuring obsessive concerns, fears about being hurt or emotionally isolated, sensitivity to environmental pressure, and tendency to internalize experiences), and 3) social concerns/concentration (7 items measuring distracting thoughts and fears that have a social or interpersonal nature, anxiety about the child's ability in comparison to peers and significant others as well as difficulties in concentration). The remaining nine items on the RCMAS constitute the Lie subscale (i.e. social desirability) and were not included in the analyses for the current study. Total scores range from 0 to 28 and the suggested cut-off for clinically significant anxiety is 19 (Stallard, Velleman, Langsford, & Baldwin, 2001). Reliability for the total anxiety score is reported as follows: internal consistency of 0.83-0.85 (Reynolds & Richmond, 1978), coefficient alphas of .79-.85 (Reynolds, Bradley, & Steele, 1980), test retest of .68 (Reynolds, 1981). In addition, the RCMAS has demonstrated good validity (Reynolds & Richmond, 1979; Reynolds, 1980). In this sample, RCMAS scores ranged from 0 to 26 (M = 9.89; SD = 6.31) and items had an internal consistency of 0.88.

The Beck Anxiety Inventory (BAI; Beck & Steer, 1993) was administered to adult offspring of participants during the 2009-2010 in-person interviews. The BAI is a 21-item self-report questionnaire assessing symptoms of anxiety, such as inability to relax, feeling nervous, difficulty breathing, and fear of losing control. Each item is rated for symptom severity on a 4-point Likert scale (0 = *not at all,* & 3 = *severely, I could barely stand it*) based on the individual's experience over the past week. Total scores range from 0 to 63 and the suggested

cut-off for clinically significant anxiety is 16 (Beck & Steer, 1993). The BAI demonstrates high internal reliability and good factorial and discriminant validity (Kabacoff, Segal, Hersen, & Van Hasselt, 1997). In this sample, BAI scores ranged from 0 to 50 (*M* = 10.88; *SD* = 9.17) and items had an internal consistency of 0.89.

Both anxiety measures were combined into a single offspring "clinically significant" anxiety variable which is a dichotomous variable indicating whether or not total anxiety scores met the cut-off for clinically significant anxiety symptoms (0 = *total anxiety score less than clinically significant cut-off score,* 1 = *total anxiety score greater than or equal to clinically significant cut-off score*).

Depression. The Children's Depression Inventory – Short Version (CDI-S; Kovacs, 2003) was administered to offspring under the age of 18. The CDI-S is a 10-item self-report questionnaire developed to provide a rapid assessment of symptoms of depression in children. For each item, respondents are asked to pick one sentence that describes them best for the past two weeks, which is rated for symptom severity on a 3-point Likert scale (e.g. 0 = *I am sad once in a while*, 1 = *I am sad many times*, 2 = *I am sad all the time*). The items are summed to create a total score that ranges from 0-20 and the suggested cut-off for clinically significant depression is 3 (Allgaier et al., 2012). The CDI-S demonstrates adequate reliability and validity (Kovacs, 1985). In this sample, CDI-S scores ranged from 0 to 12 (*M* = 1.91; *SD* = 2.38) and items had an internal consistency of 0.72.

The Center for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977) was administered to offspring over age 18. The CES-D is a 20-item self-report questionnaire assessing symptoms of depression, such as hopelessness, sadness, difficulty concentrating, and lack of motivation. Each item is rated for symptom severity on a 4-point Likert scale (0 = *rarely*

or none of the time [less than a day], & 3 = *most or all of the time [5-7 days]*) based on the individual's experience over the past week. Total scores range from 0 to 60 and the suggested cut-off for the presence of clinically significant depressive symptoms in the general population is 16 (Radloff & Teri, 1986). The CES-D demonstrates high reliability and validity as a measure of depression (Radloff, 1977). In this sample, CES-D scores ranged from 11 to 46 (M = 26.93; SD = 4.83) and items had an internal consistency of 0.76.

Both depression measures were combined into a single offspring clinically significant depression variable which is a dichotomous variable indicating whether or not total depression scores met the cut-off for clinically significant depression symptoms (0 = *total depression score less than clinically significant cut-off score*, 1 = *total depression score greater than or equal to clinically significant cut-off score*).

PTSD. The PTSD Index for DSM IV (Rodriguez, Steinberg, & Pynoos, 2001), a 22-item, self-report, structured interview, was administered to offspring under the age of 18 to screen for all DSM-IV PTSD symptoms. First, respondents are asked to indicate their responses to a series of questions regarding acute (single-incident) types of traumatic events and chronic trauma events (criterion A). Part II asks about the frequency of PTSD symptoms during the past month and ever (0 = *not at all*, 1 = *a little of the time*, 2 = *some of the time*, 3 = *much of the time*, 4 = *most of the time)*. If the symptoms were not present in the past month, respondents are asked to indicate if each symptom was ever present in their lifetime (0 = *no*, 1 = *yes*). The items in Part II map directly onto the DSM-IV PTSD criterion B (intrusion), criterion C (avoidance / numbing), and criterion D (arousal). The Youth PTSD Distress/Impairment Scale was administered to assess PTSD DSM-IV Criterion F with 3 items assessing distress and functional impairment in past month and 3 items assessing functional impairment since the trauma (Rodriguez, 2002).

The PTSD Index for DSM IV demonstrates high validity and reliability (Rodriguez, Steinberg, Saltzman, & Pynoos, 2001a, 2001b; Roussos et al., 2005; Steinberg, Brymer, Decker, & Pynoos, 2004) . In this sample, the yes/no PTSD lifetime symptom variables were used to determine if the participant met DSM-IV criteria for a lifetime diagnosis of PTSD. Current PTSD Index scores ranged from 0 to 53 (M = 14.49; SD = 13.40) and items had an internal consistency of 0.91.

A modified version of the Composite International Diagnostic Interview (CIDI) Posttraumatic Stress Disorder (World Health Organization, 1997), a structured diagnostic interview, was administered to offspring over the age of 18. The CIDI assesses experience of traumatic events, subjective experience related to the trauma, and lifetime PTSD symptoms (0 = *symptom not present*, 1 = *symptom present*). The CIDI also asks the participant to rate their current level of distress/discomfort related to PTSD symptoms on a scale from 0 = *none* to 4 = *extreme/incapacitating*. In order to determine if DSM diagnostic criterion F (duration) and G (functional significance) were met, also included in the assessment of PTSD, the adult offspring were asked the two functional impairment questions (i.e., how much symptoms have interfered with work, daily activities, and relationships rated on a five point scales from 0 = *not at all* to 4 = *very much*) from the Short PTSD Rating Interview (SPRINT; Connor & Davidson, 2001) and the two duration questions (i.e., assessing how long symptoms lasted and timing of most recent symptoms) from the National Institute of Mental Health Diagnostic Interview Schedule-Version III-Revised: PTSD Module (DIS-III-R: Robins et al., 1989). The CIDI has demonstrated acceptable validity and reliability (Peters et al., 1996). In this sample, the yes/no PTSD lifetime symptom variables were used to determine if the participant met DSM-IV criteria for a lifetime diagnosis of PTSD and these items had an internal consistency of 0.86. CIDI current distress

scores ranged from 0 to 4 (*M* = 0.66; *SD* = 1.03).

Both child and adult offspring PTSD measures were combined into a single offspring lifetime PTSD diagnosis variable which is a dichotomous variable indicating whether or not offspring met the DSM-IV criteria for a PTSD diagnosis (0 = *does not meet criteria for PTSD diagnosis*, 1 = *meets criteria for PTSD diagnosis*).

Alcohol/Drug Abuse. The Wave IV Add Health Pretest Tobacco, Alcohol, Drugs used in the National Longitudinal Study of Adolescent Health (Add Health; Harris et al., 2003) was administered to child and adult offspring to assess the use of tobacco, alcohol, and illegal use of prescription drugs and illicit drugs. The Add health survey is a 57 item, self-report instrument. Report of use of legal or illegal drugs prompts further questions about frequency of use and types of substances used. The response options vary based on the type of questions asked (e.g., yes-no and open-ended responses). If substance use is reported, there are questions about age of first use, quantity, frequency of use, and current use. For alcohol and drugs, there are also questions about the consequences of the substance use and whether at least three of them occurred together in a 12-month period, when this first happened, and whether the respondent ever used the substance more than now. If respondents endorse 1 or more of the 4 abuse items based on DSM-IV, they are considered to abuse the substance. If they endorse 3 or more of the 7 dependency items and at least 3 of those symptoms occurred within the same 12-month period, they are deemed dependent on the substance. The Add Health adolescent self-report measures have demonstrated adequate reliability and validity (Sieving et al., 2001).

In this sample, Add Health lifetime alcohol abuse/dependence symptom count scores ranged from 0 to 10 (*M* = 0.65; *SD* = 1.72) and Add Health lifetime any drug abuse/dependence symptom count scores ranged from 0 to 20 (*M* = 1.14; *SD* = 2.88). Dichotomous variables were

created indicating whether or not offspring met the DSM-IV criteria for an alcohol abuse/dependence diagnosis (0 = *does not meet criteria for alcohol abuse/dependence diagnosis*, 1 = *meets criteria for alcohol abuse/dependence diagnosis*) and whether or not offspring met the DSM-IV criteria for a drug abuse/dependence diagnosis (0 = *does not meet criteria for drug abuse/dependence diagnosis*, 1 = *meets criteria for drug abuse/dependence diagnosis*).

Any Offspring Psychopathology. As an overarching psychopathology indicator, the dichotomous variables indicting the presence of clinically significant symptoms of anxiety and depression and the dichotomous variables indicting the presence of a lifetime diagnosis of PTSD and substance abuse/dependence were combined into a dichotomous variable indicting the presence of any offspring current clinically significant symptoms (anxiety and/or depression) or lifetime diagnosis (PTSD and/or substance abuse/dependence; 0 = *does not meet cut-off/criteria for any clinically significant symptoms or diagnosis*, 1 = *meets cut-off/criteria for any clinically significant symptoms or diagnosis*).

Potential Mediator.

Parental Psychopathology. The Diagnostic Interview Schedule – Revised (DIS-III-R), a standardized psychiatric assessment that yields Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) diagnoses (Robins et al., 1989) was administered during the 1989-1995 in-person interviews to assess for Generalized Anxiety Disorder (GAD), Alcohol/Drug Abuse/Dependence, Posttraumatic Stress Disorder (PTSD), Major Depressive Disorder (MDD), and Dysthymia. Dichotomous variables reflecting the presence of a lifetime diagnosis for each of these disorders and an overall any parent psychopathology lifetime diagnosis variable were used in the analyses. The DIS-III-R demonstrates adequate reliability (Robins, Helzer, Croughan, & Ratcliff, 1981; Vandiver & Sher, 1991).

Control Variables. Control variables included parent and child sex (male = 0, female = 1), parent and child race (White, non-Hispanic = 1, all others = 2), child age group (child = less than age 18 = 0, adult = age 18 or older = 1), and parent and child age. Parent and child age are separate continuous variables representing the parent's age during the 1989-1995 interviews and the child's age during the 2009-2010 interviews.

Data Analysis Plan

IBM SPSS Statistics Version 23 was used for all analyses in this study. All variables in the study were assessed for outliers and no variables were determined to contain outliers. Multicollinearity was assessed using the Variance Inflation Factor (VIF) criteria (Tabachnick & Fidell, 2013) and no variables were determined to be multicollinear.

Chi-square tests of independence were performed to examine the relationship between parental childhood maltreatment and any offspring current clinically significant symptoms (anxiety and/or depression) or lifetime diagnosis (PTSD, alcohol abuse/dependence, and/or drug abuse/dependence). Logistic regressions were used to determine whether parental childhood abuse and neglect predicts offspring psychopathology and the potential mediator (parental psychopathology) and whether the potential mediator (parental psychopathology) predicts offspring psychopathology. Child offspring and adult offspring were also analyzed separately to assess differences by age group. Logistic regressions are reported using adjusted odds ratios (AOR) and analyses control for parent and offspring age, sex, and race. Separate logistic regressions were performed to examine type of parental child maltreatment, type of parent psychopathology, type of offspring psychopathology, and gender effects.

Mediation analyses were conducted to examine the role of the potential mediators in the relationship between parental childhood abuse and neglect and offspring psychopathology.

Analyses controlled for offspring age, sex, and race, and matched controls were used as the comparison group in all analyses. Mediation effects were considered present if after controlling for parent psychopathology, the relationship between parent childhood abuse/neglect and offspring psychopathology is no longer significant. Significance of the mediation effect was evaluated with the Sobel Test (Preacher & Hayes, 2004), which tests whether a mediator carries the influence of an independent variable to a dependent variable. Interaction variables were also tested in separate analyses to assess for interactions between parent childhood abuse and neglect and parent psychopathology in impacting offspring psychopathology.

Results

The results have been divided into four sections. The first section examines the extent to which parents with maltreatment histories have offspring with higher rates of psychopathology. The second section presents the results on the extent to which parents' maltreatment histories predict parental psychopathology and the next section examines the extent to which parent psychopathology predicts offspring psychopathology. The final section describes the results for mediation. Throughout, results associated with different types of abuse and neglect and for male and female parents are reported.

Does Parent Childhood Abuse and Neglect Predict Offspring Psychopathology?

Table 2 presents bivariate statistics on the extent to which parent childhood abuse and neglect predicts offspring psychopathology. In contrast to predictions, in general, offspring of parents with a history of childhood abuse and neglect were not more likely to report current clinically significant symptoms (CSS) or meet the criteria for a lifetime diagnosis of psychopathology than were offspring of controls with one exception. Offspring of parents with a history of childhood neglect were more likely to report a diagnosis of PTSD (40.6%) than

offspring of controls (32.1%; X^2 [1, 580] = 4.56, $p < .05$).

To further examine these results, Table 3 presents the results of logistic regressions exploring the relationship between parent childhood abuse and neglect and offspring psychopathology, controlling for offspring age group, sex, and race. The results were similar to the chi square findings except that the significant association between parent childhood neglect and offspring PTSD became non-significant, when the controls for sex, race, and age group were included in the regression. However, when the offspring age group was included in these regression equations, the results indicated that offspring age group was a significant independent predictor of offspring psychopathology (see summary of the results of these analyses in Table 4). Based on these results, the chi square analyses and regressions were repeated for the separate age groups for the offspring and several significant relationships emerged (see tables for chi square results [Table 5] and logistic regressions of parent psychopathology differentially predicting child [Table 6] and adult offspring [Table 7] psychopathology).

In the chi square analyses, child offspring of parents with a history of childhood abuse and neglect overall and neglect specifically were more likely to report any lifetime diagnosis or CSS overall (childhood abuse and neglect: X^2 [1, 157] = 4.07, $p < .05$; neglect: X^2 [1, 144] = 6.20, $p < .05$) and CSS of depression (childhood abuse and neglect: X^2 [1, 152] = 3.71, $p = .05$; neglect: X^2 [1, 140] = 4.71, $p < .05$) specifically. Child offspring of parents with a history of childhood neglect were more likely to meet the criteria for a lifetime diagnosis of PTSD (X^2 [1, 126] = 3.17, $p = .05$). In addition, child offspring of parents with a history of sexual abuse were more likely to meet criteria for CSS of anxiety (X^2 [1, 90] = 5.00, $p < .05$). Surprisingly, child offspring of parents with a history of physical abuse were less likely to report any lifetime current CSS or a lifetime diagnosis of psychopathology (X^2 [1, 100] = 4.33, $p < .05$) or PTSD (X^2

[1,86] = 3.82, p = .05) than child offspring of controls. Table 6 also shows that adult offspring of parents with histories of childhood abuse and neglect were not at significantly increased risk for any general or specific forms of psychopathology, compared to adult offspring of controls. However, it is noteworthy that rates of clinically significant symptoms of depression in this sample were high for both adult offspring of parents with a history of abuse and controls.

In the regression analyses, child offspring findings were similar to the chi square findings except that there was a non-statistically significant trend for parent childhood neglect to predict child offspring PTSD (see Table 6). Consistent with the chi square results, parent childhood abuse and neglect overall and neglect specifically predicted child offspring meeting the criteria for any lifetime diagnosis or clinically significant symptoms and for depression. In addition, parent sexual abuse was a significant predictor of child offspring current anxiety. Interestingly, despite the larger sample size of the adult offspring, there were no statistically significant relationships between parent history of child abuse and neglect and adult offspring psychopathology (see Table 7).

The Role of Gender. Logistic regressions were also conducted to examine these relationships in male and female parents separately and the results of these analyses were presented in Table 3 for all offspring, Table 6 for child offspring, and Table 7 for adult offspring. Table 6 shows that there was a non-significant trend for male parents with a history of childhood abuse and neglect to have child offspring with clinically significant depression (AOR = 2.86, 95% CI = .92-8.87, p = .07). However, there were no significant relationships for male parents with histories of child abuse and neglect (or specific types) predicting adult offspring psychopathology.

For female parents, Table 3 shows that there was a non-statistically significant trend

(AOR = 1.48, 95% CI = .95-2.31, p = .08) for female parents with a history of neglect to have offspring with increased risk for PTSD. Table 6 shows that female parents with a history of neglect were at significantly increased risk to have a child offspring with any diagnosis (AOR = 2.74, 95% CI = 1.04-7.21, $p < .05$). There were also non-significant trends for female parents with any history of child abuse and neglect to have child offspring with any diagnosis (AOR = 2.17, 95% CI = .87-5.40, p = .10) and for female parents with a history of sexual abuse to have child offspring with increased risk for anxiety (AOR = 5.69 95% CI = .78-41.61, p = .09). Female parents with histories of child abuse and neglect were not found to have adult offspring with higher rates of psychopathology (Table 7).

Does Parent Childhood Abuse and Neglect Predict Parent Psychopathology?

Table 8 shows the extent to which the parents in this sample with histories of child abuse and neglect and matched controls are at increased risk for psychopathology themselves. As can be seen, there are fewer differences than would have been expected based on previous literature. However, Table 9 shows that parent childhood abuse and neglect overall (AOR = 1.94, 95% CI = 1.05-3.59, $p < .05$) and physical abuse (AOR = 3.48, 95% CI = 1.33-9.05, $p < .05$) specifically significantly predicted parent lifetime diagnosis of Dysthymia. Interestingly, when parents of child and adult offspring were examined separately, significant differences in the impact of parent childhood abuse and neglect on parent psychopathology emerged. In parents of child offspring (see Table 10), having a history of child abuse and neglect was associated with a significant *increase* in MDD (AOR = 2.46, 95% CI = .99-6.12, $p < .05$), but *decrease in* alcohol use diagnoses (AOR = .40, 95% CI = .20-.80, $p < .01$) and a non-significant trend for *decrease risk of* any psychopathology (AOR = .56, 95% = .28-1.11, p = .09). In parents with child offspring, a history of childhood physical abuse predicted *decreased* alcohol use diagnoses

(AOR = 0.20, 95% CI = .05-0.74, $p < .05$). In parents with child offspring, a parent history of childhood sexual abuse predicted *decreased* any psychopathology (AOR = 0.17, 95% CI = .04-0.74, $p < .05$) and a non-significant trend for *decreased* alcohol use diagnoses (AOR = 0.23, 95% CI = .04-1.32, $p = .10$). In parents with child offspring, a parent history of neglect predicted *increased* MDD (AOR = 2.97, 95% CI = 1.16-7.63, $p < .05$) and *decreased* alcohol use diagnoses (AOR = 0.45, 95% CI = .22-0.92, $p < .05$).

In parents of adult offspring (see Table 11), parent childhood abuse and neglect predicted increased diagnoses of any psychopathology (AOR = 1.52, 95% CI = 1.05-2.21, $p < .05$) and alcohol use disorders (AOR = 1.53, 95% CI = 1.06-2.20, $p < .05$) in parents. In parents of adult offspring, a parent history of physical abuse predicted increased diagnoses of any psychopathology (AOR = 2.79, 95% CI = 1.17-6.65, $p < .05$), MDD (AOR = 2.45, 95% CI = 1.16-5.18, $p < .05$), Dysthymia (AOR = 2.78, 95% CI = 1.12-6.93, $p < .05$), and PTSD (AOR = 2.67, 95% CI = 1.31-5.38, $p < .01$). In parents of adult offspring, a parent history of sexual abuse predicted alcohol use disorders in parents (AOR = 2.51, 95% CI = 1.27- 4.96, $p < .01$).

The Role of Gender. In male parents, childhood physical abuse significantly predicted parent dysthymia (AOR = 6.60, 95% CI = 1.16 - 37.51, $p < .05$). In female parents of child offspring (see Table 10), having a history of childhood abuse and neglect predicted *decreased* parent any psychopathology (AOR = 0.35, 95% CI = .13-0.92, $p < .05$) and alcohol use diagnoses (AOR = 0.33, 95% CI = .11-0.93, $p < .05$) and *increased* parent MDD (AOR = 2.97, 95% CI = 1.01-8.70, $p < .05$). In female parents of child offspring, childhood sexual abuse significantly predicted *decreased* parent any psychopathology (AOR = 0.09, 95% CI = .02-0.56, $p < .01$) and a non-significant trend for *decreased* alcohol use diagnoses (AOR = 0.11, 95% CI = .01-1.14, $p = .06$). Lastly, in female parents of child offspring, having a history of childhood

neglect significantly predicted *increased* MDD (AOR = 3.65, 95% CI = 1.19-11.16, $p < .05$).

In male parents of adult offspring (see Table 11), having a history of childhood physical abuse predicted increased parent any psychopathology (AOR = 7.83, 95% CI = 0.97-63.33, $p < .05$) and PTSD (AOR = 5.17, 95% CI = 1.51-17.66, $p < .01$). In female parents of adult offspring, having a history of parent childhood physical abuse significantly predicted MDD (AOR = 2.66, 95% CI = 1.09-6.49, $p < .05$) and dysthymia (AOR = 3.13, 95% CI = 1.15-8.49, $p < .05$). In addition, in female parents of adult offspring, having a history of childhood sexual abuse significantly predicted alcohol use diagnoses (AOR = 2.47, 95% CI = 1.24-4.91, $p < .05$).

Does Parent Psychopathology Predict Offspring Psychopathology?

The next set of results examined the extent to which the hypothesized mediator (parental psychopathology) predicted the dependent variable (offspring psychopathology). The results in Table 12 indicate that any parent diagnosis (AOR = 1.68, 95% CI = 1.02-2.75, $p < .05$) and diagnoses for MDD (AOR = 2.09, 95% CI = 1.33-3.31, $p < .05$), alcohol use (AOR = 1.76, 95% CI = 1.13-2.73, $p < .05$), and drug use (AOR = 2.06, 95% CI = 1.33-3.19, $p < .05$) significantly predicted increased offspring drug use diagnoses. Table 13 shows the results of regressions predicting child offspring psychopathology as a function of parent psychopathology. Having a parent with a history of Major Depressive Disorder diagnosis significantly predicted child offspring depression (AOR = 2.98, 95% CI = 1.19-7.46, $p < .05$) and parent alcohol use diagnoses significantly predicted child offspring anxiety (AOR = 4.74, 95% CI = 1.36-16.56, $p < .05$). In adult offspring (see Table 14), having a parent with any psychopathology (AOR = 1.75, 95% CI = 1.04-2.94, $p < .05$), MDD (AOR = 2.16, 95% CI = 1.35-3.46, $p < .01$), or alcohol (AOR = 1.83, 95% CI = 1.16-2.88, $p < .05$) and drug use diagnoses (AOR = 2.12, 95% CI = 1.35-3.32, $p < .01$) significantly predicted adult offspring drug use. Lastly, parent drug use

diagnoses (AOR = 1.87, 95% CI = 1.00-3.47, $p < .05$) significantly predicted adult offspring alcohol use diagnoses.

The Role of Gender. Overall, having a male parent with psychopathology had a major impact on substance use in offspring, whereas having a female parent with psychopathology had an impact on a wider variety of offspring outcomes. Specifically, having a male parent with a history of drug use diagnosis predicted overall offspring substance abuse diagnoses (Drug: AOR = 2.68, 95% CI = 1.28-5.60, $p < .01$; Alcohol: AOR = 6.60, 95% CI = 1.39-31.29, $p < .05$) and adult offspring abuse diagnoses (Drug: AOR = 2.12, 95% CI = 1.35-3.32, $p < .01$; Alcohol: AOR = 1.87, 95% CI = 1.00-3.47, $p < .05$). In addition, male parent dysthymia significantly predicted child offspring depression (AOR = 5.02, 95% CI = 1.01-25.02, $p < .05$) and male parent alcohol use diagnoses predicted adult offspring drug use diagnoses (AOR = 2.63, 95% CI = 1.06-6.55, $p < .05$).

Having a female parent with any form of psychopathology predicted overall offspring any psychopathology (AOR = 1.58, 95% CI = .99-2.51, $p < .05$), adult offspring any psychopathology (AOR = 1.70, 95% CI = .99-2.90, $p < .05$), and overall offspring depression (AOR = 1.68, 95% CI = 1.09-2.59, $p < .05$). Female parent MDD and female parent drug use diagnosis predicted overall offspring (MDD: AOR = 2.48, 95% CI = 1.42-4.32, $p < .01$; Drug: AOR = 1.95, 95% CI = 1.09-3.51, $p < .05$) and adult offspring depression and drug use diagnoses (MDD: AOR = 2.43, 95% CI = 1.38-4.28, $p < .01$; Drug: AOR = 1.89, 95% CI = 1.04-3.44, $p < .05$). Female parent alcohol use diagnoses predicted overall offspring any psychopathology (AOR = 1.69, 95% CI = 1.04-2.74, $p < .05$). Female parent MDD predicted child offspring depression (AOR = 3.54, 95% CI = 1.17-10.65, $p < .05$) and child offspring anxiety (AOR = 5.43, 95% CI = 1.23-24.06, $p < .05$). Lastly, female parent alcohol (AOR = 9.37, 95% CI =

1.70-51.58, $p < .05$) and drug use (AOR = 5.07, 95% CI = 1.24-20.70, $p < .05$) diagnoses predicted child offspring anxiety.

Does Parent Psychopathology Mediate the Impact of Parent Childhood Abuse and Neglect on Offspring Psychopathology?

Seven separate mediation models were tested including parent child abuse and neglect overall, parent sexual abuse, and parent neglect as independent variables; parent MDD, parent dysthymia, parent alcohol use diagnosis, and parent drug use diagnosis as potential mediators; and child offspring depression and child anxiety as dependent variables with controls for offspring race and sex in each model. Only variables that showed statistically significant relationships or non-significant trends in prior logistic regressions were included. More specifically, mediation models for physical abuse were not tested because physical abuse was not a significant predictor of increased offspring psychopathology. Based on the findings for males and females separately, the mediational role of male parent dysthymia in the relationship between male childhood abuse and neglect and child offspring depression was explored. For females, MDD, Alcohol Use, and Drug Use were included as mediators in the relationship between female childhood sexual abuse and child offspring anxiety. Lastly, child offspring depression and anxiety were the only outcomes included in the analyses because offspring PTSD was not related to parent psychopathology, parent childhood maltreatment was not a significant predictor of offspring alcohol use, or drug use, and adult offspring outcomes were not related to parent psychopathology.

Child Offspring Current Depression. Parent childhood abuse/neglect significantly predicted child offspring depression (AOR = 2.13; CI= 1.01- 4.49, $p < .05$), controlling for offspring sex and race (see Table 15). When parent MDD was entered in to the logistic equation,

the results indicated that parent MDD was a significant independent predictor of child offspring depression (AOR = 2.65; CI= 1.05- 6.67, $p < .05$), and parent childhood abuse/neglect was no longer significant (AOR = 1.92; CI= 1.05-6.67, $p = .094$). However, the indirect effect was non-significant (Sobel z = 1.76, $p = .078$).

Parent childhood neglect significantly predicted child offspring depression (AOR = 2.23, 95% CI= 1.04-4.82, $p < .05$), controlling for offspring sex and race (see Table 15). When parent MDD was entered in to the logistic equation, the results indicated that parent MDD was a significant independent predictor of child offspring depression (AOR = 3.11; CI= 0.12-0.84, $p < .05$), and parent childhood abuse/neglect was no longer significant (AOR = 1.93; CI= 0.87- 4.28, $p = .10$). The Sobel test indicated that the indirect effect was significant (Sobel z = 2.09, $p < .05$), indicating mediation. These results suggest that parent childhood neglect influences child offspring depression through its effect on parent depression. No statistically significant mediational relationship was found for male childhood abuse and neglect and child offspring depression. However, AORs for male parent childhood abuse and neglect predicting child offspring depression were similar to the overall sample including both male and female parents, but only trended toward significance (AOR = 2.86, 95% CI= 0.92- 8.87, $p = .07$). In addition, there was a non-significant trend for male parent dysthymia (AOR = 4.73, 95% CI= 0.92- 24.29, $p = .06$), partially mediating the relationship between childhood abuse and neglect and child offspring depression (AOR = 2.75, 95% CI= 0.85- 8.85, $p = .09$). These non-significant results may be due to smaller sample size of only male parents.

Child Offspring Current Anxiety. The results indicate that parent psychopathology was not a mediator in the relationship between parent sexual abuse and child offspring anxiety (see Table 16). Specifically, parent childhood sexual abuse (including males and females) remained

significant in predicting child offspring anxiety (AOR = 13.19, 95% CI= 1.56-111.78, $p < .05$), despite the introduction of parent alcohol use diagnoses (AOR = 3.83, 95% CI= 0.58-25.35, $p = .16$). For the remaining tests of mediation, it should be noted that AORs for *female* parent childhood sexual abuse predicting child offspring anxiety indicated only a non-significant trend (AOR = 5.69, 95% CI= 0.78- 41.61, $p = .09$). With the introduction of female parent MDD, the AOR for female parent sexual abuse was reduced (AOR = 3.88, 05% CI = .49-30.57, $p = .20$) and the AOR for female parent MDD approached significance (AOR = 6.78, 95% CI= 0.74-62.24, $p = .09$). When female parent alcohol use was introduced into the model, the AOR for female parent childhood sexual abuse predicting child offspring anxiety (AOR = 18.28, 95% CI= 1.28-261.95, $p < .05$) increased substantially and female parent alcohol use approached significance (AOR = 12.22, 95% CI= 0.85-176.46, $p = .06$). This same pattern of results emerged for female parent drug use with female parent childhood sexual abuse significantly predicting child offspring anxiety (AOR = 17.27, 95% CI= 1.25-238.23, $p < .05$) and female parent drug use diagnoses approaching significance (AOR = 9.92, 95% CI= 0.88-111.84, $p = .06$).

Interaction Effects. Considering the significant impact of parent childhood abuse and neglect and parent psychopathology on offspring psychopathology in this sample and the few mediational effects, a post hoc decision was made to examine interaction effects between parent child abuse and neglect and parent psychopathology predicting offspring psychopathology. There were no significant interactions.

Discussion

Although one prior study (Roberts et al., 2015) examined the influence of self-reported maternal abuse history on depressive symptoms in adolescent and adult offspring, to our

knowledge, this is the first study to investigate the effects of documented maternal and paternal childhood abuse history on child and adult offspring depression, anxiety, PTSD, and substance abuse. In addition, this is the first study to examine parent psychopathology, which has emerged in the literature as an important mechanism in the relationship between parental childhood maltreatment and offspring psychopathology, and include parent MDD, Dysthymia, GAD, PTSD, Alcohol Use Disorder, and Drug Use Disorder separately as mediators. This study is also unique in using documented cases of parent childhood abuse, follow-up into adulthood, and an assessment of several psychiatric disorders as offspring outcomes.

Parent Childhood Abuse and Neglect and Offspring Psychopathology

Contrary to our hypothesis, offspring of parents with a history of childhood abuse and neglect were not more likely to report current clinically significant symptoms (CSS) or a lifetime diagnosis of psychopathology than were offspring of controls. However, analyses of the effect of age group revealed that there were significant differences between child and adult offspring. As we investigated offspring age differences further, we found that child offspring of individuals with a history of childhood abuse and neglect, and neglect specifically, reported higher rates of lifetime diagnoses or CSS overall and more CSS of depression than child offspring of controls. In addition, parent sexual abuse emerged as a significant predictor for child offspring current CSS of anxiety. However, there were no statistically significant findings for adult offspring psychopathology. There are some possible reasons for the difference between the impact of parent childhood abuse and neglect on child offspring versus adult offspring. From a developmental perspective, the child offspring ranged in age from 8 to 17 with a mean age of 13.58 and the adult offspring ranged in age from 18 to 38 with a mean age of 24.83. Therefore, the child offspring were in a sensitive period for the development of psychopathology as many

psychiatric disorders originate during childhood and adolescence (Kessler et al., 2005; Merikangas et al., 2010) and the risk for psychopathology is at its highest in adolescence (Fairchild, 2011). It may be that offspring mental health problems improved over time as parents found ways to cope with the impact of their trauma history thus providing a more consistent, low conflict environment for their offspring. In addition, adult offspring may have more access than child offspring resources to treat psychological disorders (e.g. therapy, medication, self-help resources). Another possibility is that the adult offspring are likely to no longer be living with their parents and their symptoms may have improved as exposure to the effects of their parent's trauma history decreased. Alternatively, adult offspring have more access to substances than child offspring and they may be using substances to cope with or mask their symptoms of psychopathology resulting from their parent's trauma history. Lastly, offspring age differences may be due to measurement differences as different measures were used to assess psychopathology in child versus adult offspring. These factors may help explain the differential impact of parent childhood abuse and neglect on child versus adult offspring psychopathology.

In this sample, the high rates of depression in adult offspring of both parents with abuse histories and controls are noteworthy. This may be due to the socioeconomic status of the sample and the measure of adult depression used. For example, one study found that the standard cut-off score for the CES-D of 16 was inefficient at screening for depression in a low-income sample of women and a quite elevated cut-score of 34 yielded a higher specificity (Thomas, Jones, Scarinci, Mehan, & Brantley, 2001). However, these authors concluded that the standard cut-off score and the measure is still valid in this population. On the other hand, the levels of offspring psychopathology were substantially lower than expected in offspring of parents with a history of childhood physical abuse. This is quite surprising, however, it is possible that there is something

unusual about this small sample of offspring of parents with childhood physical abuse histories.

Parent Childhood Abuse and Neglect and Parent Psychopathology

In contrast to past research (Widom, 1999; Widom et al., 2007; Widom, Ireland, & Glynn, 1995; Widom, Marmorstein, & White, 2006), parent dysthymia was the only parent diagnosis that was related to parent childhood abuse and neglect. When analyzing parents of child offspring and parents of adult offspring separately, the expected pervasive impact of parent childhood abuse and neglect on parent psychopathology was evident in parents of adult offspring. However, in parents of child offspring, parent childhood abuse and neglect only predicted increased parent Major Depressive Disorder. In addition, parent childhood abuse and neglect seemed to act as a protective factor against parent any psychopathology and alcohol use diagnoses. These surprising findings warrant comment. It is possible that there is a self-selection bias that influenced parents with abuse histories and higher rates of psychopathology not to participate in this wave of the study. The consent form that was required by the IRB included an explicit statement that researchers were required to report suspected child maltreatment. Therefore, it is possible that individuals most at risk for maltreating their children and with the highest rates of psychopathology may have been less likely to participate. Psychopathology alone would not put a parent at high risk for maltreating their children, but a parent with psychopathology and several other factors related to their history of childhood abuse and neglect (e.g., housing problems, poor physical health, adult criminal behavior, exposure to intimate partner violence) may be less likely to participate due to the IRB warnings. In addition, parents of child offspring would be more likely to choose not to participate because adult offspring are likely no longer living with their parents, decreasing the risk that they are being maltreated.

Parent Psychopathology and Offspring Psychopathology

In offspring overall, these results show that parents with more diagnoses of psychopathology (i.e., parent any psychopathology, MDD, alcohol abuse, and drug abuse) had offspring who reported more drug use diagnoses. However, when examining offspring age group influences, child offspring of parents with more diagnoses of MDD and alcohol use disorders reported more depression and anxiety, while adult offspring of parents with more diagnoses of psychopathology (i.e., any psychopathology, MDD, alcohol abuse, and drug abuse) reported more substance use diagnoses. Taken together, these findings suggest that the impact of parent psychopathology is on internalizing symptoms in child offspring, while parent psychopathology primarily impacts substance abuse symptoms in adult offspring. These differences between the impact of parent psychopathology on child offspring versus adult offspring may be due to similar factors mentioned above regarding the impact of parent childhood abuse and neglect such as the sensitive developmental periods of childhood and adolescence, improvement in symptoms of psychopathology over time, and measurement differences between child and adult psychopathology measures. Another possibility is that the adult offspring are likely to no longer be living with their parents and their symptoms may have improved as exposure to their parent's psychopathology decreased. Alternatively, adult offspring have more access to substances than child offspring and they may be using substances to cope with or mask their symptoms of psychopathology. Lastly, parents' psychopathology was measured during the 1989-1995 interviews when the parents were approximately 29 years old. It is possible that these results would differ using measures of parent psychopathology at the time the offspring were assessed.

Effects of Gender

In reviewing the effects of gender across the analyses, the results indicated that female parent childhood neglect significantly predicted child offspring any psychopathology, but no other significant differences emerged. However, these data suggest that further research into the role of gender in these relationships is warranted. Both male and female parent childhood abuse and neglect impacted parent psychopathology. However, childhood physical abuse predicted parent PTSD only in male parents of adult offspring. Childhood abuse and neglect predicted parent MDD and childhood sexual abuse predicted parent alcohol use diagnoses only in female parents. In addition, the negative relationships between parent childhood child abuse and neglect and parent any psychopathology and alcohol diagnoses were only observed in female parents of child offspring. Lastly, male parent substance use diagnoses had the most impact on offspring psychopathology and the impact was limited to offspring substance abuse for the most part. However, male dysthymia predicted child offspring depression. On the other hand, the impact of female parent psychopathology was more widespread with multiple types of female parent psychopathology predicting multiple types of child and adult offspring psychopathology.

Taken together, these findings related to the role of gender suggest that female childhood abuse and neglect and female psychopathology have a more widespread effect on offspring psychopathology than male parents. However, these findings may be better understood by the considering differences in the way mothers and fathers parent. Research suggests that fathers tend to be more involved in caring for older versus younger children (Bailey, 1994). Therefore, we may have been unable to detect paternal influences due to combining periods of childhood and adolescence in to one overall child offspring group. Societal expectations for maternal and paternal roles may also be a factor. Mothers are expected to be active in raising their children. Therefore, their levels of involvement are less open to choice and offspring are more likely to be

exposed to their mental health symptoms. However, societal expectations allow fathers more discretion in defining their parental roles and responsibilities (Cabrera, Tamis-Lemonda, Bradley, Hofferth, & Lamb, 2000). As a result, paternal psychopathology may lead to lower levels of involvement, and, thus, less impact on offspring development.

However, the results for parent childhood abuse and neglect were mostly trends and there were several significant findings where offspring psychopathology was impacted by male parent psychopathology, particularly related to parent and offspring substance abuse. There are also other possible explanations for gender differences in this study. There were about 100 fewer male parents than female parents and, therefore, this smaller sample size may have made it more difficult to find significance in male parents. It is also possible that there is a missing variable here that may explain part of these relationships and that is the amount of time spent with the offspring. If males spend less time with their children, their impact will most likely be less. Unfortunately, this question is outside the scope of the current dissertation.

Mediation Analyses

The results of mediation analyses indicated that parent Major Depressive Disorder played a significant role as a mediator between parent childhood maltreatment and child offspring psychopathology. More specifically, parent childhood neglect increased child offspring depression clinically significant symptoms through its effect on increased parent MDD. Therefore, these results suggest the possibility that parents who have experienced childhood neglect and developed MDD as a result, may have engaged in behaviors stemming from trauma and depression (e.g., emotional dysregulation, domestic violence, poor parenting skills), and exposed their children to a combination of adversity that caused their children to develop symptoms of depression in childhood. However, there are other mechanisms though which

parent MDD may be associated with child offspring depression including genetic transmission and contextual stressors associated with parent MDD (Goodman & Gotlib, 1999) and it is likely that these factors influenced the relationship as well. In addition, there were trends toward male parent dysthymia mediating the relationship between male parent childhood abuse and neglect and child offspring depression. Future research with a larger sample of male parents and inclusion of the amount of contact the parent has with the offspring might help clarify these relationships.

The mediation analyses also showed that parents with a history of sexual abuse are at increased risk for having a child offspring with clinically significant symptoms of anxiety, regardless of the introduction of parent psychopathology. However, there was a trend towards parent MDD partially mediating the relationship between female childhood sexual abuse and child offspring anxiety that warrants future investigation.

A possible alternative to the mediation hypothesis of parent psychopathology explaining the link between parent childhood abuse and neglect is the intergenerational transmission of psychopathology in parents passed on to the next generation. In this sample, we have strong evidence of intergeneration transmission in male parents with male parent substance abuse predicting offspring substance abuse. However, overall and with female parents specifically, the findings provide less support for intergeneration transmission of psychopathology as parent psychopathology predicts offspring psychopathology in different ways (e.g., various types of female parent psychopathology lead to various types of offspring psychopathology).

Limitations and Future Directions

Although these findings provide important information about the effects of parent childhood abuse and neglect on offspring psychopathology, some limitations should be noted.

First, these findings are based on cases of childhood abuse and neglect drawn from official court records and most likely represent the most extreme cases processed in the system. Second, cases that came to the attention of the courts are skewed toward the lower end of the socio-economic spectrum and, therefore, these results cannot be generalized to abused and neglected children who grew up in middle- or upper-class homes. Third, it is important to note that the data were from cases of abuse and neglect that occurred in the late 1960s and early 1970s in the Midwest part of the United States. However, these cases of child abuse and neglect from the late 1960s and early 1970s are comparable in demographic characteristics to the kinds of cases being processed by child protection services across the country. Fourth, the current study focused on one variable (parental psychopathology, albeit with multiple components). However, there are multiple factors that likely play a role in the relationship between parental childhood abuse and neglect and offspring psychopathology that are not examined here. The current study is not able to assess the influence of abuse severity, exposure to other traumatic events, or the experience of multiple types of abuse, which may be important factors to include in future research. However, only a small percentage (10-11%) of the parent sample had experienced more than one type of abuse in childhood. In addition, the current study did not include an assessment of the roles of parenting behavior, parent or child self-regulation ability, protective factors, or other contextual factors, such as social support, in the relationship between parental childhood abuse and neglect and offspring psychopathology. Therefore, future research is needed to assess the impact of these potentially important factors. Fifth, there has been recent interest in the contribution of domestic violence to negative outcomes in offspring of parents with abuse histories and this would be something to consider as a contributor. Lastly, the size of some of the groups that were compared were relatively small and might have limited our power and ability to detect clinically

significant differences.

Implications

Despite these limitations, the present study helps to better understand the long-term and intergenerational effects of childhood abuse and neglect and builds on previous research on parent childhood maltreatment and offspring mental health in several ways. First, this study found differences in offspring psychopathology outcomes based on offspring age with child offspring psychopathology being more broadly impacted by parent childhood abuse and neglect and parent psychopathology than adult offspring. These findings suggest that the impact of parent childhood maltreatment on offspring psychopathology varies across development and may differentially influence child risk over time. As a child ages, the caregiving demands change, highlighting the need to consider child developmental status when studying intergenerational effects of parent childhood abuse and neglect. In addition, mental health difficulties that emerge in childhood predict long-term psychopathology (Fryers & Brugha, 2013); however, we did not observe the same significant level of psychopathology in the adult offspring in our sample as we observed in the child offspring. In addition, the question of parent childhood abuse as a protective factor for parent psychopathology in parent of child offspring emerged from this study. Future research should investigate resiliency factors and possible protective factors related to childhood abuse and neglect, which may provide additional insights that can inform intervention strategies.

Second, the current study provided the opportunity to investigate the effects of maternal and paternal childhood abuse history on offspring psychopathology and found that maternal childhood abuse history and maternal psychopathology had more of an impact on offspring psychopathology in this sample than paternal. However, this result needs to be replicated in

future research. Third, this study examined effects of different types of maltreatment on offspring psychopathology and found differential impact by type of abuse, which supports the importance of considering type of parent abuse and neglect in understanding the impact on offspring psychopathology. Fourth, including the type of parent psychopathology and type of offspring psychopathology provided an opportunity to examine the effect of a broader range of parent psychopathology mediators and offspring psychological outcomes.

Lastly, this study adds to the existing literature by suggesting that child offspring of parents with a history of childhood neglect are at increased risk for depression symptoms, and this risk appears to be mediated by parent Major Depressive Disorder. Therefore, research and interventions that target depression in child offspring of parents with childhood maltreatment histories must consider and target the possible presence of parent MDD in order to decrease negative outcomes in parents with histories of abuse and neglect and the subsequent impact on their offspring. In addition, efforts to prevent adverse intergenerational effects of a parental childhood maltreatment history should start in early life, as these symptoms may be most significant in childhood. In mental health settings, regular screening for abuse history in parents should be conducted to identify parents and children at risk for mental health problems. This screening may be particularly important with parents seeking services for their child's emotional and/or behavioral problems.

Conclusion

Disentangling the consequences of trauma on parents, children, and families is not a straightforward task. The scientific research reviewed here and the results of this study paint a complex picture of just one of the pathways linking parent childhood abuse and neglect to offspring mental health. It is likely that a combination of risk and protective factors contribute to

intergenerational patterns of trauma and mental health problems.

Table 1

Demographic characteristics of the parent and offspring sample

	Gender (% Male)	Race (% White, non-Hispanic)	Age (*M*, *SD*)
Parents (*n* = 454)	37.9	57.7	28.9 (3.7)
Control (*n* = 209)	42.1	59.8	29.1 (3.8)
Abuse/Neglect (*n* = 245)	34.3	55.9	28.8 (3.7)
Any Physical Abuse (*n* = 35)	45.7	77.1	28.9 (4.1)
Any Sexual Abuse (*n* = 37)	5.4	51.4	29.8 (3.1)
Any Neglect (*n* = 197)	37.1	55.3	28.6 (3.7)
Offspring	50.6	56.3	13.6 (2.8)
Child Offspring (*n* = 158)			
Parents- No abuse/neglect (*n* = 87)	47.1	60.9	13.5 (2.8)
Parents- Abuse/Neglect (*n* = 71)	54.9	50.7	13.7 (2.8)
Parents- Any Physical Abuse (*n* = 14)	71.4	85.7	12.6 (2.8)
Parents- Any Sexual Abuse (*n* = 10)	90.0	50.0	12.6 (2.8)
Parent- Any Neglect (*n* = 58)	48.3	50.0	13.8 (2.7)
Adult Offspring (*n* = 539)	50.3	54.0	24.8 (4.5)
Parents- No abuse/neglect (*n* = 243)	54.3	52.7	24.7 (4.6)
Parents- Abuse/Neglect (*n* = 296)	47.0	55.1	24.8 (4.5)
Parents- Any Physical Abuse (*n* = 41)	48.8	80.5	25.1 (4.1)
Parents- Any Sexual Abuse (*n* = 48)	39.6	54.2	24.5 (4.2)
Parents- Any Neglect (*n* = 233)	48.5	52.8	24.7 (4.6)

Note: *M* = Mean; *SD* = Standard Deviation

Table 2

Extent of offspring psychopathology as a function of parent child abuse and neglect history

					Offspring Psychopathology (in percent)					
					Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
PARENT HISTORY			*N*							
All Offspring	697	69.5	60.1	20.7	35.7	6.8			16.0	
Control Parents	330	66.7	58.3	21.1	32.1	5.3			16.7	
Abuse/Neglect Parents	367	72.1	61.7	20.4	38.8	8.1			15.4	
Parent Physical Abuse	55	57.4	52.8	15.4	22.0	5.9			15.7	
Parent Sexual Abuse	58	77.6	70.7	29.8	38.9	8.9			16.1	
Parent Neglect	291	73.1	61.5	19.1	40.6*	8.5			15.1	

Note: All comparisons are for offspring of parents with histories of childhood abuse and neglect compared to offspring of parents without such histories (controls). Offspring psychopathology = meets lifetime diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs.

* $p \leq .05$

Table 3

Results of regressions showing the relationship between parent history of child abuse and/or neglect and offspring psychopathology

	Offspring Psychopathology					
	Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
Parent History	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both						
Abuse/Neglect Parent	1.15 (0.82- 1.62)	1.01 (0.73- 1.40)	0.90 (0.62- 1.31)	1.30 (0.93- 1.81)	1.50 (0.80- 2.81)	0.88 (0.58- 1.35)
Parent Physical abuse	0.64 (0.33- 1.26)	0.76 (0.39- 1.47)	0.60 (0.26- 1.37)	0.67 (0.32- 1.40)	0.96 (0.26- 3.65)	0.91 (0.39- 2.13)
Parent Sexual abuse	1.58 (0.75- 3.31)	1.55 (0.77- 3.07)	1.45 (0.76- 2.76)	1.30 (0.71- 2.39)	1.68 (0.58- 4.88)	0.97 (0.44- 2.14)
Parent Neglect	1.21 (0.84- 1.75)	1.01 (0.71- 1.42)	0.84 (0.56- 1.25)	1.39 (0.98- 1.97) †	1.58 (0.82- 3.04)	0.87 (0.55- 1.37)
Male						
Abuse/Neglect Parent	1.25 (0.72- 2.17)	1.35 (0.79- 2.30)	0.79 (0.39- 1.58)	1.22 (0.70- 2.13)	0.89 (0.28- 2.84)	0.52 (0.25- 1.08)
Parent Physical abuse	0.47 (0.17- 1.34)	0.60 (0.21- 1.71)	0.38 (0.08- 1.86)	0.90 (0.31- 2.62)	1.07 (0.11- 10.53)	0.82 (0.21- 3.18)
Parent Sexual abuse	NT	NT	NT	2.78 (0.16- 48.41)	NT	NT
Parent Neglect	1.41 (0.79- 2.53)	1.49 (0.85- 2.60)	0.79 (0.38- 1.63)	1.28 (0.71- 2.28)	1.03 (0.32- 3.29)	0.50 (0.23- 1.06)
Female						
Abuse/Neglect Parent	1.07 (0.68- 1.67)	0.84 (0.55- 1.28)	0.90 (0.57- 1.41)	1.34 (0.89- 2.04)	1.77 (0.81- 3.86)	1.19 (0.69- 2.06)
Parent Physical abuse	0.77 (0.31- 1.91)	0.84 (0.35- 2.01)	0.71 (0.26- 1.91)	0.50 (0.18- 1.41)	1.01 (0.20- 5.03)	0.97 (0.32- 2.92)
Parent Sexual abuse	1.26 (0.55- 2.75)	1.24 (0.60- 2.56)	1.28 (0.65- 2.52)	1.22 (0.63- 2.34)	1.62 (0.52- 5.09)	1.26 (0.52- 3.03)
Parent Neglect	1.09 (0.67- 1.76)	0.79 (0.51- 1.23)	0.83 (0.51- 1.35)	1.48 (0.95- 2.31) †	1.85 (0.82- 4.16)	1.21 (0.67- 2.17)

Note: Offspring psychopathology = meets diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs. AOR = Adjusted Odds Ratio, controlling for offspring sex, race, and age group (child or adult); CI = Confidence Interval; PTSD = Posttraumatic Stress Disorder; NT = not tested due to small sample size. † < .10

Table 4

Results of regressions showing the relationship between parent history of child abuse and/or neglect and offspring psychopathology and the independent effect of offspring age

	Offspring Psychopathology Varies by Offspring Age Group					
	Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
Abuse/Neglect Parents	□	□	□		□	□
Physical Abuse Parent	□	□	□			□
Sexual Abuse Parent	□	□	□			□
Neglect Parent	□	□	□		□	□

Note: Offspring psychopathology = meets diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs. □ = age group significant, based on logistic regressions with parent childhood abuse and neglect predicting offspring psychopathology, with offspring age group (child or adult offspring) as an independent variable and controls for offspring sex and race. PTSD = posttraumatic stress disorder diagnosis.

Table 5

Child and Adult Offspring Psychopathology as a function of Parent Psychopathology

		Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
		Child Offspring Psychopathology (in percent)					
PARENT HISTORY	*N*						
All Offspring	158	43.9	30.3	10.8	32.1	0.7	3.7
Control Parents	87	36.8	23.8	7.5	26.7	0.0	3.9
Abuse/Neglect Parents	71	52.9*	38.2*	14.7	38.7	1.7	3.3
Physical Abuse Parent	14	7.7*	8.3	0.0	0.0*	0.0	0.0
Sexual Abuse Parent	10	40.0	30.0	30.0*	22.2	0.0	0.0
Neglect Parent	58	57.9*	41.1*	14.0	43.1*	2.0	3.9
		Adult Offspring Psychopathology (in percent)					
All Offspring	539	77.0	68.5	23.5	36.6	8.4	19.1
Control Parents	243	77.4	70.2	25.5	33.9	7.0	20.7
Abuse/Neglect Parents	296	76.7	67.1	21.8	38.8	9.5	17.9
Physical Abuse Parent	41	73.2	65.9	19.5	28.2	7.3	19.5
Sexual Abuse Parent	48	85.4	79.2	29.8	42.2	10.4	18.8
Neglect Parent	233	76.8	66.4	20.3	40.1	9.9	17.6

Note: All comparisons are for offspring of parents with histories of childhood abuse and neglect compared to offspring of parents without such histories (controls). Offspring psychopathology = meets lifetime diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs.

* $p \leq .05$

Table 6

Results of regressions showing the relationship between parent history of child abuse and/or neglect and offspring psychopathology only including child offspring

	Child Offspring Psychopathology					
	Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
Parent History	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both						
Abuse/Neglect Parent	2.22* (1.10- 4.52)	2.13* (1.01- 4.49)	1.99 (0.67- 5.92)	1.83 (0.86- 3.93)	NT	0.79 (0.12- 5.03)
Parent Physical abuse	0.18 (0.02- 1.55)	0.38 (0.04- 3.34)	NT	NT	NT	NT
Parent Sexual abuse	2.34 (0.52- 10.51)	3.37 (0.62- 18.21)	8.11* (1.15- 57.05)	1.33 (0.23- 7.81)	NT	NT
Parent Neglect	2.52* (1.20- 5.32)	2.23* (1.04- 4.82)	1.87 (0.59- 5.88)	2.05 (0.93- 4.54) †	NT	0.92 (0.14- 5.81)
Male						
Abuse/Neglect Parent	2.32 (0.71- 7.54)	2.86 (0.92- 8.87) †	3.05 (0.41- 22.57)	2.16 (0.64- 7.32)	NT	NT
Parent Physical abuse	0.44 (0.03- 6.72)	0.99 (0.08- 11.63)	NT	NT	NT	NT
Parent Sexual abuse	NT	NT	NT	NT	NT	NT
Parent Neglect	2.10 (0.61- 7.21)	2.53 (0.78- 8.19)	3.05 (0.41- 22.57)	2.16 (0.59- 7.95)	NT	NT
Female						
Abuse/Neglect Parent	2.17 (0.87- 5.40) †	1.68 (0.62- 4.54)	1.50 (0.38- 5.85)	1.65 (0.60- 4.52)	NT	NT
Parent Physical abuse	NT	NT	NT	NT	NT	NT
Parent Sexual abuse	1.64 (0.30- 8.89)	2.66 (0.32- 22.27)	5.69 (0.78- 41.61) †	0.49 (0.05- 4.87)	NT	NT
Parent Neglect	2.74* (1.04- 7.21)	1.99 (0.72- 5.53)	1.29 (0.29- 5.66)	1.98 (0.70- 5.58)	NT	NT

Note: Offspring psychopathology = meets diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs. AOR = Adjusted Odds Ratio, controlling for offspring sex and race, CI = Confidence Interval; PTSD = Posttraumatic Stress Disorder, CAN = Childhood Abuse and Neglect, NT = not tested due to small sample size $p < .05$, † < .10

Table 7

Results of regressions showing the relationship between parent history of child abuse and/or neglect and offspring psychopathology only including adult offspring

	Adult Offspring Psychopathology					
	Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
Parent History	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both						
Abuse/Neglect Parent	0.93 (0.62- 1.40)	0.84 (0.58- 1.22)	0.79 (0.53- 1.18)	1.23 (0.85- 1.77)	1.44 (0.76- 2.71)	0.89 (0.57- 1.38)
Parent Physical abuse	0.84 (0.39- 1.83)	0.86 (0.42- 1.78)	0.63 (0.27- 1.47)	0.94 (0.43- 2.04)	0.96 (0.26- 3.54)	0.93 (0.39- 2.21)
Parent Sexual abuse	1.56 (0.65- 3.71)	1.48 (0.69- 3.16)	1.15 (0.57- 2.30)	1.44 (0.74- 2.80)	1.68 (0.58- 4.88)	1.05 (0.46- 2.36)
Parent Neglect	0.94 (0.61- 1.45)	0.81 (0.55- 1.20)	0.74 (0.48- 1.14)	1.28 (0.87- 1.89)	1.50 (0.78- 2.90)	0.86 (0.54- 1.38)
Male						
Abuse/Neglect Parent	1.04 (0.54- 2.00)	1.07 (0.58- 1.97)	0.61 (0.28- 1.32)	1.07 (0.56- 2.02)	0.89 (0.28- 2.84)	0.59 (0.28- 1.26)
Parent Physical abuse	0.44 (0.14- 1.46)	0.54 (0.17- 1.71)	0.37 (0.08- 1.83)	1.44 (0.45- 4.58)	1.07 (0.11- 10.53)	0.89 (0.22- 3.65)
Parent Sexual abuse	NT	NT	NT	NT	NT	NT
Parent Neglect	1.23 (0.56- 2.45)	1.24 (0.65- 2.36)	0.59 (0.26- 1.33)	1.10 (0.57- 2.13)	1.03 (0.32- 3.29)	0.57 (0.26- 1.24)
Female						
Abuse/Neglect Parent	0.86 (0.51- 1.46)	0.73 (0.45- 1.17)	0.81 (0.50- 1.32)	1.31 (0.83- 2.07)	1.69 (0.77- 3.70)	1.11 (0.64- 1.94)
Parent Physical abuse	1.24 (0.42- 3.68)	1.09 (0.41- 2.86)	0.79 (0.29- 2.19)	0.64 (0.22- 1.90)	1.01 (0.20- 5.03)	0.97 (0.32- 2.62)
Parent Sexual abuse	1.36 (0.55- 3.40)	1.30 (0.59- 2.90)	1.00 (0.48- 2.09)	1.41 (0.70- 2.87)	1.62 (0.52- 5.09)	1.26 (0.52- 3.03)
Parent Neglect	0.80 (0.46- 1.41)	0.64 (0.39- 1.05)	0.78 (0.46- 1.31)	1.41 (0.86- 2.31)	1.73 (0.76- 3.94)	1.11 (0.61- 2.01)

Note: Offspring psychopathology = meets diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs. AOR = Adjusted Odds Ratio, controlling for offspring sex and race; CI = Confidence Interval; PTSD = Posttraumatic Stress Disorder; CAN = Childhood Abuse and Neglect; NT = not tested due to small sample size.

Table 8

Extent of parent psychopathology as a function of parent child abuse and neglect history

		Parent Psychopathology (in percent)						
PARENT HISTORY	*N*	Any Diagnosis	MDD	GAD	Dysthymia	PTSD	Alcohol Use	Drug Use
All Parents	454	69.6	24.2	4.2	11.7	28.9	50.0	36.9
Control Parents	209	67.8	21.1	4.3	8.1	26.8	48.8	38.5
Abuse/Neglect Parents	245	71.7	26.9	4.1	14.7*	30.7	51.0	35.5
Parent Physical Abuse	35	82.8	31.4	2.9	22.9**	40.0	51.4	42.9
Parent Sexual Abuse	37	67.6	24.3	2.7	10.8	40.5	51.4	29.7
Parent Neglect	196	71.9	26.4	4.1	13.7	29.6	50.8	35.0

Note: All comparisons are for parents with histories of childhood abuse and neglect compared to parents without such histories (controls). Parent Psychopathology = meets lifetime diagnostic criteria for the disorder, MDD = Major Depressive Disorder, GAD = Generalized Anxiety Disorder, PTSD = Posttraumatic Stress Disorder,

* $p \leq .05$, ** $p \leq .01$

Table 9

Results of regressions showing the relationship between parent history of child abuse and/or neglect and parent psychopathology

	Parent Psychopathology						
	Any Diagnosis	MDD	Dysthymia	GAD	PTSD	Alcohol Use	Drug Use
Parent History	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both							
Abuse/Neglect Parent	1.29 (0.85-1.95)	1.32 (0.84-2.05)	1.94* (1.05-3.59)	1.02 (0.40-2.60)	1.17 (0.77-1.78)	1.24 (0.83-1.84)	0.97 (0.65-1.44)
Parent Physical abuse	2.16 (0.85-5.51)	1.89 (0.83-4.33)	3.48* (1.33-9.05)	0.84 (0.10-7.44)	1.93 (0.90-4.14)	0.90 (0.41-1.95)	1.08 (0.50-2.31)
Parent Sexual abuse	1.16 (0.53-2.53)	0.84 (0.36-1.95)	1.04 (0.32-3.38)	0.43 (0.05-3.87)	1.41 (0.66-2.99)	1.95 (0.91-4.21)	1.12 (0.49-2.49)
Parent Neglect	1.29 (0.84-2.00)	1.32 (0.83-2.11)	1.88 (0.98-3.62)	1.05 (0.39-2.80)	1.13 (0.73-1.76)	1.18 (0.78-1.78)	0.92 (0.60-1.40)
Male							
Abuse/Neglect Parent	1.53 (0.76-3.12)	1.59 (0.66-3.84)	2.54 (0.75-8.59)	2.71 (0.51-14.49)	1.15 (0.54-2.46)	1.08 (0.57-2.06)	0.82 (0.44-1.51)
Parent Physical abuse	5.92 (0.74-47.68)	0.97 (0.18-5.09)	6.60* (1.16-37.51)	NT	2.77 (0.85-8.98)	1.45 (0.42-4.97)	0.66 (0.22-2.03)
Parent Sexual abuse	NT	NT	NT	NT	NT	NT	0.69 (0.04-11.80)
Parent Neglect	1.41 (0.68-2.92)	1.59 (0.64-3.95)	2.27 (0.63-8.11)	3.12 (0.58-16.80)	1.07 (0.48-2.39)	0.99 (0.51-1.92)	0.82 (0.43-1.55)
Female							
Abuse/Neglect Parent	1.17 (0.70-1.96)	1.22 (0.73-2.05)	1.78 (0.87-3.64)	0.67 (0.20-2.29)	1.18 (0.71-1.94)	1.34 (0.81-2.21)	1.09 (0.64-1.85)
Parent Physical abuse	1.35 (0.45-4.08)	2.39 (0.88-6.52)	2.97 (0.90-9.86)	1.80 (0.18-18.48)	1.48 (0.55-4.04)	0.58 (0.19-1.73)	1.46 (0.52-4.10)
Parent Sexual abuse	1.10 (0.50-2.46)	0.86 (0.36-2.02)	1.04 (0.32-3.44)	0.43 (0.05-4.02)	1.52 (0.70-3.28)	1.95 (0.88-4.35)	1.17 (0.50-2.73)
Parent Neglect	1.22 (0.71-2.11)	1.23 (0.71-2.14)	1.82 (0.84-3.92)	0.55 (0.13-2.29)	1.15 (0.67-1.95)	1.31 (0.77-2.23)	1.02 (0.58-1.80)

Note: Parent Psychopathology = meets lifetime diagnostic criteria for the disorder, AOR = Adjusted Odds Ratio, controlling for parent age, sex, and race; CI = Confidence Interval; MDD = Major Depressive Disorder, GAD = Generalized Anxiety Disorder, PTSD = Posttraumatic Stress Disorder, NT = not tested due to small sample size. * $p < .05$

Table 10

Results of regression showing the relationship between parent history of child abuse and/or neglect and parent psychopathology including only parents with child offspring

	Parent Psychopathology (parents with child offspring)						
	Any Diagnosis	MDD	Dysthymia	GAD	PTSD	Alcohol Use	Drug Use
Parent History	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both							
Abuse/Neglect Parent	0.56 (0.28-1.11) †	2.46* (0.99-6.12)	1.83 (0.69-4.85)	NT	0.80 (0.38- .67)	0.40** (0.20-0.80)	0.72 (0.36-1.47)
Parent Physical abuse	0.94 (0.26-3.34)	1.33 (0.24-7.21)	2.92 (0.60-14.34)	NT	0.58 (0.13-2.57)	0.20* (0.05-0.74)	1.01 (0.30-3.45)
Parent Sexual abuse	0.17* (0.04-0.74)	1.61 (0.27-9.43)	1.24 (0.13-11.99)	NT	0.41 (0.08-2.20)	0.23 (0.04-1.32) †	0.27 (0.03-2.38)
Parent Neglect	0.67 (0.31-1.40)	2.97* (1.16-7.63)	1.84 (0.66-5.10)	NT	1.09 (0.51-2.35)	0.45* (0.22-0.92)	0.77 (0.37-1.61)
Male							
Abuse/Neglect Parent	0.92 (0.33-2.57)	1.02 (0.15-6.89)	1.80 (0.43-7.54)	NT	0.88 (0.24-3.20)	0.48 (0.18-1.26)	0.98 (0.36-1.23)
Parent Physical abuse	3.10 (0.34-28.62)	NT	5.57 (0.34-91.51)	NT	0.99 (0.12-7.90)	0.64 (0.13-3.15)	1.43 (0.24-8.49)
Parent Sexual abuse	NT	NT	NT	NT	NT	NT	NT
Parent Neglect	0.85 (0.29-2.48)	1.37 (0.20-9.61)	1.68 (0.37-7.57)	NT	1.12 (0.30-4.13)	0.44 (0.16-1.21)	0.92 (0.32-2.62)
Female							
Abuse/Neglect Parent	0.35* (0.13-0.92)	2.97* (1.01-8.70)	2.02 (0.52-7.92)	NT	0.82 (0.32-2.09)	0.33* (0.11-0.93)	0.45 (0.15-1.33)
Parent Physical abuse	0.30 (0.05-1.87)	2.78 (0.40-19.24)	1.70 (0.15-19.20)	NT	0.41 (0.04-4.29)	NT	0.48 (0.05-4.62)
Parent Sexual abuse	0.09** (0.02-0.56)	1.63 (0.26-10.10)	1.49 (0.14-16.20)	NT	0.37 (0.06-2.10)	0.11 (0.01-1.14) †	NT
Parent Neglect	0.52 (0.18- .48)	3.65* (1.19-11.16)	2.08 (0.49-8.89)	NT	1.24 (0.46-3.33)	0.44 (0.15-1.30)	0.58 (0.19-1.75)

Note: Parent Psychopathology = meets lifetime diagnostic criteria for the disorder, AOR = Adjusted Odds Ratio, controlling for parent age, sex, and race; CI = Confidence Interval; MDD = Major Depressive Disorder; GAD = Generalized Anxiety Disorder; PTSD = Posttraumatic Stress Disorder; CAN = Childhood Abuse and Neglect; NT = not tested due to small sample size.

* $p < .05$, † <.10

Table 11

Results of regression showing the relationship between parent history of child abuse and/or neglect and parent psychopathology including only parents with adult offspring

	Parent Psychopathology (parents with adult offspring)						
	Any Diagnosis	MDD	Dysthymia	GAD	PTSD	Alcohol Use	Drugs Use
Parent History	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both							
Abuse/Neglect Parent	1.52* (1.05-2.21)	1.11 (0.75- .65)	1.40 (0.80-2.46)	0.72 (0.30-1.71)	1.19 (0.81-1.75)	1.53* (1.06-2.20)	0.99 (0.68-1.44)
Parent Physical abuse	2.79* (1.17-6.65)	2.45* (1.16-5.18)	2.78* (1.12-6.93)	1.29 (0.26-6.33)	2.67** (1.31-5.38)	1.30 (0.63-2.68)	1.03 (0.50-2.12)
Parent Sexual abuse	1.65 (0.81-3.36)	0.76 (0.36-1.61)	0.58 (0.19-1.80)	0.29 (0.04-2.41)	1.73 (0.88-3.40)	2.51** (1.27-4.96)	1.29 (0.62-2.68)
Parent Neglect	1.47 (0.99-2.19)	1.06 (0.69-1.62)	1.39 (0.75-2.57)	0.66 (0.25-1.72)	1.04 (0.69-1.58)	1.42 (0.96-2.08) †	0.92 (0.61-1.37)
Male							
Abuse/Neglect Parent	1.93 (0.98-3.81)	1.73 (0.78-3.83)	2.15 (0.48-9.67)	1.33 (0.28-6.30)	1.04 (0.50-2.17)	1.46 (0.79-2.72)	0.77 (0.43-1.38)
Parent Physical abuse	7.83* (0.97-63.33)	1.86 (0.43-8.09)	1.34 (0.13-14.01)	NT	5.17** (1.51-17.66)	2.50 (0.65-9.68)	0.50 (0.16-1.55)
Parent Sexual abuse	NT	NT	NT	NT	NT	NT	NT
Parent Neglect	1.75 (0.87-3.53)	1.58 (0.69-3.62)	2.04 (0.42-9.78)	1.47 (0.31-7.04)	0.86 (0.39-1.89)	1.28 (0.68-2.42)	0.76 (0.41-1.40)
Female							
Abuse/Neglect Parent	1.36 (0.87-2.14)	0.95 (0.60-1.50)	1.32 (0.72-2.43)	0.55 (0.19-1.60)	1.24 (0.78-1.96)	1.56 (0.99-2.47)	1.22 (0.74-2.00)
Parent Physical abuse	1.97 (0.73-5.31)	2.66* (1.09-6.49)	3.13* (1.15-8.49)	1.93 (0.35-10.55)	2.03 (0.84-4.88)	0.92 (0.36-2.32)	1.70 (0.67-4.29)
Parent Sexual abuse	1.59 (0.78-3.25)	0.77 (0.37-1.63)	0.60 (0.19-1.84)	0.29 (0.04-2.44)	1.74 (0.88-3.45)	2.47* (1.24-4.91)	1.42 (0.68-2.98)
Parent Neglect	1.34 (0.82-2.18)	0.91 (0.55-1.51)	1.32 (0.68-2.57)	0.39 (0.10-1.50)	1.11 (0.67-1.82)	1.49 (0.92-2.44)	1.09 (0.64-1.87)

Note: Parent Psychopathology = meets lifetime diagnostic criteria for the disorder, AOR = Adjusted Odds Ratio, controlling for parent age, sex, and race; CI = Confidence Interval; MDD = Major Depressive Disorder; GAD = Generalized Anxiety Disorder; PTSD = Posttraumatic Stress Disorder; CAN = Childhood Abuse and Neglect; NT = not tested due to small sample size. *$p < .05$, † <.10

Table 12

Results of regressions showing the relationship between parent psychopathology and offspring psychopathology

	Offspring Psychopathology					
	Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
Parent Psychopathology	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both						
Any Diagnosis	1.40 (0.97-2.02)	1.40 (0.99- 1.98)	1.11 (0.74- 1.67)	1.12 (0.78- 1.59)	1.87 (0.88- 3.98)	1.68* (1.02- 2.75)
MDD	1.21 (0.80- 1.83)	1.07 (0.73- 1.57)	1.35 (0.89- 2.04)	1.29 (0.89- 1.87)	1.65 (0.87- 3.14)	2.09** (1.33- 3.31)
Dysthymia	1.14 (0.66- 1.97)	1.21 (0.73- 2.03)	0.91 (0.50- 1.66)	0.89 (0.53- 1.49)	1.78 (0.79- 4.04)	1.71 (0.93- 3.15)
GAD	0.59 (0.25- 1.37)	0.58 (0.26- 1.29)	0.80 (0.30- 2.17)	0.72 (0.31- 1.68)	1.78 (0.50- 6.27)	1.62 (0.61- 4.28)
PTSD	0.91 (0.62- 1.34)	1.08 (0.75- 1.56)	1.24 (0.83- 1.87)	0.74 (0.51- 1.07)	0.86 (0.42- 1.75)	1.00 (0.62- 1.62)
Alcohol Use	1.36 (0.95- 1.95)	1.24 (0.89- 1.74)	1.19 (0.81- 1.74)	1.28 (0.91- 1.79)	1.79 (0.95- 3.38)	1.76* (1.13- 2.73)
Drug Use	1.17 (0.81- 1.69)	0.98 (0.70- 1.39)	0.79 (0.53- 1.18)	1.15 (0.81- 1.62)	1.78 (0.96- 3.28)	2.06** (1.33- 3.19)
Male						
Any Diagnosis	1.19 (0.65- 2.19)	0.99 (0.55- 1.81)	0.97 (0.44- 2.15)	1.43 (0.74- 2.78)	4.91 (0.61- 39.58)	1.91 (0.78- 4.69)
MDD	0.90 (0.41- 1.97)	0.66 (0.31- 1.38)	1.52 (0.63- 3.68)	1.05 (0.49- 2.26)	1.76 (0.44- 7.12)	1.55 (0.63- 3.79)
Dysthymia	1.78 (0.56- 5.69)	2.10 (0.68- 6.50)	0.41 (0.05- 3.27)	1.15 (0.39- 3.38)	NT	2.18 (0.54- 8.89)
GAD	0.25 (0.06- 1.08)	0.40 (0.10- 1.68)	0.61 (0.07- 5.14)	NT	NT	NT
PTSD	0.50 (0.24- 1.02)	0.66 (0.33- 1.34)	1.00 (0.42- 2.42)	0.57 (0.27- 1.20)	0.59 (0.07- 4.96)	1.47 (0.59- 3.65)
Alcohol Use	1.15 (0.65- 2.06)	1.06 (0.61- 1.87)	1.04 (0.50- 2.17)	1.48 (0.81- 2.71)	7.08 (0.87- 57.46)	2.18 (0.95- 5.00)
Drug Use	1.13 (0.65- 1.95)	0.92 (0.54- 1.57)	0.72 (0.36- 1.44)	1.11 (0.64- 1.92)	6.60* (1.39- 31.29)	2.68** (1.28- 5.60)
Female						
Any Diagnosis	1.58* (0.99- 2.51)	1.68* (1.09- 2.59)	1.24 (0.77- 2.00)	1.04 (0.68- 1.60)	1.63 (0.71- 3.76)	1.55 (0.85- 2.83)
MDD	1.30 (0.79- 2.14)	1.29 (0.82- 2.03)	1.17 (0.72- 1.89)	1.33 (0.86- 2.07)	1.54 (0.74- 3.23)	2.48** (1.42- 4.32)
Dysthymia	0.94 (0.50- 1.77)	1.02 (0.57- 1.83)	0.88 (0.46- 1.69)	0.78 (0.43- 1.40)	1.96 (0.83- 4.62)	1.66 (0.83- 3.32)
GAD	0.90 (0.30- 2.71)	0.66 (0.25- 1.79)	0.82 (0.26- 2.58)	1.45 (0.55- 3.83)	2.29 (0.62- 8.53)	2.74 (0.93- 8.12)
PTSD	1.09 (0.68- 1.75)	1.31 (0.84- 2.03)	1.18 (0.74- 1.89)	0.77 (0.50- 1.18)	0.91 (0.41- 1.98)	0.85 (0.47- 1.51)
Alcohol Use	1.69* (1.04- 2.74)	1.40 (0.90- 2.18)	1.52 (0.95- 2.41)	1.32 (0.86- 2.04)	1.63 (0.78- 3.39)	1.63 (0.94- 2.82)
Drug Use	1.36 (0.80- 2.32)	1.05 (0.65- 1.69)	1.00 (0.60- 1.68)	1.27 (0.80- 2.02)	1.33 (0.61- 2.93)	1.95* (1.09- 3.51)

Note: Offspring psychopathology = meets diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs. Parent psychopathology = meets diagnostic criteria for the disorder, AOR = Adjusted Odds Ratio, controlling for offspring sex, race, and age group (child or adult); CI = Confidence Interval; PTSD = Posttraumatic Stress Disorder, MDD = Major Depressive Disorder, GAD = Generalized Anxiety Disorder, NT = not tested due to small sample size. *$p < .05$, ** $p < .01$

Table 13

Results of regressions showing the relationship between parent psychopathology and offspring psychopathology only including child offspring

	Child Offspring Psychopathology					
	Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
Parent Psychopathology	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both						
Any Diagnosis	1.07 (0.51-2.22)	1.86 (0.83- 4.20)	3.27 (0.85- 12.57)	0.94 (0.42- 2.08)	NT	0.80 (0.12- 5.32)
MDD	2.47 (0.97- 6.28)	2.98* (1.19- 7.46)	2.74 (0.83- 9.05)	1.44 (0.57- 3.67)	NT	1.42 (0.15- 13.87)
Dysthymia	1.39 (0.49- 3.92)	1.89 (0.68- 5.23)	0.52 (0.06- 4.35)	0.81 (0.27- 2.43)	NT	1.79 (0.18- 18.03)
GAD	0.41 (0.04- 4.71)	NT	NT	0.73 (0.07- 7.84)	NT	NT
PTSD	0.95 (0.44- 2.04)	1.34 (0.61- 2.96)	1.35 (0.43- 4.25)	0.85 (0.37- 1.96)	NT	4.50 (0.71- 28.72)
Alcohol Use	1.00 (0.48- 2.11)	1.65 (0.74- 3.68)	4.74* (1.36- 16.56)	1.16 (0.52- 2.59)	NT	0.77 (0.10- 5.62)
Drug Use	0.92 (0.44- 1.92)	1.20 (0.55- 2.60)	2.59 (0.87- 7.76)	1.24 (0.56- 2.76)	NT	1.59 (0.24- 10.47)
Male						
Any Diagnosis	0.76 (0.21- 2.79)	1.41 (0.40- 4.92)	2.62 (0.24- 28.94)	0.78 (0.20- 3.02)	NT	0.26 (0.02- 3.56)
MDD	1.87 (0.27- 12.99)	2.98 (0.48- 18.54)	NT	0.35 (0.03- 3.65)	NT	NT
Dysthymia	2.59 (0.45- 14.90)	5.02* (1.01- 25.02)	NT	2.18 (0.40- 11.93)	NT	NT
GAD	NT	NT	NT	NT	NT	NT
PTSD	0.60 (0.12- 2.93)	0.71 (0.15- 3.31)	0.88 (0.08- 9.32)	0.56 (0.11- 2.73)	NT	13.00 (0.42- 404.65)
Alcohol Use	0.31 (0.07- 1.29)	0.92 (0.27- 3.16)	1.60 (0.20- 12.76)	0.62 (0.16- 2.36)	NT	0.68 (0.05- 9.46)
Drug Use	0.93 (0.28- 3.05)	0.82 (0.25- 2.66)	1.32 (0.20- 8.75)	0.86 (0.24- 3.07)	NT	1.69 (0.13- 22.82)
Female						
Any Diagnosis	1.23 (0.49- 3.09)	2.27 (0.76- 6.80)	3.54 (0.67- 18.67)	0.89 (0.32- 2.51)	NT	NT
MDD	2.81 (0.95- 8.26)	3.54* (1.17- 10.65)	5.43* (1.23- 24.06)	2.71 (0.89- 8.24)	NT	2.52 (0.13- 47.73)
Dysthymia	0.93 (0.23- 3.73)	0.81 (0.18- 3.65)	1.17 (0.12- 11.42)	0.43 (0.08- 2.35)	NT	8.13 (0.23- 285.555)
GAD	1.35 (0.07- 24.79)	NT	NT	2.93 (0.16- 52.64)	NT	NT
PTSD	1.15 (0.46- 2.87)	2.04 (0.76- 5.50)	1.39 (0.35- 5.48)	1.03 (0.37- 2.86)	NT	NT
Alcohol Use	1.71 (0.64- 4.55)	2.49 (0.82- 7.57)	9.37* (1.70- 51.58)	1.42 (0.47- 4.29)	NT	0.69 (0.04- 12.57)
Drug Use	1.16 (0.41- 3.31)	1.73 (0.57- 5.26)	5.07* (1.24- 20.70)	1.42 (0.45- 4.52)	NT	4.13 (0.20- 85.36)

Note: Offspring psychopathology = meets diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs. Parent psychopathology = meets diagnostic criteria for the disorder, AOR = Adjusted Odds Ratio, controlling for offspring sex and race; CI = Confidence Interval; PTSD = Posttraumatic Stress Disorder, MDD = Major Depressive Disorder, GAD = Generalized Anxiety Disorder, NT = not tested due to small sample size. *$p < .05$, ** $p < .01$

Table 14

Results of regressions showing the relationship between parent psychopathology and offspring psychopathology only including adult offspring

	Adult Offspring Psychopathology					
	Any Diagnosis	Current Depression	Current Anxiety	PTSD	Alcohol Use	Drug Use
Parent Psychopathology	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Both						
Any Diagnosis	1.50 (0.98- 2.30)	1.29 (0.87- 1.90)	0.98 (0.64- 1.51)	1.14 (0.76- 1.70)	1.81 (0.85- 3.88)	1.75* (1.04- 2.94)
MDD	1.00 (0.63- 1.59)	0.87 (0.58- 1.31)	1.25 (0.80- 1.95)	1.25 (0.83- 1.88)	1.52 (0.79- 2.92)	2.16** (1.35- 3.46)
Dysthymia	1.00 (0.53- 1.88)	1.01 (0.57- 1.80)	0.97 (0.51- 1.83)	0.89 (0.50- 1.59)	1.52 (0.65- 3.62)	1.67 (0.88- 3.15)
GAD	0.64 (0.26- 1.61)	0.68 (0.29- 1.61)	0.89 (0.32- 2.45)	0.72 (0.29- 1.79)	1.81 (0.51- 6.42)	1.71 (0.64- 4.58)
PTSD	0.90 (0.58- 1.41)	1.03 (0.68- 1.55)	1.24 (0.80- 1.92)	0.71 (0.47- 1.07)	0.89 (0.44- 1.82)	0.90 (0.55- 1.49)
Alcohol Use	1.48 (0.98- 2.25)	1.16 (0.80- 1.68)	1.04 (0.69- 1.56)	1.27 (0.88- 1.84)	1.73 (0.91- 3.28)	1.83* (1.16- 2.88)
Drug Use	1.29 (0.83- 2.00)	0.94 (0.64- 1.38)	0.67 (0.42- 1.04)	1.10 (0.75- 1.62)	1.87* (1.00- 3.47)	2.12** (1.35- 3.32)
Male						
Any Diagnosis	1.39 (0.67- 2.87)	0.88 (0.43- 1.78)	0.84 (0.36- 1.98)	1.63 (0.74- 3.63)	4.91 (0.61- 39.58)	2.66 (0.96- 7.42)
MDD	0.81 (0.34- 1.92)	0.51 (0.23- 1.13)	1.82 (0.73- 4.53)	1.29 (0.57- 2.95)	1.76 (0.44- 7.12)	1.72 (0.69- 4.32)
Dysthymia	0.98 (0.19- 5.07)	0.77 (0.18- 3.35)	0.61 (0.07- 5.19)	0.70 (0.14- 3.60)	NT	3.11 (0.67- 14.31)
GAD	0.45 (0.09- 2.13)	0.57 (0.12- 2.70)	0.82 (0.09- 7.27)	NT	NT	NT
PTSD	0.57 (0.25- 1.31)	0.71 (0.32- 1.58)	1.15 (0.44- 3.01)	0.60 (0.25- 1.43)	0.59 (0.07- 4.96)	1.43 (0.54- 3.79)
Alcohol Use	1.64 (0.83- 3.22)	1.10 (0.58- 2.10)	0.97 (0.43- 2.16)	1.75 (0.86- 3.59)	7.08 (0.87- 57.46)	2.63* (1.06- 6.55)
Drug Use	1.30 (0.67- 2.51)	0.97 (0.52- 1.78)	0.66 (0.31- 1.42)	1.10 (0.58- 2.08)	6.60* (1.39- 31.29)	3.09** (1.40- 6.80)
Female						
Any Diagnosis	1.70* (0.99- 2.90)	1.56 (0.97- 2.52)	1.12 (0.68- 1.86)	1.07 (0.66- 1.71)	1.55 (0.67- 3.60)	1.47 (0.80- 2.71)
MDD	1.02 (0.59- 1.79)	1.03 (0.63- 1.69)	1.00 (0.60- 1.67)	1.17 (0.73- 1.89)	1.39 (0.65- 2.96)	2.43** (1.38- 4.28)
Dysthymia	1.03 (0.63- 1.69)	0.91 (0.45- 1.85)	0.88 (0.45- 1.74)	0.84 (0.45- 1.59)	1.67 (0.68- 4.09)	1.50 (0.73- 3.07)
GAD	0.83 (0.26- 2.69)	0.74 (0.26- 2.10)	0.88 (0.27- 2.81)	1.33 (0.47- 3.71)	2.34 (0.63- 8.74)	2.80 (0.94- 8.36)
PTSD	1.06 (0.61- 1.84)	1.15 (0.70- 1.88)	1.16 (0.70- 1.92)	0.72 (0.45- 1.16)	0.96 (0.43- 2.11)	0.74 (0.41- 1.35)
Alcohol Use	1.67 (0.95- 2.92)	1.25 (0.77- 2.03)	1.31 (0.80- 2.14)	1.30 (0.81- 2.08)	1.53 (0.73- 3.23)	1.65 (0.94- 2.89)
Drugs Use	1.44 (0.77- 2.71)	0.95 (0.56- 1.59)	0.79 (0.45- 1.39)	1.24 (0.75- 2.05)	1.40 (0.63- 3.08)	1.89* (1.04- 3.44)

Note: Offspring psychopathology = meets diagnostic criteria for the disorder or clinically significant symptoms that exceed recommended cutoffs. Parent psychopathology = meets diagnostic criteria for the disorder, AOR = Adjusted Odds Ratio, controlling for offspring sex and race; CI = Confidence Interval; PTSD = Posttraumatic Stress Disorder, MDD = Major Depressive Disorder, GAD = Generalized Anxiety Disorder, NT = not tested due to small sample size. *$p < .05$, ** $p < .01$

Table 15

Association of Parent Child Abuse and Neglect with Child Offspring Current Depression and Parent Psychopathology as Mediator

	Child Offspring Current Depression			
	Step **1**		Step 2	
	AOR	95% CI	AOR	95% CI
Parent CAN	2.13*	1.01-4.49	1.92†	0.90-4.12
Offspring Sex	0.31	0.15-0.67	0.32	0.15-0.70
Offspring Race	1.54	0.73-3.23	1.69	0.79-3.61
Parent MDD			2.65*	1.05-6.67
Sobel Z				1.76†
Male Parent CAN	2.86 †	0.92-8.87	2.75†	0.85-8.85
Offspring Sex	0.28*	0.08-0.97	0.28*	0.08-1.00
Offspring Race	1.84	0.59-5.75	1.74	0.53-5.69
Male Parent Dysthymia			4.73†	0.92-24.29
Parent Neglect	2.23*	1.04-4.82	1.93†	0.87-4.28
Offspring Sex	0.31**	0.15-0.72	0.32**	0.14-0.72
Offspring Race	1.54	0.72-3.32	1.75	0.79-3.89
Parent MDD			3.11*	1.19-8.12
Sobel Z				2.09*

Note: Offspring psychopathology = clinically significant symptoms that exceed recommended cutoffs. Parent psychopathology = meets lifetime diagnostic criteria for the disorder. AOR = Adjusted Odds Ratio, controlling for sex and race; CI = Confidence Interval, MDD = Major Depressive Disorder, CAN = Child Abuse/Neglect.

† < .10, * $p < .05$, ** $p < .01$.

Table 16

Association of Parent Child Abuse and Neglect with Child Offspring Current Anxiety and Parent Psychopathology as Mediator

	Child Offspring Current Anxiety			
	Step 1		Step 2	
	AOR	95% CI	AOR	95% CI
Parent Sexual Abuse	8.11*	1.15-57.05	13.19*	1.56-111.78
Offspring Sex	0.35	0.06-1.97	0.41	0.07-2.35
Offspring Race	3.29	0.73-14.85	5.81*	1.05-32.29
Parent Alcohol Use			3.83	0.58-25.35
Female Parent Sexual Abuse	5.69 †	0.78-41.61	3.88	0.49-30.57
Offspring Sex	0.51	0.08-3.44	1.21	0.12-11.99
Offspring Race	1.64	0.30-8.94	2.14	0.34-13.43
Female Parent MDD			6.78 †	0.74-62.24
Female Parent Sexual Abuse	5.69 †	0.78-41.61	18.28*	1.28-261.95
Offspring Sex	0.51	0.08-3.44	0.51	0.07-3.72
Offspring Race	1.64	0.30-8.94	4.38	0.56-34.04
Female Parent Alcohol Use			12.22†	0.85-176.46
Female Parent Sexual Abuse	5.69 †	0.78-41.61	17.27*	1.25-238.23
Offspring Sex	0.51	0.08-3.44	0.55	0.08-4.10
Offspring Race	1.64	0.30-8.94	1.30	0.22-7.58
Female Parent Drug Use			9.92 †	0.88-111.84

Note: Offspring psychopathology = clinically significant symptoms that exceed recommended cutoffs. Parent psychopathology = meets lifetime diagnostic criteria for the disorder. AOR = Adjusted Odds Ratio, controlling for sex and race; CI = Confidence Interval, MDD = Major Depressive Disorder, CAN = Child Abuse/Neglect.
† < .10, * $p < .05$, ** $p < .01$.

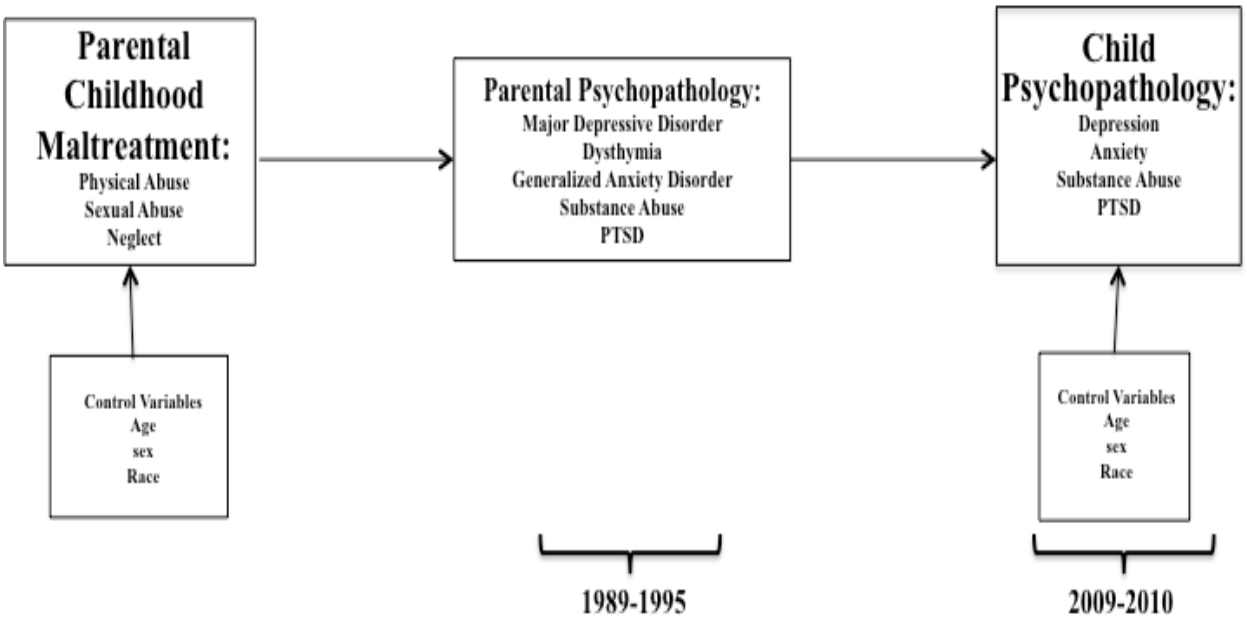

Figure 1. Hypothesized model linking parental childhood abuse and neglect to child psychopathology through parental psychopathology.

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