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Contributions of Neglect Subtypes and Family History in
DSM-IV Disorders: Findings from the NCS-R

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University

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Abstract

CONTRIBUTIONS OF NEGLECT SUBTYPES AND FAMILY HISTORY IN DSM-IV DISORDERS: FINDINGS FROM THE NCS-R

Leanne L. Heaton, Ph.D.

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Despite the prevalence of neglect in the child welfare system, understanding of the etiology of neglect remains limited in scope. Limitations are driven by the frequent reliance on child protective services (CPS) data which consists of identified cases and consequently, the most serious of all cases, or through a few population based studies that operationalize neglect as a homogenous phenomenon rather than as distinct subtypes. Furthermore, most studies of neglect focus on maternal deficiencies while paternal factors are largely ignored. This study is meant to address these considerations by utilizing the National Comorbidity Survey Replication (NCS-R), a broad population based sample of US citizens, to explore the associations between mental health disorders and neglect subtypes. The aims were to investigate distinctions between maternal and paternal psychopathology and subtypes of neglect compared to other forms of maltreatment, key differences across lifetime DSM-IV disorders between neglect subtypes and other forms of maltreatment, and how the presence of maternal and paternal

psychopathology and maltreatment subtype increase the likelihood of lifetime DSM-IV diagnoses.

Out of all neglect subtypes, supervisory neglect was the most prevalent form of neglect and also had the strongest association to most lifetime DSM-IV disorders. Paternal emotional neglect was associated with lifetime mood and behavior disorders as well as phobias compared to those without this experience. Conversely, maternal emotional neglect did not have a significant relationship to any disorder. Similarly, lack of care (LOC) neglect did not increase the risk of any lifetime disorder and even reduced the likelihood of substance disorders compared to those without LOC history.

Findings between paternal psychopathology and neglect subtypes indicate that assessments of neglect should expand to include paternal functioning and availability. Supervisory neglect, LOC neglect, and exposure to family violence all demonstrated a greater relationship with paternal substance disorders and/or antisocial behaviors than maternal depression and anxiety. However, therapeutic service delivery and research measures for both neglect and family violence are almost exclusively targeted toward the mother. Approaches that engage, assess, and intervene with both parental figures are critical to the welfare of children.

CHAPTER I

PROJECT OVERVIEW

Statement of the Problem

National child maltreatment statistics indicate that almost three-fourths of all child maltreatment referrals (71.1%) involve neglect as the primary issue (Children’s Bureau, U.S. Department of Health and Human Services [DHHS], 2010). Despite the prevalence of neglect in the child welfare system, the understanding of the etiology of neglect remains limited in scope. Limitations are driven by the frequent reliance on child protective services (CPS) data which consists of identified cases and consequently, the most serious of all cases (Dunn, Tarter, Mezzich, Vanyukov, Kirisci, & Kirillova, 2002), and by complexities defining and operationalizing neglect for research purposes (Dubowitz, Pitts, & Black, 2004). Therefore, our understanding of the long term impact of neglect has been derived from either those children identified by the child welfare system (Theodore, Runyan, & Chang, 2007), or through a few population-based studies that operationalize neglect as a homogenous phenomenon (Gilbert, Widom, Browne, Fergusson, Webb, & Janson, S., 2009). Studies involving CPS cases and other high-risk samples provide valuable insight into the most chronic cases, however they may not be representative of all neglect cases, in particular those children never identified and/or brought to the attention of child protection authorities (DeBellis, 2005). Many population-based studies combine neglect history with physical abuse or one overarching “maltreatment” variable, but very few studies have sought to highlight differences between maltreatment types or neglect subtypes (Theodore, et al., 2007). Understanding outcomes unique to neglect as well as to specific subtypes is critical from an etiological

perspective. Thus, investigating neglect in a way that addresses these concerns is vital to a more comprehensive understanding of causal and consequential patterns.

Rationale for Present Study

History of childhood abuse and/or neglect significantly increases the likelihood of mental health diagnosis throughout the lifespan (Dunn, et al., 2002; Green, McLaughlin, Berglund, Gruber, Sampson, Zaslavsky, & Kessler, 2010). While it is unequivocal that child maltreatment increases the likelihood of negative outcomes in adulthood, the divergent etiological pathways associated with the type and severity of maltreatment are less evident. For example, does severe physical abuse have different consequences than chronic neglect? Does neglect have a more detrimental effect on mental health than child sexual abuse? Do certain types of neglect have worse outcomes than others? While some prior studies have begun to clarify distinctions (Gilbert et al., 2009; Kendall-Tackett & Eckenrode, 1996; Kotch, Lewis, Hussey, English, Thompson, Litrownik, et al., 2008; Manly, Cicchetti, & Barnett, 1994; Manley, Jungmeen, Rogosch, & Cicchetti, 2001), additional research is necessary to provide further evidence supporting dissimilarities across maltreatment types as well as neglect subtypes.

Current knowledge of neglect consists mostly of samples known to child welfare or of caretakers thought to be at “high risk” for maltreatment. These studies are more likely to reflect those of lower socioeconomic status, single parent homes, and minority populations (Egami, Ford, Greenfield, & Crum, 1996). These findings, while valuable, are applicable to other similar populations, but are limited in generalizability to broader facets of the population.

Studies comparing types of maltreatment have consisted primarily of measures that operationalize neglect dichotomously rather than on a continuum with the exception of a few (Manly, et al., 1994; Straus & Savage, 2005). Frequency and severity of maltreatment are also important indicators of future outcomes. For instance, milder, less frequent forms of neglect probably have a less severe effect on social functioning than chronic neglect. A severe incident of physical abuse may not have the same detrimental effects on mental health as repetitive, less severe incidents. That is, the chronicity and/or frequency of maltreatment occurrence are just as important in understanding adverse outcomes as simply knowing whether or not maltreatment has occurred (Manley, et al., 1994, 2001; Straus & Savage, 2005).

Conceptualizing maltreatment on a continuum is particularly important in studies of neglect because “neglect” by definition is *a pattern of lack of care*, implying an inherent repetitive quality. Rarely is a parent considered neglectful for a singular incident of failing to provide care unless it is egregious (e.g. abandonment). Rather, a caretaker is considered neglectful when the behavior is perpetual and the needs of the child are unmet on a continual basis. While there is literature to support the role of chronicity and severity in outcomes based on self-reports of sexual abuse (Molnar, Buka, & Kessler, 2001), research into a similar “neglect continuum” remains an area of further study.

A continuum of neglect behavior has not been the focus of prior research simply because of the over reliance on child welfare, clinical, and/or high risk samples. Since most empirical knowledge surrounding neglect is derived from identified cases, the role of milder, less severe forms of neglect are generally not identified and unstudied. Therefore, the nature of empirical inquiry must progress to the logical next step, one that

begins to explore the range of outcomes associated with a continuum of neglectful behavior. In order to identify such a range of neglectful behavior, population based studies are essential.

Broad studies, such as population based ones, not only allow for the identification of less severe forms of neglect behavior but can also afford the opportunity to understand the role biological fathers play in the etiology of neglect. In most child welfare, clinical, and/or high risk samples, maternal deficiencies are the sole focus of inquiry. This is because in many child welfare cases, neglectful caregivers are single mothers (Coohey, 1995; Gaudin, Polansky, Kilpatrick, & Shilton, 1996). However, this does not mean that fathers are largely absent from their children's lives or that their absence has little impact on children. On the contrary, many of these fathers may have been a part of their children lives, but because they chose not to live with or marry their children's mothers, they were assumed to be absent and thus excluded from previous studies. Additionally, some of these fathers may have been intentionally absent from their children's lives, yet the intentional absence of a parent from a child's life has not been conceptualized as neglectful behavior. Family studies of mental disorders clearly indicate that paternal patterns are just as important as maternal ones (Merikangas, Rounsaville, & Prusoff, 1992; Merikangas, Dierker, & Szatmari, 1998). However, the role of paternal genetics and paternal behavior remains virtually unstudied in incidents of child neglect even with preliminary evidence indicating that men report higher incidents of neglectful behavior than women (Egami et al., 1996). Therefore, studies that balance both paternal and maternal influence are necessary to provide a holistic understanding of causal pathways of neglectful behavior.

This proposal is meant to address these considerations by utilizing a broad population based sample of U.S. adults. The aims are to explore distinctions between maternal and paternal psychopathology and subtypes of neglect compared to other forms of maltreatment, key differences across lifetime DSM-IV disorders between neglect subtypes and other forms of maltreatment, and how the presence of maternal and paternal psychopathology and maltreatment subtype increase the likelihood of lifetime DSM-IV diagnoses.

Sample

Respondents were obtained from the National Comorbidity Survey Replication (NCS-R) a multi-stage cluster probability sample designed to be representative of adults living within the United States. The purpose of the NCS-R is to investigate the patterns of mental disorders and their socio-demographic and clinical correlates within the continental U.S. (Kessler & Merikangas, 2004). The primary sample consists of 9282 respondents (Part I) with a subset of 5692 participants (Part II) who were administered additional measures. These 5692 individuals were selected through probabilities proportional to household size and consist of an over-sampling of respondents with history of DSM-IV disorders.

Measures

The entire sample was administered the Composite International Diagnostic Interview (WMH-CIDI). Based on responses to the CIDI, an over-sampling of those with mental disorders, as well as a percentage of those without a history of mental disorders, were administered other supplemental questionnaires (Kessler, Berglund, Chiu, Demler, Heeringa, Hiripi, et al., 2004). A portion of these questionnaires contain information

about child maltreatment and family history of psychiatric disorders. This study sought to explore the connections between family history of parental psychopathology, child maltreatment history, and psychiatric conditions. Therefore, the final sample for analysis consists of 5692 respondents.

Analysis

Initially, descriptive analyses were performed to determine the gender, race/ethnicity, and socioeconomic composition of the neglect sample as it compares to other forms of maltreatment. The effects were then controlled in subsequent models of analysis. Multivariate analyses consisted of a series of binary logistic regression models. The first round of analyses investigated the association between parental psychopathology and maltreatment subtypes. Then, the relationship between maltreatment subtypes and the lifetime DSM-IV disorders of mood, substance, behavior, anxious states, phobias, OCD, and PTSD were explored. Finally, correlates between parental psychopathology and maltreatment subtypes were assessed across DSM-IV outcomes.

Results

Males did not report higher rates of any maltreatment subtype. On the other hand, females reported higher prevalence of maternal emotional neglect, exposure to family violence, sexual abuse and rape. The “other” racial group, consisting of those not identifying as Hispanics, blacks, or whites, had higher rates of medical neglect, maternal emotional neglect, and serious physical abuse. Hispanics had the highest prevalence of serious family violence. Conversely, blacks and whites did not have greater rates of any form of maltreatment. Physical neglect, serious physical abuse, and serious family

violence were the only subtypes significant across all three domains of socioeconomic well-being. That is, persons with these types of experiences had lower income, less formal education, and were more likely to be not working compared to other forms of maltreatment.

Paternal, rather than maternal psychopathology, had the strongest associations with supervisory and lack of care (LOC) neglect. Parental psychopathology also had the strongest relationship to exposure to family violence and physical abuse. Conversely, maternal psychopathology had the strongest correlates to both forms of sexual trauma and to both maternal and paternal emotional neglect.

Exposure to family violence and both forms of sexual trauma had the strongest associations to all lifetime disorders with the exception of obsessive compulsive disorder (OCD). Supervisory neglect was the most prevalent form of neglect and also had the strongest relationship to all lifetime DSM-IV disorders, except the anxious states, of all neglect subtypes. Even after adjusting for the presence of parental psychopathology, supervisory neglect continued to be associated with an increased risk of substance and behavior disorders as well as post-traumatic stress disorder (PTSD).

Paternal emotional neglect was associated with an increased risk of lifetime mood and behavior disorders as well as phobias. However, after adjusting for the presence of parental psychopathology, the relationship between paternal emotional neglect and these disorders became insignificant. Maternal emotional neglect did not have a significant relationship to any disorder. Similarly, LOC neglect did not increase the risk of any lifetime disorder and even reduced the likelihood of substance disorders.

Implications

Associations between paternal psychopathology and neglect subtypes indicate that assessments of neglect should expand to include paternal functioning and availability. Supervisory neglect, LOC neglect, exposure to family violence all demonstrated a greater relationship with paternal substance disorders and/or antisocial behaviors than maternal depression and anxiety. Conversely, therapeutic service delivery and research measures for both neglect and family violence are almost exclusively targeted toward the mother. However, approaches that engage, assess, and intervene with *both* parental figures are critical to the welfare of children. Routinely screening for and treating underlying maternal psychopathology *and* paternal psychopathology are critical to reducing childhood neglect, other types of maltreatment, and future mental health problems in offspring.

Continued emphasis of the role of neglect subtypes and negative outcomes, particularly as these co-occur with other forms of maltreatment in population based studies, is necessary to enhance both screening and service delivery for neglected children. Moreover, policies that seek to reduce the disproportionality of black children in child protection agencies remain a critical area of focus. Additional research of neglect as a singular concept, measuring dimensions of neglect, in representative samples may assist in enhancing both services and policies directed towards neglected children, thus reducing the intergenerational transmission of neglect.

CHAPTER II

LITERATURE REVIEW

Introduction

Disentangling neglect, both empirically and conceptually, from other forms of maltreatment has been central to enhancing practice standards, research endeavors, and policy directives surrounding neglect since the mid 1980's. Some have argued that this can only be achieved by first defining neglect from a "child focus" rather than as a parental failure (Dubowitz, Newton, Litrowink, Lewis, Briggs, Thompson, English, Lee, & Feerick, 2005). Simply put, child neglect occurs when the basic needs of a child are not met regardless of the intent of the parent/caregiver. Given this definition, the heterogeneity of neglect must also be recognized (2005). That is neglect is comprised of various subtypes each having unique causal and consequential patterns ultimately resulting in the needs of children being unfulfilled (2005).

As such, neglect varies from other forms of maltreatment because it is not tied to a singular abusive incident like a physical strike or sexual assault; rather it a pervasive pattern of *lack* of care. Thus, neglect is an *omission* in care. Conversely, other forms of maltreatment such as physical and sexual abuse are acts of *commission*. Moreover, because of this distinction, child neglect may have varying mechanisms of transmission and unique consequences (Bolger & Patterson, 2001; Gilbert et al., 2009) compared to other forms of maltreatment.

Potentiating factors leading to omissions in care are likely to diverge from acts of commission. For example, physical abuse may be more likely to occur as the direct result of impulse control or poor regulatory coping whereas neglectful behavior may be

overwhelmingly a consequence of substance dependence. Furthermore, causal patterns are likely to reappear in subsequent generations, thereby increasing the likelihood of maltreatment in adult offspring (Belsky, 1993; Berry, Charlson, Dawson, 2003; Wilson & Horner, 2005). The following is a discussion of existing literature that explores the relationship between parental psychopathology, neglect, and the consequences of both.

Developmental Psychopathology Perspective

Child maltreatment can be conceptualized as an event or pattern of maladaptive behavior that interrupts the processes of child development. The underlying causes of maltreatment are explained by the developmental psychopathology perspective as “a recognition of the developmental and contextual aspects” or the “interplay...of risk and protective factors and processes and influences both within and outside the individual” (Cicchetti & Toth, 1995, p. 542-3) that give rise to maladaptive behavior. Neglectful caregivers have greater susceptibilities to psychiatric disorders, cognitive limitations, substance misuse, and nonexistent and/or strained intimate partner relations, all of which severely reduce parental functioning (Belsky, 1993; Berry, Charlson, Dawson, 2003; Wilson & Horner, 2005). Given these vulnerabilities, child neglect can be thought of as the overwhelming presence of potentiating factors and the absence or scarcity of compensatory factors. That is, those who do not neglect children are believed to have greater internal resources and more extensive supports which serve to reduce or minimize risks (Belsky, 1993), and those who engage in neglectful behavior are largely deficient in these areas (Cicchetti & Toth, 1995).

Neglect has profound developmental and psychological effects on children, thereby increasing the likelihood of psychopathology and other problematic conditions.

As such, the ecological and genetic traits present in neglectful caregivers are also likely to be present within their children, thereby creating repeating maladaptive pathways known as “mechanisms of transmission” (p. 541). Therefore, the etiology of neglect is laden with circular patterns whereby “environment forces, caregiver characteristics, and child characteristics influence each other and make reciprocal contributions to developmental outcomes” (Cicchetti & Toth, 1995, p. 544). Based on these patterns, the mechanisms of transmission and outcomes in neglected children demonstrate a circular process.

Mechanisms of Transmission and Developmental Outcomes

Parental Psychiatric Conditions

Results from prior family studies as well as the current literature on neglect provides empirical support for the developmental psychopathology perspective whereby neglect, in particular chronic neglect, is a phenomenon resulting from inherent and ecological family patterns through pathways of transmission. One such pathway is through underlying psychopathology. In the National Institutes of Mental Health (NIMH) Epidemiological Catchment Area (ECA), a community-based prospective longitudinal study, 69.3% of those reporting neglectful behaviors had a lifetime history of one or more DSM-III mental disorders (Egami, et al., 1996). Neglectful caregivers have higher rates of anxiety and mood disorders, antisocial personality traits (DeBellis, Broussard, Herring, Wexler, Moritz, & Benitez, 2001), and more chronic mental illness (Nelson, Saunders, & Landsman, 1993), all of which have demonstrated familial aggregation (Merikangas, et al., 1998). Neglectful families show less empathy towards one another, are less responsive emotionally, and are less willing to take responsibility for behavior (Gaudin,

et al., 1996). Low levels of empathy and externalization of actions along with violent and criminal activity are key features of Antisocial Personality Disorder (ASPD) (Dunn, et al., 2002). There is empirical evidence supporting the transmission of ASPD to biological offspring, particularly when other comorbid psychiatric conditions are present (Belsky, 1993; Foley, Pickles, Simonoff, Maes, Silberg, Hewitt, et al., 2001). ASPD has been found to be a significant predictor of neglectful behavior (Dunn et. al., 2002; Kelleher, Chaffin, Hollenberg, & Ficher 1994), and ASPD is highly associated with other co-occurring psychiatric disorders such as anxiety and substance use disorders (Foley et al., 2001).

Obsessive Compulsive Disorder (OCD), an anxiety spectrum disorder, was found to strongly predict neglect even after controlling for relevant socioeconomic factors and substance abuse (Chaffin, Kelleher, & Hollenberg, 1996). Other community studies have also confirmed the presence of a parental anxiety disorders to be a significant predictor of neglect (Cash & Wilke, 2003; Egami, et al., 1996). Offspring of a biological parent with an anxiety disorder are at an increased risk of developing an anxiety disorder themselves (Merikangas, et al., 1998), thus perpetuating the cycle of neglectful behavior.

Maternal depression, in particular, has been linked to both self-reported and official incidents of neglect (Banyard, Williams, & Siegel, 2003; Dubowitz, Papas, Black, & Starr, 2002; Nelson, et al., 1993). Depressive symptoms increase the likelihood of the withdrawal and disengagement from social involvement, thereby increasing feelings of loneliness. Self-reported feelings of loneliness increase the odds of neglecting one's own children (Banyard, et al., 2003). Polansky, Ammons, and Gaudin (1985) found neglectful mothers to report greater feelings of loneliness and isolation compared

to other non-neglectful comparison mothers with similar socioeconomic conditions. Neglectful mothers become consumed with “negative views of self and others” resulting in disengagement from parental roles due to extensive feelings of hopelessness (Davila, Ramsy, Stroud, & Steinberg, 2005, p. 218). Thus, the presence of depressive symptoms significantly impacts parental functioning. Furthermore, higher rates of maternal depression have been found to predict higher rates of problem behaviors in children (Dubowitz et al., 2002) as well as increased rates of depression symptomatology in offspring (Foley et al., 2001).

Psychiatric Conditions in Neglected Children

Family studies of psychiatric conditions demonstrate that biological children have higher rates of such conditions when one and/or both of their parents have a disorder (Merikangas, et al., 1992). The presence of psychiatric symptoms is exacerbated by the occurrence of child maltreatment. The Charlottesville Longitudinal Study (CLS) compared substantiated cases of three types of maltreatment: neglect, harsh parenting, and sexual abuse within a community public school system (Bolger & Patterson, 2001). Findings reveal that neglected children had higher levels of internalizing problems such as anxiety, depression, somatic complaints, and withdrawal (2001). Those experiencing incidents of co-occurring neglect and sexual abuse had the highest rates of internalized problems. Neglect exposure, combined with harsh punishment, resulted in higher rates of perceived external control. That is the perception that others, rather than self, have a great influence over one’s life, thereby contributing to a greater sense of helplessness (2001). Perceived external control was also heightened by the co-occurrence of sexual abuse. These results demonstrate that child neglect, especially in combination with other forms

of maltreatment, creates an environment whereby predisposition to underlying psychopathology is increased.

Cohen, Brown, and Smailes' (2001) study of a cohort of randomly selected children in upstate New York further illustrates how psychiatric conditions are heightened by maltreatment. In their study, children were selected based on official incidents of identified neglect, and they were followed from birth into early adulthood. Results demonstrated that neglected children had "elevations in anxiety, depressive, and Cluster A [personality] disorders and in disruptive and depressive symptoms" (p. 995) in early adolescence when compared to those without history of any self-reported or officially identified maltreatment. Furthermore, as these individuals entered late adolescence, reports of depressive, anxiety, and personality disorders decreased, but disruptive disorders (attention-deficit hyperactivity disorder, oppositional-defiant disorder, and conduct disorder) intensified as they transitioned to early adulthood. These findings demonstrate that neglect experience increases the likelihood of antisocial behavior along with other co-occurring disorders, all conditions prevalent in neglectful caregivers (Dunn et al., 2002; Foley et al., 2001; Kelleher et al., 1994).

Behavior Dysregulation in Neglected Children

Just as exposure to neglect, as well as other types of maltreatment, heightens the risk of psychopathology, early onset neglect contributes to problematic behavior throughout childhood. England, Sroufe, and Erickson's (1983) longitudinal study of 267 high risk mother and child dyads from a low income health clinic, the Minneapolis Minnesota Mother-Child Project, compared neglected children to matched controls and to other forms of maltreatment. At 42 months, the neglected children demonstrated

difficulties in creatively completing tasks and general negative and non-compliance behaviors compared to controls. When compared to other types of maltreatment such as physical and verbal abuse, neglected children were the “least flexible and creative of all groups... distractible, impulsive, and low in ego control” (p. 468). Findings at four and half years of age showed that “neglected children demonstrated poor impulse control...and general adjustment problems in the classroom” (Erickson & Egeland, 2002, p. 11). The Longitudinal Studies in Child Abuse and Neglect (LONGSCAN) consisting of five different geographical regions in the United States (in progress) linked the presence of neglect to higher levels of internalizing problems on the Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1979; Dubowitz, et al., 2002), with neglect exposure within the first 2 years of life strongly predictive of aggression at later ages (Kotch et al., 2008).

Children who have experienced physical neglect are more likely to be involved in delinquent behavior and score higher on aggression scales in adolescence (Erickson & Egeland, 2002). Widom and White’s 20-year follow-up study of children adjudicated as abused and/or neglected and followed into adulthood with matched controls uncovered significant gender differences and engagement in criminal behavior (1997). Females had much higher rates of both violent and non-violent crime whereas males had higher rates of non-violent crime. Both maltreated males and females committing any violent or non-violent crime had higher rates of comorbid substance use disorders implicating childhood victimization in increased likelihood of problematic substance use and deviant behavior. While this study combined neglect with other types of maltreatment, other research has supported associations between neglect and delinquent behavior (Crouch & Milner, 1993;

Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; Thornberry, Ireland, & Smith, 2001). Just as parental ASPD increases the risk of neglect, the presence of neglect increases the likelihood of childhood delinquency and aggressive behavior, both diagnostic indicators of ASPD.

Parental Substance Use

Underlying psychopathology, such as ASPD and other associative conditions, not only strengthens the possibility of neglectful behavior but also substance use problems. Persons with ASPD have increased rates of Substance Use Disorders (SUDs) compared to those without antisocial traits. Furthermore, the presence of any psychiatric disorder increases “vulnerability to drug abuse resulting from self-medication of the underlying psychiatric condition” (Merikangas, et al., 1992, p. 87). It has long been understood that many child protection cases involve high rates of SUDs which include abuse and/or dependence of alcohol, illicit drugs, and prescription medications. Prior studies indicate that “parental SUD is as high as 70% among children reported to Child Protection Services” (Kirisci, Dunn, Mezzich, & Tarter, 2001, p. 242). In mandated court samples, cases involving SUD’s were more likely to be re-referred to CPS and family court for incidents of maltreatment were more likely to be non-compliant with court ordered treatment and also more likely to lose permanent custody of their children (Murphy, Jellinek, Quinn, Smith, Poitras, & Goshko, 1991).

While substance abuse, including alcohol and illicit drug use, is a common identified problem in child welfare and high risk samples (DePanfilis, 2006; Dubowitz & Black, 2002; Wilson & Horner, 2005), community-based and clinical samples do not offer a more promising picture. Evidence indicates that comorbid incidents of neglect

and SUDs within the general population are over 50% (Kirisci, et al., 2001). In one study, the severity of emotional neglect was strongly linked to the father's SUD and associated with low monitoring and supervision by the mother (2001). In wave I of the ECA samples, those that reported neglect of a child were 4.2 times more likely to have an SUD than matched controls even after controlling for depression, number of individuals residing in the home, antisocial personality disorder, and social support. Comparatively, self reported physical abusers reported 2.7 times greater prevalence of a SUD (Kelleher et al., 1994). At wave II, persons who denied child maltreatment at wave I but reported abusing or neglecting at wave II were analyzed to determine mental health and socio-demographic predictors. Analysis demonstrated that a history of any substance abuse disorder increased the likelihood of neglect 3.24 times and physical abuse 2.90 times even after controlling for socioeconomic status (Chaffin et al., 1996). Further analysis, including controlling for all demographic variables such as number of children, marital status, socioeconomic status, and any psychiatric disorder, concluded that alcohol dependence was significantly associated with incidents of abuse and neglect, while illicit drug use was strongly linked to neglect specifically (Egami et al., 1996). Substance use disorders confound parental decision making and impair overall functioning. Vital resources necessary to care for children are redirected to meet the parent's dependency rather than being used to fulfill the child's needs (DePanfilis, 2006). Moreover, the presence of a maternal SUD is a particularly salient risk factor because it is "directly related to current neglectful parenting" (Dunn, Mezzich, Janiszewski, Kirisci, & Tarter, 2001, p. 127) as many women provide most of the child care to young children.

Substance Use in Neglected Offspring

Just as neglectful behavior is associated with SUDs, there is compelling evidence that SUDs have a high rate of intergenerational transmission along with other mental disorders (Merikangas, et al., 1992). Children who have a parent with a history of alcoholism and/or drug abuse are at greater risk to developing a SUD themselves (1992). Child report of neglect at age 10-12 is highly predictive of later SUD at age 19 (Dunn et al., 2002). SUDs have been demonstrated to be “directly associated with child neglect...and a mediator of the relationship between comorbid psychiatric disorders and child neglect” (p. 1069). Results from the longitudinal Drug Abuse Treatment Outcome Study (DATOS) confirmed that having an alcoholic parent as well as history of substance abuse in the extended family significantly predicted the odds of neglecting one’s own children (Cash & Wilke, 2003). Maternal history of neglect has been associated with severity of neglect in biological offspring, an outcome mediated by substance use disorders (Dunn et al., 2001). That is, the intergeneration transmission of current neglectful behavior is directly tied to prior neglect history and current SUDs. Thus, the presence of a SUD potentiates the likelihood of neglectful behavior in and of itself and especially with concomitant psychiatric history.

Parental Cognitive and Knowledge Deficits

In addition to psychiatric history and substance problems, many parents that neglect their children have emotional or developmental deficits that limit age appropriate expectations of their children. Research has shown that these parents are immature, unavailable, or just simply unable to respond to their children’s needs (Crittenden, 1988; 1999; Polanky, Chalmers, Williams, & Bittenweiser, 1981). They are often lacking in the ability or knowledge to adequately parent, with significant emotional limitations that

impact the ability to identify and respond to children's needs. According to Polansky, Gaudin, and Kilpatrick's (1992) summary of early research, neglectful mothers were seen to be apathetic, a condition known as "apathy-futility syndrome," or "impulse ridden" with long standing character deficits beginning as early as adolescence (p. 21). These deficiencies often lead to the misunderstanding, misinterpretation, or oversight of their children's needs or what is called "distortions of mental processing of information" (Crittenden, 1999, p. 47). For example, a parent may not respond to a child who needs medical treatment because he/she is unable to grasp the severity of the situation (Dubowitz & Black, 2002).

Research has supported that caregivers who neglect have lower cognitive capacities compared to similarly matched comparison groups (Feldman, Case, & Sparks, 1992). This may in turn lead a parent to perceive that a child is more mature than he/she actually is. For instance, a parent may fail to provide adequate supervision because he/she perceives that the child has greater developmental capacities than he/she actually does as in the example of a three year old child instructed to prepare his meal who consequently burns himself on the stove.

Chronic neglecting families have been found to have lower levels of overall child development knowledge (Nelson, et al., 1993), a direct result of less formal education. One study comparing chronic neglecting families with a similar comparison group consisting of non-significant differences in race, marital status, income, and employment type demonstrated that the neglect group had completed fewer years of school (Gaudin et al., 1996). Less formal education may be indicative of not only existing cognitive limitations but underlying psychopathology, substance misuse, and/or an overall chaotic

environment that prevents educational obtainment. Moreover, the lack of education not only has profound implications for comprehending child development but resource acquisition as well.

Cognitive and Academic Deficiencies in Neglect Children

Children from these homes may be less likely to be engaged academically because their caretakers lack the ability to assist with academic endeavors and/or are unable to obtain educational resources for their children. Additionally, neglected children have overall problem behaviors that limit their performance and attendance at school (Steinberg et al., 1994). Hildyard & Wolfe's (2002) review of empirical evidence focuses on children's development, following different kinds of neglect during three distinct time periods: infancy/preschool, school-aged children, and younger adolescents. The study demonstrated that children of neglect suffer from developmental delays, inability to problem solve, poorer scores on intellectual functioning and academic achievement, as well as lags in early cognitive development. Gaudin's (1999) review of research concerning the short and long term effects of child neglect also points to cognitive and language delays for neglected children. He cites several studies suggesting that "neglected children have the worst delays in expressive and receptive language compared with abused and non-maltreated children" (Allen & Oliver, 1982; Culp et al., 1991; Fox et al., 1988 as cited in Gaudin, 1999, p. 96). Dubowitz et al's study (2002) of high risk urban preschoolers found that by age five all neglected children in the study suffered from cognitive impairments. Kendall-Tackett & Eckenrode's (1996) study compared 324 neglected children and adolescents with 420 non-maltreated children and adolescents in academic achievement and in total number of disciplinary problems. Their

findings indicated that neglected children performed worse academically, had to repeat more grades, and received a greater number of suspensions than their non-maltreated counterparts. Academic performance was stunted with “large deficits on both mathematics and language tests” (Eckenrode et al. & Wodarski et al. as cited in Kaplan, Pelcovitz, & Labruna, 1999). Difficulties with language development and cognitive ability were present and most pronounced in boys. Overall, neglected children have limited problem solving capacities and more negative affect in general (Crouch & Milner, 1993), mirroring their adult caregivers. In other words, limited problem solving, negative affect, and cognitive deficits not only contribute to neglectful behavior, they are also a consequence of it.

Intimate Partner Relationships as a Mechanism of Transmission

Caregivers

Community based studies support that being from a single parent home places children at greater risk of neglect (Chaffin, et al., 1996; Egami, et al., 1996; Theodore et al., 2007). Child welfare samples demonstrate that many neglectful mothers are not married (Giovannoni & Billingsley, 1970), and if they have an intimate partner, they are with their partners less time, are less likely to live with the partner, and live a greater distance from the partner (Coohey, 1995). Neglectful mothers are also frequently exposed to intimate partner violence (Hartley, 2002) and are more likely to engage in conflict with their children’s fathers (Beeman, 1997). Living with a male partner actually *decreases* the risk of intimate partner violence (Hazan, Connelly, Kelleher, Landsverk, & Barth, 2004). In other words, because neglectful mothers are less likely to live with their partners they are at greater risk of intimate partner violence. Additionally, because

neglectful parents have non-existent, limited, and/or conflictual connections to a partner, they are unable reap the potential benefits of a supportive intimate relationship.

Therefore, neglectful mothers have substantial differences in intimate relationships.

These patterns of social functioning emulate patterns of interaction with their own children. Patterns of interaction are not reciprocal and tend to be “more chaotic, express fewer positive emotions, and have less empathy, and openness” (DePanfilis, 2006, p. 33). Their interactions are more conflictual, less verbal, but full of negative affect (Gaudin, 1996). There is not a consistent structure of positive and negative exchanges based on age appropriate behavior. Rather, implementation of discipline is on a continuum of extremes and is administered inconsistently in a disorganized, incongruent fashion (Dubowitz & Black, 2002; Gaudin et al., 1996).

Victims of Neglect

According to attachment theorists, children feel “secure in their relationship with their parent to the extent ... [that] the parent provides consistent, warm, and sensitive care” (Davila et al., 2005, p. 216). Secure attachment to a primary caregiver reduces stress and ensures “successful negotiation of successive developmental tasks” (Manley et al., 2001, p. 760). Conversely, insecure attachment through exposure to negative social interactions within the parent-child relationship “dispose[s] people towards certain patterns of behavior in social relationships” (Finch & Graziano, 2001, p. 44) resulting in internalized maladaptive archetypes or models of social interaction. Thus, neglected children struggle to formulate and maintain critical interpersonal relationships (Manly et al., 2001). That is, if a child is unable to receive care and comfort from a primary

caregiver, this restricts his/her ability to navigate other important connections (Davila et al., 2005), particularly those of an intimate nature.

Neglect experience continues to play a significant role in social development well into adulthood. Multiple types of neglect compromise healthy intimate partner relationships. Straus and Savage's (2005) study of history of neglect and current intimate partner violence (IPV) in college students across 17 countries demonstrated that those who experienced multiple types of neglect were much more likely to perpetrate IPV versus those who had no history of neglect or just a singular form. Therefore, childhood neglect not only increases the risk of conflict, it predisposes one to greater levels of violence in intimate partner relationships.

Basis for Current Research Study

Research indicates that approximately 30% of all maltreated children go on to abuse and/or neglect their own children (Belsky, 1993). Therefore, all children who are abused and neglected do *not* repeat such behaviors with their own children. In fact, the majority do not. Nevertheless, key potentiating genetic and ecological factors found in neglectful caregivers are also present in their biological offspring. So while a history of maltreatment does not exclusively predict subsequent maltreatment, it does significantly raise the odds for such behavior in the future. Likewise, family history of psychopathology and substance misuse does not guarantee the presence of conditions in biological offspring; however, it does increase the likelihood. How these mechanisms of transmission differ between neglect subtypes and other types of maltreatment in a large population based sample is the focus of this study. Thus, less severe experiences of

neglect, those not identified to child protection agencies, or the other end of the neglect continuum will be explored.

Limitations of Previous Studies

Experts have argued that the current literature on neglect outcomes is riddled with conceptual and methodological limitations (Crouch & Milner, 1993; De Bellis, 2005; Dubowitz et al., 2005). Many studies combine neglect with other forms of maltreatment such as physical abuse and/or sexual abuse (Cohen, Brown, & Smailes, 2001; Crouch & Milner, 1993; Dubowitz et al., 2002; Horwitz, Widom, McLaughlin, & White, 2001; Johnson, Cohen, Brown, Smailes, & Bernstein, 1999; Kendall-Tackett, 1996; Kotch, et al., 2008; Thornberry et al., 2001; Widom & White, 1997), thereby concealing differences between types of childhood adversities. Furthermore, “different forms of neglect...may have varying etiological pathways” (Harrington, Black, Starr, and Dubowitz, 1998. p. 114). Thus, understanding the unique effects of subtypes of neglect may also reveal divergent mechanisms of transmission.

Second, many studies of neglect rely on child welfare data or those identified to child protection agencies (Crouch & Milner, 1993; Dubowitz et al., 2005; Egeland et al., 1983; Kelleher, et al., 1994; Kendall-Tackett & Eckenrode, 1996; Kotch, et al., 2008). These studies, while valuable, may not capture all those engaged in maltreatment behavior as community based samples have demonstrated (Chaffin, et al., 1996; Egami, et al., 1996). Furthermore, there is evidence to suggest that cases *not* identified to child protection may have different, less severe adverse development outcomes than those that are reported to such agencies (Cohen, et al., 2001; Harrington et al., 1995).

A study of maternal substance use and neglect relying on a high risk sample, rather than CPS cases found no difference in cognitive, motor, or expressive language development between self-reported neglectful parents and non-neglectful parents. This finding is contradictory to other studies exploring substance use and neglect. One plausible explanation is that if the parent's behavior is severe enough to warrant scrutiny of authorities, then it is severe enough to impact the learning processing. It is also important to note that caregivers involved in this study also sought substance abuse treatment *voluntarily*. In other words, they sought and received treatment without the mandate of child protection or court services. Caregivers who are motivated to take action are most likely different than those who fail to act.

Finally, most studies look at the impact of the mother's behavior and/or mental health status (England, et al., 1983). Few studies are devoted to exploring negligent fathers (Dunn et al., 2002). Kirisci, et. al. (2001) is one of the only studies that explored emotional neglect in boys based on both the biological father and mother. While these results indicate that severity of neglect is highly correlated with the mother's behavior and mental health status, it is also linked to the father as well. Moreover, in community based samples, men report higher rates of negligent behavior (Egami, et al., 1996).

Family studies have demonstrated the importance of both biological parents in the transmission of substance use disorders and psychiatric conditions, *key predictors* of neglectful behavior (Merikangas et al., 1998). The presence of a substance use disorder and/or psychiatric condition in both parents significantly increases the likelihood of these conditions in their biological offspring (Merikangas, et al., 1992). Thus, failing to

integrate biological fathers, absent or not, into the empirical understanding of neglect etiology is truly remarkable.

Focus of the Current Study

This study is meant to address these limitations by utilizing a broad population based sample of US citizens. The research questions are as follows: *1) Are there key distinctions between maternal and paternal psychopathology and subtypes of neglect compared to other forms of maltreatment? 2) Do subtypes of neglect demonstrate key differences across lifetime DSM-IV disorders compared to other forms of maltreatment? 3) Are there differences between maternal and paternal psychopathology, subtype of maltreatment, and the presence of lifetime DSM-IV diagnoses?* How these answers were obtained is set forth in the following chapter.

CHAPTER III
RESEARCH PROPOSAL

The focus of this study is to investigate the following research questions:

1. *Are there key distinctions between maternal and paternal psychopathology and subtypes of neglect compared to other forms of maltreatment?*
2. *Do subtypes of neglect demonstrate key differences across lifetime DSM-IV disorders compared to other forms of maltreatment?*
3. *Are there differences between maternal and paternal psychopathology, subtype of maltreatment, and the presence of lifetime DSM-IV diagnoses?*

Answers to these questions should result in evidence supporting key differences between maternal and paternal psychopathology and outcomes in type of maltreatment, and presence of DSM-IV disorders. It is expected that paternal psychopathology is a far more significant predictor of neglect and subsequent mental health outcomes than previously assumed. Also, it is believed that the presence of parental psychopathology, maternal or paternal, combined with history of maltreatment places one at greater risk for lifetime DSM-IV diagnosis than maltreatment alone.

Secondary Data

The use of pre-existing population-based data was used for this study because it provides a feasible opportunity to explore new areas of inquiry while addressing methodological restrictions, such as small and/or non-representative samples, in many existing neglect studies. Given that the data has already been collected, secondary analysis was utilized. Secondary analysis provides an opportunity to take previously collected data in order to explore additional hypotheses connected to the original dataset

but “diverge from the original intention of the data collection” (Price, 2008, p. 101). In other words, the data collected in this study wasn’t specifically designed for the nature of this inquiry, but the data contains variables that allow for such an investigation.

Secondary analysis is a popular method of exploration with large representative samples because outcomes are generalizable, sampling error is reduced, and statistical power is enhanced, all without the expense and time imposed on researcher and participant during data collection (Rubin & Babbie, 2005). Furthermore, many population based studies have multiple lines of inquiry that are rarely explored by a single researcher or research team.

Even with these benefits, the use of secondary analysis has one important limitation: the primary purpose of data collection is not directly tied to the subsequent secondary analysis. Consequently, “theoretical congruence” (Price, 2008, p. 101) and validity of the secondary analysis (Rubin & Babbie, 2005) are always under suspicion. In other words, the theoretical base driving a secondary inquiry may not necessarily support the original purpose of data collection. For example, a study that focuses specifically on neglect will have key differences in the number and types of questions under exploration than a study that includes neglect as one of several adversities affecting overall mental health. The former study emphasizes neglect as the primary focus of inquiry whereas the latter study explores neglect as a small associative piece of mental health outcomes. As a result, the questions driving the secondary analysis often diverge from the original intent. Moreover, because existing data is driving the research inquiry rather than a priori theory, one can never be completely sure that the secondary constructs under study are truly valid measures because they are being utilized in a way that is different than what was

originally intended (2005). Nevertheless, secondary data is an important method of inquiry because the risks attributed to study participation have already been undertaken, and important insight can be gained by the exploration of such data. Therefore, this study used an existing population-based study available for the general public.

The Dataset

Overview

The National Comorbidity Survey Replication (NCS-R) is the most recent comprehensive population based study of mental health disorders carried out between February 2001 and April 2003 (Kessler et al., 2004; Kessler & Merikangas, 2004). The NCS-R is a cross sectional, multi-stage survey of English speaking adults living in the continental United States and was designed to investigate time trends of mental health disorders and their correlates as they occur throughout the population (Kessler & Merikangas, 2004). The survey questions were designed not only to identify prevalence of mental health disorders but also to include a number of other questions empirically linked to causal and consequential factors associated with these disorders, such as history of childhood maltreatment and parental psychopathology. Thus, data collected from the NCS-R can offer answers to the proposed research questions.

Methods

Sampling Procedures

Adult respondents (18 and above) were selected based on multi-stage cluster area probability sampling of U.S. households designed to be representative of the 2000 census data of the continental United States (Alaska and Hawaii excluded). The total sample consisted of 9836 ($n = 9836$) individuals (7693 households surveys some having more

than one adult reporting) with 9282 completed surveys and 554 short non-response questionnaires designed to represent all non-responders. The 554 non-responders completed only demographic and diagnostic stem questions. Upon completion of data collection, a series of weighted procedures (based on the 2002 Current Population Survey) were performed to reduce sampling error and to ensure generalizability (Kessler et al., 2004).

Survey Design

The survey was administered face-to-face at each household using computer assisted questions and included two parts. Part I included core Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), and Part II included further assessment of risk factors, consequences, services, and other correlates to core mental health diagnosis. Part I was administered to all participants with Part II measures dispensed to only 5692 respondents (2004).

The 5692 individuals were selected through probabilities proportional to household size and selected by the following three groupings: 1) 100% of all individuals that a) met criteria for a lifetime DSM-IV disorder, b) subthreshold lifetime criteria and sought treatment, c) ever in their life made a plan or attempted suicide; 2) 59% of all individuals that a) ever met subthreshold criteria, b) ever sought treatment for any emotional or substance problem c) ever had suicidal ideation, or d) used any psychotropic medication in the past 12 months to treat a emotional problem; 3) 25% of all non-cases (no indication of mental disorder ever) (Kessler et al., 2004). Thus, those meeting criteria for lifetime DSM-IV disorders were over-sampled in order to better assess mental disorders and associative conditions such as childhood maltreatment.

Advantages of Using NCS-R Dataset

Utilizing data collected in the NCS-R dataset is advantageous for this project for several reasons. It is a population-based study with sophisticated weighted multi-stage sampling procedures designed to represent all adults living within the continental U.S. thereby addressing many of sampling limitations of previous neglect studies. The final sample size is large enough to meet most statistical assumptions and to ensure adequate statistical power in many analytic procedures (Grimm & Yarnold, 1995). The data provides an opportunity to explore several types of neglectful experiences. Comparisons across maltreatment types as well as between subtypes of neglect are possible because of the number and diversity of questions.

Important information about both the respondent's mother and father's mental health history is available for analysis. The mental health focus of the study allows for an opportunity to explore *both* maternal and paternal psychopathology correlates to child neglect thereby increasing insight into the mechanisms of transmission. Therefore, the NCS-R dataset provides an excellent opportunity to explore the influence of parental family history of psychopathology, type of maltreatment, and associative outcomes across a broad spectrum of the general population.

Disadvantages of Using NCS-R Dataset

Even with these benefits, there are two primary disadvantages of using the NCS-R dataset. First, data was gathered from one respondent, cross-sectionally rather than with multiple responders or longitudinally. Because of this, cause and effect relationships between variables must be interpreted with caution (Grimm & Yarnold, 1995). For example, there may be a significant relationship between depression and neglect

experience, but the order of the relationships cannot be conclusively determined from cross-sectional data. That is to say, one cannot determine whether a child's depression induced withdrawal, thus contributing to the parent's neglectful behavior, or whether the neglect caused the onset of depressive symptoms. Therefore, the cross-sectional nature of the NCS-R limits the conclusively of statistically significant findings.

The second disadvantage is the retrospective nature of the survey which relies solely on the recall and perception of a single informant. Studies that rely on a single informant at a fixed point in time are at increased risk for error because perception is highly influenced by stress or mood state and may be "distorted by the respondent's selective recall," thereby raising the possibility of false positives (Wetherington & Kessler, 1986, p. 80). For instance, if an individual had a heated argument with his/her parent moments prior to the interview, he/she could be more likely to rate a higher level of negative symptoms and/or dissatisfaction with his/her parent. Similarly, if a person is actively experiencing a severe episode of depression, his/her perception is more likely to be negative. On the other hand, many individuals may underreport maltreatment history. Take for example an individual who experienced neglect as a child, he/she may choose to minimize the impact of such an experience as a method of coping or just simply forget, thereby leading to lower responses rates. For this reason, retrospective studies are more likely to have higher rates of false negatives leading to lower levels of statistical significance (Fang & Corso, 2007).

However, data collected retrospectively from adults, rather than children, regarding maltreatment may actually reduce some of these false negatives. Interviews with children and/or teenagers, those under the age of 18, about maltreatment can trigger

mandated reporting to child protection agencies. While legally required, the possibility of such action can result in lower rates of reported maltreatment as well as the possibility of compromising the confidential nature of data collection. For this reason, many studies implore retrospective designs to assess maltreatment history (Fang & Corso, 2007; Cohen et al., 2001). Moreover, studies that utilize self-reported neglect experience are few (Gilbert, et al., 2009), and as such the NCS-R dataset provides an excellent opportunity to contribute to the growing body of neglect literature.

Measures Supporting the Proposed Topic

Psychiatric Diagnosis

The primary survey instrument is based on the Composite International Diagnostic Interview (CIDI), a structured lay-administered diagnostic interview (Kessler & Ustun, 2004) dispensed to all 9282 respondents. Responses to the CIDI generate psychiatric diagnosis based on the ICD-10 (WHO, 1991) and the DSM-IV (APA, 1994) criteria (Breslau, Lane, Sampson, & Kessler, 2008). For the current study, psychiatric diagnoses are based on DSM-IV criteria as set forth by the American Psychiatric Association. The disorders assessed include mood disorders (major depressive disorder, dysthymia, and bipolar disorders), anxiety disorders (generalized, specific phobia, social phobia, panic disorder, agoraphobia, obsessive-compulsive disorder, and post-traumatic stress disorder), behavior disorders (conduct disorder, oppositional defiant disorder, and attention deficit disorder), and substance disorders (alcohol and drug abuse and dependence) (2008). Survey questions pertain to both lifetime history as well as current diagnostic criteria (within the past 12 months and within the past 30 days) for any DSM-IV disorder. The mood, anxiety, and substance sections of the CIDI have been validated

by re-interviewing a subset of the overall sample utilizing the Structured Clinical Interview for DSM-IV (SCID) (First, Spitzer, Gibbon, & Williams, 2002), a semi-structured clinician administered instrument (Kessler, Abelson, Demler, Escobar, Gibbon, Guyer et al., 2004). All maltreatment and family history variables will be explicitly outlined in the subsequent data analysis chapter, however the following in a brief overview.

Childhood Maltreatment

Neglect Constructs

The NCS-R survey contains two types of questions that explore the construct of childhood neglect. The first type consists of five neglect questions representing three different subtypes of neglect—supervisory, medical, and physical. These questions are non specific to the gender of the caregiver (Breslau et al., 2008). The second type of neglect questions pertain to emotional neglect with distinctions between maternal and paternal caregivers.

Other Maltreatment Constructs

There are two questions that capture incidents of childhood physical abuse within the NCS-R. Both questions represent differing levels of severity of physical abuse—minor and serious. Questions pertaining to sexual abuse were designed to illicit rape and non-rape sexual assault experiences. Exposure to family violence was captured by questions assessing minor and serious incidents. Therefore, other types of maltreatment consist of minor/serious physical abuse, minor/serious family violence, rape, and non rape sexual abuse.

Family History of Parental Psychopathology

The Family History Research Diagnostic Criteria (RDC) Interview consists of questions about parental psychiatric conditions (Andreasen, Endicott, Spritzer, & Winocur, 1977; Breslau, 2008). The original RDC contained 82 items but was revised for the NCS-R so that the current measure consists of 48 total items. The 48 items explore both maternal and parental depression, anxiety, panic, substance problems, antisocial personality traits, and history of suicide attempts. Assessment of each disorder includes several questions designed to be summed together in order to meet diagnostic criteria. For example, if the respondent endorses symptoms of depression lasting 2 or more weeks for his/her mother, he/she must also endorse either history of treatment or impairment in life functioning to meet full diagnostic criteria. The reliability and validity of the RDC family history method of data collection has been well established in the psychiatric literature (Andreasen et al., 1977; Cohen, 1988).

Sub-Sample Selected for Proposal

The child maltreatment and family history measures utilized for this proposal were administered to 5692 participants, a subset of the overall sample (Part II). Because this proposal hinges on connections between family history of parental psychopathology, child maltreatment history, and psychiatric conditions only those respondents completing Part II of the NCS-R are being included for this proposal. Thus, the final sample for analysis consists of 5692 respondents.

Proposed Analysis

Initially, descriptive analyses were performed to determine the age, sex, race/ethnicity, and socioeconomic composition of the neglect sample as it compares to

other forms of maltreatment. The effects of these factors were then controlled for in subsequent models of analysis. Bivariate measures of association between all predictor variables were conducted to assess the degree of multicollinearity prior to proceeding with all regression analyses.

The proposed multivariate analyses consisted of binary logistic regression. Logistic regression is used to predict the odds of group membership using indicator variables at varying levels measurement, such as “continuous, discrete, or dichotomous” and a dichotomous dependent variable comprised of “two or more outcome groups” (Tabachnick & Fidell, 2007, p. 437). Because logistic regression allows for indicator variables at different levels of measurement in order to predict subsequent dichotomous outcomes, it is a particularly useful type of analysis with the NCS-R maltreatment variables. Additionally, because many individuals experience more than one type of maltreatment (Gilbert, et al., 2009), it was likely that the maltreatment variables would have some degree of correlation or overlap. This type of technique accounts for a moderate amount of such overlap. Thus, binary logistic regression was used for analyses exploring the link between parental psychopathology and maltreatment subtype as well as the association to subsequent DSM-IV lifetime disorders.

CHAPTER IV
DATA ANALYSIS

Variables

Maltreatment

In order to address the aims of this project, it was important to identify and test varying subtypes of maltreatment. Participants were administered two different variations of child maltreatment questions, those that addressed minor as well as severe incidents. These were located within two different questionnaires, *Childhood* (neglect, minor physical abuse, minor family violence) and *PTSD* (sexual abuse, rape, serious physical abuse, serious family violence). Decisions about variable construction were determined by both conceptual relevance and empirical support. For example, several other projects have assessed the relationship between childhood adversity and mental health outcomes which included variations of the maltreatment items (Afifi, Enns, Cox, Asmundson, Stein, & Sareen, J., 2008; Green et al., 2010; McLaughlin, Green, Gruber, Sampson, Zaslavsky, & Kessler, 2010; McLaughlin, Green, Gruber, Sampson, Zaslavsky, & Kessler, in press). However, this project differs from these because it divided neglect into unique subtypes, rather than considering it as a singular concept, as well as adding emotional neglect to the research equation. Furthermore, this project disaggregates minor/serious forms of physical abuse and family violence as well keeping rape and sexual abuse separated in the analyses. These conceptual differences allow for the exploration of variations in neglect subtypes as well as comparisons with other forms of maltreatment.

Items found within the *Childhood* questionnaire have response choices based on a 1-4 point scale (often, sometimes, rarely, and never). Questions pertaining to minor physical abuse and minor family violence were adapted from a modified version of the Conflict Tactics Scale (CTS) while neglect items were based on questions taken from previous child welfare studies (Green, et al., 2010). Items found within the PTSD questionnaire have dichotomous response choices in a yes/no format along with a specific age of onset. These items were taken from the first National Comorbidity Survey (Molnar et al., 2001). Due to the varying levels of measurement found across maltreatment items, the maltreatment constructs were created by two different statistical procedures.

First, in order to identify inter-correlations between maltreatment subtypes an unweighted Pearson's r correlation matrix of all 1-4 level variables (subtypes of neglect, minor physical abuse, & minor family violence) was completed to identify the level of overlap between variables. A high degree of correlation was found for two items [*how emotionally close were you with the woman/man who raised you while you were growing up? and how much love and affection did s/he give you?*] pertaining to maternal emotional care ($r = .69$, $p < .0001$, $n = 5642$) and paternal emotional care ($r = .75$, $p < .0001$, $n = 5291$). These items were combined to create one single maternal and one single paternal emotional care variable. These items were then reversed to denote an absence or lack of emotional care, thereby representing maternal and paternal emotional neglect.

Within the remaining neglect variables the highest correlation ($r = .63$, $p < .0001$,

$n = 5675$) was identified for items pertaining to physical neglect [*how often did you go without things you need like clothes, shoes, or school supplies because your parents caretakers spent the money on themselves? and how often did they make you go hungry or not prepare regular meals*]. These items were combined to create one physical neglect variable. *Supervisory neglect* ($n = 5684$) was constructed using the following two questions: *How often were you 1) made to do chores that were too difficult or dangerous for someone your age and 2) left alone or unsupervised when you were too young to be left alone?* *Medical neglect* ($n = 5680$) came from the item *how often did your parents ignore or fail to get you medical treatment when you were sick or hurt?* The highest correlation between minor physical abuse and minor family violence and other variables was moderate ($r = .42, p < 0001, n = 5609$), thus they were kept separate. Therefore, final neglect subtypes consist of supervisory, physical, medical, maternal emotional, and paternal emotional.

Items found within the *Childhood* questionnaire were worded specifically to childhood experience while items within the *PTSD* section were not. Therefore, questions within the PTSD section were recoded to create childhood experience of sexual abuse, rape, serious physical abuse, serious family violence based on age of onset. Those reporting abuse experience prior to age 18 were included while those 18 and over were excluded. The decision to exclude those over 18 was necessary to maintain consistency with aims of this project which is to focus on childhood experience.

In order to assess the correlations between minor/serious physical abuse and family violence, minor physical abuse and minor family violence were collapsed into dichotomous level variables (often/sometimes = yes, rarely/never = no) and evaluated

using bivariate tables. While there was moderate correlation between minor/serious physical abuse (Cramer's $V = .38$, $p < .0001$, $n = 5596$) and sexual abuse/rape (Cramer's $V = .36$, $p < .0001$, $n = 5616$), persons reporting physical abuse of one form of abuse but *not* the other ($n = 1,102$) were substantially higher than those reporting both forms ($n = 361$).

Similarly, persons who experienced *sexual abuse only* were greater ($n = 449$) than those who reported *rape only* ($n = 255$) with a subset experiencing both ($n = 266$). Correlations between minor/serious family violence were strong (Cramer's $V = .61$, $p < .0001$, $n = 5531$) with those reporting both forms ($n = 503$) almost equal to those reporting only one ($n = 541$) type of family violence exposure. Given the moderate to strong correlations of both minor/serious physical abuse and minor/serious family violence, for parsimonious reasons these variables were combined into one physical abuse and one family violence construct.

However, since a substantial number of individuals reported the presence of one type but not the other, and to preserve the unique contribution of each subtype (minor/serious), the physical abuse and family violence items were made into multi-level variables each containing the following four categories: minor only, serious only, both, and none. Given that the correlation between sexual abuse and rape was moderate, these variables were kept as separate constructs given evidence that suggests sexual abuse outcomes differ from those of rape (Molnar et al., 2001).

Once the constructs of maltreatment were established, each neglect subtype was collapsed into a dichotomous level variable (often/sometimes = yes, rarely/never = no) in order to determine overall correlation with other dichotomous level subtypes of maltreatment. Crosstabulations of all maltreatment subtypes- supervisory, medical,

physical, maternal/paternal emotional neglect, physical abuse, family violence, rape, and sexual abuse- found modest to moderate correlations based on observation of the Cramer's V statistic. The highest of these were between child physical abuse and supervisory neglect (Cramer's V = .31, $p < .0001$, $n = 5603$), family violence and child physical abuse (Cramer's V = .36, $p < .0001$, $n = 5609$), and physical neglect and supervisory neglect (Cramer's V = .38, $p < .0001$, $n = 5684$). However, collapsing of physical and medical neglect into dichotomous level variables resulted in an usually strong relationship (Cramer's V = .46, $p < .0001$, $n = 5680$) between the two.

Upon further inspection it was noted that only a small number of individuals reported medical neglect without physical neglect ($n = 66$). This, in addition to the strong association between physical and medical neglect, lead to the combining of these two variables into one categorical lack of care (LOC) neglect consisting of physical only, medical only, both, and none. The construction of the LOC variable is consistent with the conceptual and theoretical literature on neglect (Dubowitz, et al., 2005; Knutson, DeGarmo, Koepl, & Reid, 2005; Straus & Kantor, 2005) and also fulfills statistical mandates regarding multicollinearity. Therefore, a total of eight maltreatment subtypes: supervisory, LOC, maternal/paternal emotional neglect, physical abuse, family violence, rape and sexual abuse was used in all subsequent analyses.

Family History of Parental Psychopathology

Another key aim of this project is to explore the relationship between family history of psychopathology and maltreatment as well as mental health outcomes. Items pertaining to parental psychopathology were also found within the *Childhood* questionnaire and assess the following mental health problems: maternal and paternal

history of depression, anxiety, panic attacks, suicide attempts, substance problems, and antisocial behavior. The depression construct consists of a positive rating to the core diagnostic question (*In the years you were growing up, did the woman/man that raised you ever have periods lasting 2 weeks or more where s/he was sad or depressed most of the time?*) and associated symptoms (*During the time her depression was at its worst, did s/he also have other symptoms like low energy, changes in sleep or appetite, and problems with concentration?*), and endorsement of either treatment (*Did s/he ever get professional treatment for her depression?*) or functional impairment (*Did her/his depression ever interfere a lot with her/his life or activities?*).

The same structure was also applied to the anxiety construct, endorsement of the core feature, associated symptoms and either treatment or functional impairment [*During the time you were growing up, did the woman/man that raised you ever have periods of a month or more when s/he was constantly nervous, edge, or anxious? During the time her nervousness was at its worst, did she also have other symptoms like being restless, irritable, easily tired, and difficulty falling asleep? Did she every get professional treatment for her nervousness? Did her nervousness ever interfere a lot with her life or activities?]. History of panic attacks consisted of the following positive ratings on both of the following questions: *Did the woman/man who raised you ever complain about anxiety attacks where all of a sudden s/he felt frightened, anxious, or panicky? Did s/he ever comment that during these attacks that her heart was pounding, or that she was short of breath, felt ill, or was fearful that she would die?* Prior attempts of suicide were assessed by one question (*Did the woman/man that raised you ever attempt to commit suicide?*).*

The substance variable was constructed by positive endorsement of core problems (*Did the woman/man who raised you ever have a problem with alcohol or drugs?*). It also included treatment (*Did s/he every get professional treatment for her substance problem?*) or the presence of functional impairment (*How much did her/his substance use ever interfere a lot with her life or activities- a lot, some, a little, or not at all?*). In this case, impairment comprised a response of “a lot” or “some”.

Finally, antisocial behavior was comprised of three or more positive ratings (consistent with DSM-IV criteria) of the following five questions: *Did the woman/man who raised you ever have trouble holding a job? Did s/he lie a lot? Did s/he often get into physical fights? Was s/he ever involved in criminal activities like burglary or selling stolen property? Was s/he ever arrested or set to prison?* The development of all of the above parental psychopathology constructs is supported in other NCS-R studies (Breslau et al., 2008; Scott, Koref, Alonso, Angermeyer, Benjet, Bruffaerts et al., 2008).

Once maternal/paternal depression, anxiety, panic, suicide, substance problems, and antisocial behavior were constructed, a tetrachoric correlation matrix assessed correlation of the variables. This method was chosen since all the parental mental health variables were at the dichotomous level. Tetrachoric correlation is used to estimate the size of correlations between dichotomous variables assuming there is an underlying normal distribution (Muthen & Hofacker, 1988). Tetrachoric coefficients indicated high correlation between maternal depression, anxiety, panic, and suicide with values ranging between $r_{tet} = .65$ and $r_{tet} = .82$ ($p < .0001$, $n = 5660$). Similarly, maternal substance problems and antisocial behavior were strongly correlated at $r_{tet} = .69$ ($p < .0001$, $n = 5649$). Thus, maternal depression, anxiety, panic, and suicide attempts were combined

into one maternal emotional construct with substance and antisocial variables combined into one maternal behavioral construct. Given that depression/anxiety and substance problems/antisocial behavior are usually co-occurring conditions, collapsing them into one emotional and one behavioral has conceptual as well as statistical justification.

Correlations between paternal variables yielded almost the same results with depression, anxiety, panic and suicide being strongly associated with values ranging between $r_{tet} = .67$ and $r_{tet} = .82$ ($p < .0001$, $n = 5316$), and substance and antisocial strongly related at $r_{tet} = .67$ ($p < .0001$, $n = 5300$). Therefore, the same structure of paternal emotional and behavior constructs was undertaken. Ultimately, parental family history of mental health problems consisted of four variables: maternal/paternal emotional and maternal/paternal behavioral problems.

DSM-IV Psychiatric Diagnosis

All psychiatric outcomes were based on lifetime report of the following disorders mood (bipolar I or II, major depression, and dysthymia), substance disorders (alcohol abuse/dependence and drug use/dependence), behavioral disorders (attention deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder), anxiety states (generalized anxiety and panic disorder), phobias (specific, social, and agoraphobia without panic disorder), post-traumatic stress disorder (PTSD), and obsessive compulsive disorder (OCD). Each individual disorder was assessed based on responses to the CIDI and meets full diagnostic DSM-IV hierarchical and exclusion criteria. Detailed information regarding the research methods utilized to obtain and validate lifetime diagnoses can be found elsewhere (Kessler et al., 2004; Kessler & Ustun, 2004).

For parsimonious reasons, diagnostic groups in this project consist of combined mood (any mood disorder), substance (any substance disorder), behavioral (any behavior), anxious states (any anxiety state), and phobias (any phobia). Unlike in previous studies, anxious states and phobias were separated rather than keeping them all under one anxiety category because generalized anxiety (GAD) and panic disorder (PD) have demonstrated co-occurring familial transmission patterns whereas phobic states such as social phobias and specific phobias tend to cluster in families (Merikangas, Avenevoli, Acharyya, Zhang, & Angst, 2002). As such, these conditions may have differing correlates to maltreatment which combining would obscure. Furthermore, PTSD and OCD were also separated in the analysis for both diagnostic and empirical reasons.

First, because diagnostic criteria of PTSD requires exposure to a traumatic event, such as abuse or neglect, combining it together with other anxiety disorders, as is common practice in psychiatric epidemiological research, would likely result in either an overstatement of the significance of associations between maltreatment and anxiety disorders, or minimization of the impact of maltreatment and later PTSD. For example, combining PTSD with other anxiety states outcomes such as GAD and PD could produce significant associative effects between maltreatment and anxiety disorders simply because of the potential strength of the relationship between maltreatment and PTSD. Conversely, if there is no affect of maltreatment on the development of GAD and PD, the potential association to PTSD could be minimized by combining PTSD with other anxiety states. Therefore, because PTSD requires experience of a traumatic event the

associations between maltreatment and PTSD are likely to have unique associations that could be convoluted if not kept separately.

OCD is being kept distinct from other forms of anxiety for unique conceptual reasons. Previous literature has supported a link between child neglect and OCD behavior in the parent (Chaffin et al., 1996). Because OCD is a relatively rare condition at 2.3% (Ruscio, Stein, Chiu, & Kessler, 2010) in the general population, the link between OCD and neglect may have important practical implications in which individual exploration may prove valuable. For this reason, OCD is being kept separate in all analyses. Therefore, DSM-IV outcome categories consist of mood, substance, behavior, anxious states, phobias, OCD, and PTSD.

Descriptive and Bivariate Analyses

Prevalence of Subtypes

All analyses utilized pre-established weighted procedures designed to be fully representative of the general U.S. population as described in (Kessler et al., 2004) and were performed in SAS 9.2. Descriptive and bivariate analyses examined the prevalence and unique associations between maltreatment and other demographic factors such as gender, race, education, employment, and income. Table 1 shows overall prevalence of maltreatment subtypes ranged from 2.35% of those reporting medical neglect to 21.25% experiencing minor physical abuse. Medical and physical neglect (4.75%) were the least likely to occur while supervisory (12.10%) and paternal emotional (11.93%) were the most common types of neglect. In fact, supervisory neglect was third most predominant subtype of all maltreatment preceded only by serious family violence (13.27%) and minor physical abuse. All other remaining types fell between 5.84% and 9.81%.

Gender Differences by Subtypes

Bivariate analyses between subtypes and gender, race, education, employment, and income revealed noteworthy associations. Table 1 results demonstrate that being female was significantly related to five maltreatment subtypes but only one of these was associated with neglect, maternal emotional neglect ($\chi^2 = 29.84$, $p < .001$).

Table 1: Prevalence of Maltreatment Subtypes

	<i>All</i>		<i>Females</i>		<i>Males</i>		
	<i>%</i>	<i>(se)</i>	<i>%</i>	<i>(se)</i>	<i>%</i>	<i>(se)</i>	χ^2
Neglect							
Supervisory	12.10	(0.6)	6.34	(0.4)	5.76	(0.4)	ns
LOC							
<i>Physical</i>	4.75	(0.4)	2.76	(0.3)	1.99	(0.3)	ns
<i>Medical</i>	2.35	(0.2)	1.36	(0.2)	0.99	(0.1)	ns
Maternal Emotional	5.92	(0.5)	4.09	(0.4)	1.83	(0.2)	29.84***
Paternal Emotional	11.93	(0.8)	6.36	(0.5)	5.57	(0.4)	ns
Abuse							
Physical Abuse							
<i>Minor</i>	21.25	(0.8)	11.16	(0.5)	10.10	(0.5)	ns
<i>Serious</i>	5.84	(0.3)	3.30	(0.3)	2.54	(0.2)	ns
Family Violence							
<i>Minor</i>	9.81	(0.6)	6.21	(0.5)	3.60	(0.3)	17.05***
<i>Serious</i>	13.27	(0.7)	7.71	(0.5)	5.56	(0.4)	5.82*
Child Sexual	9.46	(0.4)	7.71	(0.4)	1.75	(0.2)	187.02***
Child Rape	6.54	(0.5)	5.60	(0.5)	0.94	(0.1)	126.55***

*Weighted Percentages (Standard Error) *p < .05, **p < .01, ***p < .001, significance is denoted in bold*

Remaining relationships were with sexual abuse ($\chi^2 = 187.02$, $p < .001$) and rape (126.55, $p < .001$) as well as both minor ($\chi^2 = 17.05$, $p < .001$) and serious ($\chi^2 = 5.82$, $p < .05$) family violence exposure. Conversely, males had lower rates of all subtypes.

Racial Differences by Subtypes

In order to highlight significant differences across maltreatment subtypes and those descriptive features with several categories (e.g. race, education, employment, & income), both the actual weighted percentages are reported as well as the proportional percentages. Proportional percentages allow for a more accurate interpretation of the

true maltreatment rate within a given racial group. For example, overall Hispanics reported supervisory neglect at a 1.34% rate which seems very low. However, Hispanics represent only 11% of those surveyed. Therefore, the proportional rate experiencing supervisory neglect is actually 12% of all Hispanics. Reporting both actual and proportional differences provides additional contextual information regarding how much a specific group experienced a particular form of maltreatment.

Racial categories within the NCS-R survey consist of non-Hispanic whites, non-Hispanic blacks, Hispanic, and “other” racial group comprised of American Indians and Asian/Pacific Islanders. Overall, there were very few racial differences across maltreatment subtypes. However, Table 2 shows the most significant associations were reported by “others”.

Table 2: Prevalence and Proportions of Subtypes by Race

	<i>Hispanic</i>			<i>Black</i>			<i>Other</i>			<i>White</i>			χ^2
	%	(se)	prop	%	(se)	prop	%	(se)	prop	%	(se)	prop	
Neglect													
Supervisory	1.34	(0.3)	12.09	1.21	(0.2)	9.77	0.62	(0.1)	16.34	8.93	(0.5)	12.28	ns
LOC													
<i>Physical</i>	0.77	(0.2)	6.94	0.69	(0.2)	5.59	0.22	(0.0)	5.89	3.07	(0.3)	4.22	ns
<i>Medical</i>	0.25	(0.1)	2.22	0.11	(0.0)	0.86	0.13	(0.0)	3.53	1.86	(0.2)	2.56	13.48**
Maternal Emot.	0.52	(0.1)	4.70	0.39	(0.1)	3.18	0.34	(0.1)	8.81	4.67	(0.5)	6.41	8.81*
Paternal Emot.	1.28	(0.2)	12.66	1.11	(0.2)	10.05	0.38	(0.1)	9.72	9.16	(0.7)	12.23	ns
Abuse													
Physical Abuse													
<i>Minor</i>	2.28	(0.3)	20.60	2.36	(0.2)	19.07	0.95	(0.1)	25.13	15.65	(1.0)	21.52	ns
<i>Serious</i>	0.81	(0.1)	7.35	0.46	(0.1)	3.74	0.66	(0.2)	17.27	3.90	(0.2)	5.37	38.56***
Family Violence													
<i>Minor</i>	1.27	(0.3)	11.46	1.28	(0.2)	10.38	0.43	(0.1)	11.23	6.83	(0.6)	9.39	ns
<i>Serious</i>	2.27	(0.3)	20.50	2.12	(0.2)	17.07	0.62	(0.1)	15.98	8.27	(0.6)	11.38	34.09***
Child Sexual	1.16	(0.2)	10.49	1.18	(0.2)	9.56	0.45	(0.1)	11.79	6.67	(0.4)	9.17	ns
Child Rape	0.92	(0.2)	8.33	0.93	(0.2)	7.61	0.35	(0.1)	9.20	4.34	(0.5)	5.95	ns

Actual Weighted Percentages (Standard Error)
prop= proportional rate (maltreatment %/racial category%), **p*<.05, ***p*<.01, ****p*<.001, significance is denoted in bold

They had notably elevated numbers across medical neglect ($\chi^2 = 13.48, p < .01$), maternal emotional neglect ($\chi^2 = 8.81, p < .05$), and serious physical abuse ($\chi^2 = 38.56, p < .001$) while Hispanics had the highest rates of serious family violence ($\chi^2 = 34.09, p < .001$).

Educational Differences by Subtypes

History of childhood maltreatment had considerable associations with later educational success as seen in Table 3. Less than a high school education was significant across supervisory ($\chi^2 = 10.45, p < .05$), physical ($\chi^2 = 31.83, p < .001$) and medical neglect ($\chi^2 = 10.20, p < .05$) subtypes as well as all other abuse subtypes with the exception of sexual abuse and rape. The strongest associations were linked to physical neglect ($\chi^2 = 31.83, p < .001$), serious physical abuse ($\chi^2 = 20.10, p < .001$), and *both* minor ($\chi^2 = 26.41, p < .001$) and serious family violence ($\chi^2 = 63.23, p < .001$).

Remarkably, history of sexual trauma had no impact on level of education.

Table 3: Prevalence and Proportions of Subtypes by Education Level

	<i>Less than HS</i>			<i>High School</i>			<i>Partial College</i>			<i>College</i>			
Neglect	%	(se)	prop	%	(se)	prop	%	(se)	prop	%	(se)	prop	χ^2
Supervisory	2.42	(0.3)	14.41	4.12	(0.4)	12.67	3.38	(0.2)	12.25	2.19	(0.2)	9.45	10.45*
LOC													
<i>Physical</i>	1.37	(0.2)	8.16	1.69	(0.2)	5.20	1.20	(0.1)	4.36	0.48	(0.1)	2.09	31.83***
<i>Medical</i>	0.56	(0.1)	3.34	0.87	(0.2)	2.69	0.64	(0.1)	2.31	0.27	(0.1)	1.18	10.20*
Maternal Emotional	1.06	(0.2)	6.38	2.37	(0.3)	7.31	1.47	(0.1)	5.32	1.02	(0.2)	4.39	9.52*
Paternal Emotional	2.11	(0.3)	13.41	3.48	(0.4)	10.75	3.44	(0.2)	12.41	2.90	(0.3)	12.01	ns
Abuse													
Physical Abuse													
<i>Minor</i>	4.05	(0.3)	24.07	6.94	(0.5)	21.41	6.21	(0.5)	22.52	4.06	(0.4)	17.52	10.29*
<i>Serious</i>	1.57	(0.2)	9.43	1.82	(0.2)	5.60	1.57	(0.2)	5.68	0.88	(0.2)	3.79	20.10***
Family Violence													
<i>Minor</i>	2.30	(0.3)	13.84	3.56	(0.4)	10.97	2.66	(0.2)	9.62	1.28	(0.2)	5.50	26.41***
<i>Serious</i>	3.37	(0.4)	20.38	4.85	(0.4)	14.90	3.36	(0.2)	12.17	1.69	(0.2)	7.26	63.23***
Child Sexual	1.29	(0.2)	7.72	2.94	(0.3)	9.06	2.81	(0.2)	10.22	2.39	(0.2)	10.25	ns
Child Rape	1.39	(0.2)	8.29	1.91	(0.2)	5.89	1.96	(0.2)	7.12	1.28	(0.2)	5.51	ns

Actual Weighted Percentages (Standard Error)
 prop= proportional rate (maltreatment %/education level%), * $p < .05$, ** $p < .01$, *** $p < .001$, significance is denoted in bold

Employment Status by Subtype

Employment was comprised of those currently working, full-time students, homemakers, retired from full-time work, and those not working due to disability, illness, unemployment, or not looking for work. Just as in the case with educational level, many maltreatment subtypes were significantly linked to lack of employment (*see Table 4*). Lack of care neglect, both physical ($\chi^2 = 15.06, p < .05$) and medical ($\chi^2 = 28.91, p < .001$), along with minor ($\chi^2 = 11.79, p < .05$) and serious physical abuse ($\chi^2 = 22.86, p < .001$) were noteworthy. Serious family violence ($\chi^2 = 12.81, p < .05$) was also linked to no employment status. However, the strongest relationship between maltreatment and those not working was found in individuals reporting a history sexual abuse ($\chi^2 = 44.05, p < .001$) or rape ($\chi^2 = 39.75, p < .001$).

Table 4: Prevalence and Proportions of Subtypes by Employment Type

Neglect	Working			Student			Homemaker			Retired			Not Working			χ^2
	%	(se)	prop	%	(se)	prop	%	(se)	prop	%	(se)	prop	%	(se)	prop	
Supervisory LOC	7.68	(0.4)	11.51	0.36	(0.1)	11.68	0.55	(0.1)	9.79	1.83	(0.4)	12.17	1.69	(0.2)	17.63	ns
<i>Physical</i>	2.74	(0.3)	4.10	0.15	(0.1)	4.90	0.36	(0.1)	6.47	0.64	(0.2)	4.25	0.87	(0.1)	9.04	15.06*
<i>Medical</i>	1.48	(0.2)	2.22	0.01	(0.0)	0.28	0.15	(0.0)	2.72	0.26	(0.1)	1.71	0.45	(0.1)	4.68	28.91***
Maternal Emot.	3.87	(0.3)	5.79	0.07	(0.0)	2.17	0.27	(0.1)	4.88	1.04	(0.3)	6.94	0.67	(0.1)	6.97	ns
Paternal Emot.	8.15	(0.5)	12.15	0.31	(0.1)	9.89	0.65	(0.2)	11.72	1.52	(0.3)	9.88	1.31	(0.2)	14.67	ns
Abuse																
Physical Abuse																
<i>Minor</i>	14.49	(0.6)	21.72	0.47	(0.1)	15.24	0.85	(0.1)	15.09	2.92	(0.5)	19.38	2.53	(0.3)	26.49	11.79*
<i>Serious</i>	3.64	(0.2)	5.46	0.11	(0.0)	3.54	0.28	(0.1)	4.93	0.71	(0.2)	4.74	1.10	(0.2)	11.54	22.86***
Family Violence																
<i>Minor</i>	6.62	(0.4)	9.92	0.22	(0.1)	7.29	0.55	(0.1)	9.82	1.15	(0.4)	7.65	1.26	(0.2)	13.23	ns
<i>Serious</i>	8.95	(0.4)	13.38	0.30	(0.1)	9.73	0.78	(0.1)	13.93	1.42	(0.4)	9.46	1.82	(0.2)	19.31	12.81*
Child Sexual	6.42	(0.3)	9.60	0.27	(0.1)	9.00	0.81	(0.1)	14.45	0.59	(0.1)	3.93	1.38	(0.2)	14.44	44.05***
Child Rape	4.40	(0.4)	6.59	0.14	(0.0)	4.65	0.49	(0.1)	8.81	0.34	(0.1)	2.27	1.17	(0.2)	12.34	39.75***

Actual Weighted Percentages (Standard Error)

*prop= proportional rate (maltreatment %/employment level%), *p<.05, **p<.01, ***p<.001, significance is denoted in bold*

Income Status by Subtype

Overall income categories in the NCS-R were divided by quartiles (*see Table 5*).

Those in the lowest one-fourth experienced the most substantial association to all relevant forms of maltreatment such as serious physical abuse ($\chi^2 = 11.04$, $p < .05$), serious family violence ($\chi^2 = 14.50$, $p < .01$), and child sexual abuse ($\chi^2 = 8.33$, $p < .05$). Physical neglect ($\chi^2 = 16.83$, $p < .01$) and rape ($\chi^2 = 22.79$, $p < .001$) had the strongest link to current earnings. Given these findings across education, employment and income, history of maltreatment appears to increase the potential of lower socioeconomic status.

Table 5: Prevalence and Proportions of Subtypes by Income

	Low			Low Average			High Average			High			χ^2
	%	(se)	prop	%	(se)	prop	%	(se)	prop	%	(se)	prop	
Neglect													
Supervisory	2.71	(0.3)	12.59	2.63	(0.4)	11.93	3.84	(0.3)	11.78	2.92	(0.3)	12.26	ns
LOC													
<i>Physical</i>	1.49	(0.2)	6.94	1.19	(0.3)	5.38	1.20	(0.1)	3.68	0.87	(0.2)	3.66	16.83**
<i>Medical Neglect</i>	0.69	(0.1)	3.24	0.34	(0.1)	1.54	0.74	(0.1)	2.27	0.57	(0.1)	2.40	ns
Maternal Emot.	1.30	(0.1)	6.03	1.36	(0.2)	6.17	1.85	(0.3)	5.70	1.41	(0.2)	5.87	ns
Paternal Emot.	2.81	(0.3)	13.94	2.29	(0.4)	10.48	3.97	(0.3)	11.94	2.86	(0.3)	11.56	ns
Abuse													
Physical Abuse													
<i>Minor</i>	4.38	(0.4)	20.40	5.04	(0.4)	22.84	6.89	(0.5)	21.20	4.94	(0.5)	20.62	ns
<i>Serious</i>	1.72	(0.2)	8.04	1.22	(0.2)	5.55	1.80	(0.2)	5.53	1.10	(0.1)	4.57	11.04*
Family Violence													
<i>Minor</i>	2.58	(0.3)	12.07	2.00	(0.3)	9.11	3.13	(0.3)	9.58	2.10	(0.3)	8.74	ns
<i>Serious</i>	3.61	(0.4)	16.92	3.16	(0.4)	14.28	3.93	(0.3)	12.08	2.57	(0.3)	10.70	14.50**
Child Sexual	2.52	(0.3)	11.79	1.77	(0.2)	8.03	3.26	(0.3)	9.99	1.92	(0.3)	7.98	8.33*
Child Rape	1.91	(0.3)	8.96	1.77	(0.2)	8.00	1.62	(0.2)	4.96	1.25	(0.2)	5.21	22.79***

Actual Weighted Percentages (Standard Error)

*prop= proportional rate (maltreatment %/income I%), * $p < .05$, ** $p < .01$, *** $p < .001$, significance is denoted in bold*

This, in addition to other associative patterns between maltreatment, such as race and gender, indicate the contribution of these variables could be confounders in subsequent multivariate analyses. Therefore, all multivariate analyses controlled for gender, race, education, employment, and income.

Prevalence of Family Psychopathology Variables

Table 6 shows the prevalence of parental psychopathology and notable gender differences between emotional and behavioral disorders. Maternal emotional disorders were the most common of the four disorders at 12.39% while maternal behavior disorders were the least common at 4.17%. On the other hand, paternal behavioral disorders were greater at 11.37% than paternal emotional disorders at 5.26%. To summarize, maternal emotional and paternal behavioral occur more frequently than maternal behavioral and paternal emotional disorders.

Table 6: Prevalence of Parental Psychopathology

<i>Maternal</i>	<i>%</i>	<i>(se)</i>	<i>Paternal</i>	<i>%</i>	<i>(se)</i>
Maternal Emotional Disorders	12.39	(0.8)	Paternal Emotional Disorders	5.26	(0.4)
Maternal Behavioral Disorders	4.17	(0.4)	Paternal Behavioral Disorders	11.37	(0.6)

Weighted Percentages (Standard Error)

Family Psychopathology by Subtypes

Maternal emotional disorders (MED) were the most prominent across all maltreatment subtypes with the exception of family violence (*see Table 7*). MED accounted for the highest rates of all neglect subtypes: supervisory (3.65%), LOC (2.15%), maternal emotional (2.14%), and paternal emotional (3.17%) as well as physical abuse (5.21%), sexual abuse (2.58%), and rape (1.99%). Conversely, paternal behavior disorders (PBD) was associated with the highest rates of family violence (5.14%). Furthermore, the co-occurrence of PBD with supervisory (3.37%) and paternal emotional neglect (2.88%) was similar to MED. Comparatively, maternal behavior disorders and paternal emotional disorders had very low numbers. The frequency of maternal behavior disorders (MBD) with any subtype ranged from 0.63% (rape) to 2.04% (family violence).

Table: 7 Prevalence of Parental Psychopathology by Subtypes

	<i>MED</i>		<i>MBD</i>		<i>PED</i>		<i>PBD</i>	
	%	(se)	%	(se)	%	(se)	%	(se)
Neglect								
Supervisory	3.65	(0.3)	1.34	(0.2)	1.44	(0.2)	3.37	(0.3)
LOC	2.15	(0.2)	1.13	(0.1)	0.81	(0.1)	1.95	(0.2)
Maternal Emotional	2.14	(0.2)	0.89	(0.2)	0.72	(0.1)	1.29	(0.1)
Paternal Emotional	3.17	(0.3)	1.10	(0.2)	1.56	(0.2)	2.88	(0.3)
Abuse								
Physical	5.21	(0.4)	1.82	(0.2)	2.47	(0.2)	4.68	(0.4)
Family Violence	4.75	(0.4)	2.04	(0.2)	2.01	(0.2)	5.14	(0.5)
Child Sexual	2.58	(0.3)	0.74	(0.1)	1.15	(0.1)	1.86	(0.2)
Child Rape	1.99	(0.2)	0.63	(0.1)	0.90	(0.1)	1.37	(0.2)

Weighted Percentages (Standard Error), MED = maternal emotional disorders, MBD = maternal behavior disorders, PED = paternal emotional disorders, PBD = paternal behavioral, significance is denoted in bold

Moreover, paternal emotional disorders (PED) illustrated similar percentages to MBD ranging from 0.72% (maternal emotional neglect) to 2.47% (physical abuse). These findings demonstrate MED and PBD co-occur more frequently with maltreatment than MBD and PED.

Logistic Regression Analyses

Subsequent binary logistic regression analyses address the following research questions: *1) Are there key distinctions between maternal and paternal psychopathology and subtypes of neglect compared to other forms of maltreatment? 2) Do subtypes of neglect demonstrate key differences across lifetime DSM-IV disorders compared to other forms of maltreatment? 3) Are there differences between maternal and paternal psychopathology, subtype of maltreatment, and the presence of lifetime DSM-IV diagnoses?*

Model Design

Statistical Assumptions

All parental psychopathology and maltreatment variables had low rates of missing values, less than 1.6% percent, with the exception of paternal emotional neglect which had a total of $n = 382$ absent responses. Further exploration of those omitted determined that only six values were truly missing with the remaining 376 persons reporting “no father figure”. Due to these relatively high numbers, it was decided to include those reporting “no father figure” within the paternal emotional neglect construct because divergent outcomes may exist between those with “no father figure” and those reporting paternal emotional neglect. Therefore, paternal emotional neglect was recoded to include three outcome categories: those individuals reporting “yes” to emotional neglect, those without a father figure, and those reporting “no” ($n = 5686$). Maternal emotional neglect only had 32 individuals reporting “no mother figure” so they were excluded from subsequent models because the numbers were too low to support making a separate category ($n = 5660$).

Multicollinearity of the independent variables was assessed by collapsing the multi-level subtypes of physical abuse, family violence, LOC, and parental emotional neglect into dichotomous level variables. The maltreatment variables were then added to a tetrachoric correlation matrix along with the four parental psychopathology variables. Tetrachoric coefficients revealed modest to moderate correlations with all values below $r_{tet} = .70$. While there was a moderate degree of correlation between all maltreatment subtypes, as previously described in the creation of the maltreatment variables, the degree of overlap does not violate the assumption of multicollinearity. In other words, logistic

regression analyses allow for a moderate amount of overlap between predictor variables (Grimm & Yarnold, 1995) as is the case with maltreatment since many individuals experience more than one type (Gilbert, et al., 2009). Thus, the moderate degree of correlation between maltreatment subtypes as originally described is not considered problematic. All other assumptions of binary logistic regression analyses were met due to large sample size ($n = 5692$) (Tabachnick & Fidell, 2007).

Discussion of Model Fit

Model fit was assessed by observation of the AIC (Akaike Information Criterion), SC (Schwarz Criterion), -2 Log L (negative two times the log-likelihood), and Max-rescaled R-square statistics. An improvement of overall model fit is indicated by a reduction in values across the AIC, SC, and -2 Log L , although the numbers themselves are not meaningful, and in increase in the Max-rescaled R-square (R^2) statistic (Menard, S., 2000). All models consisted of the following covariates: gender, race, income, employment status, and education.

Binary logistic regression models for *research question #1* consisted of covariates first, followed by entry of the four parental predictors. For consistency across outcomes, each of the multi-level maltreatment variables (LOC, physical abuse, and family violence) were collapsed into simple “yes” or “no” categories. In total, eight models were run each with a different maltreatment outcome. Reductions across the AIC, SC, -2 Log L , and an increase in the R^2 values across all models were evident demonstrating good model fit. *The Likelihood Ratio Test of the Global Null Hypothesis* also demonstrated significant chi-square values at $p < .0001$ levels across all models, further

supporting overall model fit as well as the rejection of the null hypothesis between constant-only models and full models with predictors (Tabachnick & Fidell, 2007).

For *research question #2*, the same covariates were entered followed by the four neglect subtypes since the primary research hypothesis centers on neglect. Outcomes consisted of each of the seven DSM-IV disorders. Reductions across AIC, SC, -2 Log L statistics and an increase in R^2 were observed comparing the model with covariates only to the one comprised of covariates and neglect predictors. Next, the four remaining subtypes were entered and further reductions across AIC, SC, and -2 Log L values were noted with an increase in R^2 . This improvement suggests that inclusion of all the maltreatment subtypes, rather than just neglect, is necessary to improve overall model fit and strength.

The Likelihood Ratio Test of the Global Null Hypothesis showed chi-square values at the $p < .0001$ level across all seven models with the eight maltreatment predictors further demonstrating good model fit and the rejection of the null hypothesis. These results confirm that neglect experience is also highly associated with other forms of maltreatment and should be interpreted within a context that accounts for these overlapping relationships.

In order to determine the best overall model fit for *research question #3*, a series of three different models were assessed. The first model consisted of the same covariates, eight maltreatment subtypes, and four parental psychopathology variables with mood as the relevant outcome. In order to improve model fit, the four parental mental health variables were collapsed into two variables- one maternal and one paternal- resulting in a reduction in the number of predictors from 12 to 10. Model fit of this

second model improved slightly as evidenced by an increase in R^2 from .12 to .13 and the reduction in values across the AIC, SC, and -2 Log L statistics. While slight improvement was noted, the unique effects of parental emotional and behavior disorders were lost. Therefore, the third and final model kept maternal and parental variables each as one variable but with three categories: both, emotional only, and behavioral only.

Assessment of overall model fit demonstrated no change to the R^2 of .13, but further reductions in values across AIC, SC, and -2 Log L statistics were evident. This same procedure was completed across all of the remaining outcome variables with similar results. Thus, the final model consisted of eight maltreatment and two parental psychopathology indicator variables. *The Likelihood Ratio Test of the Global Null Hypothesis* showed significant chi-square values at the $p < .0001$ level across all seven models further supporting good model fit and the rejection of the null hypothesis.

Bivariate Correlations Between All Predictors and Outcomes

Prior to reporting the results of all multivariate models, the bivariate relationship between each independent and each dependent variable was explored. This allowed observation of the unique individual strength of each individual predictor and how it correlates independently with each individual outcome without adjusting for any other factor. For parsimonious reasons, all multi-level predictors were collapsed into dichotomous categories. Table 8 illustrates these results of these bivariate analyses. Cramer's V statistics show low to moderate correlations ranging from .03 to .24. Supervisory and LOC neglect had modest bivariate relationships with behavior disorders (Cramer's V = .16 & .12) and PTSD (Cramer's V = .16 & .15) while paternal emotional neglect also had a modest relationship with PTSD (Cramer's V = .10). Physical abuse

Table 8: Bivariate Correlations Between Predictors and Outcomes

<i>Predictors</i>	<i>Dependent Variables</i>						
	Mood	Substance	Behavior	Anxious	Phobias	OCD	PTSD
Neglect							
<i>Supervisory</i>	0.10	0.13	0.16	0.10	0.10	0.06	0.16
<i>LOC</i>	0.08	0.07	0.12	0.10	0.08	0.02	0.15
<i>Maternal Emot.</i>	0.08	0.05	0.07	0.06	0.06	0.02	0.09
<i>Paternal Emot.</i>	0.08	0.06	0.08	0.06	0.09	0.01	0.10
Abuse							
Physical	0.12	0.15	0.17	0.12	0.10	0.05	0.16
Family Violence	0.11	0.16	0.17	0.11	0.11	0.04	0.18
Rape	0.13	0.08	0.14	0.11	0.11	0.03	0.24
Sexual	0.15	0.03	0.11	0.11	0.11	0.05	0.21
Family History							
MED	0.14	0.10	0.17	0.12	0.12	0.07	0.13
MBD	0.07	0.11	0.12	0.05	0.05	0.00	0.05
PED	0.11	0.05	0.09	0.06	0.08	0.05	0.10
PBD	0.08	0.13	0.12	0.09	0.09	0.06	0.06

Correlations based on Cramer's V statistic, MED = maternal emotional disorders, MBD = maternal behavior disorders, PED = paternal emotional disorders, PBD = paternal behavioral disorders

and family violence had moderate correlations with behavior disorders (Cramer's V = .17), and PTSD (Cramer's V = .16 & .18) as well as substance (Cramer's V = .15 & .16) and mood (Cramer's V = .12 & .11). The strongest bivariate relationships were between rape and sexual abuse and PTSD (Cramer's V = .24 & .21). Out of all the parental psychopathology variables, maternal emotional disorders had the strongest correlation with behavior disorders (Cramer's V = .17). Other family history variables demonstrated low to moderate relationships with outcomes.

While these results demonstrate individual correlations across outcomes, they do not adjust for other significant relationships such as the gender, race, and socioeconomic status. Furthermore, the inter-correlations between predictors may also weaken some of these relationships in subsequent multivariate analyses. Nevertheless, this table

demonstrates the strength of individual relationships between all relevant variables and outcomes and provides a statistical context for the multivariate results.

Results of Research Question #1

This first series of analyses centered on answering if *there are key distinctions between maternal and paternal psychopathology and subtypes of neglect compared to other forms of maltreatment?* It was hypothesized that persons with a history of neglect would be more likely to report maternal and parental history of psychopathology than those reporting other forms of maltreatment and those without a history of maltreatment.

Table 9 illustrates the results of all eight models with R^2 values ranging from modest (.08) to moderate (.22) strength. The highest R^2 values were associated with LOC neglect (.19) and family violence (.22) with the lowest values linked to physical abuse (.09) and paternal emotional neglect (.08). R^2 is used as one measure “of the strength

Table 9: Logistic Regression Models of Parental Psychopathology by Maltreatment Subtypes

Neglect Subtypes				
	Supervisory	LOC	Maternal Emot.	Paternal Emot.
Family History	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
MED	2.95* (2.20-3.95)	3.58* (2.47-5.20)	3.63* (2.63-5.01)	2.28* (1.78-2.93)
MBD	1.80* (1.20-2.70)	3.02* (1.88-4.85)	2.40* (1.63-3.52)	1.63* (1.11-2.41)
PED	1.55* (1.04-2.32)	1.66 (0.98-2.81)	1.52 (0.97-2.37)	1.97* (1.26-3.07)
PBD	3.20* (2.54-4.04)	3.84* (2.66-5.55)	1.62* (1.21-2.16)	2.20* (1.72-2.82)
R^2	0.12	0.19	0.14	0.08
Abuse Subtypes				
	Physical	Family Violence	Child Rape	Child Sexual
Family History	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
MED	2.16* (1.67-2.78)	2.93* (2.22-3.87)	2.35* (1.65-3.34)	2.39* (1.81-3.16)
MBD	1.68* (1.22-2.29)	2.97* (2.10-4.21)	1.27 (0.81-2.01)	0.90 (0.61-1.34)
PED	2.27* (1.69-3.05)	1.99* (1.41-2.79)	2.32* (1.58-3.40)	1.83* (1.31-2.58)
PBD	2.20* (1.80-2.68)	5.33* (3.96-7.19)	1.69* (1.33-2.15)	1.77* (1.33-2.34)
R^2	0.09	0.22	0.17	0.14

Reference group = those reporting no to each subtype of maltreatment, Controlling for race, gender, education, employment, and income, MED = maternal emotional disorders, MBD = maternal behavior disorders, PED =paternal emotional disorders, PBD = paternal behavioral disorders, R^2 = Max Rescaled R-square, * = significant at $p < .05$

of association between the dependent variable and the total set of predictors” but isn’t a “coefficient of determination or explained variance” (Menard, 2000, p. 17). So, in this case, R^2 values are meant to demonstrate differences across models as well as to illustrate the intensity of the connection between predictors and the identified outcome. Therefore, LOC neglect and family violence have the most intense association to parental mental health history while physical abuse and paternal emotional neglect have the least.

Findings confirm that parental psychopathology is a major correlate of all subtypes of maltreatment. Maternal emotional disorders (MED) and paternal behavioral disorders (PBD) were the most strongly associated with all forms of maltreatment. Maternal behavioral disorders (MBD) are also notably connected to all subtypes with the exception of rape and sexual abuse. Paternal emotional disorders (PED) are significantly associated with all subtypes except LOC and maternal emotional neglect. Despite the relevance of these findings, the most noteworthy outcomes are *the differences* between maternal and paternal disorders.

For the most common forms of neglect, supervisory and LOC, *paternal* behavior disorders was found to be more strongly associated with outcomes than *maternal* emotional disorders. Participants reporting PBD were at greater risk of supervisory (OR = 3.20, CI: 2.54, 4.04) and LOC neglect (OR = 3.84, CI: 2.66, 5.55) than those reporting a history of MED (OR = 2.95, CI: 2.20, 3.95; OR = 3.58, CI: 2.47, 5.20) comparatively. The same pattern was noted for family violence and physical abuse where PBD was more likely to result in exposure to family violence (OR = 5.33, CI: 3.96, 7.19) and physical abuse (OR = 2.20, CI: 1.80, 2.68); although, paternal emotional disorders accounted for the highest rate of physical abuse (OR = 2.27, CI: 1.69, 3.05). PED were also

significantly high for rape (OR = 2.32, CI: 1.58, 3.40) and sexual abuse (OR = 1.83, 1.31, 2.58).

However, *maternal* emotional disorders (not paternal) contributed to the greatest likelihood of rape (OR= 2.35, CI: 1.65, 3.34) and sexual abuse (OR= 2.39, CI: 1.81, 3.16). MED also had the greatest relationship to maternal emotional neglect (OR =3.63, CI: 2.63, 5.01) and paternal emotional neglect (OR = 2.28, CI: 1.78, 2.93). Maternal behavior disorders and paternal behavior disorders were also highly connected to emotional neglect. MBD increased the risk for maternal emotional neglect (OR = 2.40; CI: 1.63, 3.52) while PBD elevated the likelihood of paternal emotional neglect (OR = 2.20, CI: 1.72, 2.82).

Results of Research Question #2

The next question addresses whether *subtypes of neglect are associated with key differences across lifetime DSM-IV disorders compared to other forms of maltreatment?* It was hypothesized that persons with a history of neglect would report higher rates of lifetime DSM-IV disorders compared to other forms of maltreatment. Results of Table 10 show R^2 values ranging from modest (.09) to moderate (.20) in strength with the most robust found in substance (.18) and behavior disorders (.18), as well as PTSD (.20). Inspection of individual maltreatment predictors show that supervisory neglect cuts across all disorders with the exception of the anxious states. Persons experiencing supervisory neglect were at greater odds of having lifetime mood disorders (OR = 1.39; CI: 1.17, 1.65), substance problems (OR 1.64; CI: 1.33, 2.03), behavior disorders (OR = 1.62; CI: 1.25, 2.08), phobias (OR = 1.36; CI: 1.04, 1.79), OCD (OR = 2.23; CI: 1.05, 4.76), and PTSD (OR = 1.42; CI: 1.10, 1.84) than those not reporting this experience.

LOC was significant for substance disorders, but it had a *reverse* affect (OR = 0.55; CI: 0.31, 0.98). In other words, those experiencing LOC were less likely to report a substance use problem than those without a history of LOC neglect. Furthermore, LOC neglect did not correlate with any other disorder.

Maternal emotional neglect was also not a significant contributor to any disorder, but paternal emotional neglect was noteworthy. Persons experiencing paternal emotional neglect were more likely to have lifetime mood disorders (OR = 1.38; CI: 1.07, 1.79), behavior disorders (OR = 1.34, CI: 1.01, 1.78), and phobias (OR = 1.42; CI: 1.05, 1.92) than those not reporting this experience. Furthermore, “no father figure” wasn’t significant across disorders with the exception of behavior disorders. In this case, “no father figure” was associated with greater likelihood of having a behavior problem (OR = 1.91; CI: 1.26, 2.91) than those experiencing paternal emotional neglect and those without paternal neglect history. Moreover, this is the only instance that having “no father figure” was significant and increased the rate of a disorder over paternal emotional neglect.

“Minor only” physical abuse had a considerable contribution across all disorders but “serious only” physical abuse did *not* except in instances where “both” types were reported. Furthermore, while “minor only” physical abuse cut across all disorders, “both” types of physical abuse did *not* have significant associations to mood disorders and OCD. However, psychiatric disorders were elevated among those who reported “both” types compared to those with “minor only”. In other words, having “*both*” types of physical abuse had a more profound affect across substance (OR = 1.92; CI: 1.23, 3.00), behavior (OR = 2.02; CI: 1.40; 2.91), anxious states (OR = 1.62; CI: 1.13, 2.31),

Table 10: Logistic Regression Models of Maltreatment Subtypes by DSM-IV Lifetime Diagnoses

Subtypes		Any Mood	Any Substance	Any Behavior	Any Anxious State	Any Phobias	OCD	PTSD
		OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
Neglect								
Supervisory	Yes	1.39* (1.17-1.65)	1.64* (1.33-2.03)	1.62* (1.25-2.08)	1.32 (1.00-1.73)	1.36* (1.04-1.79)	2.23* (1.05-4.76)	1.42* (1.10-1.84)
Lack of Care	Both	1.34 (0.68-2.68)	0.55* (0.31-0.98)	0.56 (0.24-1.27)	1.92 (0.95-3.90)	1.19 (0.64-2.18)	1.35 (0.31-5.94)	1.31 (0.60-2.84)
	Medical only	1.40 (0.67-2.93)	0.55 (0.27-1.12)	1.92 (0.61-6.01)	1.38 (0.71-2.70)	1.04 (0.55-1.96)	1.85 (0.30-11.47)	0.99 (0.33-3.00)
	Physical only	1.00 (0.68-1.45)	0.75 (0.47-1.18)	1.10 (0.73-1.67)	1.48 (0.92-2.40)	1.19 (0.83-1.71)	0.29 (0.06-1.40)	1.24 (0.84-1.82)
Maternal emot.	Yes	1.17 (0.91-1.51)	1.39 (0.89-2.19)	1.14 (0.81-1.60)	1.12 (0.83-1.50)	1.10 (0.80-1.49)	0.67 (0.22-2.06)	1.06 (0.67-1.67)
Paternal emot.	No father	0.76 (0.55-1.06)	1.02 (0.67-1.56)	1.91* (1.26-2.91)	0.65 (0.38-1.10)	0.71 (0.48-1.05)	0.36 (0.12-1.07)	0.78 (0.48-1.25)
	Yes	1.38* (1.07-1.79)	1.23 (0.95-1.60)	1.34* (1.01-1.78)	1.03 (0.79-1.35)	1.42* (1.05-1.92)	0.77 (0.37-1.61)	1.22 (0.86-1.74)
Abuse								
Physical	Both	1.34 (0.98-1.84)	1.92* (1.23-3.00)	2.02* (1.40-2.91)	1.62* (1.13-2.31)	1.40* (1.02-1.91)	1.06 (0.19-5.82)	1.82* (1.19-2.76)
	Minor only	1.43* (1.16-1.76)	1.72* (1.37-2.15)	1.53* (1.14-2.06)	1.56* (1.19-2.05)	1.22* (1.01-1.49)	2.67* (1.13-6.28)	1.53* (1.14-2.06)
	Serious only	1.47 (0.71-3.02)	0.96 (0.51-1.80)	1.22 (0.56-2.68)	0.86 (0.38-1.93)	0.89 (0.45-1.74)	3.84 (0.84-17.46)	1.21 (0.47-3.12)
Family violence	Both	1.54* (1.19-1.98)	1.77* (1.20-2.60)	1.96* (1.31-2.94)	1.78* (1.34-2.36)	1.75* (1.32-2.34)	1.03 (0.38-2.77)	2.07* (1.46-2.95)
	Minor only	1.22 (0.82-1.83)	1.75* (1.16-2.63)	1.18 (0.62-2.26)	0.73 (0.45-1.19)	1.53 (0.94-2.49)	1.07 (0.14-8.23)	1.30 (0.64-2.67)
	Serious only	1.54* (1.11-2.14)	1.94* (1.40-2.70)	1.40 (0.94-2.08)	1.39* (1.05-1.82)	1.44* (1.07-1.96)	1.38 (0.62-3.09)	1.89* (1.30-2.74)
Rape	Yes	1.75* (1.38-2.21)	2.23* (1.68-2.97)	2.29* (1.53-3.42)	1.34 (0.93-1.93)	1.53* (1.13-2.08)	1.01 (0.50-2.02)	3.03* (2.04-4.50)
Sexual Abuse	Yes	2.06* (1.60-2.66)	1.32* (1.02-1.70)	1.67* (1.21-2.31)	1.94* (1.44-2.63)	1.64* (1.33-2.04)	2.03 (0.85-4.84)	2.49* (1.97-3.16)
R^2		0.12	0.18	0.18	0.10	0.09	0.11	0.20

Reference Group = those reporting “no” to each subtypes and family history category, Controlling for race, gender, education, employment, and income. R^2 = Max Rescaled R-square. * $p < .05$, Any Mood (BP, MDD, Dysthymia), Any Substance (Alcohol/Drug Abuse/Dep), Any Behavior (ADHD, ODD, Conduct), Any Anxious (GAD, Panic), Any Phobia (Social, Specific, Agoraphobia),

phobias (OR = 1.40; CI: 1.02, 1.91), and PTSD (OR = 1.82; CI: 1.19, 2.76) outcomes than those experiencing “minor only” and those without physical abuse history.

Exposure to family violence was substantial across all disorders with the exception of OCD. “Serious only” and “both” were comparable across all of the disorders except behavior where “both” was the only significant contributor. In fact, family violence overall odds ratios were greater than supervisory neglect, paternal emotional neglect, and physical abuse across mood (OR = 1.54, CI: 1.19, 1.98), substance (OR = 1.94; CI: 1.40, 2.70), anxious states (OR = 1.78; CI: 1.34, 2.36), phobias (OR = 1.75; CI: 1.32, 2.34), and PTSD (OR = 2.07; CI: 1.46, 2.95) and even rivaled those of sexual trauma comparatively. Similarly, while rape (OR = 2.29; CI: 1.53, 3.42) and “both” forms of physical abuse (OR = 2.02; CI: 1.40, 2.91) were more likely to be associated with behavior disorders, family violence exposure (OR = 1.96, CI: 1.31, 2.94) was almost as considerable.

Sexual abuse was significantly associated with all disorders (except OCD) while rape had the most substantial relationship with all disorders excluding OCD and the anxious states. In fact, either form of sexual trauma accounted for the overall greatest odds ratios across all the disorders (OCD excluded) with the notable exception of phobias (OR = 1.75; CI: 1.32, 2.34) where the greatest value was linked to family violence exposure.

Results of Research Question #3

The final research question looks at exploring the relationship between maltreatment and later DSM-IV disorders adjusting for parental psychopathology. In other words, *are there differences between maternal and paternal psychopathology,*

subtype of maltreatment, and the presence of lifetime DSM-IV diagnoses? It was hypothesized that the presence of both parental psychopathology combined with history of maltreatment would have a greater association with lifetime DSM-IV diagnoses than maltreatment alone. Furthermore, there would be key differences between maternal and paternal psychopathology and DSM-IV outcomes while adjusting for maltreatment. Finally, the previous associations of each maltreatment subtype, particularly supervisory neglect, would hold constant once the contribution of parental psychopathology was entered into the research equation. Also, based on the lack of statistical significance of “physical only” and “medical only” in the previous analyses, the multi-level categories of physical and medical neglect in LOC were combined into one dichotomous level “yes” or “no” variable in order to increase statistical strength. In other words, if a respondent said “yes” to either the presence of physical or medical neglect this would result in a positive endorsement of LOC.

The most noteworthy observation is the *minimal* change in R^2 values across all models after adjusting for family history of psychopathology. Table 11 demonstrates only a one to two point increase across mood ($R^2 = .12$ to $.13$), substance ($R^2 = .18$ to $.19$), anxious states ($R^2 = .10$ to $.12$), and phobias ($R^2 = .09$ to $.10$). OCD had the largest change ($R^2 = .11$ to $.14$) while behavior and PTSD remained unchanged. Despite these small changes, parental psychopathology has significant associations across all disorders.

Contributions of maternal emotional disorders (MED) were evident across mood (OR = 1.76; CI: 1.43, 2.16), substance (OR = 1.56; CI: 1.24, 1.96), anxious states (OR = 1.78; 1.29, 2.44), and phobias (OR = 1.66; CI: 1.32, 2.08) compared to those without a history of MED. However, the greatest associations were with behavior (OR = 2.28; CI:

1.64, 3.15) and OCD (OR = 2.82; CI: 1.70, 4.68). Conversely, maternal behavioral disorders (MBD) had the most substantial associations with mood (OR = 2.03; CI: 1.29, 3.18) and substance (OR = 2.64; CI: 1.71, 4.09) compared to those without a history of MBD. While the presence of “both” types of maternal disorders did translate into an increased likelihood of substance (OR = 2.48; CI: 1.44; 4.28) and behavior (OR = 2.18; CI: 1.25, 3.81) disorders, the overall odds ratios were not as large comparatively nor did they transfer to mood, anxious states, phobias, or OCD.

Parental psychopathology, while not as significant as maternal, also had sizeable correlations. Paternal emotional disorders (PED) had strong associations with mood (OR = 2.00; CI: 1.44, 2.77), OCD (OR = 3.94; CI: 1.41, 10.99), and PTSD (OR = 1.61; CI: 1.11, 2.33) compared to those without a history of PED while paternal behavior disorders had strong connections to substance (OR = 1.41; CI: 1.06, 1.87) and phobias (OR = 1.43; CI: 1.18, 1.73). The presence of “both” types of paternal disorders were linked to behavior disorders (OR = 1.78; CI: 1.16, 2.72). That is, persons with any paternal mental health problem had a greater likelihood of lifetime mood disorder, substance problem, behavioral disorder, phobias, OCD, and PTSD compared to those without a history of paternal psychopathology even after correcting for the impact of childhood abuse and/or neglect. However, paternal psychopathology had a more limited effect because in several instances maternal emotional and maternal behavior disorders were both statistically significant across several outcomes (e.g. mood, substance, & behavior) but paternal disorders were not. In other words, it appears that maternal psychopathology has a cumulative effect across lifetime DSM-IV disorders, but paternal psychopathology does

not as evidenced by the presence of only one type of parental disorder across each associated outcome.

Finally, the prior effects of maltreatment subtypes on DSM-IV outcomes were compared to the present findings adjusting for family history (*see Table 11*). Supervisory neglect remained significant for substance (OR = 1.47; CI: 1.17, 1.86) and behavior disorders (OR = 1.35; CI: 1.01, 1.80) as well as PTSD (OR = 1.44; CI: 1.09, 1.90) compared to those without this experience. However, the previous associations to mood, phobias, and OCD were eliminated as well as the connections of paternal emotional neglect. The reverse affect of LOC neglect (OR = 0.62; CI: 0.43, 0.88) continued to be significant while the *lack of* findings with maternal emotional neglect also held constant.

Table 11 also demonstrates changes across other forms of maltreatment but these were small. “Minor only” physical abuse remained significant across all disorders with the exception of behavior, but this was still significant for “both” types. “Both” remained unchanged except for phobias which became insignificant after family history was added to the model. “Serious only” physical abuse by itself continued to have no effect. “Minor only” physical abuse was also the only remaining subtype correlated with OCD.

The role of family violence remained virtually unchanged across disorders but the significant effects of “serious only” dropped from mood, anxious state, and phobias. While the cumulative effects of “both” dropped from substance disorders, contributions were still evident for those experiencing “serious only” (OR = 1.86; CI: 1.37, 2.52). In other words, “serious only” or “both” types of family violence, continued to have a substantial impact across all disorders except OCD. Furthermore, the odds ratios of

Table 11: Logistic Regression Models of Maltreatment Subtypes and Family History of Psychopathology and Lifetime DSM-IV Diagnoses

		Any Mood	Any Substance	Any Behavior	Any Anxious State	Any Phobia	OCD	PTSD
		OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
Neglect								
Supervisory	Yes	1.15 (0.98-1.35)	1.47* (1.17-1.86)	1.35* (1.01-1.80)	1.20 (0.92-1.57)	1.17 (0.88-1.56)	1.64 (0.71-3.79)	1.44* (1.09-1.90)
LOC	Yes	1.09 (0.78-1.51)	0.62* (0.43-0.88)	0.84 (0.47-1.49)	1.31 (0.88-1.93)	1.06 (0.76-1.48)	0.55 (0.17-1.71)	1.24 (0.84-1.84)
Maternal emot.	Yes	1.22 (0.93-1.59)	1.24 (0.72-2.14)	1.00 (0.69-1.43)	1.15 (0.89-1.48)	1.08 (0.82-1.42)	0.71 (0.24-2.07)	1.14 (0.74-1.77)
Paternal emot.	Yes	1.28 (0.98-1.68)	1.14 (0.87-1.51)	1.28 (0.98-1.69)	0.95 (0.72-1.27)	1.32 (0.96-1.81)	0.61 (0.27-1.38)	1.21 (0.86-1.71)
Abuse								
Physical	Both	1.19 (0.85-1.67)	1.79* (1.14-2.83)	1.68* (1.20-2.35)	1.62* (1.12-2.34)	1.38 (1.00-1.90)	1.17 (0.24-5.81)	1.70* (1.11-2.60)
	Minor only	1.36* (1.09-1.68)	1.65* (1.35-2.03)	1.33 (0.99-1.79)	1.54* (1.16-2.05)	1.22* (1.01-1.48)	2.70* (1.09-6.66)	1.41* (1.05-1.90)
	Serious only	1.46 (0.72-2.95)	0.92 (0.50-1.69)	1.35 (0.60-3.04)	0.86 (0.39-1.89)	0.80 (0.43-1.48)	3.61 (0.86-15.18)	1.06 (0.39-2.89)
Family violence	Both	1.52* (1.11-2.07)	1.48 (1.01-2.18)	1.58* (1.08-2.31)	1.77* (1.31-2.40)	1.78* (1.32-2.40)	0.91 (0.39-2.11)	2.30* (1.58-3.33)
	Minor only	0.99 (0.63-1.55)	1.54 (0.96-2.45)	0.86 (0.43-1.70)	0.57 (0.33-1.00)	1.26 (0.76-2.10)	0.81 (0.10-6.26)	1.01 (0.40-2.51)
	Serious only	1.45 (1.01-2.10)	1.86* (1.37-2.52)	1.34 (0.86-2.09)	1.27 (0.94-1.72)	1.29 (0.93-1.79)	0.88 (0.38-2.05)	1.87* (1.24-2.81)
Rape	Yes	1.64* (1.25-2.15)	2.12* (1.51-2.96)	2.16* (1.38-3.37)	1.24 (0.87-1.78)	1.41* (1.04-1.91)	0.85 (0.42-1.72)	2.84* (1.79-4.52)
Sexual Abuse	Yes	1.91* (1.44-2.54)	1.27 (0.96-1.69)	1.51* (1.09-2.09)	1.89* (1.37-2.62)	1.61* (1.30-2.00)	1.60 (0.64-3.98)	2.55* (1.99-3.27)
Family History								
Maternal M.H.	Both	1.24 (0.83-1.84)	2.48* (1.44-4.28)	2.18* (1.25-3.81)	0.89 (0.59-1.33)	1.11 (0.71-1.73)	1.88 (0.57-6.18)	1.10 (0.75-1.62)
	Behavioral only	2.03* (1.29-3.18)	2.64* (1.71-4.09)	1.66 (0.76-3.65)	1.63 (0.97-2.76)	1.33 (0.82-2.17)	*** **	0.55 (0.21-1.43)
	Emotional only	1.76* (1.43-2.16)	1.56* (1.24-1.96)	2.28* (1.64-3.15)	1.78* (1.29-2.44)	1.66* (1.32-2.08)	2.82* (1.70-4.68)	1.25 (0.88-1.78)
Paternal M.H.	Both	1.66 (0.92-2.98)	1.48 (0.87-2.52)	1.78* (1.16-2.72)	1.44 (0.76-2.70)	1.37 (0.86-2.21)	2.73 (0.76-9.81)	0.86 (0.47-1.58)
	Behavioral only	1.26 (0.98-1.62)	1.41* (1.06-1.87)	1.25 (0.93-1.70)	1.41 (0.99-2.01)	1.43* (1.18-1.73)	2.23 (0.98-5.08)	0.85 (0.62-1.16)
	Emotional only	2.00* (1.44-2.77)	0.93 (0.51-1.69)	1.29 (0.71-2.34)	1.16 (0.74-1.80)	1.56 (0.99-2.46)	3.94* (1.41-10.99)	1.61* (1.11-2.33)
R^2		0.13	0.19	0.18	0.12	0.10	0.14	0.20

Reference Group = those reporting “no” to each subtypes and family history category. Controlling for race, gender, education, employment, and income. R^2 = Max Rescaled R-square . * $p < .05$. Any Mood (BP, MDD, Dysthymia), Any Substance (Alcohol/Drug Abuse/Dep), Any Behavior (ADHD, ODD, Conduct), Any Anxious (GAD, Panic), Any Phobia (Social, Specific, Agoraphobia). Maternal M.H./Paternal M.H = Behavioral (Substance, Antisocial), Emotional (Depression, Anxiety, Panic, Suicide), Both (Emotional & Behavioral).

family violence continued to be higher overall across mood (OR= 1.52; CI: 1.11, 2.07), substance (OR = 1.86; CI: 1.37, 2.52), anxious states (OR = 1.77, 1.31, 2.40), phobias (OR = 1.78; 1.32, 2.40), and PTSD (OR = 2.30; 1.58, 3.33) than those of either supervisory neglect and physical abuse and comparable to sexual trauma. Sexual abuse and/or rape continued to be the strongest contributors uniformly across all disorder with the exception of OCD.

Limitations

Despite the relevance of current study, there are a number of limitations with the cross-sectional retrospective design of this dataset that must be noted. First, retrospective reports are generally thought to underestimate the true proportion of maltreatment experience (Fang & Corso, 2007). This is particularly true for neglect because it is not tied to a specific incident, and consequently memories of childhood deprivation may evaporate more easily. This could also be one of the reasons that LOC neglect failed to produce significant findings in the current study. Thus, the retrospective nature of this design is more likely to produce “low sensitivity” resulting in “fewer false positives” (2007, p. 288). So while the true prevalence rates are underestimated, the chance of erroneous statistically significant findings is reduced.

Second, the cross sectional design of this study does not allow for the establishment of temporal order. In other words, it cannot be determined what types of maltreatment preceded other types. For example, it cannot be ascertained if exposure to family violence preceded incidents of neglectful behavior. Additionally, it is not evident if the underlying mental health conditions found in this study contributed to maltreatment, or if the maltreatment experience triggered underlying psychopathology.

While this study can identify relationships between predictors and outcomes, these results cannot determine casual patterns.

Third, individuals with history of psychopathology are more likely to perceive events in a negative fashion and are therefore more likely to report maltreatment experience because of these conditions. Cohen and others state “the major issue... is whether these [retrospective] reports may be biased by the very psychopathology that is under investigation” (2001, p. 982). While the NCS-R dataset allows ways to reduce this overall bias, the current study did not implore these methods due to time constraints. For example, this study looked only at history of lifetime disorders. History of the psychopathology within the past twelve months as well as the last 30 days is also available for exploration. Therefore, future exploration could consider controlling for the effects of selective recall exacerbated by the negative cognitions associated with a current episode of depression.

Fourth, the maltreatment types and underlying psychopathology under investigation are provided by a single informant. Research has demonstrated that other sources, such as family members, are particularly helpful in substantiating or verifying history of maltreatment as well as psychopathology because of perceptual differences. For example, research into intimate partner violence has shown that abusive incidents can be perceived differently by male and female partners (Hartley, 2002). Thus, having information from more than one source strengthens understanding of both causal and consequential factors. Furthermore, for certain conditions such as substance and/or behavioral problems, information collected from persons other than the person affected by the condition is often necessary to determine the true impact of the condition on

others. Hence, the inclusion of multiple informants is preferable but generally not feasible in a study of this magnitude.

Finally, while the NCS-R dataset allows for such inquiry, this study did not assess parental psychopathology in way that determined if problems existed in both parents, mother only, or father only. The current methodology only allowed for observation of patterns rather than looking at the presence of both maternal and paternal psychopathology from a single participant. Further exploration into this matter would help to disentangle the questions surrounding parental concordance of psychopathology and the connection to sexual trauma, family violence, and neglect.

Moreover, the current study did not make distinctions in parental psychopathology between biological and non biological parents. Investigating these distinctions could also provide additional information about the relationship between paternal psychopathology and neglect. Thus, exploring the link between paternal psychopathology and maltreatment should also look at the biological relationship of the father figure under investigation. Despite this, many families are blended consisting of a mixture of biological and non biological relationships. The fact this study did not disaggregate biological fathers from other types of father figures has relevance for many different types of families identified in social work practice. Even though these limitations exist, important findings about neglect subtypes in relation to other types of maltreatment as well history of parental psychopathology were discovered and will be discussed in greater detail in the final chapter.

CHAPTER V

IMPLICATIONS

Most of our current knowledge regarding neglect comes from child welfare samples. Consequently, most of what is understood about neglect is derived from the most serious forms of neglect, and almost exclusively focuses on maternal factors. The purpose of this study was to focus on neglect as it occurs throughout the general population in order to highlight those not identified to child protection agencies.

In order to illustrate these differences three research questions were explored: *1) Are there key distinctions between maternal and paternal psychopathology and subtypes of neglect compared to other forms of maltreatment? 2) Do subtypes of neglect demonstrate key differences across lifetime DSM-IV disorders compared to other forms of maltreatment? 3) Are there differences between maternal and paternal psychopathology, subtype of maltreatment, and the presence of lifetime DSM-IV diagnoses?* The remaining portion of this study discusses findings from these three questions with specific implications for practice, research, and policy.

Findings

The current study demonstrated notable findings across gender, race, and socioeconomic indicators. Physical neglect, serious physical abuse, and serious family violence were the only subtypes significantly associated with all three domains of socioeconomic well-being. In other words, those individuals reporting physical neglect, serious physical abuse, or exposure to serious family violence had the lowest rates of educational attainment, lowest income, and highest rates of unemployment. However, physical neglect and serious only physical abuse did not translate to multivariate

associations. That is to say, those of lower socioeconomic status may have higher rates of physical neglect and serious physical abuse, but these types of maltreatment did not translate to an increased risk for mental health problems relative to other subtypes in this study.

The strongest racial associations with maltreatment subtypes showed that 17% of the “other” racial group experienced serious physical abuse. Approximately one-fifth of all Hispanics reported exposure to serious family violence during childhood whereas whites and blacks experienced much lower proportions of overall maltreatment. This result is striking because blacks are disproportionately overrepresented in child welfare statistics for child neglect (Crampton & Coulton, 2008; Cross, 2008).

One possible interpretation of this result is that when left to account for themselves, blacks do not perceive themselves as neglected at greater proportions than those of other racial groups. Rather, underlying racial biases may be the driving force behind the over involvement of black children within the child protection system due to neglect. Therefore, inherent systemic bias may explain the discrepancies between this representative study and other non representative findings; especially considering that many reporters of child maltreatment are professionals (Children’s Bureau, U.S. Department of Health and Human Services [DHHS], 2010).

Rates of medical neglect, maternal emotional neglect, as well as serious physical abuse were considerable for the “other” racial group, but not for whites, blacks, or Hispanics. The “other” racial group includes all individuals who do not fall into one of the aforementioned three groups. These include American Indians, Asian/Pacific

Islanders, and any other individual that does not self-identify as white, black, or Hispanic, thus a very heterogeneous group.

One probable explanation is that groups such as Native Americans and Asian/Pacific Islanders communities are more self-contained and the true rates of maltreatment are not as easily understood, particularly for neglect. That is to say, these communities are more averse to disclosing potential problems to outsiders such as child protection agencies. This, in addition to their relatively small numbers within the general population, makes them difficult to study. It is also possible that this result will not translate to other similar studies; therefore further exploration of this matter is necessary to draw further conclusions.

Gender differences were not observed across most neglect subtypes and physical abuse, but significant distinctions were apparent in maternal emotional neglect, sexual abuse, rape, and family violence. Consistent with prior studies, prevalence of sexual abuse and rape were substantially higher for females (Molnar et al., 2001). Females also had higher rates of family violence exposure. Research has generally shown mixed results regarding gender differences and family violence experience (Finkelhor, Turner, Ormrod, & Hamby, 2009; Field & Caetano, 2003), however exposure to family violence in females puts them at much greater risk for future victimization (Stover, 2005).

Females were also more likely to experience maternal emotional neglect. This is of particular interest because very little attention has been directed towards emotional neglect let alone its connection to gender differences. One possible reason for the heightened prevalence in females is because they have higher rates of mood disorders,

they are more sensitive to and possibly more susceptible to the effects of emotional neglect, thus more likely to report it.

While maternal emotional neglect was found to be more common for females, no effects of maternal emotional neglect were demonstrated in subsequent multivariate analyses. Conversely, paternal emotional neglect was not related to gender, but there were significant multivariate outcomes. Those that experienced paternal emotional neglect had an increase risk of lifetime mood disorders by 1.38 times, substance disorders by 1.34 times, and phobias by 1.42 times compared to those who did not. This indicates that *paternal*, rather than maternal, lack of emotional care is a more salient risk factor for negative outcomes.

Research Question #1

The first hypothesis suggesting that neglect would be more strongly linked to parental history of psychopathology than other forms of maltreatment was partially upheld. The obvious exception was family violence in terms of overall model strength and the unusually robust relationship with paternal behavior disorders. Nevertheless, remaining outcomes showed the highest overall odds ratios across three of the four subtypes of neglect.

Paternal behavior disorders demonstrated the strongest association to supervisory and lack of care neglect (LOC), while maternal emotional disorders had the greatest connection to maternal emotional neglect. The relationship between maternal emotional disorders and supervisory, LOC, and maternal emotional neglect was stronger than that found between maternal emotional disorders and any other form of maltreatment. Moderate R^2 values across supervisory, LOC, and maternal emotional neglect also

support this pattern since they are comparable to or greater than other models. However, this pattern did not hold true for paternal emotional neglect which had the lowest R^2 value of all. Despite this, the correlation between maternal emotional disorders and paternal emotional neglect was greater than physical abuse, and rivaled that of rape and sexual abuse. These results suggest that while maternal history is an important indicator of maternal emotional neglect is also an equally important indicator of *paternal* emotional neglect.

This is noteworthy because *maternal* emotional disorders were more strongly associated with history of sexual trauma than *paternal* emotional disorders. At first, this finding seems counterintuitive since in many cases sexual maltreatment is committed by a well known male relative, such as a father figure, so it stands to reason that paternal psychopathology, not maternal, would have the stronger association. However, research on spousal concordance and mental disorders indicates that partners with mood disorders are more likely to select mates with similar psychopathology (Low, Cui, & Merikangas, 2007). Therefore, the contribution of both maternal and paternal emotional disorders should be of similar proportion to sexual trauma, as has been demonstrated in this study. Furthermore, women with emotional disorders may be less able to protect their children from such victimization because they overwhelmed by their own difficulties.

This same logic supports the relationship between maternal emotional disorders and paternal emotional neglect. Although, maternal emotional disorders are strongly associated with paternal emotional neglect, paternal emotional and parental behavior disorders have similar contributory affects. In other words, maternal emotional disorders increase the risk of paternal emotional neglect by 2.28 fold compared to those with no

history of maternal emotional disorders while paternal behavior and parental emotional disorders account for a 2.20 and a 1.72 fold increase compared to those who were not emotionally neglected by a father figure. That is, mothers with emotional disorders may be more likely to partner with males who are emotionally unavailable to meet their children's needs. This is of particular concern given the increased likelihood of parental emotional neglect and lifetime mood and behavioral disorders as well as phobias. These results, while considerable, are not nearly as striking as the relationship between paternal psychopathology and other forms of neglect.

Remarkably, the associations between paternal behavior disorders and supervisory and LOC neglect were stronger than those of maternal emotional and maternal behavior disorders. Paternal behavior disorders increased the likelihood of supervisory neglect by 3.20 times and LOC by 3.84 times compared to those without a history of paternal behavior disorders while maternal emotional disorders accounted an elevation of 2.95 times for supervisory and 3.58 times for LOC comparatively. Maternal behavior disorders also increased supervisory by 1.80 times and LOC neglect by 3.02 times. While these numbers are substantial across both paternal behavior and maternal emotional disorders, they are also interesting given that numerous other studies that depict neglect as solely a maternal failure. Instead, these results suggest the *paternal* psychopathology, rather than maternal, maybe a more prominent contributor to the most common forms of neglect.

Paternal behavior disorders had the strongest of all relationships with family violence. Persons identifying paternal behavior disorders were 5.33 times more likely to be exposed to family violence while those reporting maternal behavior and maternal

emotional disorders were 2.97 times and 2.93 times more likely to also report this experience. Certainly, maternal family history was also associated with family violence but the paternal contribution far exceeded that of maternal influence.

Research Questions #2 and #3

Parental psychopathology was also associated with all disorders with notable gender effects. Maternal psychopathology was found to be a more vigorous contributor to lifetime disorders than paternal psychopathology. The presence of more than one type of maternal disorder was evident across mood, substance, and behavior while paternal disorders did not demonstrate these combined affects.

For those with maltreatment experience, a family history of psychopathology had a small contributory role to the onset of DSM-IV disorders. Rather, the experience of abuse and/or neglect proved to be a more salient risk factor for mental health problems. This is evidenced by only a slight improvement in model strength across mood, substance, anxious states, and phobias once the parental variables were added to the model. Moderate improvement was found in OCD once these were added to the analyses. Furthermore, these improvements did not translate to behavior disorders and PTSD. Therefore, the third hypothesis that the presence of both parental psychopathology combined with history of maltreatment would have a greater association with lifetime DSM-IV diagnoses than maltreatment alone was only partially upheld. Nevertheless, these findings suggest that while maternal psychopathology is more relevant universally to lifetime mental health problems, paternal psychopathology appears to play a more substantial role in childhood maltreatment.

Despite the well know contribution of sexual abuse and subsequent psychopathology (Molnar et al., 2001) which this project also confirmed, the current project yielded substantial findings for family violence, supervisory neglect, and minor physical abuse across almost all outcomes. Paternal emotional neglect was also notable across several disorders while maternal emotional negligence had no contribution to any disorder, a surprising finding. These results while relevant were also disappointing because they disprove the second hypothesis suggesting that neglect subtypes would result in higher rates of lifetime DSM-IV disorders compared to other forms of maltreatment. Rather, both forms of sexual trauma and family violence had the most substantial impact on psychopathology.

However, what is most intriguing is that supervisory neglect had a substantial relationship across most outcomes while LOC did not. The contributions of supervisory neglect remained across substance disorders, behavior disorders, and PTSD, even after adjusting for parental psychopathology. That is, supervisory neglect was associated with an elevated risk for substance disorders by 1.47 times, behavior disorders by 1.35 times, and PTSD by 1.44 times while LOC continued to demonstrate a reduction in the likelihood of lifetime substance disorders even after accounting for family history. This finding contradicts existing literature pertaining to neglect and substance problems; specifically that LOC neglect is a causal factor of substance use disorders (SUD).

One possible explanation as to why this is the case is that LOC neglect is not uniformly a contributor to SUD. Rather, only chronic LOC neglect, the type found throughout child welfare cases, is a true predictor. Conversely, LOC neglect experienced throughout the general population appears to serve in a protective capacity. For example,

given the usually strong link between both paternal and maternal behavior disorders (which consist of SUDs) and LOC, those who have a parent with a SUD *and* experience LOC are more likely *not* to engage in drinking or drug use behaviors because of their neglectful experience. In other words, these individuals may attribute the SUD as the direct reason why their physical needs were not met, and therefore are adverse to these behaviors.

While “minor only” physical abuse and/or “both” types of abuse were associated with an increased risk uniformly across all disorders even after adjusting for family history, “serious only” physical abuse was not significantly associated with any disorder. However, this result may be attributable to low power. For example, those persons reporting “serious only” ($n = 85$) physical abuse without experiencing “minor” forms are very low comparatively ($n = 361$ “both”, $n = 1017$ “minor only”). This suggests that serious physical abuse without minor physical abuse occurs so infrequently that the effects are inconsequential in such a large sample. Still it stands to reason that those reporting “serious only” physical abuse would at least have some statistical relationship to PTSD, given that serious physical abuse by itself is likely to be perceived as a traumatic event. Conversely, the presence of “minor only” physical abuse permeated all disorders and was the only form of maltreatment correlated with OCD. This is probably best explained as the repetitive nature of OCD makes one more susceptible to parental frustration resulting in higher rates of physical abuse.

Family violence continued to be a more robust contributor to overall lifetime disorders than either supervisory neglect or physical abuse even after adjusting for the affects of family history. Family violence exposure increased the risk for mood disorders

by 1.52 times, substance disorders by 1.86 times, anxious states by 1.77 times, phobias by 1.78 times, and accounted for a 2.30 fold increase in the presence of PTSD comparable to that of rape (2.84) and sexual abuse (2.55). While physical abuse did show greater risk for behavior disorders at 1.68, family violence produced a similar rate of 1.58.

In summary, while the current project did not demonstrate greater correlates between neglect and DSM-IV disorders comparatively, a number of significant findings relevant to neglect were discovered. Paternal emotional neglect was a significant contributor to mood and behavior disorders as well as phobias but maternal emotional neglect was not statistically relevant to any disorder. While maternal psychopathology was again confirmed to be associated with all subtypes of neglect, paternal psychopathology appears to play a much greater role in supervisory and LOC neglect than previously thought. Supervisory neglect was discovered to be a more robust indicator of mental health disorders than other forms of neglect. Other forms of neglect became insignificant once parental psychopathology variables were entered into the model. However, the contributions of supervisory neglect remained across substance, behavior, and PTSD. This documents previous assumptions about the intergenerational transmission of neglect. That is, paternal and maternal antisocial and/or substance problems increase the likelihood of supervisory neglect, which in turn places offspring at greater risk of similar problems which ultimately may contribute to future child maltreatment.

Physical neglect was significantly associated across all socioeconomic indicators, but these results did not translate to multivariate outcomes. In other words, while physical neglect rates were higher among those with lower socioeconomic status,

physical neglect was not correlated with negative mental health outcomes. However, these results confirm findings from other studies that neglect experience limits educational advancement as well as resource acquisition through employment and income, factors which increase the likelihood of future maltreatment.

Finally, previous empirical evidence regarding race and neglect were not supported by this project. That is, blacks did not report higher rates of neglect relative to other racial groups. This finding has particular implications for policies surrounding screening of suspected child maltreatment.

All of these results explain a facet of the neglect continuum that has been previously overlooked; those children not reported to child protection agencies. Because these findings are not derived from child welfare samples they provide additional evidence about neglect that may support a shift in social work practice. In other words, almost everything know about neglect is based on maternal factors. However, paternal factors are equally important in child neglect as well as family violence and require more emphasis. In order to modify practice, research that provides evidence to support fundamental changes in policy is necessary. These findings provide such a foundation and have implications for all three interlocking facets of the social work profession- practice, research, and policy. Therefore, the remaining discussion will center on how these results provide a preliminary foundation for modifications to all three areas.

Practice

Paternal Engagement and Intervention

These findings support the direct inclusion of fathers and/or father figures in both neglect assessment and intervention. However, historically, neglect practice has focused

exclusively on assessment and engagement with mothers and/or maternal relatives.

There are two central reasons why this is the case. First, identifying fathers of neglected children can be difficult. Some may not be involved thereby foregoing all parental responsibilities. Of those that are involved, they are more likely not to live in the home with their children. Hartley (2002) found that neglected children were less likely to live with a biological father. Neglectful mothers are also less likely to live with their partners (Coohey, 1995) making integration of fathers and/or father figures into practice more challenging.

Second, if there are multiple children in the home, there may be more than one biological father. Larger sibling groups may be indicative of more than one father and have been identified as one of the key indicators of child neglect (Gaudin et al., 1996; Nelson et al., 1993). Locating and engaging more than one father is often time consuming, complicated, and can often mean divided loyalties. For instance, a father of one sibling may focus exclusively on the needs of his child rather than seeing all the children as part of a larger family system. Therefore, engagement of fathers in child neglect cases is often an additional challenge because competing interests are often part of the process. However, as this study demonstrated, parental factors are critical in both the occurrence of neglect and in overall mental health outcomes.

This suggests that engagement of fathers, biological or not, into neglect practice strategies is an important endeavor to reduce the likelihood of subsequent mental health problems in their children. Furthermore, the noteworthy associations between paternal psychopathology and neglect subtypes indicate that assessments of neglect should expand to include paternal functioning and availability. Prior research has shown that the extent

of the mother's mental health and father's antisocial behavior can differentiate severe forms of neglect from milder forms (Child Welfare Partnership as cited in Hartley, 2002). Antisocial behavior is directly tied to aggression. A woman who is being subjected routinely to partner violence may be unable to function resulting in negligence to the children.

Previous studies have found that maternal depression was correlated with increased odds of severe intimate partner violence (Hazan et al., 2004). Hartley (2002) also found that in cases involving domestic violence and neglect the mother was identified as the neglectful caregiver. Therefore, it could be surmised that paternal abusive behavior may very well be exacerbating underlying maternal mental disorders, thus contributing to the well established link between maternal depression and neglect (Renner & Slack, 2006). This also indicates that in certain instances *neglect* may actually be a *consequence of exposure to family violence*.

A number of studies have found that the co-occurrence of child maltreatment and domestic violence is between 30-60% (Edleson, 1999). However, these studies have emphasized the co-occurrence of physical abuse and domestic violence (McGuigan & Pratt, 2001). Very few have explored the link between neglect and family violence without combining neglect with physical abuse, and most of these studies rely on retrospective reports so temporal order cannot be established (Higgins & McCabe, 2001).

McGuigan and Pratt's (2001) longitudinal study of high risk mothers and children is one such study that specially emphasized the temporal relationship between family violence and other forms of child maltreatment. They found that that family violence co-occurred with other forms of maltreatment in 78% of the cases. For neglect specially,

domestic violence preceded neglect in 80% of the cases. Furthermore, the co-occurrence of family violence and child maltreatment also resulted in an increased likelihood of identification to child protection agencies (Hazen et al., 2004). This could explain the overwhelming presence of neglect in the child welfare system. For example, if neglect is actually a direct consequence of family in the home, but the violence is not initially apparent, it appears on the surface that children are only being neglected. Rather, child neglect may actually be a symptom or a consequence of a much larger problem- exposure to family violence.

This supposition has particular relevance for this study because paternal behavior disorders were the strongest contributor of exposure to family violence. Exposure to family violence was also found to substantially increase the risk of overall lifetime mental disorders- more than all other neglect subtypes and physical abuse- and rivaled that of sexual trauma in many instances. That is, exposure to family violence is directly tied to paternal substance disorders and/or antisocial behaviors, is likely to co-occur with neglect, and has long term mental health consequences for children. However, service delivery for family violence is focused almost exclusively on the mother.

In the child protection service sector, family violence interventions for mothers and fathers can be drastically different. For example, interventions for mothers are often therapeutic and may emphasize leaving the male batterer. Conversely, fathers are often not treated in a therapeutic environment; rather they are most often charged with a crime and sent through the criminal justice system. This is problematic for several reasons.

First, even if the mother and children leave after the initial crisis surrounding the abusive episode subsides, many families reunite. Research has demonstrated that even if

women do leave they are likely to return (Gordon, Burton, & Porter, 2004). Without having parallel therapeutic service delivery to both mothers and fathers the likelihood of re-occurrence is inevitable. That is not to say that the primary perpetrator of violence should not have criminal consequences for violent behavior. Rather, services for the father should also involve a therapeutic piece that accounts for the probability of the family reuniting. Thus, the family is treated in a systematic fashion rather than targeting one or two individuals.

Second, in many cases of co-occurring child maltreatment and family violence, the violence is between two biological parents (Hartley, 2002). So, even if the children no longer live with their father, they still share emotional connections and genetics that simply cannot be erased just because he is no longer physically present. Therefore, interventions should still seek to address paternal needs simply because in most cases fathers are and will continue to be a part of their children's lives.

Third, several studies have demonstrated that while men commit more severe intimate partner violence, women actually perpetrate violence against their partners at equal or higher rates (Fang & Corsco, 2007; O'Leary & Curley, 1986; Straus & Savage, 2005). Targeting therapeutic services exclusively to women and not men fails to address this reality. Moreover, relying on exclusively on maternal report measures about family violence also fails to account for this actuality.

Finally, the impact of exposure to family violence has on subsequent mental health outcomes is unequivocal (Carlson, 2000; Stover, 2005). That is, children exposed to family violence have worst mental health outcomes than many other forms of maltreatment and those without exposure as this study demonstrated. However, to what

extent this exposure *and* the subsequent loss of a father figure may exacerbate mental health outcomes particularly when perceived paternal emotional neglect also has a relationship to DSM-IV disorders. Furthermore, because paternal psychopathology is the overwhelming contributor to family violence, and that family violence has such devastating mental health outcomes, therapeutic interventions to address both the underlying psychopathology and violent behavior are necessary to reduce the likelihood of re-occurrence and subsequent negative outcomes. Therefore, inclusion of fathers in therapeutic service delivery is a necessity to lessen the frequency and impact of family violence exposure. That is not to say that addressing the needs of mothers in these situations should be secondary, rather engaging and intervening with *both* parental figures is critical to the welfare of children.

Maternal Intervention

This study confirmed the well established relationship between maternal psychopathology and all types of neglect, physical abuse, and family violence. Notably, maternal emotional disorders had the strongest relationships with all four neglect subtypes as well as physical abuse, sexual abuse, and rape. Numerous studies have also shown that maternal emotional disorders, particularly depression, are associated with neglect, physical abuse, and sexual abuse. However, what is most surprising in this study is that the *associations* between *maternal* emotional disorders are *higher* than that of paternal emotional disorders for *rape, sexual abuse*, and even paternal emotional neglect.

Theories and studies of mate selection have demonstrated that those who have been victimized in the past, through exposure to family violence or sexual trauma, are likely to select mates who repeat these types of patterns (Fang & Corso, 2007; Stover,

2005). Conversely, it can also be surmised that those who perpetrate abuse seek out those individuals who are the least able to defend themselves. That is, women with a long standing history of depression are targeted at higher rates for victimization because they are less able to protect themselves and their children from sexual and physical abuse. Moreover, women with histories of psychopathology are also likely to select mates with similar psychopathology (Low et al., 2007).

This study demonstrated that both maternal and paternal emotional disorders had the greatest association with sexual abuse and rape. Raymond and others found that men who perpetrate sexual abuse have elevated rates of depression (Raymond, Coleman, Ohlerking, Christenson, & Miner, 1999). That is to say if paternal depression is associated with an elevated risk for sexual abuse, and depressed women are likely to select men with depression, these combined mating characteristics are contributing to increased risk of sexual trauma for their children.

Similarly, maternal behavior disorders and paternal behavioral disorders demonstrated the strongest relationship with family violence. Empirical evidence has shown that substance abuse (part of parental behavior disorders) in one or both partners increases the risk of intimate partner violence (Field & Caetano, 2003). Similarly, the literature on spousal concordance and substance disorders shows that individuals who have substance problems often select mates with the same tendencies (Low et al., 2007).

While this study did not directly explore if the same individuals were reporting similar psychopathology in both parents and should be a matter of future exploration, the aggregate results do demonstrate overall concordant patterns. These patterns could indicate that *maternal* psychopathology may be an *indirect* contributor to sexual trauma,

exposure to family violence, and consequently neglect, while *paternal* psychopathology may actually be a *direct* contributor.

For example, if exposure to family violence in females places them at greater risk of future victimization as well as an increased risk for mood disorders; and if neglect is actually a consequence of exposure to family violence, then the link between maternal depression and neglect may in fact be precipitated by paternal psychopathology. However, it should be noted that the limitations of this data and the scope of this study did not allow exploration of this theory. Rather, this supposition should be the subject of future empirical inquiry because it enhances knowledge about the role of fathers in the neglect of children.

What is evident, however, is that routinely assessing for and treating underlying maternal psychopathology remains a critical part of reducing childhood neglect, other types of maltreatment, and future mental health problems in offspring. Moreover, because women who have histories of victimization are likely to recreate these same patterns through mate selection, assessment and treatment of these traumatic experiences are necessary to reduce the likelihood of maltreatment re-occurrence in their children. Therefore, intervention strategies designed to explore and address specific patterns of paternal *and* maternal functioning are necessary to reduce the prevalence of all types of childhood maltreatment, including neglect.

Routine Assessment

In the current study, supervisory neglect had a significant relationship with both and substance and behavior disorders as well as PTSD even after adjusting for parental psychopathology. That is, inadequate supervision increased the risk of alcohol and drug

problems, and the likelihood of to getting into trouble for impulsive, oppositional, and/or antisocial behavior. These types of problems also create more opportunities for exposure to traumatic events thereby increasing the likelihood of PTSD. Furthermore, supervisory neglect may actually be initial indicator of other types of maltreatment which then mediate other problematic outcomes.

For example, Knuston and others found that supervisory neglect not only co-occurred with other forms of maltreatment, but it was also a precursor to both lack of care neglect and harsh punishment techniques, both of which predicted future child aggression (2004, 2005). While the cross-sectional design of this study does not allow for establishment of temporal order between supervisory neglect and other forms of maltreatment, this study did find moderate correlations between supervisory, LOC, and physical abuse. That is, supervisory neglect not only contributed to mental health disorders, it seems to co-occur with other forms of maltreatment. Consequently, a pattern of improper supervision may indicate other familial risks such as family violence and physical abuse both of which have demonstrated significant relationships to DSM-IV disorders. Therefore, routinely assessing for other types of co-occurring maltreatment along with supervisory neglect should be a standard area of practice.

Routinely screening for other types of problematic family dynamics, along with supervisory neglect, would denote a shift in focus for many child welfare agencies. The “incident specific” emphasis for many in child protection does not allow for comprehensive assessment. Instead, many workers focus exclusively on the *circumstances* surrounding the specific supervisory neglect incident. However, this approach is problematic because *neglect* is *an act of omission* rather than of commission,

and therefore *a pattern* of behavior directly tied to underlying parental psychopathology. As such, a broader comprehensive assessment of family functioning is necessary rather than just exploring whether the alleged incident occurred.

This change, along with the direct inclusion of fathers in child neglect and family violence cases, would result in an overall shift in social work practice. In order to create such a shift, further exploration of the co-occurrence of supervisory neglect with other types of family dysfunction is necessary. Moreover, research that includes direct measures from fathers would provide critical missing information that may be useful in developing more comprehensive intervention strategies.

Research

Paternal Measures

Just as practice strategies have emphasized maternal factors, studies exploring neglect have also focused almost exclusively on maternal outcome measures, or relied solely on maternal report of paternal functioning. Very few have attempted to explore the direct contributions of paternal influence. Therefore, it can be surmised that fathers are not being engaged in neglect practice because they are not routinely being incorporated into research.

For example, if research serves as a catalyst for the development of practice standards, and practice serves as the basis for empirical inquiry, the exclusion of fathers in child neglect is circular. That is, fathers are routinely being excluded from both. Moreover, this pattern is likely to continue unless evidence is produced that parental factors are critical to the expansion of both. The results of this study provide key preliminary evidence regarding the association of paternal psychopathology to child

neglect as well as the importance of paternal emotional nurturance and overall mental health.

Furthermore, research about the co-occurrence of family violence and other types of child maltreatment rarely involves direct inclusion of father figures even though fathers are the ones more likely to perpetrate child maltreatment (Hartley, 2002). Rather, nearly everything known about the comorbidity of family violence and child maltreatment relies almost exclusively on maternal outcome measures and/or maternal reports about the father. Without direct information from the father, intervention strategies to engage and work with fathers cannot be fully developed. Consequently, fathers are excluded from the research process and, in a parallel process, from practice as well.

In order to enhance therapeutic interventions to families where children are exposed family violence and neglect, research measures of paternal psychopathology that come from sources other than that of the mother are necessary. Direct information from the father or father figure would certainly be more credible than that of a mother whom relations are strained or cutoff, or in instances where the female is the primary instigator of physical violence. In absence of paternal direct report, other third party sources such as case files, court documents, police reports, and/or caseworkers could be used in conjunction with maternal report to ensure reliable data about the father figures of neglected children as well as those exposed to family violence.

Hartley (2002) has also suggested the use of multiple informants when family violence is present because of perceptual differences regarding the abusive incidents. These practices would establish knowledge about the kinds of interventions that should

be directed towards fathers as well as information about how to engage fathers in the therapeutic process. Therefore, if parental psychopathology is associated with greater risk of neglect, exposure to family violence, and physical abuse of children, research that assesses parental psychopathology directly, or from less biased sources, is necessary to enhance social work practice with fathers.

Comorbidity of Neglect and Other Maltreatment Subtypes

This study has attempted to focus on neglect subtypes and unique outcomes, however the reality remains that neglect frequently co-occurs with other forms of maltreatment (Gilbert et al., 2009; Higgins & McCabe, 2001). As previously mentioned, the overall strength of the logistic regression models was enhanced by the addition of other forms of maltreatment with neglect. Furthermore, moderate correlations between neglect subtypes and other forms of maltreatment were identified in the initial tests of multicollinearity. Given this comorbidity, it may be more prudent to consider aggregate patterns of neglect subtypes and how these correlate to other forms of maltreatment.

For example, several studies have identified child neglect as a predictor of later aggression (Fang & Corso, 2007; Knutson, et al., 2005; Kotch et al., 2008; Straus & Savage, 2005). While these studies controlled for the interactive effects of physical abuse, they did not control for effects of exposure to family violence. Evidence indicates that exposure to family violence between parents is a main contributor to receiving partner violence in adulthood (Ehrensaft, Cohen, Brown, Smailes, Chen, & Johnson, 2003). In other words, neglect may be a consequence of aggression, and therefore a possible mediator of aggressive behavior rather than an actual contributor.

Higgins and McCabe have stated that “the comorbidity of maltreatment types may have either a cumulative or an interactive effect” (2001, p. 548). That is, exposure to family violence in childhood combined with neglect may actually be increasing the risk of intimate partner violence in adulthood. However, without accounting for the effects of exposure to family violence it is impossible to know if neglect contributes to later aggression, or if neglect is a direct result of exposure to family violence and this cumulative effect is what actually repeats.

Furthermore, exploring aggregate patterns could also provide additional information for enhancement of service delivery. For example, paternal engagement may differ in instances of neglect and family violence because father figures are less likely to be biological (Hartley, 2002). On the other hand, in instances where family violence occurs without a history of neglect, biological fathers may be the ones perpetrating the abuse (2002). Thus, routinely exploring the patterns of co-occurrence of neglect with other types of maltreatment may provide more useful information than the results of neglect alone. Findings from these outlined areas of future research would provide the necessary evidence to advocate for shifts in overall policies addressing neglect as well as family violence.

Policy

Historically, policies regarding child protection interventions have emphasized gathering evidence of the existence of child maltreatment and timelines to assure legal rights and safety issues are addressed rather than comprehensive strategies for assessment. Although there has been a recent shift in this approach by the implementation of differential response in many agencies, the emphasis still seems to

revolve around if the neglectful incident occurred and if so, the circumstances surrounding the incident. This approach fails to address the fundamental nature of these cases. That is, neglect subtypes and exposure to family violence are acts of omission and often there is no direct evidence of harm. Instead neglect represents a fundamental break down of family functioning directly linked to parental mental health and/or substance problems. Therefore, these cases require a different approach to assessment rather than the “incident specific” method routinely used.

Some have suggested policies mandating “something different at the third [neglect] referral” are necessary (American Humane Association, 2009). However, the more quickly screening and intervention are implemented the more likely negative outcomes for children could be reduced. Thus, considering a shift in practice at the second referral may be a necessary.

One such shift is a policy that mandates routine screening of neglectful caregivers, particularly in cases of supervisory neglect, for mental health and alcohol and/or drug problems as well as family violence. Furthermore, policies that direct assessment of the availability and functioning of the non neglectful parent could also be included in order to reduce the likelihood of re-occurrence. In many neglect instances, the father, who may not be living in the home, and/or the father’s family may be in a position to help to support the children. For example, the father’s extended family may be in better position than the mother’s extended family to help provide support. It has been demonstrated that mothers who routinely neglect their children have strained relationships with their extended families (Coohey, 1995). Conversely, in many instances, the father’s family may have had very little contact with the mother and the

children and as such may not be fatigued by a long history of providing continual emotional and instrumental support. Therefore, policies that promote routine screening of neglectful caregivers and support integration of non neglectful caregivers and their extended family are likely to reduce the re-occurrence of neglect.

Just as these changes would result in a different response to child neglect, the same approach could be used in many instances of exposure to family violence. Of course in the most extreme cases, women and children may still need to escape and perhaps sever contact with a dangerous batterer. However, the reality remains the vast majority of children exposed to family violence are living in homes where violence may be mutual between both parents, instigated by a female caregiver, or instigated by a male partner but the female caregiver plans to remain with him and the children.

The needs of the most extreme cases, those that leave, are already being addressed by women's shelters. Conversely, direct services for those children remaining in homes with ongoing family violence need further enhancement. It is these families that future policy development should target.

Policies that promote initial screening for exposure to family violence could be included in routine child protection assessments or investigations. If a history of family violence exists, mandated referral to separate psycho-education group for both partners and children could be a way to reduce the negative effects of exposure without the demise of the family unit. In order to create such a mandate, policies that make exposure to family violence a public health concern as well as a criminal offense are necessary. For example, driving while intoxicated is considered both a criminal offense and a public health issue. As such, mandating of psycho-education classes regarding the dangers of

driving while intoxicated often occur at the time of an initial offense. The same policies for exposure to family violence could exist; especially when the devastating outcomes for children exposed to family violence are considered. CPS policies that promote routine screening and referral for these types of cases are one way to reduce family violence exposure.

CPS is in a unique position to link families to other service delivery agencies, such as mental health and/or substance treatment services, because they are a mandated service. In other words, they can identify and refer problematic families because they are often first to respond to child maltreatment. On the other hand, because they are a mandated agency they can also use leverage to require services when there is clear evidence of family dysfunction, but extreme resistance blocks service entry. Either way, this places child protection workers in a unique position to assess overall family functioning in both cases of supervisory neglect and family violence exposure.

Of course such as shift in policy and practice, would result in greater government involvement into people's lives. However, given the devastating consequences of child maltreatment and later adult functioning more intrusion, such as routine assessment of overall family functioning with respect to parental mental health and substance problems along with exposure to family violence, may be necessary to reduce these effects.

Reductions in Disproportionality

Even with these proposed policy shifts, careful attention to racial inequities within the child welfare system remain a concern. As noted earlier, blacks did not report higher rates of neglect or any other type of maltreatment for that matter. Yet, they are routinely reported to protection agencies at much higher rates (Crampton, D. & Coulton, C. J.,

2008; Cross, 2008). While there a growing emphasis on addressing these disparities once families enter the child protection system through collaborative models (e.g. family group conferencing, community engagement), greater efforts also need to be directed at the front end or the referral point of initial services.

An emerging model to reduce disproportionality within child welfare is the *National Breakthrough Series Collaborative (BSC)*. An underlying tenet of this approach is to “increase the awareness and understanding of the issue” (Miller & Ward, 2008, p. 227). While the model emphasizes reductions of disproportionality along all points of the child welfare system, most of the collaborative efforts are directed towards those families already identified to the system. One way to expand these efforts is through mandated reporter trainings.

Since the majority of reports to child protection agencies are initiated by mandated reporters, trainings that focus on mandated reporting laws should also integrate ways to increase cultural competence. In other words, these the training should also be designed to raise awareness of potential racial bias in the reporting of child maltreatment. That is not to say that maltreatment of black children should not be reported. Rather, other racial groups should be reported and assessed *equally* for the same maltreatment behavior. In other words, distinctions about whether to report should not be based on race or income level.

For instance, Crampton and Coulton observed that the disparity between black and Caucasian newborns placed in care due to substance-exposure at birth was a direct result of different reporting practices of hospitals that serve predominately black versus white patients in Cleveland, Ohio (2008). The black children were reported and placed in

care at much higher rates than their Caucasian counterparts. Therefore, if substance exposure at birth is considered maltreatment, then reporting practices for both black and white children should be similar. Promoting awareness in medical professionals of these disparities may help to reduce the disproportionate number of black children within child protection agencies. Thus, policy directives that promote the inclusion of cultural awareness within mandated reporter trainings could be one additional way to reduce disproportionality.

Social Work Education

The proposed shifts in practice, research, and policy have several important implications for social work educators. First, the continued social justice emphasis of raising awareness of racial inequities within child protection systems is one way to reduce racial disparities for maltreated children. The assumption is that if students are taught about this problem they will be more culturally competent in direct practice. Second, social work education at the graduate level emphasizes students choosing different “tracks of practice” that focus on child welfare *or* mental health. In actuality, child maltreatment is very closely linked to mental health problems. A child welfare track that does not heavily emphasize how to assess and identify mental health and/or substance problems fails to address some of the primary causes of child maltreatment. Without a greater understanding of the comorbidity between child maltreatment and mental health problems and/or substance problems, service referral and delivery is severely restricted. Thus, if child maltreatment is truly going to be addressed by social work students focusing on child welfare greater understanding of mental health and substance problems is critical.

Finally, while social work education has historically highlighted the importance of the family, more emphasis in the child welfare curriculum about the importance of engagement and assessment of fathers is needed. The current social justice framework to empower traditionally disempowered groups such as women and minorities is critical to the larger mission of the social work profession. However, in child protection systems the role of fathers and their importance to the family system, particularly in instances of neglect, is grossly undervalued. Therefore, the role of social work educators is to bring this disparity to the forefront so that the needs and outcomes for maltreated children can be improved.

Directions for Future Research

Based on this discussion, several areas of future research are apparent. Because neglect occurs so frequently with other forms of maltreatment, specifically family violence, exploring these relationships in other population based and longitudinal studies may provide important insight about neglect in non child welfare cases. As previously indicated, family dynamics, family structure, and long term consequences may be different between neglect and family violence versus physical abuse and family violence. If distinctions are apparent, these findings would serve to promote better methods of assessment and intervention strategies in both types of cases.

Future inquiry should also explore the direct contribution of paternal psychopathology to neglectful behavior. It has long been thought that maternal depression is one of the direct causes of neglect; however this study has raised important questions about this relationship. Maternal depression may actually be a mediator of neglect. Therefore, further exploration of the relationship between paternal and maternal

factors in neglectful behavior is necessary to determine if this pattern holds true across other studies.

Third, evidence indicates that rates and outcome patterns differ for males and females subjected to neglect and abuse (Fang & Corso, 2007). Longitudinal studies of mental health outcomes attributed to exposure to family violence, have shown that males have increased risk for externalizing problems, and females internalizing problems (Yates, Dodds, Sroufe, & England, 2003). Results also show that while females are also exposed to higher rates of family violence, males are more likely to be physically abused in these situations (Chang, Theodore, Martin & Runyan, 2008). While these findings emphasize exposure to family violence and physical abuse, similar gender specific results may also be found for neglect. Thus, future inquiry into neglect should also emphasize gender differences because this directly impacts service delivery.

Finally, while many areas of maltreatment overlap, it is still important to consider distinctions between abuse and neglect as well as neglect subtypes. However, uniform measures of neglect in non child welfare samples are critical to this undertaking. The literature on family violence has been greatly enhanced by standardized areas of measurement, such as the Conflict Tactics Scales (CTS), because the same concepts are being measured uniformly. This consistency allows for comparisons and distinctions among heterogeneous samples with varying outcome measures. Thus, we know a great deal more about the impact of family violence and physical abuse. The same approach should be considered with neglect. Straus and Kantor (2005) have proposed a scale that measures four key areas of neglect. The inclusion of such a uniform measures across

studies would help to further clarify distinctions between neglect subtypes, abuse, as well as the role of family violence in both.

Conclusion

The purpose of this study was to explore neglect subtypes and family history with the relationship to DSM-IV disorders from a population based sample. While important findings were noted, it appears that neglect frequently co-occurs with other types of maltreatment, and is highly associated with parental psychopathology. Historically, child neglect has been conceptualized as the direct result of maternal depression, but these results suggest that neglect is strongly related to both maternal and paternal psychopathology. More importantly, the role of paternal psychopathology seems to be more substantial than previously demonstrated in prior research. Parental substance problems and antisocial behavior may be responsible for many forms of maltreatment including supervisory neglect, LOC neglect, and exposure to family violence.

Outcomes associated with maltreatment demonstrated that supervisory neglect was most strongly correlated with lifetime mental health disorders of all neglect subtypes. Physical abuse uniformly was associated to all DSM-IV outcomes. Exposure to family violence and sexual trauma were also associated with the greatest likelihood of lifetime DSM-IV diagnoses.

In order to reduce negative outcomes associated with neglect, which was the emphasis of this study, key findings suggest 1) the direct inclusion of fathers in both research measures and practice interventions surrounding neglect and exposure to family violence, 2) continued emphasis on assessment and treatment of maternal psychopathology, 3) the role of supervisory neglect as an initial indicator of family

dysfunction, 4) continued inquiry into neglect with a specific emphasis on the co-occurrence of neglect subtypes and exposure to family violence, and 5) continued empirical support for policies that reduce the disproportionate number of black children in the child protection system. While these results still need to be replicated in other population based samples, the inclusion of fathers in practice, research, and policies is a necessity to reduce the negative outcomes associated with neglect as well as family violence.

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