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Predictors of parental physical abuse: The contribution of internalizing and externalizing disorders and childhood experiences of abuse

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Abstract

Background—The deleterious effects of childhood abuse have been a focus of much research; however, the causes of parental physical abuse are less well documented. Research with clinical samples suggests that individuals who display abusive behaviors are more likely to have a history of childhood abuse and higher rates of internalizing and externalizing disorders. Whether childhood abuse and psychopathology contribute independently to parental abusive behaviors or if the association between childhood abuse and the parental physical abuse is mediated by the individual's psychopathology has not been studied empirically.

Methods—The current study is based on data from a representative sample (N=4141). Lifetime psychiatric diagnoses, childhood experiences of sexual and physical abuse, and physically abusive behaviors exhibited towards children were assessed.

Results—Internalizing and externalizing disorders partially mediated the association between childhood abuse and parental abuse. Nonetheless, the participant's internalizing disorders, externalizing disorders, and previous experiences of childhood abuse each independently predicted parental abuse. Further, the influence of childhood abuse was greater for women than men.

Limitations—The data is cross-sectional, thus clear conclusions regarding causality cannot be made.

Conclusions—There are multiple pathways in the etiology of parental abusive behaviors. Previous experiences of childhood abuse, internalizing disorders, and externalizing disorders each contribute to parental abuse. Individuals with psychiatric disorders or a history of childhood abuse are at an increased risk for abusive behaviors towards children in their care. Identifying such high risk parents and providing parent training programs may be effective in lowering rates of child abuse.

Childhood experiences of physical and sexual abuse unfortunately occur all too often in our society. The negative effects of child abuse have been well documented. However, what causes a parent to abuse a child has been less well studied empirically and is the focus of the

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current paper. Specifically, we examine the contribution of the participant's lifetime psychopathology and the participant's own childhood experiences of abuse (physical or sexual) to his or her physically abusive behaviors (e.g., hitting, spanking, kicking, punching, burning, etc.) towards children in his or her care.

Depending on definitions of sexual and physical abuse, epidemiological studies have shown that rates of childhood sexual abuse range from approximately 12.8% to 16.8% for females and 4.3% to 7.9% for males (Loranger *et al.*, 1994; Putnam, 2003). Rates of childhood physical abuse are approximately 21.1% for females and 31.2% for males (MacMillan *et al.*, 1997). According to a US government data source (USDHHS, 2005), 79.4% of childhood victims were abused by their parents.

There are many lifelong problems that have been linked with childhood sexual and physical abuse. Such negative outcomes include psychological disorders, health problems, problems with the law, and problems in tasks of every day living (e.g., problems associated with employment, marriage and parenting). Researchers examining the negative outcomes associated with sexual abuse and physical abuse have found more similarities than differences (Mullen *et al.*, 1996). Nonetheless, some studies have found unique affects associated with specific types of abuse. In particular, emotional abuse was found to be associated with self-criticism (Sachs-Ericsson *et al.*, 2006), physical abuse with aggressive behavior (Briere & Runtz, 1990) and sexual abuse with sexual problems (Mullen *et al.*, 1996).

Several characteristics have been found to be associated with a parent engaging in abusive behaviors towards his or her child. Most prominent is the individual's psychopathology and the individual's own past experiences of childhood abuse. Social learning theory would suggest that through the experience of childhood abuse, aggressive and abusive behaviors are modeled, and the child learns that such behaviors are appropriate in parenting (Bandura, 1978).

The individual's own psychopathology may interfere with parenting behaviors. Parents who abuse their children have higher rates of psychiatric disorders in both the internalizing and externalizing domains (Famularo *et al.*, 1992; Kim-Cohen *et al.*, 2006). Indeed, researchers have suggested that early experiences of abuse may be one mechanism which underlies the development of externalizing (Verona & Sachs-Ericsson, 2005) as well as internalizing disorders (Sachs-Ericsson *et al.*, 2006). In turn, externalizing and internalizing disorders have been linked with the abuse of children (Donohue *et al.*, 2006; Kim-Cohen *et al.*, 2006).

Thus, it may be the case that a participant's own psychopathology and experiences of abuse independently contribute to abusive parenting behavior. It is also possible that childhood experiences of abuse increase the risk of the development of psychopathology, and the individual's psychopathology, in turn, contributes to developing abusive parenting behavior.

Whereas childhood abuse has been found to negatively influence both men and women, some studies have suggested that there may be gender differences, with women having more negative effects from abuse than do men (Verona & Sachs-Ericsson, 2005). Therefore, it is possible that gender may moderate the association between childhood abuse and externalizing behaviors--behaviors which in turn may increase risk for parental abuse.

The unique aim of this study is to examine simultaneously the independent influence of childhood experiences of abuse and the participant's psychopathology in relation to parental abusive behavior. A second aim is the examination of the mediating role of the participant's psychopathology in the association between childhood abuse and subsequent parental

abusive behaviors. We examine these associations while controlling for an array of family-of-origin and demographic characteristics also known to influence parental abusive behaviors.

The current study tested two models. First, we tested a model in which psychopathology and a history of abuse both directly influence the development of abusive behaviors. Secondly, we tested a model in which the association between a history of childhood abuse and subsequent parental abuse is mediated by the individual's psychopathology. Based on past research, we predicted that the participant's internalizing disorders, externalizing disorders, and experiences of childhood abuse would independently contribute to subsequent parental abusive behaviors. Secondly, we expected gender to moderate the relationship between childhood abuse and parental abuse such that the influence of childhood abuse will be greater for women than men.

The present study adds to the existing literature in several ways. First, it is based on a large, national representative population. Few empirical studies have investigated parental characteristics that may be risk factors for abusing children. In particular, few studies have examined jointly the influence of past experiences of abuse and psychopathology in the prediction of parental abusive behaviors. Second, many of the studies reviewed above were drawn from clinical samples, comprised of individuals seeking treatment for psychiatric and/or medical problems. Individuals who have experienced abuse are overrepresented in populations seeking such treatment (Raphael *et al.*, 2004), and thus such research may overestimate the relationship between early experiences of abuse and subsequent negative outcomes.

Additionally, many studies on effects of childhood abuse are based on known abused populations. Studies based on known abused populations are overrepresented with women, people of color, and those in lower socio-economic classes (Kelleher *et al.*, 1994). Therefore, findings may not generalize to the population as a whole. Thus, epidemiological samples may better inform us as to the nature of the relationship between participants' characteristics (e.g., psychiatric disorders and history of abuse) and subsequent abuse of children.

In sum, this investigation significantly improves on previous investigations because it simultaneously examines the key known risk factors for parental abuse (e.g., the participant's own experiences of childhood abuse and the participant's psychopathology). Additionally, this study has sophisticated sampling methods, is representative of the national general population and uses well-validated measures of childhood abuse and psychiatric disorders.

Methods

Sample

The methods, weighting and sampling procedures for the NCS-R, have been described by Kessler and colleagues (2005). Briefly, the study was based on a nationally representative sample of participants 18 years and older. Participants were selected from 48 states, based on a stratified, multistage probability sample. Data were collected between 2001 and 2003. Interviews were conducted face-to-face in the respondent's home, and respondents were interviewed in two parts. The response rate was 73%.

All respondents received the Part I interview (N = 9282). Part II was administered to 5692 respondents who met criteria for any lifetime disorder plus a probability sub-sample of other respondents. Part II included questions about additional psychiatric disorders, risk factors, consequences, and correlates of psychiatric disorders. Additionally, childhood experiences

as well as questions regarding the participant's parenting behavior were assessed. The current study is based on both the Part I and Part II data from which we obtained a subsample of participants ($N = 4141$) who reported having served as a parent to a child at some point in their life.

Sampling and weighting—A stratified, multistage probability sample was used to match the 2000 Census population. The sample was weighted to adjust for differential probability of selection and discrepancies with the US population. The Part II sample was weighted additionally to adjust for differential probability of selection (Kessler *et al.*, 2004).

Respondent recruitment—Potential participants received a letter in the mail a few days before they were contacted by the interviewer. Respondents were paid \$50 for participating.

Consent—Interviewers obtained verbal informed consent. The human subject committees of Harvard Medical School and the University of Michigan approved the consent procedures.

Interviewers—Interviews were conducted by professional interviewers who had obtained extensive training and were closely supervised from the Institute for Social Research.

Measures

Demographic—A comprehensive demographic section assessed sex, age, education, family income, race and ethnicity.

Diagnostic Assessment—The diagnoses are based on the World Health Organization Composite International Diagnostic Interview (WHO-CIDI) (Kessler *et al.*, 2004), a structured, lay-administered diagnostic interview from which DSM-IV Axis I (APA, 2000) diagnoses were derived. The WHO-CIDI has been found to have good validity and reliability (First *et al.*, 2002). The average sensitivity and specificity for any disorder was 62.8% and 89.0%, respectively (Kessler *et al.*, 2005). Additionally, the Axis II diagnosis of antisocial personality disorder (ASPD) was obtained from the ASPD screening items from the International Personality Disorder Examination (Loranger *et al.*, 1994), which has been shown to have good sensitivity and specificity. To identify cases of ASPD, the participant's continuous score on the scale was computed ($\alpha = .624$). We applied a cut-score criteria for identifying ASPD caseness based on previously established lifetime rates for ASPD (Robins *et al.*, 1991) (i.e., highest 2.8% of the population).

Internalizing Diagnoses—The NCS-R internalizing diagnoses included panic disorder, agoraphobia with and without panic disorder, specific phobia, social phobia, generalized anxiety disorder, post traumatic stress disorder (PTSD), separation anxiety disorder, major depressive disorder (MDD), and dysthymia. A diagnosis count variable was created that calculated the number of lifetime internalizing disorders and was then standardized.

Externalizing Disorders—The externalizing diagnoses included alcohol abuse or dependence, drug abuse or dependence, intermittent explosive disorder (IED), oppositional-defiant disorder, conduct disorder, attention-deficit hyperactivity disorder and ASPD. A diagnosis count variable was created and standardized.

Childhood Experiences of Abuse—The physical and sexual abuse items were embedded in the PTSD section of the NCS survey, which has been found to have adequate validity and reliability (Kessler *et al.*, 2005). Additionally, some items pertaining to childhood experiences of physical abuse were obtained from a subsequent section on family

life. More detail regarding the reliability and validity of these abuse items have been extensively reviewed in earlier articles (Sachs-Ericsson *et al.*, 2005).

Sexual Abuse Items—The list of traumatic events from the PTSD section included questions about being raped or molested: The interviewer stated: “the next two questions are about sexual assault. The first is about rape. (1) You were raped? Someone had sexual intercourse with you or penetrated your body with a finger or an object, when you did not want them to by threatening you or using some degree of force or you were so young you did not know what was happening. (2) You were sexually molested? Other than rape were you ever sexually assaulted where someone touched you inappropriately when you did not want them to?” Respondents who reported that they had been raped or molested before the age of 15 were coded ‘1’ Yes for childhood sexual abuse. Individuals who reported that they had not been raped or molested before the age of 15 were coded ‘0’ No.

Childhood Physical Abuse—Two items were used to assess childhood physical abuse. The list of negative events in the PTSD section included a question about childhood physical abuse: “As a child were you ever badly beaten up by your parents or the people who raised you?” (Yes/No). In a subsequent section assessing the participant’s early family life, participants were asked “How frequently did your parents or the people who raised you do any of the following: Pushed, grabbed, shoved, threw something, slapped, or hit?” Participants used the following response scale: “Often”, “Sometimes”, “Rarely” or “Never”. Participants who reported that they had been badly beaten up by their parents in the PTSD section and/or that they had “*Often*” or “*Sometimes*” been “Pushed, grabbed, shoved, threw something, slapped, or hit” by their parents were coded ‘1’ Yes for physical abuse, and those who reported that they had not were coded ‘0’ No. Past research based on this survey instrument found the physical abuse items to have good reliability (Sachs-Ericsson *et al.*, 2007)

Assessment of parenthood—Several items were used to identify those participants who had cared for a child. First, the participants were asked “Has there ever been a time in your life when you have been a parent or served as a parent to a child?” (Yes/ No). The survey then proceeded with several questions (described below) related to the participant’s care of that child. Only participants who described themselves as having parented a child (currently or in the past) and who also reported on their behaviors in caring for the child were included in the analyses. Unfortunately, the nature of the survey was such that we could not identify when in the participant’s life he or she had served as a parent (e.g., currently or in the past) or when any abusive behaviors were exhibited towards the child. Importantly, it should be noted that any research interview that identified current abusive behaviors towards children would have encountered potentially insurmountable legal and ethical problems in the data’s collection. Thus, the general framework of asking the participant about abuse of a child occurring at anytime in the participant’s experience when caring for a child was, in part, necessary to obtain some information on correlates of parental abusive behaviors.

Parental Abuse of Children—Two items were used to assess participants’ abusive behavior towards children under their care. These items were used to construct both a dichotomous measure of parental abuse (Abuser/Non-Abuser) and a continuous measure of abusive behaviors (based on severity and frequency of abuse). Participants were shown, sequentially, two lists of abusive behaviors (Mild and then Severe).

Mild Abuse Item—Participants were asked how frequently they engaged in any of the following behaviors towards children under their care, “Pushed, grabbed, shoved, threw

something, slapped, hit, or spanked.” Participants who stated that they “Never” or “Rarely” displayed any of these behaviors were coded ‘0’. Participants who responded that they “Sometimes” or “Often” displayed such behaviors were coded ‘1’ and ‘2’, respectively.

Severe Abuse Item—Participants were then asked if they had ever engaged in any of the following behaviors towards children under their care: “Kicked, bit or hit with a fist, beat up, choked, burned or scaled, or threatened with a knife or gun.” Participants’ responses were coded: ‘0’ “Never”, ‘1’ “Rarely”, ‘2’ “Sometimes” and ‘3’ “Often”.

Researchers have shown that individuals under-report socially undesirable behavior (Roese & Jamieson, 1993). Individuals may be reluctant to disclose parental abuse, and in particular disclose more severe forms of parental abuse. However, Crandall and colleagues (2006) have found a high correlation between those who admit to only mild abuse, but who actually exhibit more severe forms of abuse (e.g., spanking is predictive of more severe abuse). Thus, we would expect the participant’s endorsement of at least mild abuse to serve as a proxy measure for more severe abuse.

Dichotomous Measure of Parental Abuse—For some descriptive purposes it was useful to dichotomize parents as either abusive or non-abusive. We characterized participants as Non-Parental Abusers if they scored ‘0’ on both of the two parental abuse items described above (e.g., *Never* or *Rarely* exhibited mild abuse and *Never* exhibited severe abuse). The remaining participants were characterized as Abusers.

Parental Abuse continuous scale—The two separate abuse items were then z-scored, and the standardized scores were summed to form a continuous parental abuse scale ($\alpha = .62$).

Family history of participant’s parents’ psychiatric symptoms—Participants were asked about psychiatric symptoms of each of their parents. A series of questions were asked of the participants in regards to their own parents’ symptoms within the internalizing domains (MDD and GAD) and externalizing domains (alcohol abuse/dependence, substance abuse/dependence, and ASPD). The items were based on the Family History Research Diagnostic Criteria (Andreasen *et al.*, 1977), which has been shown to have good sensitivity. A continuous scale score of symptoms for each diagnostic category was calculated and standardized. A symptom count for the participant’s parents’ internalizing symptoms and a count for the participant’s parents’ externalizing symptoms were computed for the participant’s mother and father, separately.

Several variables were identified as potential correlates of childhood abuse for which we controlled for in the analyses (Sachs-Ericsson *et al.*, 2006). Participants were asked to indicate if, before the age of 15, they had experienced the divorce of their parents, the death or abandonment by a parent. Moreover, participants were asked if their family had been on welfare.

Results

Data analytic methods

First, the demographics of the sample are described. Secondly, we compare the demographics of those participants who reported exhibiting no physically abusive behaviors towards their children to those who reported some abusive behaviors. Next, a hierarchical linear regression analysis was performed to determine predictors of parental abuse. In the first step we wished to examine the association of the participant’s demographics to parental

abuse. In the second step, while controlling for the participant's demographics, we examined the extent to which family-of-origin variables (e.g., welfare status, early abandonment of mother or father by death or divorce, being raised by mother or father alone) influenced parental abuse. We then wished to examine the extent to which the participant's own parents' psychiatric symptoms predicted the participant's abusive behaviors towards children. After controlling for all of these important variables, we then examined the association between the participant's internalizing and externalizing disorders and the participant's abuse of children. In the final step we determined if childhood abuse contributed to parental abuse after controlling for all relevant variables. We then completed additional analyses to determine if either internalizing disorders or externalizing disorders mediated the association between childhood abuse and parental abusive behaviors.

Participants

Participants included those individuals in the NCS-R who identified themselves as having served as a parent to a child ($N=4141$). There were 44.1% men and 55.9% women. The average age of the participants was 49.9 years ($SD=16.4$). Ethnicity was as follows: 73.2% Caucasian, 12.6% African American, 10.7% Hispanic, and 3.5% categorized as "Other". The average years of education were 12.9 ($SD=2.5$). Approximately two-thirds of the sample were currently married (62.8%), whereas 28.7% were currently divorced and 8.4% never married. Among the participants, 22.5% reported one or more externalizing disorders, and 36.5% reported one or more internalizing disorders. Among the participants, 29.5% reported experiencing any childhood abuse (10.9% sexual and 23.4% physical). More women than men reported experiencing any abuse as a child (31.9% vs. 26.4%, χ^2 ($N=4119$) = 15.0, $p < .001$). Specifically, more women than men reported sexual abuse (16.2% vs. 4.3%, χ^2 ($N=4119$) = 149.6, $p < .001$). However, there were no gender differences for physical abuse.

Among the participants, 20.4% reported some parental abusive behaviors towards children in their care, the vast majority of whom reported "sometimes" or "often" engaging in *mild* abuse. Only 2.5% of participants admitted to any *severe* abuse. More women than men reported some abusive behaviors (23.6% vs. 16.4%, χ^2 ($N=4119$) = 32.1, $p < .001$). Participants who experienced childhood abuse were almost twice as likely to exhibit parental abusive behaviors compared to those who reported no childhood abuse (30.5% vs. 16.2%, respectively) (X^2 ($N=4119$) = 108.7, $p < .001$). Interestingly, both childhood experiences of physical abuse and sexual abuse were associated with parental abuse. Parental abuse was significantly correlated with a history of any child abuse ($r(1,4111) = .193$, $p < .01$), childhood sexual abuse ($r(1,4111) = .108$, $p < .01$) and childhood physical abuse ($r(1,4111) = .187$, $p < .01$). A history of any childhood abuse was significantly correlated with internalizing disorders, ($r(4141) = .25$, $p < .001$) and externalizing disorders ($r(4141) = .20$, $p < .001$).

Prediction of parental abusive behaviors

In order to examine the influence of childhood abuse and participants' internalizing and externalizing disorders on parental abusive behaviors, a hierarchical linear regression analysis was performed. The results of the regression analysis are summarized in Table 2. In the first step, we found female gender and fewer years of education were related to parental child abuse. In the next step we found not being raised by the participant's biological mother and having been on welfare were related to parental child abuse. In the third step, we found the externalizing symptoms of the participant's own father to be related to the participant's parental child abuse. In the fourth step, we included the participant's number of externalizing disorders and internalizing disorders. Consistent with our prediction, both were

related to parental abuse. It is of interest to note that once we included the participant's disorders, the participant's father's externalizing symptoms were no longer significant.

In the fifth step, we entered a history of any childhood abuse (e.g., sexual or physical abuse). This variable also predicted parental child abuse. With the inclusion of any childhood abuse, the participant's internalizing and externalizing disorders still remained significantly related to parental child abuse. Thus, the participants' psychiatric disorders and their experiences of childhood abuse independently contributed to parental abusive behaviors. However, further analyses were conducted (see below), to determine if participants' psychopathology partially mediated the association between childhood abuse and parental abusive behaviors.

Next we wished to determine if there were any significant interactions among the predictor variables (e.g., childhood abuse, participant's externalizing or internalizing disorders) as well as gender in their relation to parental child abuse. Only the two-way interaction of gender and childhood abuse was significant. Subsequent analyses were performed to examine the nature of this relationship. As predicted, we found that the influence of childhood abuse on parental abusive behavior was greater for women than for men.

Independent effects of physical and sexual abuse

In the above analysis we grouped childhood sexual and physical abuse together (e.g., any abuse). We wished to determine the independent effects of each specific type of abuse. We therefore performed additional analyses restricting the abuse variable in the first analysis to only childhood sexual abuse and in the second analyses to only childhood physical abuse. In each case we found the results to be consistent with the analyses reported above in which we combined the two types of childhood abuse together (e.g., any childhood abuse). Thus, it appears that the negative outcome, the development of parental abusive behaviors, is similar for each type of abuse (e.g., sexual or physical) even after controlling for the influence of the participant's psychiatric disorders.

Mediation analyses

We wished to determine if internalizing or externalizing disorders partially mediated the relationship between childhood abuse and parental abuse. Several conditions must be met to establish mediation (Baron & Kenny, 1986). Important is the significant association between the independent variable and dependent variable. This requirement was established in the previous regression analysis (e.g., childhood abuse predicted parental abuse). We also had established a further condition. Specifically, we had found that each potential mediator (e.g., internalizing disorders and externalizing disorders) was significantly related to parental abuse. Next, we performed two separate regression analyses to determine if the independent variable influenced the potential mediators. Analyses revealed that childhood abuse predicted internalizing disorders $F(1,4100) = 452.0, p < .001$ and externalizing disorders, $F(1,4100) = 93.3, p < .001$. To examine the final condition, Sobel tests (Sobel, 1982) were conducted. We found internalizing disorders ($z = 4.04, p < .001$) and externalizing disorders ($z = 2.8, p < .001$) to each be a partial mediator of the relationship between childhood abuse and parental abuse. Nonetheless, childhood abuse remained significantly related to parental abuse even with the addition of externalizing and internalizing disorders.

Discussion

The current study, based on a large, representative sample of the US population, examined the relationship of the participant's childhood experiences of abuse (sexual and physical) and the participant's externalizing and internalizing disorders to parental abusive behaviors. We found that the participant's internalizing disorders, externalizing disorders and

childhood experiences of abuse each independently predicted parental abusive behaviors even after controlling for demographics and family-of-origin characteristics. Moreover, the influence of childhood abuse on parental abuse was greater for women than men. While past research has confirmed that early childhood abuse is a risk factor for both internalizing and externalizing disorders, these disorders only partially mediated the association between childhood abuse and parental abuse.

In our study we found participant's externalizing disorders to predict parental child abuse. This link between externalizing symptoms and parental abuse may not be all that surprising. By definition, several of the externalizing disorders include criteria related to abuse or assault. Indeed, abusing a child is one symptom of ASPD (APA, 2000). Studies have shown that people with ASPD exhibit higher rates of physical violence against others (Goldstein *et al.*, 2006). Intermittent explosive disorder (IED) is defined, in part, by serious assaults against others (APA, 2000). Moreover, IED is highly comorbid with substance disorders (Kessler *et al.*, 2006), which in turn increases the risk for parental child abuse. Research has consistently shown that substance abuse negatively affects impulse control, which may increase the probability of aggressive behaviors including abuse towards a child (Fillmore & Rush, 2006). Intoxication may result in cognitive impairments, distorted perceptual processes, negative biases in interpreting the child's behavior (Mayes & Truman, 2002), as well as heightened arousal which may lead to more impulsive behaviors (Iler, 1997). These problems may in turn influence the parent's ability to appropriately care for a child (Locke, 2004).

We found internalizing disorders to predict parental child abuse, even after controlling for externalizing disorders. Similarly, De Bellis and colleagues (2001) found that mothers involved in the maltreatment of their children had a greater incidence of anxiety disorders when compared to non-offending mothers. Moreover, studies have shown that children of depressed mothers are at a greater risk for experiencing abuse (Cohen, 2006).

Depression is often accompanied by irritability and sometimes characterized by hostility and anger (Joiner & Coyne, 1999) as well as other interpersonal problems (Joiner *et al.*, 1992). Thus, parents with depression may have more difficulty than others in regulating their mood and anger, which in turn may lead to more aggressive behaviors towards children in their care. When coupled with the stress of caring for a child, internalizing symptoms may lower the individual's threshold for the toleration of their child's negative behaviors (Dopke *et al.*, 2003).

The cognitive style of individuals with internalizing disorders may also contribute to their abusive behaviors. Individuals with anxiety disorders are characterized as having irrational concerns, and often overestimate the probability of negative outcomes (Beck & Emery, 1985). These distorted thought processes could influence parents' interpretation of the environment as more threatening and influence their interpretation of the child's behavior as more problematic. Indeed, one study found that abusive parents over-report externalizing behavior problems in their children (Lau *et al.*, 2006).

Individuals who are depressed have also been shown to have a negative cognitive style (Abramson *et al.*, 1989), attributing the causes of negative life events to stable and global factors. Researchers have found that individuals who abuse their children make attributions that place their children in a more negative light than non-abusive parents (Dadds *et al.*, 2003). The etiology of this negative attributional style is not clear. The attributional style of individuals prone to abuse children may be related to internalizing symptoms -- or such attributions may have developed from the individual's own interpretations as to why, as a child, he or she was abused (Sachs-Ericsson *et al.*, 2006). Future research investigating the

development of such attributions in relation to parental abuse would be of great interest and may have direct influence on developing cognitive-behavioral treatment programs for at-risk parents.

Several aspects of experiencing childhood abuse may contribute to parental abuse. There is considerable literature showing that witnessing violent behavior increases the likelihood of the individual displaying violent behavior. Bandura (1978) proposed the social learning theory of aggression in which he postulated that people learn to emulate the behavior that others do, including violent behavior. Indeed, a review published in *Science* (Anderson & Bushman, 2002) concluded that evidence is steadily mounting that exposure to violence during childhood is associated with subsequent aggression. Thus, it is likely that parenting behaviors, including abuse, are learned through children's own experience of being parented.

We found gender to moderate the relationship between childhood abuse and parental abuse such that childhood abuse had a stronger negative effect on women. Aggression is more culturally accepted among males than females (Sachs-Ericsson, 2000). However, the experience of being abused for women may increase their likelihood of modeling such "non-female" behaviors as aggression. Future research that examines the mechanism by which childhood abuse has greater influence on women than men would also be of interest and may possibly have implications for the development of intervention programs in the prevention of child abuse.

As in any study, there are a number of limitations. First, there are likely other unmeasured variables that may have influenced the participant's parental abusive behaviors. For example, other studies have examined specific components of family structure, such as being a young single parent, which is associated with an increased risk for parental abuse. Because the current study did not allow us to determine marital status or age of the participant when the parental abuse occurred, we could not control for these variables in the analyses.

A further limitation is that the childhood abuse measures were retrospective and self-report. However, Kendall-Tackett and Becker-Blease (2004) identified important strengths of examining adult survivors of abuse rather than relying on documentation. Further, we have no objective measure of parental abuse. Though our parental abuse items were quite specific, such behavior is likely to be underreported. Nonetheless, previous research assessing parental abusive behaviors such as those items used in the current study have been found to have good validity (Straus, 1990). Although individuals may be reluctant to disclose more severe forms of parental abuse, the less severe forms of abuse included in our scale, such as spanking, are predictive of more severe abuse (Crandall *et al.*, 2006), and thus we may have indirectly identified, in our assessment of parental abuse, individuals who display more severe parental abusive behaviors.

An additional consideration is that participant's retrospective reports of childhood abuse as well as parental abusive behaviors may be influenced by the participant's current level of psychopathology. That is, individuals who have more severe psychological problems may be more likely to report experiences of childhood abuse and parental abuse. This in turn may increase the apparent relationship between childhood abuse, participant's psychopathology and parental abusive behavior. Finally, the data is cross-sectional, and thus any clear conclusions regarding causality cannot be made based on the current data.

The study's results have implications for the development of intervention programs. Specifically, individuals with psychiatric disorders or a history of childhood abuse are at a greater risk for abusive behaviors towards children in their care. Providing parent training

programs for high-risk parents may be effective in lowering rates of parental abuse (Barlow *et al.*, 2006). Programs should include a cognitive component which focuses on the parent's possible negative attributional style which may lead to distorted interpretation of their child's behavior. Active outreach programs offered to high-risk parents may ultimately lower the tremendous toll on the individual and society that parental child abuse exacts.

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Table 1

Demographics of the participants by gender and parental abuse

	Parental Abuser No		Parental Abuser Yes	
	Men (n=1520)	Women (n=1759)	Men (n=298)	Women (n=542)
Age	50.03 (SD=15.65)	49.7 (SD=17.4)	51.22 (SD=14.46)	50.99 (SD=15.78)
Household Income	\$68,422 (SD=48560)	\$54,067 (SD=46270)	\$67,351 (SD=51668)	\$53,274 (SD=44780)
Education	12.89 (SD=2.76)	12.97 (SD=2.34)	12.97 (SD=2.76)	12.63 (SD=2.28)
Participant's Externalizing Disorders	.64 (SD=1.3)	.26 (SD=.81)	.92 (SD=1.6)	.41 (SD=.99)
Participant's Internalizing Disorders	.48 (SD=.99)	.81 (SD=1.3)	.70 (SD=1.2)	1.2 (SD=1.5)
Participant's Mother Absence	6.6%	9.0%	10.4%	11.3%
Participant's Father Absence	20.2%	20.7%	20.1%	21.8%
Participant's Mother Externalizing	.23 (SD=.86)	.33 (SD=1.12)	.26 (SD=.92)	.39 (SD=1.14)
Participant's Father Externalizing	.60 (SD=1.4)	.65 (SD=1.5)	.84 (SD=1.5)	.80 (SD=1.5)
Participant's Mother Internalizing	.65 (SD=1.8)	1.1 (SD=2.4)	.88 (SD=2.2)	1.22 (SD=2.5)
Participant's Father Internalizing	.37 (SD=1.3)	.46 (SD=1.4)	.49 (SD=1.6)	.52 (SD=1.5)

Table 2

Regression analysis: Influence of childhood abuse, internalizing and externalizing disorders on parental abuse.

	Unstandardized Coefficients		<i>F</i>	<i>p</i> -value	95% Confidence Interval for Unstandard <i>B</i>		Correlation
	B	Std. Error			Low	Upper	Partial
Step 1							
$F(4,4114)=10.5$, $p < .001$							
Age	.001	.001	1.93	.165	-.001	.003	.022
Sex	-.174	.032	30.03	<.001	-.236	-.111	-.085
Education	-.017	.007	6.4	.011	-.030	-.004	-.039
Household Income	.00001	<0.01	.02	.89	.000	.000	-.002
Step 2							
$F(7,4111)=8.6$, $p < .001$							
Raised by Biological Mother	.120	.059	4.16	.041	.005	.235	.032
Raised by Biological Father	-.011	.043	.06	.802	-.094	.073	-.004
Child Welfare	-.196	.054	13.09	<.001	-.303	-.090	-.056
Step 3							
$F(11,4107)=6.9$, $p < .001$							
Participant's Mothers Internalizing Disorders	.010	.008	1.39	.239	-.006	.026	.018
Participant's Mothers Externalizing Disorders	.013	.017	.56	.455	-.021	.046	.012
Participant's Fathers Internalizing Disorders	.002	.013	.031	.860	-.022	.027	.003
Participant's Fathers Externalizing Disorders	.032	.012	7.19	.007	.009	.055	.042
Step 4							
$F(13,4105)=9.3$, $p < .001$							
Number of Participants Externalizing Disorders	.063	.018	12.72	<.001	.026	.097	.056

	Unstandardized Coefficients		<i>F</i>	<i>p</i> -value	95% Confidence Interval for Unstandard <i>B</i>		Correlation
	B	Std. Error			Low	Upper	Partial
Number of Participants Internalizing Disorders	.074	.017	18.47	<.001	.04	.108	.067
Step 5 ^a							
<i>F</i> (14,4104)=14.3, <i>p</i> <.001							
Number of Participants Externalizing Disorders	.049	.017	.792	.005	.015	.083	.044
Number of Participants Internalizing Disorders	.055	.017	10.19	.001	.021	.089	.050
Any Child Abuse	.317	.036	76.82	<.001	.246	.388	.136
Step 6							
<i>F</i> (19,4099)=11.1, <i>p</i> <.001							
Gender and Abuse	-.075	.033	5.12	.024	-.141	-.010	-.035
Gender and Internalizing Disorders	.002	.018	.017	.897	-.034	-.039	.002
Gender and Externalizing Disorders	.016	.018	.777	.378	-.019	-.051	.014
Abuse and Internalizing Disorders	-.003	.015	.050	.823	-.033	.027	-.003
Abuse and Externalizing Disorders	-.014	.015	.866	.352	-.045	.016	-.015
Step 7							
<i>F</i> (23,4095)=9.6, <i>p</i> <.001							
Gender, Abuse, and Internalizing Disorders	-.032	.017	3.36	.067	-.066	.002	-.029
Gender, Abuse, and Externalizing Disorders	-.028	.017	2.72	.099	-.061	.005	-.026
Abuse, Internalizing and Externalizing Disorders	.001	.010	.003	.955	-.018	.019	.001
Gender, Internalizing Disorders, and Externalizing Disorders	.022	.012	3.13	.077	-.002	.046	.028

	Unstandardized Coefficients		<i>F</i>		95% Confidence Interval for Unstandard <i>B</i>		Correlation
	B	Std. Error		<i>p</i> -value	Low	Upper	Partial
Step 8							
<i>F</i> (24,4094)=9.4, <i>p</i> <.001							
Four-way interaction	.022	.011	3.73	.053	.000	.044	.030

^a After each of the predictor variables were entered into the model (Step 5), the following variables remained significant: gender, not being raised by biological mom, and child welfare.