ABSTRACT

Title of Thesis	THE SOCIAL DISTRIBUTION AND LONG-TERM EFFECTS OF CHILDHOOD MALTREATMENT: AN ANALYSIS OF THE MODERATING EFFECTS OF SOCIAL STATUS AND PARENTAL SUPPORT
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This study explores the relationship between childhood physical maltreatment and two mental health outcomes, psychological distress and problem drinking, in a nationally representative sample. Data from the National Survey of Midlife Development in the United States (MIDUS), which measured childhood experiences with parental physical maltreatment and adult mental health outcomes, were used to examine the conditional effects of childhood maltreatment on psychological distress and problem drinking. A "gender-difference hypothesis" predicts that childhood physical maltreatment is more strongly related to distress among women and is more strongly related to problem drinking among men. The results support this hypothesis only for psychological distress.

A “saturation hypothesis” predicts that women are more likely to have higher rates of problem drinking but not distress, and men experience elevated rates of distress but not problem drinking. No significant findings emerged to support the second hypothesis. Results also suggest that, among respondents who experienced either any physical maltreatment or major psychical maltreatment, low parental support exacerbates the negative impact of physical maltreatment on distress. This research underscores the importance of structural and contextual factors for the long-term consequences of childhood physical maltreatment.

THE SOCIAL DISTRIBUTION AND LONG-TERM EFFECTS OF CHILDHOOD MALTREATMENT: AN ANALYSIS OF THE MODERATING EFFECTS OF SOCIAL STATUS AND PARENTAL SUPPORT

by

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In memory of my father,

Matei A. Veronicã

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Central Aims

The aims of the present thesis are threefold. The first aim is to examine the extent to which exposure to childhood maltreatment affects adult mental health. The second goal is to determine whether the long-term effects of childhood maltreatment vary across socio-demographic groups such as gender and socioeconomic status. The third aim is to test the extent to which parental support alters the relationship between childhood maltreatment and subsequent mental health.

CHILD MALTREATMENT

Conceptual Definitions and Measurement

The documentation and measurement of maltreatment is a critical issue in child abuse research. Numerous clinical and research instruments (Straus and Gelles 1990; Mullen et al. 1996; Boney-McCoy and Finkelhor 1996) have been developed to assess for all forms of maltreatment but agreement as to what specific acts should be included in a comprehensive definition is far from resolved. Because most maltreatment research relies on state-derived, child protection agencies, or courts definitions, several authors have stressed the crucial importance of adequate conceptual and operational definitions of maltreatment (Zuravin 1991). Aber and Zigler (1981) recommended the formulation of broad research definitions, in which the main classification principle is the nature of acts, or “descriptive compartmentalization of behaviors”, as opposed to child outcomes. In general, definitions of maltreatment were conceptualized based on the severity (or likeness of causing harm to the victim) of the specific acts or describing the acts solely on a frequency basis (the more frequent the abuse the more likely it will cause trauma).

Physical maltreatment is often defined as an act of commission in which a parent does something injurious to a child. Injuries from physical abuse may result from extended physical altercations (e.g., hitting, kicking, shaking) or brief, isolated incidents (e.g., being burned, thrown down stairs, bitten, poisoned). Physical maltreatment can be intentional, as some adults make a conscious decision to hurt a child. In some cases, physical maltreatment may be the unintentional consequence of a parent's loss of self-control. Several studies consider physical abuse to be a potential outcome of corporal punishment, especially if corporal punishment is administered too severely or too frequently (Straus and Kantor 1994). However, it may be overlaps between different forms of punishment and physical maltreatment. For instance, some researchers would consider beating the child as an abusive act (Rohner, Kean and Cournoyer 1991). Some instances of physical abuse, such as hitting or striking children either with parents' hands or with objects, appear similar to corporal punishment. Thus, it is the *intent* and the *risk of injury* that differentiates abuse from other punitive acts (Wolfner and Gelles 1993).

The most widely used instrument in survey studies, the Conflict Tactics Scale (CTS) developed by Straus and his colleagues, was designed to measure behaviors ranging from passive behaviors (i.e., sulking or withdrawing) to very severe acts (i.e., burning or threatening with a gun) (Straus 1990). This measure allows the examination of the frequency and types of conflict tactics used between a couple, children or parent and child. The Revised CTS (Straus, Hamby, Boney-McCoy and Sugarman 1996) offers several additions and improvements because it includes psychological aggression, physical assault, sexual coercion and injury. This scale covers a broad range of acts from culturally legitimate corporal punishment to criminal acts of physical assault. At the low

levels of severity, spanking and other forms of corporal punishment are acts that have traditionally been regarded as responses to persistent misbehavior (Straus and Mathur 1996). In contrast, higher levels of severity are indicators of severe physical maltreatment (e.g., kicked, bit, hit with fist, burned or scalded and used gun or knife). This measure was the first systematic attempt to quantify psychological violence within families.

The present study follows Straus et al. (1998) approach using an instrument that measures behaviors used by family members in situations of conflict by assessing the frequency and type of abusive acts. Physical maltreatment includes acts of physical aggression that are commonly viewed as legitimate forms of discipline with a low risk of physical injury (i.e., slap, throw something at you), whereas severe physical maltreatment includes acts of physical aggression that have a higher likelihood of physical injury (i.e., beat you up, kicked, burned or scalded you).

Prevalence and Estimates of Maltreatment

National studies on the rates of maltreatment against children in the U.S. society indicate that while abuse may be declining, a high incidence of severe physical abuse against children prevails. Child abuse and neglect continues to be a significant problem in the U.S.; there were approximately 903,000 reported victims of child maltreatment in 2001: 19 percent were physically abused and 8 percent were psychologically maltreated (U.S. Department of Mental Health and Human Services 2001). However, these estimates may underestimate the reality. Child protective services were noted to investigate only 28 percent of cases in which children were harmed due to abuse or neglect.

Prevalence estimates are most commonly drawn from self-report research and may vary based upon operational definitions of the various types of abuse, characteristics of the sample, and response rates. Although self-report and retrospective survey research has been criticized for potentially assessing "false memories" or exaggerating the number of cases of childhood maltreatment, some researchers (della Femina, Yeager and Lewis 1990) have posited that adults with abusive pasts are more likely to deny or minimize their experiences, resulting in an underestimation of maltreatment cases.

In a nationally representative sample of 6,002 families, Straus and Gelles (1990) found that 2.4 percent of children (approximately 1.5 million) were victims of severe parental violence (being kicked, bitten, punched, beat up, burned, scalded, or threatened or attacked with a knife or gun). When being hit with an object is added to the list of severe violence items, that percentage increases to 11 percent or approximately 6.9 million people. However, Gorey and Leslie (1997) suggest that decreasing survey participation makes it more difficult to get accurate prevalence figures about physical abuse. They argue that the prevalence estimates vary widely because adults who have experienced child abuse are more likely to respond to such surveys than the nonabused counterparts are.

Furthermore, several factors appear to increase a child's level of risk of being harmed. Sedlak (1997) used a nationally representative database of child abuse and neglect cases to examine demographic risk factors for the occurrence of different types of abuse and neglect. For all maltreatment categories, older children and children in families with incomes under 15,000 per year were at far greater risk and risk was related to family structure and metropolitan status of the county. In a profile of violence toward children in

the U.S., Wolfner and Gelles (1993) discuss abusive violence and confirm that the youngest, poorest, most socially isolated and economically frustrated caretakers are the most likely to abuse their children.

Based on parents' answers concerning their physically assaultive actions toward their children, Straus and Gelles (1990) found that child's gender was not related to physical abuse, but family socioeconomic was. Severe violence evidenced a curvilinear relationship with child's age, peaking in the three to ten year old ranges. Race/ethnicity differences also emerged, with both Black and Hispanic children abused at significantly higher rates than White children. Family size also appeared to be related to the rate of physical abuse, in that families with one or two children had higher rates than those with three or more children. Despite such findings, it is important to note that maltreatment occurs across all levels of parental class, income and education, and that discrepancies in victimization rates may be due to differences in reporting across different SES groups.

Overall, different definitions and standards lead to variations in prevalence figures. Prevalence estimates are most commonly drawn from self-report research and may vary based upon operational definitions of various types of maltreatment, characteristics of the sample, and response rate. Nonetheless, the limited available evidence suggests that child maltreatment is an important, prevalent problem in the U.S.

The Problem

Mental health is not uniformly distributed throughout society; it is more densely concentrated in the low social strata (Aneshensel and Phelan 1999). Socioeconomic characteristics (i.e., education, income, occupation) affect mental health (Turner,

Wheaton and Lloyd 1995; Bruce, Takeuchi and Leaf 1991). Specifically, it has been consistently demonstrated that SES is negatively associated with the prevalence of mental and emotional impairment (Cockerman 1990; Gilman et al. 2002; McLeod and Shanahan 1996; Aneshensel and Sucoff 1996).

On the other hand, numerous studies support the proposition that negative life events may predispose individuals to a wide variety of physical and mental health problems (Dohrenwend and Dohrenwend 1981; Kessler and Magee 1993). Negative life events, such as divorce and job loss, as well as more extreme experiences such as war and natural disasters, are associated with psychological disturbance (Harris, Brown and Bifulco 1990; Thoits 1983). Negative life events that occur during childhood are especially traumatic. Certain sequences of stressful and traumatic experiences in childhood serve as an important determinant of subsequent mental health (Wheaton 1994; Terr 1991), suggesting that experiences during the early years are a potent force in shaping mental health over the life course.

Childhood maltreatment is one type of early childhood trauma that may be especially pernicious. Prior research indicates that experiences of childhood traumatic events, such as parental physical abuse, are associated with a variety of adverse psychological outcomes (Kessler and Magee 1993; Holmes and Robins 1988; Wheaton, Roszell and Hall 1997; MacMillan et al. 2001). The emotional and developmental scars that abused children receive may persist beyond adolescence into adulthood, manifested in elevated levels of drug and alcohol disorders, physical and mental health problems, and suicide (Horwitz, Widom, McLaughlin and White 2001; Malinosky-Rummell and Hansen 1993; Downs and Harrison 1998; Frias-Armenta 2002; Widom, Ireland and

Glynn 1995). Therefore, abuse is a significant risk factor for mental health and social relationship problems in adulthood.

However, the effects of early stressful events on mental health may not be uniform. For example, the effects of such stressors may differ by gender. Yet, gender differences in the consequences of childhood victimization have not received adequate attention. Several studies indicate that various types of stressors are more strongly associated with substance abuse for men and psychological distress for women (Aneshensel et al. 1991; Horwitz and Davies 1994). These studies emphasize the importance of inclusion of multiple measures of mental health to determine how men and women respond to stress. For instance, research documents that women are more prone to react to stresses in an inward manner, exhibiting signs of emotional distress such as depression and anxiety, while men are more likely to react with an outward behavior such as alcohol abuse (Horwitz and Davies 1994). Therefore, it is important to examine mental health outcomes that reflect both female and male styles of disorder to adequately test the impact of childhood maltreatment (Aneshensel et al. 1991). In sum, two core hypotheses emerge:

Hypothesis 1: People who experienced childhood maltreatment report more psychological distress and problem drinking in adulthood.

Hypothesis 2: Childhood maltreatment is more strongly related to psychological distress among women, and more strongly related to problem drinking among men.

Among studies dealing with gender differences in response to childhood abuse, a few have found contradictory patterns: childhood victimization produces different mental health outcomes for women and men, such that abused men are more likely to have long-lasting moderate indications of depression as adults, as indicated by dysthymia, while abused women are more likely to have alcohol problems in adulthood (Horwitz et al. 2001; Widom et al. 1995). To explain these atypical findings researchers suggest that, since men from disadvantaged social conditions are already pre-disposed to higher rates of alcohol and females from these backgrounds are already at higher risk for depression, childhood experience with abuse may not have an additional effect on these mental health outcomes. Instead, the results of exposure to maltreatment in childhood may contradict expectations, so that women will be more likely to have higher rates of alcohol abuse but not distress, and men will experience elevated rates of distress but not alcohol abuse.

Horwitz et al. (2001) observed this so called "saturation effect" in a low SES sample that came from court documented cases of child abuse and neglect in a Midwestern city. Because their results cannot be generalized to abused and neglected children from middle and upper classes, a test of the "saturation hypothesis" in a nationally representative sample is needed. Based on the "saturation effect" idea, I hypothesize the following:

> *Hypothesis 3:* The positive association between childhood maltreatment and distress is stronger among men in low SES groups, while the positive association between childhood maltreatment and problem drinking is stronger among men in high SES groups.

Hypothesis 4: The positive association between childhood maltreatment and distress is stronger among high SES women, while the positive association between childhood maltreatment and problem drinking is stronger among low SES women.

Childhood maltreatment does not operate in isolation; the effects of maltreatment are moderated by situational, relational and socio-cultural contexts. Thus, this phenomenon can only be defined or understood by considering the total social context with special emphasis on some specific factors. A key context that warrants attention from researchers is that of parent-child relationship - an important factor in how well children cope with a history of maltreatment. The research on stressors and protective factors, generally, and the maltreatment literature, specially, suggests that having a very supportive relationship with at least one parent can do much to ameliorate the effects of maltreatment (Rutter 1987).

Thus, in addition to examining the conditional effects of socio-demographic status (i.e., gender and SES), the present study also assesses the role of parental support as a contextual factor that may affect the association between maltreatment and mental health. The perception of the support received from parents or peers constitute a relevant variable in understanding the consequences of childhood maltreatment. Researchers studying social support have debated whether support is best understood as having positive effects regardless of the individual's situation (the main effect hypothesis) or only when the recipient is under substantial stress (the buffering hypothesis). While the direct effect of bonding on psychological well-being has been studied extensively (Parker

1994; Kraaij and Garnefski 2002), fewer studies have been performed on the buffering effect that bonding has on the response to stressful events. For instance, Merrill et al. (2001) showed that childhood maltreatment victims with positive family environments and high levels of parental support suffer less extreme long-term maltreatment consequences than their peers who lack these resources. However, Turner and Finkelhor (1996) discussed the potential moderating effect of supportive parenting suggesting that the association between distress and corporal punishment may be greater under conditions of low support.

Therefore, I hypothesize that adults do not develop mental health symptoms solely because of the amount of maltreatment they experienced in childhood. It also depends on how much parental support was present. In other words, I wish to determine whether childhood maltreatment will have a more detrimental effect when there is low parental support. Thus, the following hypotheses come to light:

Hypothesis 5: Parental support has a strong negative effect on psychological distress and problem drinking.

Hypothesis 6: The association between childhood maltreatment and distress is greater under conditions of low parental support.

Hypothesis 7: The association between childhood maltreatment and problem drinking is greater under conditions of low parental support.

The Mental Health Effects of Child Maltreatment

Despite the growing interest in child abuse issues in recent years, few studies have examined the long-term sequelae of such abuse in the general population (for a review,

see Malinosky-Rummell and Hansen 1993). Researchers have primarily utilized samples selected from clinics and other social service agencies or college students. While these investigations are valuable in identifying the prevalence and consequences of abuse in these subpopulations, they are not included in the present discussion because the application of their findings to the general population is limited. Studies examining mental health impacts of childhood maltreatment have noted the prevalence of two main disorders: depression and alcohol abuse. I begin with a brief review of the adulthood outcome studies in this area, focusing on the outcomes that I mentioned above.

Many studies link depression with physical abuse (Frias-Armenta 2002; Mullen et al. 1996). Thompson et al. (2002) studied a nationally representative sample of women and found that physical victimization in childhood was significantly associated with poor global health, chronic depression, and alcohol use. Duncan and colleagues (1996) examined the relationship between a childhood history of serious physical assault and emotional impairment in a national sample of women, finding that those who reported such victimization experienced higher rates of depression, posttraumatic stress disorder and substance abuse.

Among a sample of 150 Mexican women reported as child abusers, Frias-Armenta (2002) examined the long-term effects of child punishment, especially physical and verbal punishment. Women's history of abuse was hypothesized as directly affecting mothers' antisocial behavior, their alcohol consumption and their level of depression and anxiety. These three factors were also shown to influence mother's harsh discipline of their own children. Mullen et al. (1996) examine the specific associations between histories of sexual, physical or emotional abuse and negative adult outcomes as well as

potential interaction between them in a community sample of women. Physical abuse was defined as reporting physical punishment or hitting with open hands or with a weapon (such as a belt or stick) on a regular basis (i.e., more than two times a year). It was found that women who were exposed to some form of abuse in childhood were in adult life more likely to have mental health difficulties (e.g., depressive and anxiety symptoms). Part of the apparent relationship between childhood abuse and negative outcomes in adult life was accounted for background factors such as SES, violence in the parental relationship, alcoholism, etc. This study supports an association between giving a history of abuse and an increased risk to a range of mental health, personal and social problems in adulthood. What makes this study a valuable research is that examines a wider spectrum of abuse in the context of a matrix of childhood disadvantage, from which often abuse originates and from which some of the apparent associations to abuse are likely to be attributable.

MacMillan and colleagues (2001) assessed lifetime psychopathology in a general population sample and compared rates of anxiety, major depression, alcohol/dependence between those with a history of physical and/or sexual abuse and those without any abusive history. The definition of physical abuse included categories such as being pushed, grabbed or shoved; having something thrown at them; being kicked or punched; getting hit with something; being chocked; burned, or scalded; or being physically attacked in some other way. Findings indicate that those reporting a history of childhood physical abuse have significantly higher lifetime rates of anxiety disorders, alcohol abuse/dependence, and antisocial behavior and were more likely to have one or more disorders than those without such a history. An important finding of this study is that the

association between a history of child abuse and psychopathology varies by gender. Specifically, women *but not* men with a history of abuse in childhood had significantly higher lifetime rates of major depression and drug abuse/dependence.

The aforementioned studies show that physical maltreatment has been associated with depression in adult female samples. Although women have been reported to suffer more abuse, gender effects may present differential in the development of future sequelae. Therefore, an investigation of childhood abuse while utilizing mixed samples of females and males with adequate sample sizes for both genders is needed.

Alcohol abuse was often found a major problem identified by those who had been abused in childhood (Langeland and Hartgers 1998; Jacobs and Gill 2002; Downs and Harrison 1998). Retrospective studies demonstrated a link between experiences of childhood abuse and the development of alcohol problems in adulthood for both male and female respondents (Holmes and Robins 1988; Briere and Runtz 1988). A review by Langeland and Hartgers (1998) confirm that among females there is higher likelihood of alcohol problems if they were sexually and physically abused as children, but there is insufficient evidence on which to base conclusions about relationships between child sexual abuse and child physical abuse and alcoholism in males. Holmes and Robins (1987) found that unfair and inconsistent discipline from parents during childhood, and presence of childhood behavior problems predicted alcohol disorders during adulthood for males.

In a prospective study, Ireland and Widom (1994) followed 908 children with court-documented abuse and neglect histories and a control group of 667 matched children without such histories. The investigators analyzed whether childhood

victimization was associated with an increased risk of alcohol- and/or drug- related arrests as juveniles or adults. The results show that for male subjects, a history of childhood abuse did not significantly predict alcohol and other drugs related arrests. Surprisingly, such an abuse history significantly predicted adult alcohol and other drugs related arrests among women. In other words, these findings also suggest differential long-term consequences of childhood maltreatment for males and females. A follow up study based on the same sample also concluded that no relationship existed between childhood victimization and subsequent alcohol abuse in men, but found a significant increase in risk for women (Widom et al. 1995). Two measures of alcohol abuse were used: alcoholism diagnosis and number of alcohol-related symptoms; physical abuse cases included injuries such as bruises, cuts, burns, bone fractures and other evidence of physical injury. After controlling for childhood poverty, parental alcohol and/or drug problems, childhood neglect, sexual abuse, race and age, childhood physical abuse was not an independent risk factor for later alcohol problems for men. Thus, men and women react differently to child victimization, so that women abused and neglected in childhood may manifest the long-term consequences of such abuse by direct the pain and suffer inwardly, rather than express it outwardly as in aggression or antisocial behavior.

Galaif et al. (2001) tested gender differences in the structure of the relationships between childhood maltreatment, familial variables and adult problem alcohol use in a population-based sample across three time periods. Childhood maltreatment included measures of emotional, physical and sexual abuse, as well as emotional and physical neglect, assessed by a self-report inventory (Child Trauma Questionnaire). Findings indicate that childhood abuse is an early risk factor of later alcohol misuse. Although men

reported more problem alcohol use, there were no gender differences in the predictive relationships among the constructs over time. Childhood maltreatment did not significantly predict later alcohol problems for men; only childhood sexual abuse predicted more problem alcohol use in adulthood for both men and women. However, the relatively small number of men in the sample is an impediment to the generalizability of this study.

Findings from the aforementioned studies clearly indicate that developmental pathways leading to alcohol abuse may be dissimilar for men and women. Therefore, alcohol abuse may serve different psychological, social, and family functions for boys and girls influencing their pattern of abuse. In part, these findings may be a function of differences in operationalization of childhood victimization and/or of alcohol abuse.

While most studies focus on single abuse outcome, several recently published articles have begun to explore multiple negative outcomes for the same subjects (Horwitz, White and Howell-White 1996; Aneshensel et al. 1991). The most notable investigation of long-term consequences of child abuse that examines multiple outcomes in response to childhood victimization is Horwitz et al. (2001). By placing childhood victimization in the context of other life stressors that might affect subsequent mental health, Horwitz et al. (2001) examine the impact of sexual abuse, physical abuse, and neglect on lifetime measures of mental health among adults. The study uses a prospective sample based on documented cases of children who were abused or neglected between the years 1967 and 1971. The outcomes under study were dysthymia, alcohol abuse and dependence, and antisocial personality disorder; also, the study presents both dichotomous diagnoses and continuous measures of mental health outcomes. Results

indicate that men who experienced childhood abuse and neglect report more dysthymia and antisocial behavior personality disorder later in life, *but not* more alcohol problems. Among women, those who were abused and neglected early in life report more symptoms of dysthymia, antisocial behavior personality disorder, and alcohol problems than controls. In other words, childhood experience with abuse not only has different impacts on men and women but also is associated with gender-atypical outcomes. However, after controlling for stressful life events, the impact of early child abuse and neglect on any lifetime mental health outcome comes to be insignificant for both men and women. By examining multiple mental health outcomes using a prospective study as well as symptoms and diagnostic measures of these outcomes, and stressful life events, the undertaken study shed light on the conditions under which early traumatic events become risk factors later in life.

What most of the studies do not take into account is the effect of gender on the association between childhood maltreatment and adult mental health. As Aneshensel et al. (1991) noted women qualify for psychiatric diagnoses of affective disorders more frequently than men, whereas men qualify for diagnoses of alcoholism and drug abuse more frequently than women. This indicates that only by using male as well as female types of disorder can we truly understand the processes linking gender to the variety of ways that individuals display psychological disorder:

> "Whenever diverse groups respond to stressful social conditions differently, outcomes that are typical of each group must be considered to estimate accurately the mental health impacts of social conditions."
>
> Horwitz, White and Howell-White (1996:287)

Therefore, the present study assesses whether the impact of childhood maltreatment is similar or different for women and men. It needs to be acknowledged that the relationship between maltreatment and adult mental health is invariably nested within the family, which is in turn significantly influenced by the social environment in which the family is located. Thus, this study also investigates whether the effects of childhood physical maltreatment on adult mental health vary across current socioeconomic groups.

The importance of Parental Support

A general category of variables that may predict the extent to which child physical maltreatment victims experience negative outcomes relates to the social context within which the maltreatment takes place. Most research in this realm has examined the impact of social support and family environment on the outcomes of abuse victims. Thus, the present study also seeks to assess the role of parental support as a contextual factor that may affect the association between maltreatment and adult mental health. Several studies have examined factors that *moderate* the impact of childhood maltreatment on adult psychological functioning. For example, quality of parental involvement was shown to be associated with psychological well-being of adolescents (Simons, Johnson and Conger 1994). Also, studies show that childhood maltreatment victims who had more positive family environments and high levels of parental support are less likely to suffer long-term maltreatment consequences compared with their peers who lack these resources (Merrill et al. 2001). To the extent that parents do not provide an appropriate level of support basic bonding processing will be disrupted and individuals will become vulnerable to mental health problems.

In the context of the stress model, Turner and Finkelhor (1996) examined the moderating influence of parental support on the associations between corporal punishment and psychological outcomes. Corporal punishment was operationalized by asking respondents how often they were spanked, slapped or hit by parents or guardians within the past year. Physical abuse indicating whether the child had ever experienced a completed or attempted incident of severe physical assault by a parent or a guardian was included in the analysis as a control. Results indicate that corporal punishment represents a source of stress for many youth, significantly contributing to both psychological distress and depression. Their findings indicate that the association between corporal punishment and psychological distress is partly conditional upon the support received from parents during childhood. Surprisingly, among those experiencing high frequency of physical punishment, low parental support reduced instead of accentuating the negative impact of physical punishment on distress. In other words, parental support did not buffer the stress of frequent corporal punishment. It seems that parents who are inconsistent and arbitrary in their rearing practices, in other words highly supportive and frequently users of physical punishment, increase youth's chances for subsequent distress. These findings suggest that even in the context of a supportive parent-child relationship, corporal punishment *does* have a negative impact on the well being of adolescents.

Thus, the perception of the support received by parents constitutes a relevant variable in understanding the consequences of physical maltreatment. This study examines whether parental support moderates the detrimental effect of maltreatment on distress and alcohol abuse.

METHODS

Sample and Procedure

The data used for this analysis are from the National Survey of Midlife Development in the United States conducted in 1995-1996 (MIDUS), a nationally representative study focused on issues of midlife and older adulthood (Brim et al. 1996). Participants were English-speaking adults with ages ranged from 25 to 74 (mean = 46, sd = 13). The sample was 51% female and 49% male; approximately 6% of the sample was African-American. The survey had two portions. Initially, all respondents were contacted by phone using a random-digit dialing procedure. Those agreeing on participation were administered a 30-minutes telephone survey and asked to complete another mail-in questionnaire. The response rate was 70% of those contacted by phone, and 87% returned the mail questionnaire. Thus, the combined response rate was 61% (.70 x .87 = .61). The sample analyzed here comprised of respondents who completed both the telephone and mail surveys and were not part of urban oversample (N = 3,032).

Measures

Dependent variables

Psychological distress Frequency measures of unpleasant symptoms of depressed mood were used as measure of psychological distress. Previous studies have demonstrated the psychometric properties of this measure (Keyes 1998; Mroczek and Kolarz 1998). Respondents were asked to indicate: “During the past 30 days, how much of the time did you feel: a) so sad nothing could cheer you up?, b) nervous?, c) restless or fidget?, d) hopeless?, e) that everything was an effort?, f) worthless?”. The response

options for the psychological distress scale were as follows: 1 = all of the time, 2 = most of the time, 3 = some of the time, 4 = a little of the time, 5 = none of the time. The response categories were recoded such that higher scores indicate psychological distress and low scores indicate psychological well-being. The distress scale has good reliability (Cronbach's alpha = .87). The distress score is the averaged scores of the six items.

Table 1 shows an overview of how respondents answered the psychological distress questions. Although the percentage of respondents who reported never feeling a psychological distress symptom varied across the five feelings, no more than 2 percent of respondents admitted to feeling each distressful emotion all of the time. This positively skewed distribution is consistent with depressive findings found in previous studies (Mirowski 1999).

Problem drinking was operationalized by considering the extent to which a respondent experienced serious consequences as a result of drinking or symptoms of alcohol dependence within the past year (Grzywacz and Marks 2000). Respondents were asked the following five questions expanded from the Composite International Diagnostic Interview (World Health Organization 1990): "During the past 12 months, did you have any of the following problems while drinking or because drinking alcohol: a) were you ever during the past 12 months under the effects of alcohol or feeling its after-effects in a situation which increased your chance of getting hurt – such as when driving a car or boat, or using knives or guns or machinery?, b) Did you ever during the past 12 months, have any emotional or psychological problems from using alcohol – such as feeling depressed, being suspicious of people, or having strange ideas?, c) Did you ever, during the past 12 months, have such a strong desire or urge to use alcohol that you could not

resist or could not think of anything else?, d) Did you have a period of a month or more during the past 12 months when you spent a great deal of time using alcohol or getting over its effects?, e) Did you ever, during the past 12 months, find that you had to use more alcohol then usual to get the same effect or that the same amount had less effect on you than before?". I summed these items to create the index of problem drinking. The internal (alpha) reliability is $\alpha = .82$.

Independent variables

Child maltreatment A number of questions asked respondents to recall the behavior of their parents while they were growing up. This operationalization of parental maltreatment behaviors was adapted from the verbal aggression, minor violence, and severe violence subscales of the Conflict Tactic Scale (CTS), an instrument that measures behaviors used by family members in situations of conflict. Prior research shows its acceptable psychometric properties (Straus et al. 1998). In the MIDUS, behaviors were combined into three separate questions assessing evidence for emotional, minor physical and major physical maltreatment[1]. *Minor physical maltreatment* was operationalized as acts of physical aggression that are commonly viewed as legitimate forms of discipline with a low risk of physical injury. Respondents indicated how often their parents "pushed, or shoved you; slapped you; threw something at you?" *Major physical*

[1] The original Conflict Tactics Scale consists of series of questions that begin with items such as "discussed the issue calmly", and progress to items such as "insulted or swore at you" or more severe forms of abuse such as "beat you up, burned or scalded you" Due to the list length, the items were grouped into three categories of tactics used in parent-child conflict: emotional maltreatment, minor physical maltreatment and major physical maltreatment. The same questions were asked separately for mother's and father's use of disciplinary acts.

maltreatment is operationalized as acts of physical aggression that have a higher likelihood of physical injury. Respondents were asked how often their parents "kicked, bit or hit you with a fist; hit or tried to hit you with something; beat you up; kicked you; burned or scalded you?" Using a scale from 1 to 5 ("often", "sometimes", "rarely", "never" or "does not apply"), respondents indicated the frequency of their experiences with maltreatment. Those who answered, "does not apply" have been included in the "never" category because they were never exposed to maltreatment. Using the same coding scheme as Corliss, Cochran and Mays (2002), I categorized respondents as experiencing *any physical maltreatment* (1) by either parent if they answered either "often" or "sometimes" to the minor physical maltreatment question or "often", "sometimes" and "rarely" to the major physical maltreatment question. Those who answered "sometimes" or "often" to the major physical maltreatment question were categorized as experiencing *major physical maltreatment* and were coded (1).

Control variables

I control for several individual characteristics that are typically associated with child maltreatment, including age, race, marital status, living with parents until 16, father's education, income and education. Age is scored continuously in years. Race is recoded as 1 = white and 0 = non-white. Marital status is assessed with a single item simply asking whether one was married, never married, separated, divorced or widowed. The item was dichotomized with 1 representing currently married people and 0 representing all others. Gender is a dichotomous variable coded as male = 1 (51% of the sample) and female = 0 (49%). Living with both parents until 16 was measured by asking

the respondents whether they live or not with their biological parents up until they were 16.

Father's education is measured by father's highest level of education. The education measure reflects the highest grade or year of schooling completed and is coded with a 12-point ordinal scale in the following manner: 1 = no school or some grade school, 2 = eight grade or junior high school, 3 = some high school, 4 = GED (graduate equivalency diploma), 5 = graduate high school, 6 = 1 to 2 years of college (no degree), 7 = 3+ years of college (no degree), 8 = graduate from 2-year college, 9 = graduate from 4-year college, 10 = some graduate school, 11= master's degree, and 12 = doctoral or other professional degree.

Potential moderators

Socioeconomic status is estimated by 1) education and 2) current family income (derived from respondent personal earnings, spouse's or partners' personal earnings, other family members' earnings, social security retirement benefits, government assistance and other family household income). Income is a continuous variable based on self-reported categories of earnings (from less than $0 to $1,000,000 or more). Respondents reported on six different types of income: personal earnings, other family members' earnings, social security retirement benefits, government assistance and other family household income. A summed scale was created based on these six items. For those who did not answer to one or more of the income questions, the mean income based on the level of education was imputed except for the social security retirement benefits item, where the mean income for age was used. Additionally, to avoid outliers,

respondents whose combined income was at or above the 95th percentile (greater than $210,000) were recoded to have an income of $210,000.

Parental support items ask about the level of supportive bonds with their parent(s) (Turner and Finkelhor 1996). Respondents answered on a 4-point scale ranging from not at all (1) to a lot (4) questions such as: “How much did she/he understand your problems and worries?”, “How much could you confide in her/him about things that were bothering you?”, “How much love and affection did she/he give you?” and “How much time and attention did she/he give you when you needed it?”. These questions were answered for mother and father separately, thus the maternal and paternal scales were combined into parental scales by adding the two scales. Alphas for adults’ reports of maternal support and paternal support were .89 and .90, respectively.

RESULTS

Predictors of Exposure to Childhood Physical Maltreatment

Findings from the logistic regression analysis conducted to identify what background factors are likely to predispose children to maltreatment show that exposure to childhood physical maltreatment is associated with gender, race, living with parents until 16, father's education and parental support. The resulting coefficients and odds ratio (in parenthesis) are shown in Table 2, which presents two logistic regressions: the first examines the predictors of any physical maltreatment and the second examines the predictors of major physical maltreatment. This tables show that boys were more likely to be maltreated than girls, white children were less likely to experience maltreatment than non-whites, and those having supportive parents were less likely to be exposed to maltreatment. Overall, these results are conforming to research showing that socioeconomic status is inversely related to childhood maltreatment.

The bivariate Table 3 shows descriptive statistics of the study variables by gender. As expected, women report higher levels of psychological distress ($t = 5.85$, $p < .001$) and men report higher levels of problem drinking ($t = 6.97$, $p < .001$).

Table 4 presents a series of multivariate ordinary least squares regression analyses (OLS) to examine the effects of childhood maltreatment, gender, and socio-demographics on psychological distress and problem drinking, respectively. Eq. (1) and (2) examine the impact of childhood maltreatment with respect to distress, as follows: Eq. (1) regresses distress on childhood maltreatment, gender and socio-demographic variables and Eq. (2) tests the maltreatment by gender interaction. Similarly, Eq. (3) and (4) assess the effects of childhood maltreatment on problem drinking. The same models are run separately for

both measures of childhood maltreatment: any physical maltreatment (Table 4) and major physical maltreatment (Table 5).

Psychological Distress

When distress is the outcome assessed, the results in Eq. (1) of Tables 4 and 5, show that any physical maltreatment and major physical maltreatment have significant positive effects on distress, independent of socio-demographic factors. Lower levels of income and education are associated with higher levels of distress. Furthermore, the expectations regarding gender and distress are also supported: the gender coefficients for both any and major physical maltreatment are negative and significant indicating that women report higher levels of distress, net of maltreatment and controls.

Is the effect of physical maltreatment on adult psychological distress greater for women than for men? Results from Eq. (2) of Table 4 suggest that any physical maltreatment is more distressing for women than men. This is indicated by the negative and significant interaction term b = -.159 (p = .002). To further illustrate this interaction, Figure 1 graphs the effect of any physical maltreatment on distress separately for women and for men. As can be seen in Figure 1, it appears that exposure to childhood maltreatment results in an increment in symptoms of distress for both genders, but this increment is greater for women than for men, as shown by the difference in slopes between the two lines. These results support part of my second hypothesis: childhood maltreatment results in a disproportionate elevation in distress among women compared to men. No significant interaction term was found for major physical maltreatment,

indicating that the effect of major physical maltreatment on adult psychological distress is not different for men and women.

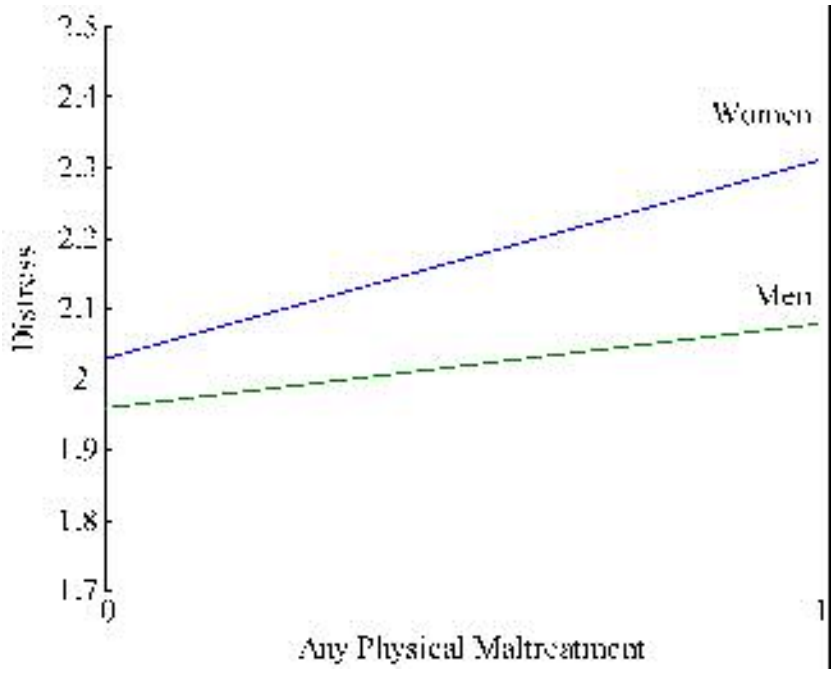

Figure 1 Gender as a Moderator of the Effect of Any Physical Maltreatment on Psychological Distress

Problem drinking

When problem drinking is considered, the gender coefficients in Eq. (1) of Table 4 and 5 are positive and significant, indicating that men report higher levels of problem drinking in adulthood. Neither income nor education is related to problem drinking. Neither any nor major physical maltreatment is related to problem drinking. Thus the first hypothesis is supported only when distress is the outcome assessed: those who experienced childhood maltreatment report more psychological distress but not problem drinking.

Is the effect of physical maltreatment on adult problem drinking greater for men than for women? The interaction term in either Table 4 or 5 is not significant, thus we

find no evidence that the effect of childhood maltreatment on problem drinking differ by gender. The second aspect of my hypothesis that men are more likely to respond to childhood maltreatment with higher levels of problem drinking is not supported. Like depression, there is not a significant interaction term for major physical maltreatment, indicating that the effect of major physical maltreatment on problem drinking is similar for women and men.

SES-contingent effects

To test the two SES hypotheses, I enter the maltreatment by income interaction and maltreatment by education interaction separately to see whether the effects of childhood maltreatment on distress and problem drinking differ by current SES. Tables 6 and 7 present the results for the any physical maltreatment variable, and Tables 8 and 9 refer to the major physical maltreatment variable.

As shown in Tables 6 and 8, any physical maltreatment and major physical maltreatment significantly predicts more psychological distress for both men and women, net of controls for the demographic variables. While age is negatively associated with psychological distress for both men and women, only education is associated with distress among women. Also, age, marital status and living with parents are negatively associated with distress for men.

When problem drinking is the outcome assessed (Tables 7 and 9), neither men nor women who were maltreated as children report higher levels of problem drinking over their lifetime. Only age and marital status are related to problem drinking for both men

and women. However, father's education is significant for men but not for women at each step of the regressions.

When examining SES conditional effects of maltreatment on adult mental health none of the interaction terms are significant. Thus, there is no evidence to support the hypothesis that SES moderates the relationship between childhood maltreatment and distress or problem drinking. This will be addressed further in the discussion section.

Parental Support as a Moderator

Next, I wish to determine whether parental support moderates the detrimental effect of maltreatment on distress and problem drinking. To examine this, I added parental support to the equation and then tested for a statistical interaction between each type of childhood maltreatment and support.

As shown in Eq. (2) of Tables 10 and 11, parental support has a negative effect on level of psychological distress, independent of childhood maltreatment and the socio-demographic factors. However, both any physical and major physical maltreatment still have positive effects on distress, independent of parental support. In addition, parental support is negatively related to problem drinking. These findings support my fifth hypothesis that parental support is associated negatively with psychological distress and problem drinking.

The association between distress and physical maltreatment is greater under conditions of low parental support, indicated by the negative and significant interaction term in Eq. (3) of Tables 10 and 11. As expected, parental support buffers against the detrimental effect of both measures of childhood maltreatment on adult psychological

distress. Figure 2 illustrates childhood maltreatment's relationship with depressive symptoms at low and high scores on the parental support index. The figure indicates a decrease in distress when parental support is high. However, when the problem drinking is the outcome assessed, none of the interaction terms are significant. Parental support does not moderate the harmful effects of childhood maltreatment on problem drinking.

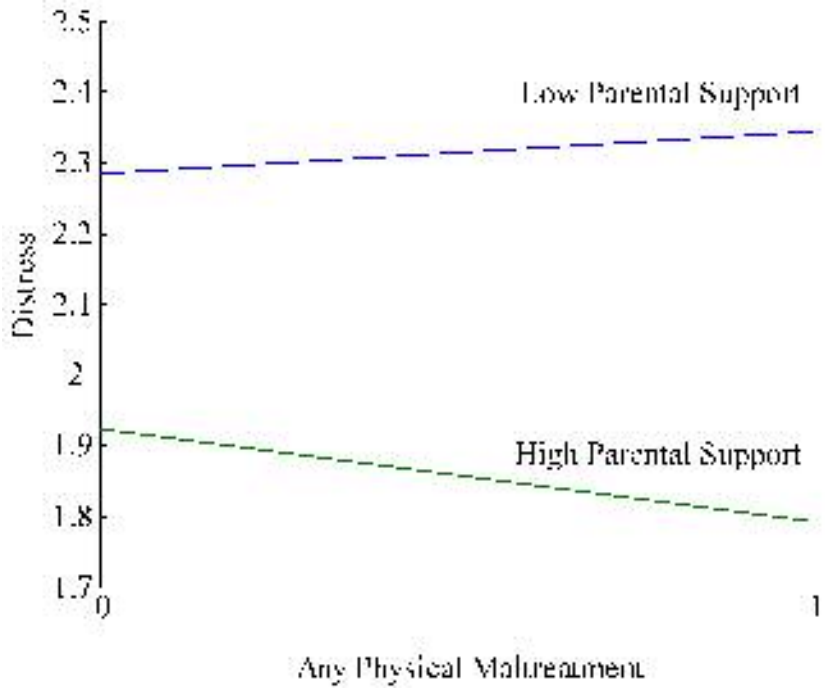

Figure 2 Parental Support as a Moderator of the Effect of Any Physical Maltreatment on Psychological Distress

DISCUSSION

This study investigates the association of childhood physical maltreatment with psychological distress and problem drinking among adults in a nationally representative sample. Two measures of childhood physical maltreatment asses the severity of maltreatment acts, allowing the exploration of whether the observed outcomes are the result of minor or more severe acts of maltreatment. In addition, I examine two mental health outcomes: psychological distress and problem drinking. As Aneshensel et al. (1991) argue the use of single outcome variables can systematically distort comparisons of mental health impact of victimization between different social groups (i.e., gender). Therefore, I focus on psychological distress and problem drinking because several studies document the link between childhood maltreatment and these outcomes (Holmes and Robins 1988; Horwitz et al. 2001).

Childhood maltreatment experiences occur within the broader context of the individual's life, so that individual factors or other life circumstances influence the presence of symptoms and behavior problems in adulthood. One set of potential moderator variables includes the social support and family environment in which maltreatment takes place. The present study aims to examine two social statuses believed to influence differential vulnerability to adverse consequences of childhood physical maltreatment: gender and socioeconomic status. Given the importance of contextual factors, I also wish to explore factors that may affect the relationship between physical maltreatment and the two problem outcomes. Thus, I consider the moderating effect of supportive parenting on long-term consequences of physical maltreatment.

Research based on retrospective reports of adults who recall past traumatic events consistently shows a strong impact of childhood physical maltreatment on adult mental health (Frias-Armenta 2002; Malinosky-Rummel and Hansen 1993). The findings from the current study suggest that people exposed to early life trauma, such as physical maltreatment from one's parents, are more likely to have both psychological distress and drinking problems in adulthood. Bivariate analyses suggest that adult women who were physically maltreated report higher levels of psychological distress, while adult men who suffered physical maltreatment report higher levels of problem drinking. However, when multivariate regression was employed results indicate that childhood physical maltreatment appears to have an effect on adult distress but not problem drinking.

Furthermore, these findings also illustrate the importance of gender and contextual variables in understanding the consequences of early childhood victimization. The gender-difference hypothesis predicts that childhood physical maltreatment would be more strongly related to distress among women, and would be more strongly related to problem drinking among men. The results, however, indicate that this hypothesis is supported only when distress is the outcome assessed. These findings show no substantial gender differences in the effects of childhood physical maltreatment on problem drinking in adulthood.

This is consistent with Horwitz et al. (1996) research on the impact of marital dissolution on the mental health of men and women. They found that although men report more alcohol problems than women, rates of these problems do not increase disproportionately among men, compared to women, during marital dissolution. In other words, they found that distress is a more strongly related gender-linked outcome to

stressors than the problematic use of alcohol. While their study examines the impact of a different stressor - marital dissolution, on mental health outcomes of men and women, my results suggest that their argument applies to childhood maltreatment as well. Findings from the present study reinforce the notion that men and women react to childhood victimization in different ways. It suggests that long-term consequences of childhood victimization are more likely to include internalizing measures such as depression and anxiety, rather than externalizing measures that are more compatible with men responses to stress.

Moreover, it is important to note that there has been some controversy as to whether experiences of childhood violence are in fact related to the development of alcohol problems in adulthood. Research has yielded inconsistent findings on the relationship between childhood victimization and alcohol abuse (Widom and Hiller-Sturmhoefl 2001), and also criticizes the fact that most studies have not controlled for background risk factors, which may be responsible for the associations between childhood maltreatment and adult alcohol abuse (Downs and Harrison 1998). These factors are stressful in and among themselves, and it is for this reason that they may in fact be responsible for the association between experiences of childhood maltreatment and adult mental dysfunction.

In a subsequent analysis not shown here I found support for this idea that physical maltreatment significantly affects problem drinking later in life, net of controls for gender, age, race, marital status, living with parents until 16, father's education, income and education. However, these significant results disappeared when adding the demographic controls, indicating that the background factors, which predispose to

problem drinking in adulthood account for much of the relationship. Thus the lack of findings for problem drinking in this thesis may be because I control for background factors associated with exposure to maltreatment.

The present study also examined whether the effects of childhood physical maltreatment on adult mental health vary across current socioeconomic groups. No significant findings emerged to support the hypothesis that exposure to physical maltreatment in childhood would have atypical results, so that women would be more likely to have higher rates of problem drinking but not distress, and men would experience elevated rates of distress but not problem drinking. The non-significant results suggest that the "saturation hypothesis" was not supported, contradicting Horwitz et al.'s (2001) findings in a prospective study that rates of alcohol abuse are *higher* for abused females but *not* for abused males, and rates of distress are *higher* for abused males but *not* for abused women. However, although the data used by Horwitz and his colleagues are prospective, one limitation in their study is that their sample involves cases reported to child protection agencies, thus over-represent low income families. Their results may have been due in part to a bias in their sample. Moreover, the Horwitz et al. study uses a dichotomous measure of child abuse; the present study, in contrast, investigates the severity of maltreatment by differentiating between minor acts of maltreatment (e.g., slapping, pushing, shoving) and more severe acts (e.g., kicking, hitting with a fist, burning).

This thesis also examined whether the association between physical maltreatment and mental health was conditional upon parental support. I proposed that parental support would moderate the effects of childhood maltreatment and adult psychological distress

and problem drinking, respectively. Thus, individuals reporting higher parental maltreatment report lower parental support. Results show that among respondents who experienced any physical maltreatment or major physical maltreatment, higher levels of parental support buffer the negative effect of maltreatment on distress. However, parental support does not moderate the harmful effects of childhood maltreatment with respect to problem drinking. Thus, the moderating hypothesis, which states that physical maltreatment will have a more detrimental effect on adult mental health when there is low parental support, is supported only when distress is the outcome assessed. Turner and Finkelhor (1996) reported that parental support did not moderate the association between frequent corporal punishment and adolescents' distress, although moderation was present at moderate to low levels of corporal punishment. However, their study employed a conservative measure of corporal punishment that represents what most Americans would view as "normal" physical punishment; thus a possible explanation for why the presence of a buffering effect was not confirmed. The present study examines minor and major forms of maltreatment, a more serious childhood trauma. Nonetheless, findings from this study underscore the importance of looking at child maltreatment in a family context.

Although it is reasonable to believe that supportive parents are more likely to protect children from chronic and severe forms of abuse, research implies that abusing parents can also be supportive parents (Nicholas and Bieber 1996). In analysis not shown here, those who reported lower supportive behaviors on the part of parents also reported higher abusive behaviors ($p<.001$). However, one may question how abusive behaviors by one parent are related to supportive behaviors by the other parent. Additional analysis not shown here revealed that the key ingredient is when a parent's maltreatment is

tempered by his or her own support, and that the other parent's support is inconsequential. In other words, no matter how supportive one parent is, the effects of abusive behavior by one parent are not offset by support from the other parent. Moreover, the observed gender differences in the relationship of abuse to support show that mother support was more closely tied to maltreatment than was father support. This could be due to the general belief that mothers are expected to be more nurturant and protective than are the fathers. Thus, although results from this study show that supportive parenting acted as a buffer, reducing the negative effects of maltreatment on adult mental health, the relationship between parental support and maltreatment is complex and warrants research attention.

Overall, this thesis set out to investigate whether the effects of childhood maltreatment on psychological distress and problem drinking are conditional on structural and family context. Although childhood maltreatment experiences occur within the broader context of the individual's life, previous research on the long-term effects of maltreatment did not examine conditional effects of maltreatment on adult mental health. However, as this study showed the effects of childhood maltreatment are not uniform but vary by a variety of social statuses. Thus, by giving greater consideration to parent-child relationships and environmental conditions that precipitate extreme responses, we will advance our understanding of abusive behavior.

Limitations and Areas for Further Research

These results represent only a first step in fully understanding the effects of childhood maltreatment on mental health in adulthood. In evaluating the findings from

this study, several limitations deserve mention. First, data about experiences with physical maltreatment during childhood were collected from adults at one point in time. Given the age range of this study (25 to 74), some respondents are being asked to recall events that may have arisen up to a half century ago[2]. Asking people about experiences they suffered as a child also runs into the problem of how good their memories are and how they evaluated the experience initially. Second, retrospective studies raise concerns about the accuracy of self-reported exposure to early life-traumatic events. Widom and Shepard (1996) examined accuracy of adult recollections of childhood physical abuse and found good discriminant validity and predictive efficiency of the self-report measures, despite substantial underreporting by abused respondents. Brewin, Andrews and Gotlib (1993) review the potential sources of error in retrospective reports of childhood experiences, including normal limitations of memory, recall deficits associated with psychopathology, and specific retrieval biases. They conclude that there is little evidence that these factors significantly interfere with the validity of retrospective reports of early experiences. Moreover, most influences on memory will tend to inhibit recall, and suggest that positive reports of events should be given more weight than negative reports. Thus, although recalls of early experiences may be a source of bias, there are only conservative estimates.

[2] In additional analyses not shown here I examined whether the effects of childhood maltreatment on adult mental health vary across age groups. No significant interaction terms were found for both distress and problem drinking, indicating that the effects of maltreatment do not diminish with age. Thus, one can conclude that the effects of childhood physical maltreatment may not dissipate with time and instead are consistently evident throughout one's life.

Third, the current study did not examine other indicators of mental health such as criminal behavior or personality disorder. The outcome measures in the present study are limited to distress and drinking problems and should be supplemented by a broader range of disorders that are measured in comparable time frames. For instance, a review of studies by Malinosky-Rummell and Hansen (1993) suggests that exposure to childhood physical maltreatment may also have long-lasting negative effects on one's intimate social-relationships. Thus, the detrimental outcomes of childhood maltreatment may exhibit other social outcomes associated with mental health such as unstable relationships. Mullen et al. 1996 found that those women who reported having been exposed to some form of maltreatment in childhood, be it sexual, physical or emotional were in adult life more likely to have interpersonal difficulties. Moreover, Shaw and Krause (2002) found that exposure to physical violence during childhood leads to deficiencies in personal control beliefs and sub-standard social relationships, especially with one's own family, that appear to last throughout the adult life span. Thus, future research should address the possibility that the effects of childhood physical maltreatment on adult mental health may be largely due to the persisting effects that this early trauma has on important psychosocial resources. In other words, poor sense of self and poor social relationship quality may be particularly important mediators of the effects of childhood physical violence on adult mental health.

And, finally, in the future it would be worthwhile to isolate and examine specific forms of abuse (e.g., emotional maltreatment, neglect, sexual maltreatment). For instance, it was shown that emotional maltreatment is uniquely associated with low self-esteem, physical maltreatment is linked to aggression towards others and sexual abuse is

specifically related to maladaptive sexual behavior (Briere and Runtz 1990). Not only that there might be unique effects of each type of maltreatment, but they are often present together, a combination associated with general psychosocial problems (Briere and Runtz 1988). Thus, future studies should assess the extent of all forms of maltreatment (i.e., physical, sexual, and psychological) experienced by a given subject, and then examine their specific and overlapping associations with the various types of psychological symptoms.

Despite these limitations, this study has a number of important strengths. One is its use of a nationally representative sample. This allows a high level of generalizability, which is rare in research of child maltreatment that commonly used community samples. Another strength is that it includes gender-specific outcomes to determine the impact of gender on shaping differential outcomes. This allows a rare opportunity to inquire about whether the effects of childhood maltreatment differ for men and women. Moreover, this study shed some light on the importance of considering physical maltreatment of children in the familial context in which it occurred. Past research has not examined how the contextual factors, which occurred in the family, may moderate the relationship between childhood maltreatment and subsequent mental health. These socioeconomic and family characteristics seem to act as critical modifiers of the association between childhood physical maltreatment and adult mental health.

More work is needed to determine the precise mechanisms behind the long-term effects of childhood maltreatment. Research in this field is demonstrating that experiences with child maltreatment are a major component of many child and adult mental and behavioral disorders, including delayed development, delinquency,

depression, alcoholism, and domestic and criminal violence. Thus, research on child maltreatment can provide scientific information that will help with the solution of a broad range of individual and social disorders. It also can provide insights and knowledge that can directly benefit victims of child maltreatment and their families.

Table 1 Frequency of Psychological Distress

"During the past 30 days, how much of the time did you feel…?

	Feel so sad	Feel nervous	Feel restless/ fidgety	Feel hopeless	That everything was an effort	Feel worthless
None	68.3%	43.0%	45.7%	78.9%	56.0%	78.7%
A little	21.2%	35.8%	33.6%	13.0%	26.7%	13.0%
Some	8.3%	17.1%	16.7%	5.8%	11.4%	6.1%
Most	1.8%	3.2%	2.8%	1.7%	4.3%	1.4%
All	.4%	.8%	1.2%	.7%	1.5%	.8%
	N = 3010	N = 3011	N = 3005	N = 3005	N = 3001	N = 3012

Table 2 Logistic Regression Coefficients and Odds Ratio Predicting Childhood Physical Maltreatment (N = 2464)

Predictors	Any Physical	Major Physical
Gender (1 = male)	.476***	.451***
	(1.609)	(1.570)
Age	-.009*	-.007
	(.991)	(.993)
Race (1 = white)	-.408**	-.436*
	(.665)	(.647)
Living with parents until 16 (yes = 1)	-.479***	-.460**
	(.619)	(.631)
Father's education	-.083***	-.108***
	(.921)	(.898)
Parental support	-.103***	-.127***
	(.902)	(.881)
Constant	3.17	2.15
-2Log-Likelihood	2873.46	1519.44
Model Chi-Square	275.16	200.76

*p<.05; **p<.01; ***p<.001 (two-tailed)

Table 3 Bivariate Table with Means/Proportions of Main Variables by Gender

	Men	Women
Psychological distress	1.49	1.63***
Problem drinking	.33	.15***
Any physical maltreatment	.37	.31***
Major physical maltreatment	.13	.11**
Age	46.66	47.33
Race (1 = white)	.88	.85
Marital status (1 = married)	.71	.57***
Living with parents until 16 (yes = 1)	.79	.73***
Father's education	4.75	4.69
Education	6.92	6.50***
Parental support	3.23	3.01***
Household income	72,695	58,155***

* p<.05; **p<.01; ***p<.001 (two-tailed)

Table 4 OLS Regression of Psychological Distress and Problem Drinking on Any Physical Maltreatment and Demographics

	Distress		Drinking	
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)
Any physical maltreatment	.196***	.278***	.045	-.001
Gender (1 = male)	-.126***	-.073*	.198***	.168***
Age	-.005***	-.005***	-.009***	-.009**
Race (1 = white)	.024	.022	.115*	.116
Marital status (1 = married)	-.099***	-.098***	-.174***	-.175***
Living with parents until 16 (yes = 1)	-.082*	-.080*	-.044	-.045
Father's education	.004	.005	.012*	.012
Income	-.006*	-.006*	-.003	.003
Education	-.018**	-.018***	.000	.000
Any physical maltreatment x Gender		-.159**		.090
Intercept	2.058	2.032	.545	.560
Adjusted R^2	.072	.075	.069	.070
	N = 2465		N = 2456	

Note: Unstandardized regression coefficients are shown.
*p<.05; **p<.01; ***p<.001 (two-tailed)

Table 5 OLS Regression of Psychological Distress and Problem Drinking on Major Physical Maltreatment and Demographics

	Distress		Drinking	
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)
Major physical maltreatment	.222***	.215***	.061	.007
Gender (1 = male)	-.117***	-.083	.201***	.142
Age	-.006***	-.006***	-.009***	-.009***
Race (1 = white)	.015	.015	.115**	.116**
Marital status (1 = married)	-.095***	-.095***	-.174***	-.174***
Living with parents until 16 (yes = 1)	-.092**	-.092**	-.047	-.005
Father's education	.003	.003	.012*	.012*
Income	-.006*	-.006*	-.003	-.003
Education	-.020***	-.020***	-.003	.000
Major physical maltreatment x Gender		-.004		.008
Intercept	2.138	2.140	.559	.556
Adjusted R^2	.063	.063	.069	.069
	N = 2466		N = 2458	

Note: Unstandardized regression coefficients are shown.
*p<.05; **p<.01; ***p<.001 (two-tailed)

Table 6 OLS Regression of Distress on Any Physical Maltreatment by Gender

	Men (N = 1228)			Women (N = 1237)		
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)	Eq.(5)	Eq.(6)
Any physical maltreatment	.130***	.159**	.300**	.273***	.341***	.288*
Age	-.006***	-.006***	-.007***	-.004**	-.004**	-.004**
Race (1=white)	.127*	.127*	.121*	-.089	-.090	-.089
Marital status (1 = married)	-.112**	-.112**	-.114***	-.076	-.074	-.075
Living with parents until 16 (yes = 1)	-.120**	-.118**	-.115**	-.043	-.044	-.043
Father's education	.005	.005	.005	.004	.004	.004
Income	-.005	-.003	-.005	-.007	-.004	-.008
Education	-.006	-.006	.003	-.032***	-.031***	-.032**
Any physical maltreatment x income		-.004			-.011	
Any physical maltreatment x education			-.025			-.002
Intercept	1.855	1.846	1.804	2.156	2.126	2.151
Adjusted R^2	.064	.064	.073	.070	.071	.070

Note: Unstandardized regression coefficients are shown.
* p<.05; **p<.01; ***p<.001 (two-tailed)

Table 7 OLS Regression of Problem Drinking on Any Physical Maltreatment by Gender

	Men (N = 1225)			Women (N = 1231)		
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)	Eq.(5)	Eq.(6)
Any physical maltreatment	.087	-.009	.164	.004	.043	-.046
Age	-.009***	-.009***	-.009***	-.007***	-.007***	-.007***
Race (1=white)	.096	.094	.093	.132*	.132*	.131*
Marital status (1 = married)	-.254***	-.255***	-.255***	-.101**	-.100**	-.102**
Living with parents until 16 (yes = 1)	-.051	-.057	-.048	-.042	-.042	-.043
Father's education	.019*	.019*	.019*	.005	.005	.006
Income	-.004	-.009	-.004	-.003	-.001	-.003
Education	-.004	-.003	.000	.006	.006	.004
Any physical maltreatment x income		.013			-.007	
Any physical maltreatment x education			-.011			.008
Intercept	.843	.872	.820	.424	.407	.443
Adjusted R^2	.073	.068	.066	.037	.037	.036

Note: Unstandardized regression coefficients are shown.
*p<.05; **p<.01; ***p<.001 (two-tailed)

Table 8 OLS Regression of Distress on Major Physical Maltreatment by Gender

	Men (N = 1228)			Women (N = 1238)		
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)	Eq.(5)	Eq.(6)
Major physical maltreatment	.104*	.181*	.013	.357***	.388***	.514**
Age	-.006***	-.007***	-.006***	-.005***	-.005***	-.005***
Race (1=white)	.121*	.123*	.122*	-.104	-.104	-.102
Marital status (1 = married)	-.109**	-.109**	-.108**	-.072	-.072	-.072
Living with parents until 16 (yes = 1)	-.129**	-.127**	-.131**	-.057	-.058	-.055
Father's education	.004	.005	.005	.002	.002	.002
Income	-.005	-.004	-.005	-.007	-.007	-.007
Education	-.007	-.008	-.009	-.034***	-.034***	-.032***
Major physical maltreatment x income		-.011			-.005	
Major physical maltreatment x education			.013			-.025
Intercept	1.918	1.908	1.927	2.257	2.270	2.254
Adjusted R^2	.055	.056	.055	.063	.062	.063

Note: Unstandardized regression coefficients are shown.
*p<.05; **p<.01; ***p<.001 (two-tailed)

Table 9 OLS Regression of Problem Drinking on Major Physical Maltreatment by Gender

	Men (N = 1225)			Women (N = 1233)		
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)	Eq.(5)	Eq.(6)
Major physical maltreatment	.062	-.077	.052	.062	.155	.113
Age	-.009***	-.009***	-.009***	-.062***	-.007***	-.007***
Race (1=white)	.092	.088	.092	-.007*	.133*	.134*
Marital status (1 = married)	-.253***	-.254***	-.253***	.133**	-.099**	-.101**
Living with parents until 16 (yes = 1)	-.057	-.061	-.057	-.101	-.041	-.040
Father's education	.018*	.018***	.018*	-.040	.006	.005
Income	-.004	-.007	-.004	.005	-.001	-.002
Education	-.005	-.004	-.005	-.002	.007	.008
Major physical maltreatment x income		. 021		.007	-.017	
Major physical maltreatment x education			.002			-.008
Intercept	.889	.905	.890	.411	.396	.404
Adjusted R^2	.065	.066	.064	.039	.040	.038

Note: Unstandardized regression coefficients are shown.
*p<.05; **p<.01; ***p<.001 (two-tailed)

Table 10 OLS Regression of Psychological Distress and Problem Drinking on Any Physical Maltreatment, Control Variables and Parental Support

	Distress			Drinking		
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)	Eq.(5)	Eq.(6)
Any physical maltreatment	.196***	.131***	.125***	.045	.025	.023
Gender (1 = male)	-.126***	-.094***	-.091***	.198***	.211***	.212***
Age	-.005***	-.005***	-.005***	-.009***	-.009***	-.009***
Race (1 = white)	.024	.000	-.000	.115*	.110*	.110*
Marital status (1 = married)	-.099***	-.082**	-.080***	-.174***	-.172	-.172***
Living with parents until 16 (yes = 1)	-.082*	-.048	-.046	-.044	-.043	-.042
Father's education	.004	.005	.005	.012*	.013*	.012*
Income	-.006*	-.006*	-.006*	-.003	-.003	-.003
Education	-.018**	-.018***	-.018**	.000	.000	.000
Parental support[a]		-.019***	-.015***		-.005*	-.004
Any physical maltreatment x Support			-.008*			-.003
Intercept	2.058	2.032	2.404	.545	.552	.644
Adjusted R^2	.072	.103	.104	.069	.071	.071
N	2465	2430	2430	2456	2422	2447

Note: Unstandardized regression coefficients are shown.

[a] Centered around its sample mean.

*p<.05; **p<.01; ***p<.001 (two-tailed)

Table 11 OLS Regression of Psychological Distress and Problem Drinking on Major Physical Maltreatment, Control Variables and Parental Support

	Distress			Drinking		
	Eq.(1)	Eq.(2)	Eq.(3)	Eq.(4)	Eq.(5)	Eq.(6)
Major physical maltreatment	.222***	.123**	.107**	.062	.037	.030
Gender (1 = male)	-.117***	-.084***	-.090***	.201***	.214***	.215**
Age	-.006***	-.005***	-.005***	-.009***	-.009***	-.009***
Race (1 = white)	.015	-.009	.000	.115**	. 110*	.110*
Marital status (1 = married)	-.095***	-.080**	-.080**	-.174***	-.173***	-.173***
Living with parents until 16 (yes = 1)	-.092**	-.056	-.055	-.047	-.045	-.044
Father's education	.003	.004	.005	.012*	.012*	.013*
Income	-.006*	-.006*	-.006*	-.003	-.003	-.003
Education	-.020***	-.019***	-.018**	.000	.000	.000
Parental support[a]		-.020***	-.016*		-.005*	-.004*
Major physical maltreatment x Support			.008**			-.003
Intercept	2.138	2.093	2.496	.559	.558	.657
Adjusted R^2	.063	.097	.104	.069	.072	.071
N	2466	2431	2425	2458	2424	2443

Note: Unstandardized regression coefficients are shown.

[a] Centered around its sample mean.

*p<.05; **p<.01; ***p<.001 (two-tailed)

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