

CHILDHOOD PSYCHOLOGICAL MALTREATMENT AND ADOLESCENT DEPRESSIVE
AND CONDUCT DISORDER SYMPTOMS: A PROSPECTIVE LONGITUDINAL
ANALYSIS

A Thesis

Presented to the Faculty of the Graduate School
of Cornell University

in Partial Fulfillment of the Requirements for the Degree of
Master of Arts

by

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August 2013

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ABSTRACT

The relationship between childhood psychological maltreatment (CPM) and later maladjustment has been observed in numerous cross-sectional studies, but prospective longitudinal evidence is limited. The current analysis employed a prospective longitudinal design to investigate the contribution of CPM to adolescent depression, anxiety, and conduct disorder symptoms. The sample includes 696 youth age 14 years from the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN). Youth self-report of CPM was assessed at age 12, and via official Child Protective Service (CPS) allegations from birth to age 12. Anxiety, depression, and conduct disorder symptoms were assessed via youth self-report at age 14 and conduct disorder using parent report. Zero-inflated binomial regression models controlled for youth age, caregiver education, household income, minority status, study site, and age 12 symptoms. Youth reports of CPM were significantly related to adolescent depressive and conduct disorder symptoms, but CPS reports were not.

BIOGRAPHICAL SKETCH

Elise Paul is currently a second year Ph.D. student in Developmental Psychology in the Department of Human Development at Cornell University. Prior to coming to Cornell, Elise completed a year of graduate studies in Developmental Psychology and an M.A. in Science Education at Teachers College, Columbia University. Elise also holds a B.S. in Biological Sciences from the University of California, Irvine. Elise's research interests are focused on parenting and the development of mental health problems in adolescence and adulthood.

For DWS

ACKNOWLEDGMENTS

This thesis was completed with the ongoing support of several people. John Eckenrode patiently worked with me as I learned to become a graduate student and guided me toward a feasible thesis. Gary Evans gave several helpful reviews of this paper, and Elliott Smith helped me learn to navigate SPSS. This research uses data from the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) which was designed by Desmond Runyan, Elizabeth Knight, and Mark Everson. LONGSCAN was funded by The Doris Duke Charitable Foundation and the Children's Bureau. Information about the LONGSCAN study can be found at <http://www.iprc.unc.edu/longscan/>. Information about how to obtain public use files for LONGSCAN is available on The National Data Archive on Child Abuse and Neglect (NDACAN) website (<http://www.ndacan.cornell.edu/>).

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LIST OF ABBREVIATIONS

A-CASI	Audio Computer Assisted Self-Administered Interview
ANOVA	Analysis of Variance
APSAC	American Professional Society on the Abuse of Children
CECA	Childhood Experience of Care and Abuse
CBCL	Child Behavior Checklist
CPM	Childhood Psychological Maltreatment
CPS	Child Protective Services
DISC	Diagnostic Interview Schedule for Children
LONGSCAN	Longitudinal Studies for Child Abuse and Neglect
NIMH	National Institute of Mental Health
NIS	National Incidence Study
TSC	Trauma Symptom Checklist
YSR	Youth Self Report

CHAPTER 1

INTRODUCTION

The negative consequences of childhood abuse and neglect have been widely documented (Gilbert et al., 2009; McLaughlin, et al, 2010; Cicchetti & Toth, 1995). The study of childhood psychological maltreatment (CPM), however, has not progressed as much as that of physical and sexual abuse (Teicher, Samson, Polcari, & McGreenery, 2006). Possible reasons for its limited attention include problems with definition (Smith Slep, Heyman, & Snarr, 2011; Glaser, 2002) and other methodological issues (Tonmyr, Draca, Crain, & MacMillan, 2011). For example, most studies of childhood maltreatment have been retrospective and with adult samples (Hardt & Rutter, 2004), and many have made use of CPM indicator variables or collapsed maltreatment types into a single index. Despite evidence that abuse and neglect types often occur together, many studies have measured only one maltreatment type (Finkelhor, Ormrod, Turner, & Hamby, 2005). Further, there remains disagreement about what should constitute CPM and how it should be measured. The aim of the present study is to address some of these definitional and methodological challenges as well as provide prospective longitudinal evidence of CPM's harmful effects on socioemotional development.

Definition and measurement issues regarding child psychological maltreatment

One methodological limitation of the CPM literature pertains to measurement. Unlike physical and sexual maltreatment, which have more clearly defined societal, clinical, and legal boundaries, psychological maltreatment is more elusive and difficult to define (Slep, Heyman, & Snarr, 2011; Trocme et al., 2005; Glaser, 2002). Given the multitude of ways in which parents could psychologically maltreat their children, and that certain behaviors may be more harmful during sensitive periods of development, a definitive list of psychological maltreatment

behaviors could never be exhaustive and may not even be practical (Garbarino, 2011). The American Professional Society on the Abuse of Children (APSAC; Brassard, 2000, p. 80) defines CPM as “a repeated pattern or severe incident of spurning, rejecting, terrorizing, isolating, exploiting, corrupting, degrading, and denying emotional responsiveness; conditions that convey to the child that they are flawed, worthless, unloved, or endangered.” Not surprisingly, a list of behaviors meeting these criteria would be difficult to construct (Garbarino, 2011); especially since parenting practices vary across time, with child age, and cultures. In this paper, the term childhood psychological maltreatment will be used to mean parenting practices that meet the above APSAC definition in childhood or adolescence. “Psychological” encompasses parenting practices that are potentially cognitively or emotionally damaging, while “maltreatment” includes both neglectful (omission) and abusive (commission) parenting.

In addition to concerns about how to measure behavioral manifestations of CPM, another challenge related to the definition and measurement of CPM is the threshold at which behaviors are considered abusive or neglectful (Tonmyr et al., 2011). While many researchers advocate and use a definition of psychological maltreatment that includes repeated acts or severe instances of abuse or neglect (Garbarino, 2011; Glaser, 2002), many studies proceed with the use of dichotomous indicator variables to represent maltreatment experiences (Thompson et al., 2011; Saluja, Kotch, & Lee, 2003; Thompson & Whimper, 2010; van Tilburg et al., 2010). For example, an 18-item psychological maltreatment measure may be administered to all participants in a study, but a dichotomous indicator variable will be created and entered into statistical models for youth who endorsed one or more item on the measure (Everson et al., 2008; Lewis et al., 2011; Oberlander et al., 2011; Thompson et al., 2012; Thompson et al., 2011; Saluja, et al., 2003; Thompson & Whimper, 2010; van Tilburg et al., 2010). This practice contradicts the frequency

and severity dimension of most researchers' stated CPM definitions, truncates variability, and makes interpretation of CPM's contribution to adverse developmental outcomes even more difficult (Finkelhor, et al., 2005). There are no empirical or theoretical reasons to assume that youth who report having experienced multiple types of psychological maltreatment should be grouped with youth who report only one type of CPM. In this study, all maltreatment measures will be used in their continuous form. We hypothesize that using continuous measures of childhood maltreatment will both be more valid and explain more of the variance than using dichotomous indicator variables.

A practice that further obscures the relationship between CPM and later psychosocial functioning involves collapsing maltreatment types into a single maltreatment index (Lewis et al., 2010; Oberlander et al., 2011; Lewis et al, 2011; Romano, Zoccolillo, & Paquette, 2006; Caspi et al., 2002). Other studies leave out psychological maltreatment altogether (Trickett & McBride-Chang, 1995; Slade & Wissow, 2007; Kerr, Black, & Krishnakumar, 2000). Indeed, some reviews of the developmental sequelae of child abuse and neglect do not even mention emotional or psychological maltreatment (Knutson, 1995; Greenwald, 2002; Crittenden, Claussen, & Sugarman, 1994). Some studies have even used a single dichotomous indicator of maltreatment to create indices of child adversity (Caspi et al., 2002; Thompson et al., 2012), further obscuring the relationship between childhood maltreatment types and later functioning. While physical, sexual and psychological maltreatment have many things in common and often occur together (Stouthamer-Loeber, Loeber, Homish, & Wei, 2001; Widom & Ames, 1994; Claussen et al., 1994), these measurement practices do not allow us to understand the different developmental trajectories that may relate to each type of maltreatment (Cicchetti and Rogosch,

2001). For these reasons, psychological and physical maltreatment as well as sexual abuse will be analyzed separately in all models in the current study.

A third methodological issue relates to the measurement of outcome variables. Many studies examining childhood maltreatment and mental health outcomes in children and adolescents have made use of aggregate measures of internalizing and externalizing disorder symptoms (Lewis et al., 2010; Lewis et al., 2011; Thompson & Whimper, 2010; McGee, Wolfe, Yuen, Wilson, & Carnochan, 1995; Sachs-Ericson, Verona, Joiner, & Preacher, 2006). Some studies even collapse internalizing and externalizing indices into single measures of psychological distress (Thompson et al., 2011; Oberlander et al., 2011; van Tilburg et al., 2010). This approach does not allow us to ascertain how maltreatment types are differentially related to the disorders that underlie internalizing and externalizing indices. While the use of these broad measures may be easier and increase statistical power, this approach has limitations. Internalizing indices typically include anxiety, depression, somatization, and withdrawal, while externalizing measures are usually composed of anger, aggressive and disruptive behavior, and delinquency. These constructs have different pharmacological and therapeutic interventions, and their developmental trajectories are poorly understood. Further, comorbidity among mental health disorders and symptoms is often high, and the use of internalizing and externalizing indices does not allow for comorbidity rates to be determined (Caron & Rutter, 2006). For these reasons, the present study will examine depression, anxiety, and conduct disorder symptoms as outcome variables separately.

Self-report and Child Protective Services reports of childhood psychological maltreatment

Many studies of childhood maltreatment have used retrospective reports with adult samples (Briere & Runtz, 1988; Kent & Waller, 1998; Spertus, Yehuda, Wong, Halligan, &

Seremetis, 2003; Reddy, Pickett, & Orcutt, 2006; Rich, Gingerich, & Rosen, 1997; Gross & Keller, 1992). Others have relied solely on Child Protective Services (CPS) reports (Saluja et al., 2003; English et al., 2005), and a few have utilized CPS allegations together with youth self-report (Thompson et al., 2011; van Tilburg et al., 2010; Everson et al., 2008; Black et al., 2009; Oberlander et al., 2011). Adolescent self-reports of childhood abuse and neglect have shown low concordance with CPS reports (Williams, 1994). Reports of psychological maltreatment showed the lowest rates of concordance, with youth reports yielding much higher rates than CPS records of maltreatment (Everson et al., 2008). For this reason, the present study will include separate analyses for each outcome variable using self-report at age 12 and CPS case reports. Since no difference in outcomes has generally been shown between children with substantiated versus unsubstantiated CPS reports (Senn et al., 2008), all reports to CPS, rather than substantiations, of emotional, sexual, and physical abuse will be used.

Prevalence of childhood psychological maltreatment

Given the definitional and measurement issues that have hampered the study of CPM, incidence and prevalence rates are difficult to interpret (Egeland, 2009; Tonmyr et al., 2011). Further complicating this issue, some studies only include measures of either emotional abuse or emotional neglect (Tonmyr et al., 2011; Dubowitz, Pitts, & Black, 2004), while others consider physical and sexual abuse but not emotional maltreatment (Smith Slep et al., 2011; Kerr, Black, & Krishnakumar, 2000). A recent random probability population sample of young adults (ages 18-24 years, $N=2,869$) in the United Kingdom found a 6% lifetime prevalence rate of emotional abuse (May-Chahal & Cawson, 2005), a rate similar to the 7% reported for physical abuse. The young women in the sample reported twice (8%) as much emotional maltreatment as the young men (4%). The authors examined emotional abuse along a continuum of seven dimensions;

control, domination, humiliation, withdrawal, and threat. Over a third (34%) of the sample reported experiencing at least one of the seven forms of emotional maltreatment, but youth were classified as having been emotionally maltreated if they had experienced four or more types of emotional maltreatment. Across both males and females, terrorizing (34%) and psychological control (24%) were the most common forms of emotional maltreatment. Interestingly, the majority of the sample (90%) reported that they had come from a “warm and loving family background”. Additionally, most participants (87%) reported that the form of discipline used by their parents was based on reasoning and explanation, a construct many studies refer to as authoritative parenting, or the most suitable form of discipline. In combination with the finding that 34% of the sample had also experienced one or more type of psychological abuse, these results suggest that youth who experience abuse and neglect may not perceive themselves as having experienced maltreatment (May-Chahal & Cawson, 2005). Although representative, the data were retrospective and because lifetime prevalence was estimated, it is impossible to tell at what ages the maltreatment occurred, and thus may be underestimated.

Another population study of 2-17 year olds ($N = 2,030$) in the United States found the one-year incidence rate of emotional abuse to be 10.3% (Finkelhor, et al., 2005). A wide range of offenses against children, including witnessed violence, childhood maltreatment, sexual assault, and peer and sibling victimization were assessed with the Juvenile Victimization Questionnaire (JVQ; Hamby & Finkelhor, 2001) across gender, child age, and race. Although a rather simple and vague definition was used (name calling or denigration by an adult), emotional abuse was the most common maltreatment type, and boys and girls were equally likely to report having experienced emotional abuse. Children ages 13 to 17 years were significantly more likely to report experiences of emotional abuse, and children ages 6 to 12 more likely to be

abused than children ages 2 to 5 (Finkelhor, et al., 2005). Youth ages 10-17 were questioned directly, but for children ages 2-9 caregivers reported maltreatment, increasing the likelihood that this age group's maltreatment status was underreported. Among demographic variables, parents and youth from low-income households and Black participants were significantly more likely to report emotional abuse, and Hispanic participants reported more physical abuse.

The National Incidence Study (NIS-4; Sedlak et al., 2010) is a congressionally mandated nationally representative U.S. sample of children deemed abused or neglected either by CPS or by community professionals working in schools, day care centers, hospitals, and other agencies working with children and families. These sentinel reporters from 122 U.S. counties documented children they believed to have been abused or neglected during 2005 and 2006. Emotional, physical and sexual abuse, as well as emotional, physical, and educational neglect were assessed using the same abuse and neglect definitions as in previous NIS waves. The NIS assesses prevalence rates of child abuse and neglect using both harm and endangerment standards. In order to be considered abused or neglected under the more stringent harm standard, demonstrable harm as a result of either abuse or neglect must be observed. As such, it is possible that a child with a substantiated Child Protective Services (CPS) report may not be considered abused or neglected if observable harm did not result. The less stringent endangerment standard counts children as abused or neglected if a reporter believes that the maltreatment has the potential to harm the child, or if either a substantiated or unsubstantiated CPS report indicated maltreatment.

Emotional abuse was defined as: "severely restricting child's physical movement by tying, binding, or confining to small enclosed space to punish or control, verbal abuse consisting of a consistent pattern of belittling, denigrating, scapegoating, or other overtly hostile or rejecting

treatment, and verbal threats of other forms of maltreatment, such as abandonment, suicide, beating, or sexual assault” (Sedlak et al, 2010, p. 2-13). Emotional neglect included “inadequate emotional nurturance, exposure to domestic violence, knowingly permitting drug or alcohol abuse or other maladaptive behavior, failure to allow or seek needed care for emotional or behavioral impairment” (Sedlak, 2010, p. 2-13). In the NIS-4, physical abuse was the most commonly reported abuse type, followed by emotional and sexual, while physical and emotional neglect were found at similar incidence rates (53% and 52%, respectively) and more common than educational neglect (16%). Between NIS-3 (1993) and NIS-4 (2006), there was a significant decrease in physical abuse (22%), sexual abuse (40%), and emotional abuse (43%), but a more than double increase in emotional neglect (101%), but only for Black and Hispanic children. Since NIS-3, there has been an increase in the focus on emotional neglect by CPS agencies, and this large increase in the number of emotionally neglected children reported in NIS-4 could reflect this increase in attention. Regarding demographic characteristics, Black children and children from low-socioeconomic and single parent households were significantly more likely to have experienced every abuse and neglect type. Notwithstanding the definitional and methodological concerns that have challenged childhood maltreatment researchers, the results from these nationally representative studies indicate that emotional abuse and neglect have a substantial presence within the general population.

Outcomes related to childhood psychological maltreatment

Despite definitional challenges in the child maltreatment literature, several cross-sectional and fewer longitudinal studies have documented associations between childhood psychological maltreatment and later psychosocial impairment. Depression and anxiety are two mental health outcomes frequently associated with childhood psychological maltreatment, and several studies

have found a relationship between CPM and anxiety and depression. An early investigation of psychological maltreatment, Briere and Runtz (1988) found a positive association between psychological maltreatment from both mothers and fathers and interpersonal sensitivity and dissociation in college undergraduates. Psychological maltreatment from fathers was associated with anxiety and depression, while maternal psychological maltreatment was also related to suicidal ideation. The Family Experiences Questionnaire (FEQ) was used in the cross-sectional study and includes 7 items inquiring verbally focused CPM and inquired about parenting behaviors such as criticism, yelling, insulting, and humiliation, capturing a narrow range of psychological maltreatment experiences. Sexual abuse was not accounted for, however, and the data were cross-sectional, posing major limitations (Briere & Runtz, 1988). In a second study utilizing the Family Experiences Questionnaire (FEQ; Briere & Runtz, 1990) in a large co-ed sample of college students, psychological abuse before the age of 14 was significantly related to a mental health variable comprised of depression, anxiety, and stress items (Reddy, Pickett, & Orcutt, 2006). The authors opted to exclude parental criticism because it was found in such a high frequency in the sample, citing that it might be characteristic of a style of parenting rather than psychological abuse. Also excluded were yelling, embarrassment, and guilt, leaving a psychological abuse measure of just 3 items, making comparison to other studies extremely difficult. They controlled for physical and sexual abuse using a dichotomous indicator for both, but did not report whether either were related to mental health symptoms.

More recent papers examining childhood psychological maltreatment have not shown much improvement regarding measurement and statistical techniques. In a cross-sectional study with over 250 university students, the relationship of childhood emotional abuse, borderline personality disorder symptoms, and suicide potential were explored. Despite stating in the

introduction that childhood sexual abuse is related to childhood emotional abuse (the predictor), borderline personality disorder symptoms (the proposed mediator), and suicide potential (the study outcome variable), sexual abuse was not included as a control variable in the model (Allen, Cramer, Harris & Rufino, 2013). The authors concluded that borderline symptoms mediated the relationship between childhood emotional abuse before age 13 and suicide potential, despite the omission of sexual and physical abuse as controls. Further, the terms “psychological abuse” and “emotional abuse” were used interchangeably, despite suggesting in the introduction that the APSAC (1995) definition of CPM was informing their study.

The Childhood Experience of Care and Abuse (CECA, Bifulco et al., 1994) is a semi-structured interview developed to assess psychological, sexual, and physical abuse as well as antipathy (hostile, cold, critical parent behavior) and role reversal (child taking over a parent responsibility or role) before age 17. The latter two parenting behaviors are considered “other” types of maltreatment (Moran, Bifulco, Ball, Jacobs, Benaim, 2002), though they appear to meet the definitional criteria for psychological abuse set forth by APSAC (1995). The CECA defines psychological abuse as “humiliation, terrorizing, cognitive disorientation, deprivation of basic needs, deprivation of valued objects, extreme rejections, corruption, or blackmail” (Bifulco, Moran, Baines, Bunn, & Stanford, 2002). Indeed, a factor analysis revealed that antipathy and neglect overlapped highly with psychological abuse, further indicating their similarity. In a community study of women deemed high-risk for lifetime experiences of depression, increased severity of psychological abuse was related to chronic depression, while any experience of psychological abuse related to lifetime suicidality (Bifulco et al., 2002). While cross-sectional, these findings point to a positive relationship between parenting practices that meet APSAC

(1995) definitional criteria for psychological maltreatment in childhood and adult depression and suicidality.

Using the Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995), a measure that captures 2 dimensions of the APSAC (1995) definition, spurning and terrorizing (7 items), emotional abuse was concurrently related to both anxiety and depression in a sample of over 200 university students in the United Kingdom (Kent & Waller, 1998). Sexual abuse was not related to either depression or anxiety in this community sample of young women. These findings were later replicated in a cross-sectional community sample of mostly White (80%) adult women (Spertus et al., 2003). Measured by the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1994), emotional abuse and neglect were related to anxiety and depression symptoms as well as somatic complaints even when controlling for physical and sexual abuse as well as prior trauma. Emotional abuse and neglect were the most commonly reported maltreatment types in this non-clinical mostly middle to upper-middle class sample. These findings are limited by their cross-sectional nature and the narrow range of emotionally abusive and neglectful questions on the CTQ. The CTQ defines emotional abuse as “verbal assaults on a child’s sense of worth or well-being or any humiliating or demeaning behavior directed toward a child by an adult or older person”, while emotional neglect is “the failure of caretakers to meet children’s basic emotional and psychological needs, including love, belonging, nurturance, and support” (Bernstein et al., 2003). Each subscale consists of just 5 items, and question wording was vague. Exemplar items such as “I felt loved” (emotional neglect), and “I thought my parents wished I had never been born” (emotional abuse) (Spertus et al., 2003), invite measurement error and are closely related to mental health outcomes, obscuring the relationship between emotional maltreatment and later dysfunction. Using the same measure (CTQ) in a large community

sample of mostly White adults, childhood emotional abuse related to the diagnosis of major depressive disorder (MDD), post-traumatic stress disorder (PTSD), and social phobia, even when accounting for physical and sexual abuse (Gibb, Chelminski, & Zimmerman, 2007). Physical and sexual abuse did not relate to diagnosis for MDD, but were associated with a diagnosis of an anxiety disorder. However, despite having administered the entire CTQ to participants, this study did not examine emotional neglect. Taken together, these findings suggest that CPM is a significant risk factor for the development of anxiety and depression symptoms in adolescence and adulthood.

Another commonly studied outcome associated with childhood maltreatment is conduct disorder. Conduct disorder in adolescence, especially early adolescence, is a significant risk factor for the development of criminality in adulthood (Stouthamer-Loeber et al., 2001; Lansford et al., 2007). Conduct disorder symptoms are among the most common reasons for referral to behavioral clinics (Loeber, Burke, Lahey, Winters, & Zera, 2000) and special education classes (Knitzer, Steinberg, & Fleisch, 1990). According to *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (APA, 2000) criteria, conduct disorder is characterized by “a persistent pattern of violating the rights of others or societal norms that results in social, academic, or occupational impairment.” In addition to being harmful to interpersonal and academic functioning, adolescent conduct disorder symptoms are often comorbid with depression, anxiety, and substance use (Flannery, Williams, & Vazsonyi, 1999; Anderson, Williams, McGee & Silva, 1987; Kashani et al., 1987). Conduct disorder is more common in males than in females (Nock, Kazdin, Hiripi, & Kessler, 2006).

Several prospective longitudinal studies have assessed the contribution of childhood maltreatment to the development of conduct disorder in adolescence, though many used

exclusively male samples (e.g. Stouthamer-Loeber et al., 2001; Caspi et al., 2002). In the Pittsburgh Youth Study, a large prospective longitudinal community investigation, adolescent males who had experienced childhood maltreatment (assessed via referrals to Children and Youth Services) were more likely than controls to have engaged in fighting, violence, or other aggressive behavior (Stouthamer-Loeber et al., 2001). Emotional maltreatment accounted for 40% of Youth Services reports, but the authors collapsed maltreatment types, making its relation to later conduct problems impossible to determine. Lansford et al (2002) did include girls in their prospective longitudinal study of adolescent functioning, but they relied exclusively on maternal reports of physical abuse, omitting psychological maltreatment and sexual abuse. Adolescents whose mothers indicated physical abuse during in-home interviews before kindergarten were more likely to have elevated aggressive and anxious/depressive (an aggregate measure) symptoms and delinquent behaviors. Interestingly, girls who had been physically maltreated reported higher rates of aggressive behaviors as assessed by the Child Behavior Checklist (Achenbach, 1991b). The number of maltreated youth was small (n=52) however, indicating that the gender differences in maltreatment effects may need replication.

Collapsing across maltreatment types, Caspi et al. (2002) found the severity of maltreatment between the ages of 3 and 11 years predicted a diagnosis of conduct disorder between the ages of 10 and 18 years, but they did not distinguish among maltreatment types and did not include girls in the sample. In a meta-analysis on the relationship between parenting and child externalizing behaviors, negative motivational strategies such as the use of threats and punishment, coercive control, and ridicule were all positively associated with externalizing behaviors (Rothbaum & Weisz, 1994). While not labeled as such, these parenting dimensions fit the APSAC (1995) definition of psychological maltreatment.

The Rochester Youth Development Study is often cited as key evidence linking childhood maltreatment and later delinquency (Smith & Thornberry, 1995). Relying exclusively on substantiated CPS cases before age 12, 5 of 7 maltreatment type indicators were used (prevalence, frequency, duration, number of types, and total severity score). A dichotomous indicator of maltreatment experience of any type before age 12 increased the likelihood of having a both a record of official and self-report of delinquency at age 14. Maltreated youth were significantly more likely to have engaged in serious or violent delinquency. All analyses controlled for gender, socioeconomic status, single parent household, and youth ethnicity.

A more recent large prospective longitudinal study of community males found that youth self-report of emotional abuse at ages 10 and 12 predicted criminal convictions between the ages of 12 and 24, but only in boys whose teachers did not report that they engaged in hurtful and uncaring behaviors towards others (Silva, Larm, Vitaro, Tremblay, Hodgins, 2013). Analyses did make use of a continuous measure of emotional abuse, but the assessment consisted of only 4 items and was based on a very limited definition of emotional abuse. Youth who reported that their parents called them “mean names” or argued with them frequently were considered to have experienced emotional abuse. Further, neglect was operationalized as feeling rejected by parents, but it was unclear if the rejection was based on parent behaviors that were actively rejecting (acts of commission) or passively rejecting (acts of omission). It is unclear which formal definitions of emotional abuse and neglect informed their inquiry. Though fraught with definitional and measurement limitations, the results from the aforementioned studies suggest that childhood psychological maltreatment is related to depression, anxiety, and conduct disorder symptoms in adolescence.

Evidence from the LONGSCAN study

In an introduction to a special issue of the journal *Child Abuse and Neglect* which featured papers based on data from the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN), Herrenkohl remarked that the LONGSCAN study “represent(s) a major step forward in operationally defining child maltreatment sub-types” (Herrenkohl, 2005, p. 414). The LONGSCAN website states that needed in the area of child maltreatment is research that can “clarify(ing) the outcomes of specific and combined types of maltreatment” (LONGSCAN, 2013). However, since then, many articles using the LONGSCAN data have made use of dichotomous indicator variables of either a single CPS report or endorsement of a single question on a youth self-report measure of maltreatment. Some studies have even collapsed maltreatment types, making it impossible to elucidate how maltreatment subtypes are related to specific outcomes, yet alone how specific combinations of subtypes relate to outcomes. These measurement practices are problematic and prevent the uncovering of pathways related to child victimization that may be amenable to intervention (National Research Council (NRC), 1993).

LONGSCAN is a consortium of five study sites around the country using similar data collection and assessment techniques. The objective of the LONGSCAN study is to examine the environmental and psychosocial correlates and consequences of childhood maltreatment, as well as address some of the definitional challenges in the field. Data collection began in 1990 when the children were 4 to 6 years old and included 1,354 participants. Child maltreatment data were collected two ways. CPS records were accessed and coded for maltreatment from birth to age 18 using the LONGSCAN Modified Maltreatment Classification System (LMMCS: English, 2005; a LONGSCAN-modified version of Barnett, Manly, & Cicchetti, 1993). Emotional maltreatment was coded from CPS narratives that contained descriptions of “the extreme or persistent thwarting of children’s basic emotional needs”, and included threats of homicide or

other violence, frequent derogatory comments or belittling of the child, a chronic pattern of rejecting or ignoring the child's signals for attention or care, abandoning the child for 24 hours or more, and tying or binding the child, among others (LONGSCAN, 2010). The papers presented in a special issue of *Child Abuse and Neglect* demonstrated that the LONGSCAN modifications to the coding of Child Protective Services (CPS) reports were in high (80-90%) concordance with CPS classifications for physical abuse, sexual abuse, and neglect, but emotional maltreatment coding was less reliable (Runyan et al., 2005).

Starting at the age 12 interview, youth self-reported lifetime experiences of psychological maltreatment, physical, and sexual abuse. The childhood psychological maltreatment assessment was developed using both APSAC (Hart, Brassard & Karlson, 1996) and Barnett et al. (1993) and defines CPM as five overlapping scales: "psychological safety and security; acceptance and self-esteem, age appropriate autonomy, exploiting and corrupting, and mental health, medical and educational neglect" (LONGSCAN, 2010). Perpetrator information was obtained for physical and sexual abuse, but not for psychological maltreatment, which only assessed parental behaviors.

Evaluation of analyses using the LONGSCAN data is difficult due to measurement limitations. Mentioned previously, many LONGSCAN studies have made use of dichotomous indicator variables for each child maltreatment subtype (Lewis et al., 2007; Everson et al., 2008; van Tilburg et al., 2010; Jones et al., 2010; Black et al., 2009), thereby truncating variability. Many have used dichotomous variables but collapsed maltreatment subtypes (Lewis et al., 2010; Lewis et al., 2011; Thompson et al., 2011), making their etiologies impossible to discern. Others have collapsed outcome measures into internalizing and externalizing (Lewis et al., 2010), obscuring the relationship between maltreatment and specific outcomes like anxiety and

depression. Some have even collapsed internalizing and externalizing dimensions into single emotional distress indices (Everson et al., 2008; van Tilburg et al., 2010; Black et al., 2009; Lewis et al., 2011), further obscuring the contribution of maltreatment sub types to specific mental health outcomes.

Several LONGSCAN studies have kept maltreatment types from CPS and youth self-report separate, but have still made use of dichotomous indicator variables, and therefore have truncated variability. In one of the first uses of the LONGSCAN-developed age 12 youth reports of maltreatment, dichotomous indicators of physical and sexual abuse were used if adolescents endorsed one or more stem items on their respective measures (Lewis et al., 2007). Indicators of both physical and sexual abuse predicted whether or not youth had ever carried a gun at age 12, and these relationships were mediated by the perceived need for a gun. Maltreatment data from CPS reports and youth self-report of psychological maltreatment were not included in the analysis for reasons unspecified and make interpretation of these findings difficult, especially since the LONGSCAN psychological maltreatment measure includes several questions that inquire about parent threats of violence (see Appendix A). Examining concordance between CPS report data and the LONGSCAN youth reports of maltreatment, Everson et al. (2008) analyzed maltreatment types separately and found that age 12 self-report of psychological maltreatment was associated with a composite measure of anxiety, depression, PTSD, anger, and dissociation. Youth reports of physical and sexual abuse showed the same relationship, but CPS reports of these 3 maltreatment types did not relate to youth symptoms. van Tilburg et al. (2010) also kept maltreatment types separate, and found that “psychological distress” (an aggregate of anxious and depressive symptoms) mediated the relationship between each type of self-reported maltreatment and unexplained stomach pain and nausea/vomiting at age 12. Only sexual abuse

data obtained from CPS records showed the same pattern with stomach pain, while physical and emotional abuse from CPS records did not. Results from the Everson et al. (2008) and van Tilburg et al. (2010) indicate that CPS and youth reports of maltreatment are differentially related to youth outcomes.

Despite these observations, some LONGSCAN studies have continued to rely exclusively on CPS maltreatment data, despite the availability of youth self-reports. One study found the presence of physical, sexual, or emotional abuse from birth to age 12 contributed to HIV-risk behaviors, alcohol use, and sexual intercourse at age 14 (Jones et al., 2010). Another investigation relying solely on CPS report data found that physical abuse, sexual abuse, and emotional maltreatment before age 12 related to an aggregate measure of anxiety, depression, posttraumatic stress disorder, anger, and dissociation, which in turn predicted intercourse at age 14 (Black et al., 2009). While these studies did maintain separate maltreatment types, they all used dichotomous variables, a practice that introduces measurement error, especially with self-report measures, and does not allow us to examine whether youth who experienced more maltreatment differ on these outcomes.

Many LONGSCAN studies that have made use of dichotomous indicator variables have truncated variability even further by collapsing maltreatment data from either CPS or age 12 self-report into a single maltreatment indicator. Lewis et al. (2010) exemplified this when they found that a dichotomous maltreatment indicator variable (of any subtype from either CPS or youth report) before age 12 predicted youth report internalizing (withdrawal, somatic complaints, anxiety/depression) and externalizing (aggression and delinquency) problems at age 12. Similarly, a dichotomous indicator variable for maltreatment of any type from either CPS allegations or age 12 self-report predicted parent report of youth internalizing symptoms at age

14, which in turn predicted smoking at age 16 (Lewis et al., 2011). Examining the relationship between adolescent (ages 12-16) maltreatment and suicidal ideation, psychological distress at age 16 (anger, anxiety, depressed mood, dissociation, and post-traumatic stress) mediated dichotomous indicators of physical abuse and psychological abuse between the ages of 12 and 16 and suicidal ideation at age 16 (Thompson et al., 2012a). Psychological maltreatment between the ages of 12 and 16 increased the likelihood of suicidal ideation at age 16 more than three fold. This relationship held when controlling for prior levels of psychological distress and suicidal ideation as well as witnessed violence, and demographics.

Another study used the same approach in creating a single maltreatment indicator, but included it in childhood (birth to age 12) and adolescent (ages 12-16) adversities indices (Thompson et al., 2012b). A combination of these two indices, the lifetime adversities index, predicted suicidal ideation at age 16, and although girls were more likely to report suicidal ideation, the results were not moderated by gender. The adolescent, but not the childhood adversities index, also predicted age 16 suicidal ideation, and these results were not moderated by gender. When analyzed separately, dichotomous indicators of either childhood CPS or youth report of psychical abuse and neglect increased the likelihood of suicidal ideation at age 16, while indicators of youth report of adolescent (ages 12-16) psychical abuse, sexual abuse, or psychological abuse increased likelihood of age 16 suicidal ideation. The authors acknowledged the crude nature of measures of childhood and adolescent maltreatment used in their analyses.

Since different maltreatment types were not differentiated in these analyses, it is impossible to tell how they may be influencing these outcomes. Interestingly, all three of these papers cited the Everson et al. (2008) recommendation that both CPS and youth reports be included in analysis as the rationale for using either CPS or youth reports in their analyses.

While this was recommended for greater maltreatment measurement accuracy, this practice is actually inconsistent with the other findings of the paper that CPS and youth self-reports are differentially related to youth outcomes (Everson et al., 2008), since it assumes that there is no difference in the relationship between CPS and youth reports of maltreatment and adolescent outcomes.

Summary and research questions

Progress in the study of childhood psychological maltreatment has been hampered by definitional and measurement issues and progress in this area is important. The present study makes contributions to our understanding of its consequences in the several ways. A prospective longitudinal design will be used, a rarity in the childhood maltreatment literature. Two reporting sources of adolescent mental health outcomes (parent and youth) and two of maltreatment data, youth self-reports and coding from CPS records will also be used. Maltreatment and mental health subtypes will be kept separate, allowing their specific relationships to be explored. Additionally, maltreatment data from both sources will be kept in their continuous forms, so variability will not be truncated and measurement error will be reduced. Based on previous findings, we expect childhood psychological maltreatment from youth reports to uniquely contribute to anxious, depressive, and conduct disorder symptoms at age 14. Gender moderation between CPM and each outcome will also be explored. Based on previous findings, we do not expect CPS reports of maltreatment to predict youth outcomes (Everson et al., 2008; van Tilburg et al., 2010).

CHAPTER 2

METHODS

Data

The data used in the current analysis are from The Longitudinal Studies of Child Abuse and Neglect (LONGSCAN), a consortium of five research studies in the Midwest (MW), Southwest (SW), Northwest (NW), South (SO), & East (EA) United States. Data collection began in 1991 when the children were 4 years old. Over 1300 children and their caregivers participated. Recruitment strategies varied by site in order to collect a representative sample of varying levels of exposure to maltreatment (Runyan et al., 1998). Three of the sites are urban centers (EA, MW, and NW), one is suburban (SW), and the last is statewide and includes rural, urban, and suburban (SO). Each site used common data collection methods and procedures in the form of caregiver and child interviews. Child Protective Services (CPS) records were also accessed and coded every two years for emotional, sexual, and physical maltreatment. The primary aim of the study is to assess the environment of maltreatment as well as child and parent characteristics that contribute to outcomes related to maltreatment. Parental and youth consented to participate and for the LONGSCAN researchers to review case records.

Sample

The sample used in this analysis included 696 youth with complete data at ages 12 and 14 years from all five LONGSCAN sites. This represents 51% of the original sample of 1354 participants. Of those with complete data at the age 12 and 14 interviews, 50% were female, 73.4% of minority status, and 26.6% non-Hispanic White. The median annual household income was between \$25,000 and \$29,999 for the past year. 71.1% of primary caregivers had obtained at least a high school education.

Missingness Assessment

Of the 1,354 youth who participated in LONGSCAN at baseline, 51.4% had complete data at the ages 12 and 14 interviews. Listwise deletion was used and results are presented for the 696 youth who had complete data for both the age 12 and age 14 interviews. Individuals with missing data on study variables were compared to individuals with no missing data, and results from these analyses are presented in Appendix C. At the age 12 interview, there were no significant differences in primary caregiver education, gender, household income, CPS and youth self-reports of any of the three maltreatment types, depressive symptoms, and anxious symptoms between the removed cases and the analytic sample. There were significant differences by study site and youth race (see Appendix C). Individuals with missing data also had significantly higher parent and youth reported delinquent behaviors at age 12. At the age 14 interview, youth with missing data had significantly higher parent-reported conduct disorder symptoms than those included in the analytic sample.

Measures

Childhood Maltreatment

Child Protective Services Reports. Childhood psychological maltreatment (CPM) was assessed in two different ways. Low-concordance rates between Child Protective Services (CPS) and adolescent self-reports of childhood maltreatment, particularly psychological maltreatment, suggest using both report sources to more accurately capture youth who have been maltreated (Everson et al., 2008). Separate analyses for each outcome variable using either CPS allegations or youth self-report maltreatment were conducted. CPS case records from birth to age 12 were reviewed by LONGSCAN researchers and coded for emotional, physical, and sexual abuse using the LONGSCAN Modified Maltreatment Classification System (LMMCS; English

et al., 2005) coding scheme is based on the Maltreatment Classification System (MCS) scheme established by Barnett, Manley, and Cicchetti (1993).

Since distinctions between allegations and substantiations of maltreatment have not been useful in predicting adjustment (Hussey et al., 2005; Kohl, Jonson-Reid, & Drake, 2009), a total count of the number of allegations of each type of abuse were used. CPS referrals about suspected maltreatment up to age 12 were coded from final CPS case narratives based on the following: “(1) physical abuse (any blows or injury to the head, torso, buttocks, or limbs; and violent handling, choking, burning, shaking, or nondescript injury); (2) sexual abuse (any sexual exposure, exploitation, molestation, or penetration); and (3) emotional abuse (threats to psychological safety and security, lack of acceptance and threats to self-esteem, or failure to allow age-appropriate autonomy)” (LMMCS; English et al., 2005. Counts of CPS allegations of sexual and physical abuse were included as covariates in the CPS emotional maltreatment analyses and assessed using the coding system described above for emotional abuse. Higher scores indicate more CPS reports of maltreatment.

LONGSCAN Youth Self-report of Childhood Abuse and Neglect. At the age 12 interview, youth were asked about their past psychological, physical, and sexual abuse and neglect experiences using a project-developed measure. The Audio Computer Assisted Self-Administered Interview (A-CASI) methodology provided a visual and audio demonstration of each stem item, with the possibility of the audio being turned off. There is no reliability and validity information available for these project-developed measures, although a pre-test was conducted with a small number of outpatient adolescents to ensure comprehension of question wording. Physical, psychological and sexual maltreatment self-report scores and CPS

allegations were left in continuous form for all analyses and higher scores indicate more maltreatment experiences.

The psychological maltreatment self-report measure consists of 23 yes/no stem items and assesses lifetime experiences of psychological abuse and neglect by primary caregivers. When youth endorsed a yes/no stem question, they were asked how often that particular type of abuse had happened to them never (0), sometimes (1), or often (2) a) before they were in elementary school, b) since they had started elementary school till the time of the interview, and c) in the last year. Scores for each of the 23 yes/no stem items and corresponding follow up timing questions (0-2) were then totaled to create the age 12 youth self-report CPM measure used in the present analyses. Internal reliability was acceptable for the sample ($\alpha=.94$) and values ranged from 0-50.

The psychological maltreatment index was modified for the present analysis to exclude items that closely resembled outcome measure questions. Youth were asked a total of 26 stem questions about psychological maltreatment at the age 12 interview, but prior analyses using this measure have constructed dichotomous indicator variables when youth endorsed one out of only 18 stem items (Lewis et al., 2011; Black et al., 2009). The LONGSCAN publications do not explain why 8 questions were not included in other published analyses, but perhaps they closely resembled items from other LONGSCAN measures. In the present analyses, two items were removed from the 18-item CPM index used by other researchers and 7 were added. One question, “Have any of your parents ever made you feel like they really didn’t love you?” was removed because of its resemblance to the outcome measures depression and anxiety, and replaced with the more event-based question “Have any of your parents ever left you for most of a day or night without telling you where they were, or who was going to take care of you?”. Another question, “Have any of your parents ever tried to stop you from having or making

friends outside the family?” was removed because it is unclear whether this might actually be a positive parenting behavior in some high-risk contexts. Six of the 8 questions that were left out by other LONGSCAN researchers were added into the analyses: “Have any of your parents ever had you take care of yourself or other people in ways that you didn’t feel old enough to do?”; “Have any of your parents ever made you do something like steal, have sex for money, or carry drugs?”; “Have any of your parents ever refused to allow you to get the help you needed from a doctor?”; “Have any of your parents ever refused to allow you to get the help you needed from someone like a counselor?” ; and “Have your parents ever locked you out of the house overnight without arranging for you to have a place to stay?”.

The physical abuse self-report measure consists of 16 yes/no items and assesses lifetime experiences of physical abuse by any adult. Endorsement of a stem item was followed by: “*About how often did an adult do this to you*” a) before they were in elementary school, b) since they had started elementary school till the time of the interview, and c) in the last year. Answer choices to each of these follow up questions were 0 = Never; 1 = 1 time; 2 = 2 or 3 times; 3 = ≥ 4 times. For a complete listing of questions, see Appendix A. Physical abuse self-report values ranged from 0-39, and internal reliability was acceptable for the sample ($\alpha = .84$).

The sexual abuse self-report measure consists of 11 yes/no items and assesses lifetime experiences of sexual abuse by any adult or older child. Endorsement of a stem item was followed by “*About how often did an adult do this to you*” a) before they were in elementary school, b) since they had started elementary school till the time of the interview, and c) in the last year. Like the physical abuse measure, answer choices to each of these follow up questions were 0 = Never; 1 = 1 time; 2 = 2 or 3 times; 3 = ≥ 4 times. See Appendix A for the complete list of

questions. Youth self-report sexual abuse values ranged from 0 to 41, and internal reliability was acceptable ($\alpha = .91$).

Control Variables

Gender and Race. Information on the child's gender and race were collected from the primary caregiver at the age 4-interview. Youth race was coded as (1= White, 2= Black, 3=Hispanic, 4=Native American, 5= Asian, 6= Mixed Race, 7= other) and entered as a covariate. Gender was coded as (0 = Male, 1 = Female).

Age. Youth age in years and months was collected at the age 14 interview and entered as a continuous variable with values ranging from 12.00-16.08 years.

Caregiver Education. Caregiver education information was collected from the primary caregiver at the age 12 interview and coded as the highest grade level completed. Values ranged from 0-20.

Household Income. Household income information was collected at the age 12 interview from the primary caregiver and coded 1 = < \$5,000 per year; 2 = \$5,000 – \$9,999 per year; 3 = \$10,000 – \$14,999 per year; 4 = \$15,000 – \$19,999 per year; 5 = \$20,000 – \$24,999 per year; 6 = \$25,000 – \$29,999 per year; 7 = \$30,000 – \$34,999 per year; 8 = \$35,000 – \$39,999 per year; 9 = \$40,000 – \$44,999 per year; 10 = \$45,000 – \$49,999 per year, 11 = > \$50,000 per year; 12 = DK/NA. Values ranged from 1-12.

Study Site. Recruitment strategy varied at each of the five LONGSCAN data collection sites. Study site was therefore entered into each analysis as a control variable. Study site was coded 1=East; 2= Midwest; 3= Northwest; 4= South; 5= Southwest.

Prior Psychosocial Functioning. Anxiety and depression symptoms at age 12 were controlled for using the Trauma Symptom Checklist for Children (TSC-C; Briere, 1996). The

TSC-C is a standardized 54-item checklist for children and adolescents ages 8 to 16. The anxiety and depression subscales each consist of 9 items. Youth report the frequency with which they experienced each symptom on a scale ranging from 0 = Never; 1 = Sometimes; 2 = Lots of times; 3 = Almost all of the time. Symptoms ranged from 0-27 for both anxiety and depression subscales. Internal reliability for the sample was good for anxiety ($\alpha=.86$) and depression ($\alpha=.83$). Reliability and validity for the TSC-C have been established (Briere, 1996). See Appendix A for a list of the TSC anxiety and depression subscale items.

Age 12 conduct problems were assessed via using the delinquency subscales of the Youth Self-Report Form (YSR; Achenbach, 1991a) and the Child Behavior Checklist (CBCL; Achenbach, 1991b). The two measures are nearly identical and reliability and validity have been well demonstrated for both (YSR; Achenbach, 1991a; CBCL; Achenbach, 1991b). Youth were asked 11 questions and primary caregivers were asked 13 questions. Both youth and parents were asked to rate each item 0 = not true; 1 = somewhat or sometimes true; or 2 = very true or often true. Delinquent behaviors ranged from 0 to 15 on the youth subscale and 0-18 on the parent subscale. Internal reliability for the sample was acceptable for both the youth ($\alpha=.62$) and parent ($\alpha=.69$) subscales. See Appendix A for a complete list of the YSR and CBCL delinquency subscale items.

Age 14 Outcome Variables

Conduct Disorder Symptoms. Youth and parent report of conduct disorder symptoms associated with DSM-IV diagnostic criteria were assessed at the age 14 interview using the National Institute of Mental Health Computerized Diagnostic Interview Schedule for Children IV (NIMH DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). The conduct disorder module consists of 23 items that conceptualize conduct disorder as “a repetitive and persistent

pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated” (APA, 2000). Youth and parents were asked questions about youth conduct disorder behaviors over the last year and were given the following answer choices: 0=no; 1=yes. Symptom counts ranged from 0 to 18 for the youth report and 0-21 for the parent report. Conduct disorder symptoms were left in their continuous form as outcome variables. Internal consistency was acceptable for both the youth ($\alpha = .74$) and parent ($\alpha = .65$) modules.

Depression and Anxiety Symptoms. Youth report of depressive and anxious symptoms were assessed for the past year at the age 14 interview using the DISC IV (NIMH-DISC IV; 1997). Symptom counts for major depressive disorder (15 possible symptoms, range 0-21) and generalized anxiety disorder (9 possible symptoms, range 0-12) were assessed with yes/no questions. See Appendix B for the full measures. Variables were kept in their continuous form as symptom counts for all analyses. Internal consistency was acceptable for anxiety ($\alpha = .74$) and depression ($\alpha = .83$).

Statistical Analysis

Descriptive statistics for all predictor variables were first calculated (Table 1). Bivariate associations between predictors and outcome measures were also explored (Table 5). Histograms for all outcome variables prior to conducting regression analyses revealed zero-inflated distributions. Linearity between the predictor and outcome variables was also assessed by scatter plot analysis with overlaid loess smoothers. Further, the standardized residuals of linear regression models were not normally distributed, and homoscedasticity was violated. Therefore, zero-inflated binomial regression equations were used (Cohen, Cohen, West, & Aiken, 2003). In order to investigate the relationship between CPM and adolescent psychosocial functioning, a total of 8 zero-inflated regression models were run, two for each outcome variable;

one with CPS abuse allegations and the other with youth self-reports of maltreatment.

Household income, minority status, gender, study site, and highest level of caregiver education at the age 12-interview, and age at the age 14 interview were added as covariates. In addition, appropriate age 12 outcomes were also added to each equation, so the analyses assess a change in mental health symptomatology from ages 12 to 14 years. To explore the possibility that the relationship between CPM and mental health outcomes differs by gender, the interaction term gender x CPM was entered into each model. The Statistical Package for the Social Sciences (SPSS 12.0.1; SPSS Inc, Chicago, Ill) software was used.

CHAPTER THREE

RESULTS

Descriptive Statistics

Demographic statistics for the sample are reported in Table 1. The mean age of this sample was 14.33 years ($SD= 0.43$) at the age 14 interview, 50.4% of the sample was female, and the majority of the participants were Black (56.2%). The median household income was \$25,000 – \$29,999 per year, which was below the national average at the time of the age 12 interview.

Psychological maltreatment was the most commonly reported type of maltreatment at the age 12 assessment, with 40.5% of the sample endorsing one or more CPM item (Table 2). 23.0% of youth reported any physical abuse, and 12.5% reported having been sexually abused.

Frequency of CPS allegations of abuse type showed the same pattern (Table 2). Mean self-report of psychological maltreatment was also higher ($M=3.20$, $SD=6.75$) than self-reported physical ($M=2.13$, $SD= 3.73$) and sexual abuse ($M=0.98$, $SD=3.97$). Mean numbers of physical abuse ($M=.88$, $SD=1.78$) were higher than emotional abuse ($M=.75$, $SD=1.50$) and sexual abuse ($M=.22$, $SD=.65$) for CPS reports (Table 2).

Concordance between youth self-report and history of CPS allegations was also examined. 32.9% of the sample (229 youth) had at least one CPS allegation of emotional abuse (Table 2), but only 106 of the adolescents (46.3%) with one more CPS emotional abuse allegation endorsed one or more CPM self-report item. Of the 221 youth with one or more CPS allegation of physical abuse, only 73 (33.0%) endorsed one or more physical abuse item. Similarly low concordance was found for sexual abuse; 96 adolescents had one or more CPS reports of sexual abuse, but only 27 (28.1%) of these adolescents self-reported sexual abuse at the age 12 interview.

Mean differences in youth self-report of maltreatment types and CPS allegations were explored using one way analysis of variance (ANOVA). There were no significant differences in the mean number of self-reported psychological, physical, or sexual abuse experiences reported over the lifetime between boys and girls (Table 2). Girls did report slightly more sexual abuse experiences ($M=1.21$, $SD=4.72$) than boys ($M=0.76$, $SD= 3.03$), but this difference was not statistically significant $F(1, 686) = 2.23$, $p = ns$. Boys and girls did differ in the number of CPS physical and sexual abuse allegations, with boys having more physical abuse reports and girls more sexual abuse reports (Table 2). There were no significant mean differences by ethnicity on youth self-report of any of the maltreatment types. This is inconsistent with findings from the NIS-4, where Black children were significantly more likely to experience physical, emotional, and sexual abuse, as well as physical and emotional neglect (Sedlak et al., 2010).

Table 1: Demographic Characteristics of Sample (n= 696)

Age, mean	14.33 years (SD=0.43)
Sex	Percentage
Female	50.4% (n= 350)
Male	49.6% (n= 345)
Ethnicity	
White	26.1% (n=354)
Black	53.2% (n=721)
Hispanic	7.2% (n=97)
Native American	0.6% (n=8)
Mixed Race	11.9% (n=161)
Other	0.6% (n=8)
Household Income, median	\$25,000 – \$29,999 per year
Caregiver Education, mean	12.20 years (SD= 2.21)
Study Site	
East (EA)	21.7% (n=151)
Midwest (MW)	13.9% (n=97)
Northeast (NE)	20.4% (n=142)
South (SO)	21.0% (n=146)
Southwest (SW)	23.0% (n= 160)

Table 2: Descriptive Statistics of Adolescent Self-Report of Abuse and Number of CPS Allegations

<i>Childhood Maltreatment Measure</i>	<i>Total Sample (n =696)</i>	<i>Boys, % total sample</i>	<i>Girls, % total sample</i>
Self-report psychological maltreatment	40.5% (n= 282)	19.8% (n=138)	20.7% (n=144)
Self-report physical abuse	23.0% (n=160)	11.6% (n=81)	11.4% (n=79)
Self-report sexual abuse	12.5% (n=87)	5.7% (n=40)	6.8% (n=47)
CPS emotional abuse allegations	32.9% (n=229)	16.7% (n=116)	16.2% (n=113)
CPS physical abuse allegations	31.8% (n=221)	17.4% (n=121)	14.4% (n=100)
CPS sexual abuse allegations	13.8% (n=96)	4.9% (n=34)	9.2% (n=64)
<i>Adolescent Self-report</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>
Psychological maltreatment	3.20 (6.75)	2.87 (6.49)	3.54 (7.00)
Physical abuse	1.71 (4.90)	1.77 (5.69)	1.65 (4.10)
Sexual abuse	1.01 (4.03)	0.76 (3.03)	1.21 (4.72)
<i>CPS Allegations</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>
Emotional abuse	0.75 (1.50)	0.81 (1.68)	0.69 (1.29)
Physical abuse	0.88 (1.78)	1.03 (1.97)*	0.73 (1.55)
Sexual abuse	0.22 (0.65)	0.16 (0.59)*	0.27 (0.71)

* $p < .05$

Youth self-report and CPS allegations of all three types of maltreatment were significantly correlated (Table 3). Self-report of psychological and physical maltreatment showed the strongest associations ($r = 0.46^{**}$), with self-reported physical and sexual abuse showing a small to moderate correlation ($r = 0.26^{**}$). Self-report of psychological maltreatment and sexual abuse were similarly correlated ($r = 0.27^{**}$). Associations between age 12 self-report and CPS allegations were mostly significant, but showed weaker relationships (Table 3). Similar to the relationship between self-report psychological maltreatment and physical abuse, CPS allegations of emotional and physical abuse showed the strongest association ($r = 0.51^{**}$). Interestingly, self-report of psychological maltreatment and CPS emotional abuse allegations were small, although significant ($r = 0.13^{**}$). A significant correlation was found between youth self-report of physical abuse and CPS allegations of physical abuse ($r = 0.21^{**}$), and youth report of sexual abuse with CPS allegations of sexual abuse ($r = 0.23^{**}$). These modest correlations are similar to those found by Everson et al. (2008).

Table 3: Intercorrelations of Childhood Maltreatment Measures

<i>Adolescent Self-report</i>	1	2	3	4	5	6
1. Psychological Maltreatment	-	.46**	.27**	.13**	.12**	.12**
2. Physical Abuse	-	-	.26**	.11**	.21**	.08**
3. Sexual Abuse	-	-	-	.02	.11**	.23**
<i>CPS Allegations</i>						
4. Emotional Abuse	-	-	-	-	.51**	.28**
5. Physical Abuse	-	-	-	-	-	.31**
6. Sexual Abuse	-	-	-	-	-	-

* $p < .05$. ** $p < .01$.

Means and standard deviations for age 12 and 14 mental health variables are summarized in Table 4. A one-way ANOVA revealed significant gender differences between males and females on every mental health variable except age 12 youth report of delinquency (Table 4). The mean differences were in expected directions, with boys reporting more delinquent behaviors and girls reporting more anxious and depressive symptoms. Since age 12 and age 14 mental health measures were different, correlations between age 12 and corresponding age 14 outcome measures were conducted and are presented in Table 5. All age 12 and age 14 mental health measures were highly correlated. Parent report of delinquent behavior showed the largest correlation ($r = .60^{**}$), suggesting greater stability in parent reports of problematic behaviors between these two time points.

At the age 14 interview, 18 (2.6%) adolescents met the criteria for a diagnosis of major depressive disorder, 12 (1.7%) met criteria for generalized anxiety disorder, and 49 (7.2%) met the criteria for conduct disorder diagnosis. These results differed by gender for depression, $\chi^2(1, N = 693) = 8.47, p < .01$, with girls more likely to meet diagnostic criteria, but only marginally for anxiety $\chi^2(1, N = 696) = 3.16, p = .067$. Interestingly, there were no significant differences between conduct disorder diagnosis for boys ($n=27$) and girls ($n=22$), $\chi^2(1, N = 693) = 0.39, p = ns$.

Table 4: Means and Standard Deviations for Age 12 and 14 Mental Health Variables

	<i>Total Sample, Mean (SD)</i>	<i>Boys, Mean (SD)</i>	<i>Girls, Mean (SD)</i>
Anxiety, youth report, age 12	3.08 (3.65)	2.50 (3.23)**	3.66 (3.95)
Depression, youth report, age 12	3.02 (3.43)	2.32 (2.96)**	3.73 (3.73)
Delinquency, youth report, age 12	2.34 (2.17)	2.45 (2.22)	2.23 (2.10)
Delinquency, parent report, age 12	2.43 (2.69)	2.74 (2.93)**	2.12 (2.38)
Anxiety, youth report, age 14	2.82 (2.46)	2.34 (2.23)**	3.31 (2.60)
Depression, youth report, age 14	3.95 (3.87)	3.18 (3.33)**	4.73 (4.21)
Conduct Disorder, youth report, age 14	3.53 (3.73)	4.01 (4.02)**	3.03 (3.33)
Conduct Disorder, parent report, age 14	2.80 (3.15)	3.18 (3.49)**	2.42 (2.71)

* $p < .05$. ** $p < .01$.

Table 5: Correlations between age 12 and age 14 Mental Health Variables

	Age 14 Anxiety	Age 14 Depression	Age 14 Conduct Disorder, youth	Age 14 Conduct Disorder, Parent
Anxiety, age 12	0.26**	-	-	-
Depression, age 12	-	.30**	--	-
Delinquency, age 12 youth	-	-	.30**	-
Delinquency, age 12 parent	-	-	-	.60**

Association of Childhood Maltreatment and Adolescent Mental Health

Unadjusted bivariate associations between age 12 maltreatment types and age 14 mental health variables were also explored and are presented in Table 6. Consistent with other findings (Everson et al., 2008), youth self-reports were generally more highly correlated with outcome measures than CPS allegations. Youth self-report of CPM was significantly associated with more conduct disorder symptoms (youth and parent report) and anxious symptomatology, but showed the strongest correlation to depressive symptoms ($r = .29^{**}$). Youth self-report of sexual abuse did not significantly relate to either youth or parent report of conduct disorder symptoms. A small but significant association also existed between CPS allegations of emotional abuse and parent and youth report of conduct disorder symptoms, but CPS reports of emotional abuse did not relate to anxiety or depression. Small relationships were seen between CPS reports of

physical abuse and both youth and parent conduct disorder symptoms. CPS reports of sexual abuse did not relate to any of the age 14 mental health outcomes.

Table 6: Unadjusted Biserial Correlations of Childhood Maltreatment Variables and Age 14 Outcome Measures (n= 696)

	<i>Anxiety</i>	<i>Depression</i>	<i>CD (Y)</i>	<i>CD (P)</i>
<i>Adolescent Self-report</i>				
Psychological Maltreatment	.18**	.29**	.20**	.11**
Physical Abuse	.15**	.15**	.15**	.12**
Sexual Abuse	.17**	.13**	.05	-.03
<i>CPS Allegations</i>				
Emotional Abuse	.00	-.02	.09*	.19*
Physical Abuse	-.02	-.01	.13**	.22**
Sexual Abuse	.01	-.02	.03	.06

NOTES: *CD (Y)* = Youth report of conduct disorder symptoms; *CD (P)* = Parent report of youth conduct disorder symptoms. * $p < .05$. ** $p < .01$.

After accounting for covariates, youth self-report of psychological maltreatment was associated with greater depressive symptomatology ($\beta = .023$ ($SE = .008$, $p < .001$)) and increased youth report of conduct disorder symptoms ($\beta = .018$, $SE = .008$, $p < .05$) at age 14 (Table 7). Despite significant bivariate associations, age 12 self-report of psychological maltreatment was not significantly associated with anxiety or parent report of conduct disorder at age 14 (Table 7). Similarly, CPS reports of emotional abuse did not predict any of the age 14 mental health outcomes in the full models (Table 7). Removing outliers improved the linearity between the CPS abuse and mental health outcome variables, but did not change the regression parameters. These differential results for youth self-report and CPS allegations support the practice of keeping these two sources of child maltreatment data separate. Also, youth self-report of psychological, physical, and sexual abuse were differentially related to all four outcome variables.

Table 7: Zero-Inflated Regression Analysis of Youth-Reported and CPS Reports of Maltreatment at age 12 Predicting Mental Health Outcomes at age 14

	<i>Psych. Maltreat.</i> <i>Coefficient β (SE)</i>	<i>Physical Abuse</i> <i>Coefficient β (SE)</i>	<i>Sexual Abuse</i> <i>Coefficient β (SE)</i>
<i>Anxiety</i>	.01 (.008)	.00 (.011)	.012 (.012)
<i>Depression</i>	.023 (.008)**	-.004 (.010)	.005 (.012)
<i>Conduct Disorder, Y</i>	.018 (.008)*	-.003 (.013)	.001 (.012)
<i>Conduct Disorder, P</i>	.003 (.009)	.004 (.012)	-.015 (.014)
	<i>CPS emotional abuse</i> <i>Coefficient β (SE)</i>	<i>CPS physical abuse</i> <i>Coefficient β (SE)</i>	<i>CPS sexual abuse</i> <i>Coefficient β (SE)</i>
<i>Anxiety</i>	.013 (.038)	-.050 (.034)	.025 (.078)
<i>Depression</i>	-.030 (.037)	-.009 (.032)	-.086 (.075)
<i>Conduct Disorder, Y</i>	.007 (.039)	.034 (.032)	.010 (.074)
<i>Conduct Disorder, P</i>	.020 (.037)	.050 (.032)	-.023 (.085)

NOTE: *Y* indicates youth report; *P* indicates parent report. All analyses control for youth ethnicity, study site, age, household income, caregiver education, and gender. Each analyses also controls for the dependent variable at age 12 (e.g., in the regression for anxiety, anxiety at age 12 was included as a covariate). * $p < .05$. ** $p < .01$.

To explore the possibility that the relationship between psychological maltreatment and mental health problems is dependent on gender, a gender x CPM interaction term was added to each model. Despite significant main effects for gender in the self-report models on anxious, depressive, and conduct disorder (youth report) symptoms, gender did not significantly interact with self-reported CPM in any of the models. Caregiver education had a marginally positive relationship with parent report of conduct disorder symptoms ($\beta = .044$, $SE = .022$, $p = .050$). Household income and caregiver education were not significantly related to youth report of conduct disorder, anxious, or depressive symptoms in the self-report maltreatment models.

In the CPS report models, gender significantly predicted anxious, depressive, and conduct disorder symptoms, but did not interact with CPS emotional abuse allegations in any of the models. Similar to the self-report model, caregiver education was marginally significant in predicting parent report of conduct disorder. It could be that parents with more education also

monitor their children more closely and are more aware of their children's problem behaviors ($\beta = .041$, $SE = .022$, $p = .061$). Aside from gender, caregiver education for parent report of conduct disorder symptoms, and age 12 mental health controls, no other covariates were significant in the CPS models.

CHAPTER FOUR

DISCUSSION

The results from this prospective longitudinal study demonstrate that adolescent self-report of childhood psychological maltreatment is related to adverse outcomes in adolescence. Two years after youth reported their maltreatment experiences, childhood psychological maltreatment was predictive of elevated depressive and youth-reported conduct disorder symptoms when controlling for demographics, other abuse types, and prior levels of psychosocial functioning. Although there were significant main effects for gender in both of these models, the gender x CPM interaction term was not significant in either model. Although there were significant bivariate associations between CPM and anxious and parent-reported conduct disorder symptoms, these associations were no longer significant once controls were added. No association was found between CPS reports of emotional maltreatment and any of the four outcomes in the regression models. Given that the relationship between CPM, conduct disorder and depression held under such a rigorous test, these findings indicate that CPM is a meaningful contributor to adolescent psychosocial maladjustment. Additionally, youth self-report of psychological, physical, and sexual abuse were differentially related to each outcome variable. These results support keeping reports of maltreatment types and outcome variables separate when analyzing their relationships.

Low rates of concordance were found between CPS and youth self-reports of maltreatment. These low rates of concordance between CPS and self-reports of maltreatment are similar to those found in other studies (Everson et al., 2008) and could be due to maltreatment that did not gain the attention of child protective agencies. Alternatively, the particular maltreatment experiences included in the age 12 self-reports could differ from those reported to

CPS. Since youth self-reports, but not CPS reports were found to relate to mental health problems, future studies should analyze youth self-reports separately, rather than together.

Comparisons to Prior Work

Although these results support past longitudinal work relating childhood psychological maltreatment and mental health, comparison to prior work is difficult because of measurement issues. Despite the differential relationship of maltreatment types to these mental health constructs found in this study and others, many previous studies of child maltreatment have aggregated externalizing and internalizing outcome variables (Lewis et al., 2010; Lewis et al., 2011; Thompson & Whimper, 2010; McGee, Wolfe, Yuen, Wilson, & Carnochan, 1995; Black et al., 2009), collapsed internalizing and externalizing scores into psychological distress variables (Thompson et al., 2011; Oberlander et al., 2011; van Tilburg et al., 2010; Sachs-Ericson et al., 2006; van Tilburg et al., 2010), used dichotomous variables (Everson et al., 2008; Lewis et al., 2011; Oberlander et al., 2011; Thompson et al., 2012; Thompson et al., 2011; Saluja, Kotch, & Lee, 2003; Thompson & Whimper, 2010; van Tilburg et al., 2010), or collapsed dichotomous variables of maltreatment types into single child maltreatment measures (Lewis et al., 2010; Saluja, Kotch, & Lee, 2003; Lewis et al., 2011). These practices thwart our understanding of how maltreatment types are related to later outcomes. In order to reduce measurement error, future measures of psychological maltreatment should use continuous scales and make efforts to ensure that survey items not resemble outcome measure questions too closely.

The results from the present analysis are similar to others using the LONGSCAN data (van Tilburg et al., 2010; Everson et al., 2008; Black et al., 2009). Everson and colleagues (2009) demonstrated that dichotomous indicators of age 12 youth reports, but not CPS reports, of psychological maltreatment, physical and sexual abuse each related to psychological distress

(anxiety, depression, PTSD, anger, dissociation) at age 12. Similarly, using the age 12 LONGSCAN data and keeping maltreatment types separate, van Tilburg et al. (2010) found a relationship between a collapsed measure of anxious and depressive symptoms and youth reported psychological maltreatment, physical abuse, and sexual abuse. A longitudinal study using the age 12 and 14 LONGSCAN data relied on CPS reports of emotional maltreatment, physical and sexual abuse. Dichotomous indicators of each of these maltreatment types predicted an aggregate measure of psychological distress, which then related to sexual intercourse at age 14 (Black et al., 2009). Despite their availability and low concordance with CPS reports (Everson et al., 2009), youth self-reports of maltreatment were not used.

Preliminary analyses in the present study revealed linear relationships between maltreatment types and outcome measures, demonstrating that the use of dichotomous indicators, as was done in these two studies is not warranted (van Tilburg et al., 2010; Everson et al., 2009). The present analyses improve upon these findings by using continuous measures of maltreatment types, thereby reducing measurement error and explaining more variability. Outcome measures were also kept separate, allowing understanding of how maltreatment subtypes may be differentially related to mental health constructs, and a prospective longitudinal design strengthens the conclusions that psychological maltreatment in childhood relates to adverse mental health outcomes in adolescence.

Several studies report an association between childhood maltreatment and later disruptive behavior problems (Ireland & Widom, 1994), but many have focused on the relationship between physical abuse and later delinquency and excluded psychological maltreatment or collapsed maltreatment types. In a large prospective study, Widom (2000) reported that children who had experienced physical abuse, sexual abuse, or neglect were more likely to have been

arrested for a crime in both adolescence and adulthood. Substance abuse, suicide attempts, and fewer completed years of schooling were also more likely in the abused versus the control groups, but the study did not account for psychological maltreatment.

In a prospective longitudinal study of mostly African American, low-income adolescent boys, maltreated youth were significantly more likely than boys in a matched control group to engage in fighting, aggressive, and violent behaviors (Stouthamer-Loeber et al., 2001).

Although the design was prospective longitudinal, the authors relied on maltreatment reports to youth services and did not use parent or youth reports of maltreatment. Due to the low rates of concordance between official reports and youth assessments of child maltreatment found in this study and others (Everson et al., 2008), the contribution of childhood abuse and neglect was likely underestimated. Even though the frequency of abuse and neglect type was reported descriptively, the authors did not examine the differential relationship between maltreatment types and later delinquency.

In another large community study, physical abuse before age 5 assessed by parent interview, predicted criminality in late adolescence (age 18) and early adulthood (age 21), however only data on physical abuse were obtained (Lansford et al., 2007). The study was prospective longitudinal but did not include girls. Given that in the present study there were no significant differences between girls and boys in criteria for conduct disorder diagnosis, future studies of the development of delinquency should include female participants. In a cross-sectional study of pregnant teenagers, a latent child maltreatment variable was associated with conduct disorder symptoms (Romano et al., 2006). Because the authors did not analyze the maltreatment-conduct disorder relationship by abuse or neglect type, it is impossible to determine whether emotional maltreatment is related to conduct disorder.

One prospective longitudinal study of early physical abuse and adolescent adjustment found a positive association between maternal report physical abuse before age 5 and 11th grade anxiety/depression symptoms (an aggregate measure), aggression, and dissociation, but not delinquent behavior (Lansford et al., 2002). Family stress, maternal social support, socioeconomic status, gender, and ethnicity were also accounted for, but without inclusion of emotional or sexual abuse, these findings may be spurious since these maltreatment types often co-occur. Relying solely on maternal reports is also a serious limitation, since parents may be reluctant to disclose negative parenting practices. Conversely, the present study did not find a prospective longitudinal relationship between physical abuse and aggressive and anxious/depressive symptoms. Taken together, these studies suggest that psychological maltreatment in childhood is related to adverse mental health outcomes in adolescence.

A major strength of this study is its prospective longitudinal design and the use of multiple informants for both childhood maltreatment and outcome measures. Most studies of psychological maltreatment have been cross-sectional and relied exclusively upon adult retrospective reports in (Briere & Runtz, 1988; Kent & Waller, 1998; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003; Reddy, Pickett, & Orcutt, 2006). Previously, CPS and youth self-reports of maltreatment have been shown to have low concordance (Everson et al., 2008). CPS allegations and youth self-report were therefore used separately in order to capture maltreatment experiences not reported by youth or to CPS. Two reporters, parent and youth, were also used to assess youth problem behaviors. Testing the interaction between gender and CPM in the analysis is an additional strength, especially given the unequal gender distribution of anxiety (Bruce et al., 2005), depression (Parker & Brotchie, 2010), and externalizing behaviors (Broidy et al., 2003; Berkout, Young, & Gross, 2011). While many previous reports of CPM using the LONGSCAN

data have used gender as a control variable (Everson et al., 2008; Lewis et al., 2010), few have examined gender and CPM interactions (Black et al., 2009). While this study did not find a significant gender moderation effect, future studies should still explore this as a possibility.

Possible Pathways to Adolescent Maladjustment

A straightforward relationship between two variables is rare in human development (Garbarino, 2011). The mechanisms by which psychological maltreatment in childhood contributes to psychosocial impairment in adolescence and adulthood are likely dependent on many contextual and individual factors. Evidence from the rat and primate literature suggests that neglectful parenting causes compromised stress-responsiveness in offspring (Meany, 2001). In humans, adverse childhood experiences appear to have similar effects on the stress-response systems (Repetti et al., 2002; Heim & Nemeroff, 2001). Chronic stress associated with maltreatment exposure may contribute to deregulation of the stress-response system, interfering with an ability to manage future stressors, and predisposing child maltreatment victims to later mental health problems.

Given the particularly aggressive nature of the items on the CPM measure used in this study, it is not terribly surprising that it predicted conduct disorder symptoms. Caregiver-child relationships that are characterized by coercion, threats, and general non-responsiveness provide negative models for what relationships in general are like as well as communicate to the child that they are unworthy. One cross-sectional investigation revealed that distrust, selflessness, and emotional inhibition schemata mediated the relationship between CPM and relational aggression victimization in a college student sample (Crawford & O'Dougherty Wright, 2007).

At least two recent studies have studied the role of shame in explaining the relation between childhood psychological maltreatment and later mental health. In a community study of

women from different economic backgrounds, those who reported any form of childhood psychological abuse also reported high levels of shame (Moran et al., 2002), although other dimensions of psychosocial functioning were not explored. In a study involving undergraduates, participant reactions to experiences of CPM were measured (Harper & Arias, 2004). Women reported much greater distress and shame than men in response to experiences of CPM. Higher levels of shame were associated with more anger expression in men and depressive symptoms in women. The study was cross-sectional, however, and the authors did not test the possibility that shame mediated these associations. The results from these two studies suggest that experience of shame could play a role in the association between CPM and later depression in women and aggressive behaviors in men.

Not all children who experience maltreatment develop psychosocial difficulties later in life. Similarly, there are many adolescents and adults without maltreatment histories who have problems with mental health. It is possible that maladaptive parenting resembling or consisting of psychological maltreatment is also important in these developmental pathways. A continuum of relevant parenting behaviors, with psychologically abusive parenting at the extreme may be a useful way to conceptualize the wide range of maladaptive and potentially harmful parenting practices that predispose children to mental health difficulties later in life.

Limitations

This study has several limitations. The sample used in this analysis consisted of a high-risk sample and is not representative of the general population. The results can therefore not be generalized. Also, this was a secondary analysis of data that were collected 10 years ago. The types of psychological maltreatment experienced by these youth may be outdated. Similarly, although the CPM measure used in the current study included more items than most other

measures, there are still many other ways in which parents could have psychologically maltreated their children. There are countless ways in which parents can communicate to their children that they are unloved or worthless, and using a structured, closed assessment imposes limitations on our understanding of CPM. Also, acknowledging that a parent or caregiver had done something to harm them may be a perceived threat to the attachment bond and therefore anxiety provoking, and underreporting of CPM is therefore likely. The timing of CPM and the different subtypes of CPM were also not considered. It could be that certain types of CPM or CPM in general is more harmful during certain developmental periods, and future research should address this issue.

The time period for which adolescents had to remember childhood maltreatment experiences was shorter than that of adult studies, but the measures used in this study were still retrospective. Also, basic psychometrics of the LONGSCAN maltreatment self-report measures have not been obtained. The two significant relations were between youth self-report of CPM and youth report of depressive and conduct disorder symptoms. These results could be due to shared method variance; youth who were both aware of their symptoms and able to recognize that the treatment they received as a child was abusive, may also be more comfortable disclosing these things. The depression finding may be due to the fact that youth with more depressive symptoms were more likely to remember negative interactions with their parents. The inclusion of a control for prior depressive symptomatology reduces this possibility. Consistent with results from Everson et al. (2008), the relation between CPS emotional abuse allegations and the outcome variables did not hold in the regression analyses. There were also a low number of youth who had CPS abuse allegations who reported corresponding abuse types at the age 12 interview. This lack of convergent validity is also consistent with the findings of Everson et al.

(2008). The CPS allegations could have taken place before the youth remembered, adolescents may have been reluctant to admit that they were maltreated, or the questions on the self-report maltreatment measures may not correspond to the way in which the youth were maltreated at the time of the CPS referral.

Future studies

In this study, the relationship between the items on the CPM self-report and each outcome measure was linear, and use of dichotomous maltreatment variables was therefore not justified.

Future analyses using maltreatment indices should verify that the relationship is not linear before making arbitrary decisions about the use of dichotomous variables. Individuals who answer yes to one item on a depression or anxiety survey would not be counted as being clinically depressed or anxious. Similarly, there is no empirical or theoretical justification to considering an individual maltreated if they have endorsed a single item on a psychological maltreatment index, especially given the sometimes ambiguous nature of psychological maltreatment. This strategy may be appropriate in inquiries related to sexual abuse, where more clearly demarcated boundaries exist between having been abused or not.

Consistent with the findings of several other studies (Briere & Runtz, 1988; Romano, Zoccolillo, & Paquette, 2006) psychological maltreatment often occurred with sexual and physical maltreatment. Future studies of CPM should also take psychological maltreatment into account when studying other forms of childhood abuse. Maltreatment types often occur together, but this is not always the case (Briere & Runtz, 1990). Keeping maltreatment types separate in analyses and in their continuous forms will allow practitioners and researchers to tailor prevention and intervention efforts for specific abuse types. Similarly, internalizing and externalizing disorder symptom clusters should not be collapsed. Anxiety, depression, and

conduct problems each have their own therapeutic and pharmacologic interventions. Maintaining independent analyses for each of these outcomes has value for our understanding their developmental trajectories, as well as contributes useful information for practitioners.

Given the numerous ways in which parents can subtly and overtly psychologically maltreat their children, surprisingly little qualitative work has been done to develop new measures or validate existing ones. Finkelhor et al., (2005) used qualitative measures such as focus groups and cognitive interviews with parents and children to determine the appropriateness of its language and content. Moran and colleagues (2002) developed a semi-structured interview to assess new categories of abuse not previously accounted for on a structured questionnaire. A mixed methods approach to the study of CPM would be optimal for several reasons. A qualitative approach can be used to uncover new behavioral manifestations of psychological maltreatment, while quantitative measures can establish the frequency of these behaviors and their relationships to mental health outcomes. Participant observation and in-depth interview could also be used to identify new forms of physical and psychological maltreatment. In her ethnography exploring the relationship between social class and child rearing strategies, Lareau (2011) observed first-hand what would be counted as physical abuse and emotional neglect. She describes the Yanelli family's frequent use of physical discipline and constant fear that the marks left on their son's body would result in a report to child services by the school. In other chapters, Lareau describes instances of what would be considered psychological neglect. These observations indicate that participant observation would be a viable way to uncover new manifestations of psychological maltreatment, since the families in Lareau's study were willing to behave in this way when she was present.

Conclusions

Despite its limitations, the present study has important implications for both basic research and intervention efforts related to childhood psychological maltreatment. The field of child abuse and neglect has yet to agree upon a definition for CPM, and until it does our understanding of its etiology and effects will continue to be thwarted. The most recent National Incidence Study (NIS-4) indicates that incidence and prevalence of emotional neglect relative to other types of abuse and neglect is rising (Sedlak, et al., 2010). Given the findings of the present study and others, this is cause for concern. Lack of consensus on the definition of CPM will also delay the development of effective, coherent prevention and intervention efforts, as well as hinder a consistent, clear message to the general public.

Since more recent research on the topic of CPM has revealed it to be a unique contributor to depression (Bifulco et al., 2002) and externalizing problems (Lewis et al., 2010; Saluja, Kotch, & Lee, 2003), more prospective longitudinal studies are needed to confirm that this relationship is indeed causal. As this prospective longitudinal study demonstrates, childhood psychological maltreatment is detrimental to adolescent psychosocial functioning, and systematic efforts toward its prevention should be made.

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*APPENDIX A: Age 12 Assessments***Child Behavior Checklist Raw Score: Delinquent Behavior**

Range 0-18. 13 items.

0 = Not true (as far as you know)

1 = Somewhat or sometimes true

2 = Very true or often true

- 26 Doesn't get along with other kids.
- 39 Hangs around with others who get in trouble.
- 43 Lying or cheating.
- 63 Prefers older kids.
- 67 Runs away from home.
- 72 Sets fires.
- 81 Steals at home.
- 82 Steals outside home.
- 90 Swearing or obscene language.
- 96 Thinks about sex too much.
- 101 Truancy skips school.
- 105 Alcohol or drugs for nonmedical purposes.
- 106 Vandalism.

Physical Abuse Self-Report Measure

Range 0-39. 16 yes/no items followed by:

- A. About how often did an adult do this to you BEFORE YOU STARTED ELEMENTARY
- B. SCHOOL?
- C. About how often has an adult done this to you SINCE YOU STARTED ELEMENTARY SCHOOL until now?
- D. About how often has an adult done this to you IN THE LAST YEAR?

0 = Never

1 = 1 time

2 = 2 or 3 times

3 = \geq 4 times

- 1 Has any adult ever hit you with something really dangerous, like a baseball bat or a shovel?
- 5 Has any adult ever hit you with a less dangerous object?
- 9 Has an adult ever kicked or punched you?
- 13 Has any adult ever bitten you?
- 17 Has any adult ever pushed you around, like against a wall or down stairs?
- 21 Has any adult ever burned or scalded you on purpose?
- 25 Has any adult ever tried to choke, drown or smother you?
- 33 Has an adult ever actually stabbed you with a knife, razor, fork, or something sharp like that?
- 41 Has any adult ever shot at you with a gun, but didn't hit you?
- 45 Has any adult ever done something else that physically hurt you or put you in danger of being hurt?
- 49 Has any adult ever bruised you, or given you a black eye?
- 53 Has any adult ever broken one of your bones?
- 57 Has any adult ever cut you in a way that caused you to bleed or need stitches?
- 61 Has any adult ever knocked you out, or made you unconscious?
- 65 Has any adult ever caused an injury to your eyes, ears, nose, or teeth?
- 69 Has any adult ever wounded you by shooting you with a gun?

Childhood Psychological Maltreatment Measure

Range 0-38. 23 Yes/No items followed by:

- A. About how often did an adult do this to you Before you started elementary school?
- B. About how often has an adult done this to you since you started elementary school until now?
- C. About how often has an adult done this to you in the last year?

0 = Never

1 = 1 time

2 = 2 or 3 times

3 = ≥ 4 times

- PSMA1 Have any of your parents ever blamed you for their own problems?
- PSMA2 Have any of your parents ever called you names or teased you in a way that made you really feel bad about yourself?
- PSMA3 Have any of your parents ever punished by not letting you sleep, eat, or drink?
- PSMA4 Have any of your parents ever left you for most of a day or night without telling you where they were, or who was going to take care of you?
- PSMA5 Have any of your parents ever made you feel that you couldn't do anything right, no matter how hard you tried?
- PSMA6 Have any of your parents ever punished you in an unusual way - like tying you up, or locking you in a closet?
- PSMA7 Have any of your parents ever made you feel like they didn't care whether you were safe or healthy?
- PSMA8 Have any of your parents ever threatened to hurt you badly?
- PSMA9 Have any of your parents ever threatened to kill you?
- PSMA10 Have any of your parents ever threatened to abandon or to leave you forever?
- PSMA11 Have any of your parents ever threatened to kick you out of your home, or to have you taken away?
- PSMA12 Have any of your parents ever tried to kill him/herself, or another person, in front of you?
- PSMA15 Have any of your parents seemed crazy, like heard voices or seen things that weren't there, in a way that really scared you?
- PSMA16 Have any of your parents ever had you take care of yourself or other people in ways that you didn't feel old enough to do?
- PSMA17 Have any of your parents ever made you do something like steal, have sex for money, or carry drugs?
- PSMA18 Have any of your parents ever been so drunk or high that they behaved in ways that really scared you?
- PSMA19 Have any of your parents ever threatened to hurt someone very important to you?
- PSMA20 Have any of your parents ever threatened to hurt or destroy something important to you, like a pet or a favorite thing of yours?
- PSMA22 Have any of your parents ever refused to allow you to get the help you needed from a doctor?

- PSMA23 Have any of your parents ever refused to allow you to get the help you needed from someone like a counselor?
- PSMA24 Have any of your parents ever blamed you for other people's problems when they were not your fault?
- PSMA25 Have any of your parents ever locked you out of the house on purpose, without arranging for a place for you to go?
- PSMA26 Have any of your parents ever humiliated you or embarrassed you very badly by putting you down a lot in front of other people?

Sexual Assault and Abuse Measure

Range 0-41. 11 yes/no items followed by:

- A. About how often did an adult do this to you BEFORE YOU STARTED ELEMENTARY
- B. SCHOOL?
- C. About how often has an adult done this to you SINCE YOU STARTED ELEMENTARY SCHOOL until now?
- D. About how often has an adult done this to you IN THE LAST YEAR?

0 = Never

1 = 1 time

2 = 2 or 3 times

3 = ≥ 4 times

- 1. Has any adult or older kid ever made you look, at something sexual, like pictures or a movie?
- 5. Has anyone ever forced you to look at their sexual parts?
- 9. Has anyone spied on you or tried to look at you without your clothes on when you didn't want them to?
- 13. Has anyone ever touched your private parts or bottom in some way?
- 17. Has anyone ever tried to touch your private parts or bottom in some way, but they weren't able to do it?
- 21. Has anyone ever gotten you to touch their private parts or bottom in some way?
- 25. Has anyone ever tried to get you to touch their private parts/bottom in some way, but they weren't able to?
- 29. Has anyone ever put some part of their body or anything else inside your private parts or bottom?
- 33. Has anyone ever tried to put some part of their body or anything else inside your private parts or bottom, but they weren't able to do it?
- 37. Has anyone ever put their mouth on your private parts or made you put your mouth on their private parts?
- 41. Has anyone ever tried to put their mouth on your private parts or get you to put your mouth on their private parts, but they weren't able to do it?

Trauma Symptom Checklist (TSC) Anxiety and Depression Subscales

TSC Anxiety Raw Score Sum

Range 0-27. 9 items

- 0 = Never
 - 1 = Sometimes
 - 2 = Lots of times
 - 3 = Almost all of the time
-
- 2 Feeling afraid something bad might happen. This happens to me...
 - 15 Get scared suddenly and don't know why. This happens to me...
 - 24 Feeling scared of men. This happens to me...
 - 25 Feeling scared of women.
 - 32 Feeling nervous or jumpy inside.
 - 33 Feeling afraid. This happens to me...
 - 39 Being afraid of the dark. This happens to me...
 - 41 Worrying about things.
 - 50 Feeling afraid someone will kill me.

TSC Depression Raw Score Sum

Range 0-27, 9 items

- 0 = Never
 - 1 = Sometimes
 - 2 = Lots of times
 - 3 = Almost all of the time
-
- 7 Feeling lonely.
 - 9 Feeling sad or unhappy. This happens to me...
 - 14 Crying.
 - 20 Wanting to hurt myself.
 - 26 Washing myself because I feel dirty inside.
 - 27 Feeling stupid or bad. This happens to me...
 - 28 Feel like I did something wrong.
 - 42 Feeling like nobody likes me. This happens to me...
 - 52 Wanting to kill myself.

Youth Self-Report Delinquent Behavior Scale

Range 0-15. 11 items

0 = Not true

1 = Somewhat or sometimes true

2 = Very true or often true

- 26 I don't feel guilty after doing something I shouldn't do.
- 39 I hang around with kids who get in trouble.
- 43 I lie or cheat.
- 63 I would rather be with older kids than with kids my own age.
- 67 I run away from home.
- 72 I set fires.
- 81 I steal at home.
- 82 I steal from places other than my home.
- 90 I swear or use dirty language.
- 101 I cut classes or skip school.
- 105 I use alcohol or drugs for nonmedical purposes.

APPENDIX B: Age 14 Assessments

Conduct Disorder Symptoms over the last year- Youth and Parent report

23 questions. Parent range 0-21, Youth range 0-18.

0=No 1=Yes

- Q5 Have you [stolen/shoplifted/faked someone's name] more than once in the last year?
- Q10 Have you done (snatched someone's purse or jewelry/held someone up or attacked somebody to steal from them/threatened someone in order to steal from them) in the last year?
- Q12A In the last year, have you gotten into trouble because you stayed out at night more than two hours past the time you were supposed to be home?
- Q13A In the last year, have you run away from home overnight?
- Q16 In the last year, have you lied [to get something you wanted/to get out of something]?
- Q18A In the last year, have you skipped [school/work]?
- Q19A In the last year, have you broken into a house, a building, or a car?
- Q20A In the last year, have you broken something or messed up some place on purpose, like breaking windows, writing on a building, or slashing tires?
- Q21A In the last year, have you broken or damaged somebody else's things on purpose?
- Q22C In the last year, have you started a fire to cause damage or hurt someone in the last year?
- Q23A Have you been physically cruel to an animal in the last year?
- Q24B In the last year, have you forced someone to do something sexual with you?
- Q25C Have you bullied someone like this in the last year?
- Q26A Have you threatened or frightened someone on purpose in the last year?
- Q27B In the last year, have you started a physical fight in which someone was hurt or could have been hurt?
- Q28C Have you been physically cruel to someone when you weren't in a fight in the last year?
- Q29A In the last year, have you hurt someone with a weapon?
- Q29B In the last year, have you threatened someone with a weapon?
- Q36B Were you expelled from a school because of your behavior in the last year?
- Q38B Have you ever had an "in-school" suspension – that is, where you went to school but you weren't allowed to attend your usual classes? Has this happened in the last year?
- Q39A Were you actually arrested in the last year?
- Q40A Have you been fired from a job in the last year?

Generalized Anxiety Disorder Symptoms over the last year- Youth Report

12 Questions. Range 0-12.

0=No 1=Yes

- Q1 In the last year did you often get very worried before you [took a test or handed in an important assignment/had to get something ready for a deadline]?
- Q2 In the last year, did you often worry a lot before you were going to play a sport or game or do some other activity?
- Q3 In the last year, did you often worry a lot when you made small mistakes doing (your homework or on other) projects or activities?
- Q4 In the last year did you often worry about being on time?
- Q5 In the last year, have you worried a lot that you might have some sickness or illness?
- Q23 Are you the kind of person who is often very tense, or who finds it very hard to relax?
- Q24 In the last year, have you often been worried that you have made a mistake or have done something the wrong way?
- Q25 In the last year, have you often worried that you made a fool of yourself in front of other people?
- Q26 In the last year, have you often worried about whether other people liked you?
- Q27 In the last year have you had a lot of headaches?
- Q28 In the last year have you had a lot of stomachaches?
- Q29 In the last year have you had a lot of other aches and pains?

Major Depressive Disorder Symptoms over the last year- Youth report

22 Questions. Range 0-21.

0=No 1=Yes

- Q1 In the last year, was there a time when you often felt sad or depressed?
- Q2 In the last year, was there a time when nothing was fun for you and you just weren't interested in anything?
- Q3.3 In the last year, was there a time when you often felt grouchy or irritable and often in a bad mood, when even little things would make you mad?
- Q4 In the last year, was there a time when you lost weight?
- Q5 In the last year, was there a time when you lost your appetite or often felt less like eating?
- Q6 In the last year, was there a time when you gained a lot of weight?
- Q7 In the last year, was there a time when you felt much hungrier than usual or when you ate a lot more than usual?
- Q8 In the last year, was there a time when you had trouble sleeping, that is, trouble falling asleep, staying asleep, or waking up too early?
- Q9 In the last year, was there a time when you slept more during the day than you usually do?
- Q10 In the last year, was there a time when you often felt slowed down ... like you walked or talked much slower than you usually do?
- Q11 In the last year, was there a time when you often felt restless ... like you just had to keep walking around?
- Q12 In the last year was there a time when you had less energy than you usually do?
- Q13 In the last year, was there a time when doing even little things made you feel really tired?
- Q14 In the last year, was there a time when your arms and legs felt heavy, like you were weighed down by them?
- Q15 In the last year, was there a time when you often blamed yourself for bad things that happened?
- Q16 In the last year, was there a time when you felt you couldn't do anything well or that you weren't as good-looking or as smart as other people?
- Q17 In the last year, was there a time when you couldn't think as clearly or as fast as usual?
- Q18 In the last year, was there a time when you often had trouble keeping your mind on (your [schoolwork/work] or other) things?
- Q19 In the last year, was there a time when it was often hard for you to make up your mind or to make decisions?
- Q20 In the last year, was there a time when you often thought about death or about people who had died or about being dead yourself?
- Q21 In the last year, was there a time when you thought seriously about killing yourself?
- Q22b Now thinking about the whole last year have you tried to kill yourself?

APPENDIX C: Missingness Assessment

Predictor Variables

<i>Variable</i>	<i>Analytic Sample</i>	<i>Not in Analytic Sample</i>	<i>Test Statistic</i>	<i>p-value</i>
Caregiver Education	$M= 12.23 (2.27)$	$M=12.14 (2.05)$	$F(1,951) = 0.31$	.58
Center			$\chi^2(4, N=1354) = 24.72$	.00
East	21.7%	19.9%		
Midwest	13.9%	22.5%		
Northwest	20.4%	17.0%		
South	21.0%	14.7%		
Southwest	23.0%	25.8%		
Gender			$\chi^2(1, N=1354)= 2.09$	.16
Male	50.4%	46.5%		
Female	49.6%	53.5%		
Race			$\chi^2(6, N=1353)= 16.73$	.01
White	26.6%	25.7%		
Black	56.2%	50.2%		
Hispanic	5.3%	9.1%		
Native American	0.1%	1.1%		
Asian	0.4%	0.2%		
Mixed Race	10.9%	12.9%		
Other	0.4%	0.8%		
Household Income	$M= 6.06 (3.20)$	$M= 6.05 (3.50)$	$F(1,943) = 0.00$	.99
CPS Emotional Maltreatment	$M= 0.75 (1.50)$	$M= 0.79 (1.59)$	$F(1,1353) = 0.25$	.62
CPS Physical Abuse	$M= 0.88 (1.78)$	$M=0.91 (1.76)$	$F(1,1352) = 0.09$	.77
CPS Sexual Abuse	$M= 0.22 (0.65)$	$M= 0.24 (0.62)$	$F(1, 1352)= 0.45$	.50
Physical Abuse- Youth Report	$M= 1.71 (4.96)$	$M= .88 (1.78)$	$F(1,879) = 0.00$	.99
Psychological Maltreatment- Youth Report	$M= 3.20 (6.75)$	$M= 4.12 (8.80)$	$F(1,881) = 2.41$	.12
Sexual Abuse- Youth Report	$M= 0.98 (3.97)$	$M= 1.11(4.25)$	$F(1,872) = 0.15$	.70
TSC Depression	$M= 3.02(3.44)$	$M= 3.38 (4.27)$	$F(1,853) = 1.35$	.25
TSC Anxiety	$M= 3.08 (3.65)$	$M= 3.58 (4.37)$	$F(1, 853) = 2.45$	.12
YSR Delinquent Behavior	$M= 2.34 (2.17)$	$M= 2.66 (2.35)$	$F(1, 877) = 3.27$	.07
CBCL Delinquent Behaviors	$M= 2.43 (2.69)$	$M= 2.91 (3.23)$	$F(1, 948) = 5.36$	.02

Outcome Variables

<i>Variable</i>	<i>Analytic Sample</i>	<i>Not in Analytic Sample</i>	<i>Test Statistic</i>	<i>p-value</i>
Anxious Symptoms	<i>M</i> = 2.82 (2.46)	<i>M</i> = 2.87(2.83)	<i>F</i> (1,824)= 0.04	.84
Depressive Symptoms	<i>M</i> = 3.95 (3.87)	<i>M</i> = 4.40 (4.69)	<i>F</i> (1,824)= 1.40	.24
Conduct Disorder Symptoms- Youth Report	<i>M</i> = 3.53 (3.73)	<i>M</i> = 4.08 (4.23)	<i>F</i> (1,819)= 2.34	.13
Conduct Disorder Symptoms- Parent Report	<i>M</i> = 2.80 (3.15)	<i>M</i> = 3.78 (4.04)	<i>F</i> (1,839)= 12.18	.00