



**College of Arts & Sciences
Department of Psychology**

312F Austin Peay Building
Knoxville, Tennessee 37996-0900
Phone: (865) 974-2531
Fax: (865) 974-3330
E-mail: <http://web.utk.edu/~jlawler>

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To Whom It May Concern:

Elizabeth Reid has conducted a study on maltreatment in children whose mothers have a severe mental disorder called borderline personality disorder. She has been trained to code maltreatment records and has achieved reliability with an expert coder. She coded the remaining records. In addition, Elizabeth has written a full and complete literature review. Moreover, she has entered all relevant data onto the computer, created composite variables of interest, and conducted all statistical analyses to test her hypotheses.

Elizabeth has written up the entire research paper with minimal help from her mentor. She has done a superb job with her first research project. Her work is on a par with work expected from a Masters level graduate student and she is still Freshman!! I am delighted with her work. It has been extremely helpful for our research and bodes well for her future as a productive scientist.

Ben MacL E

**The effect of maternal borderline personality disorder on experiencing child maltreatment
and its relationship to narrative representations of parents**

Elizabeth Reid

Undergraduate Summer Research Internship

Child and Adolescent Development Lab

Mentor: Jenny Macfie, PhD

Abstract

The present research was conducted on (1) the experience of maltreatment by children living in homes with maternal borderline personality disorder (BPD) versus normal homes and (2) the effect of maltreatment on the representations of parents. BPD participants ($n = 10$) were recruited from inpatient and outpatient clinics in the greater Knoxville, TN area while control participants ($n = 10$) were recruited from local schools and Boys & Girls Clubs. The participants were matched for age, gender, race, and yearly family income. It was found that maltreatment is more likely to occur in maternal BPD homes, significant differences in subtypes include neglect, pure neglect, and a composite of physical abuse and sexual abuse. There was significance in the positive mother representations, positive parent representations, negative mother representations, and negative parent representations. Maltreatment subtype also showed significant differences on parent representations. Overall, the results supported both the hypotheses of the present research and the need for future research in this area.

The motivation for the present research lies in deleterious effects of maltreatment on child development as maltreatment is an etiological factor for psychological disorders such as borderline personality disorder (BPD). The major focus of this research was on the experience of maltreatment in homes with maternal BPD versus psychologically normal mothers. The additional focus of the experience of maltreatment on child narrative representations of parents was sought to give insight to the downward spiral that occurs as a result of child maltreatment, which potentially leads to the development of an array of psychological disorders, including BPD.

Maltreatment

In order to conduct research on child maltreatment, whether or not in homes of the psychologically ill, one must understand the definition and nuances of the term “maltreatment.” According to Public Law 93-247, section 2, child maltreatment is the harm or threat of welfare or health to a child, under the age of eighteen, by means of physical abuse, sexual abuse, mental abuse, or negligence of the person responsible for the child’s welfare (Barnett, Manly, & Cicchetti, 1993).

This definition encompasses the major themes of maltreatment, but does not embrace the complicatedness of defining maltreatment. For instance, there are various subcategories that must be taken into account; such as, subtype (physical, sexual, emotional, neglect, and moral/legal/educational), severity (low, medium, and high), and chronicity (the number of developmental periods. In addition, the perpetrator (i.e., a parent, step-parent, foster parent, sibling, stranger, etc) may affect the meaning of the maltreatment event for the child (Barnett et al, 1993). All these factors interact and affect

the researcher's designation of maltreatment for each child and the child's own interpretation of the maltreatment event.

Using maltreatment as a variable for comparison is important, as maltreatment has deleterious effects on the mental and cognitive development of children who experience it (Johnson, Cohen, Smailes, Skodol, Brown, & Oldham, 2001; Manly, Cicchetti, & Barnett, 1994; Paris & Zweig-Frank, 1992). Despite this, maltreatment is not universally associated with the development of psychological disorders; however, research has shown that children who experience maltreatment do not develop the ability to adapt to changes in their lives, unlike nonmaltreated children (Manly et al, 1994). Furthering this theme of maladaptation, a history of child maltreatment is associated with the development of other psychological disorders; such as, affective, anxiety, dissociative, and eating disorders, substance abuse, sexual dysfunction, low self esteem, and problems with interpersonal relationships (Soloff, Lynch, & Kelly, 2002). Specifically, one such psychological disorder is BPD; in fact, there is a high occurrence of childhood maltreatment reported by adult BPD patients (Soloff et al, 2002).

Borderline personality disorder

BPD is a disorder of the self (Macfie, Rivas, Engle, Hamilton, & Rathjen, 2005). BPD patients suffer from extreme emotional pain (Zanarini, 2000) and are diagnosed for having at least six of the following: (1) a fear of abandonment, whether real or imaginary, (2) pattern of unstable and/or intense interpersonal relationships, (3) identity disturbance, (4) impulsiveness in at least two of the following: spending, sex, substance use, shoplifting, reckless driving, and/or binge eating, (5) recurrent mutilation and/or suicide attempts, (6) affective instability (mood, irritability, anxiety), (7) chronic feelings of

emptiness or boredom, (8) inappropriately intense or lack of control of anger, and (9) transient, stress-related, severe dissociative experiences or paranoid ideation (American Psychiatric Association, 1994).

Considering the extreme complicatedness and unpleasantness of BPD, many researchers have sought to discover the etiology of BPD with the hope of developing interventions for those at risk of developing BPD. Etiological factors can be divided into two categories: (1) constitutional (i.e., temperament, a predisposition to psychiatric disorders, and subtle neurological and/or biochemical dysfunction) and (2) environmental (i.e., early childhood separations, disturbed parental involvement, and child maltreatment) (Zanarini & Frankenburg, 1997). In all the current research on the etiology of BPD, maltreatment, such as physical, sexual, emotional abuse, and neglect, was found to be a major etiological factor of BPD (Johnson et al, 2001; Links & Reekum, 1992; Macfie, Cicchetti, & Toth, 2001; Paris et al, 1992; Zanarini, 2000; Zanarini et al, 1997; Zanarini, Gunderson, Marino, Schwartz, & Frankenburg, 1989).

Considering the etiological factors that lead to the development of BPD, it is logical to infer that children of mothers with BPD are especially susceptible to develop the disorder. For instance, the offspring inherit constitutional, or biological, factors that may predispose them to the disorder. Furthermore, offspring are more likely to be experiencing maltreatment as childhood maltreatment is reported more often when there was greater evidence for parental psychiatric illness (Links et al, 1992). Also, the cycle of abuse, from mother to child, is more likely to be broken if the mother has sought psychological help, had an emotionally supportive adult or mentor during childhood, or established a stable relationship with a partner in adulthood (Egeland, Jacobvitz, &

Sroufe, 1988). Taking into account the etiological factors and aspects of BPD, a borderline mother is more likely to continue the cycle of abuse.

Research has been conducted on the offspring of BPD mothers concerning the susceptibility of the offspring developing BPD (Hobson, Patrick, Crandell, Garci-Perez, & Lee, 2005; Weiss, Zelkowitz, Feldman, Vogel, Heyman, & Paris, 1996). However, none of this research focuses on the offspring's experience of maltreatment. Considering the major role of maltreatment in the etiology of BPD, there is a great need to study this relationship in order to foresee the development of BPD from a young age.

Child Narratives

In conjunction with the second aspect of this research, child representations of parents, story-stem narratives were used. The story-stem technique is designed to elicit responses from the children regarding attachment to caregivers, internal models, and representations of the self and others. These aspects are coded from videotaped child responses to various story-stems that present stressful home situations (Bretherton, Oppenheim, Bushsbaum, Emde, & the MacArthur Narrative Group, 1990; Robinson, Mantz-Simmons, Macfie, & the MacArthur, Narrative Group, 1996).

Specifically of interest in this research were the offspring representations of parents. Previous research has shown that maltreated child representations of parents are more negative and less positive (Macfie et al, 2005; Toth, Cicchetti, Macfie, & Emde, 1997). Moreover, BPD mothers' representations of their parents were found to be more negative and less positive, as well as more malevolent (Nigg, Silk, Westen, Lohr, Gold, Goodrich, & Ogata, 1989; Nigg, Lohr, Westen, Gold, & Silk, 1992; Oppenheim, Emde, & Warren, 1997). These representations of parents can be used to determine the

attachment of the offspring to the parent(s). The attachment aspect gained from the narratives also is important, because BPD is thought to be, among other things, an attachment disorder (Fogny, Target, & Gergely, 2000).

Hypotheses

In the current study, is it specifically hypothesized that (1) preschool-aged children whose mothers have BPD will have experienced more childhood maltreatment, in the forms of sexual abuse, physical abuse, and neglect, than will comparison children whose mothers do not have BPD and (2) the experience of childhood maltreatment will be reflected in fewer positive and greater negative representations of mothers and fathers in the children's narratives.

Method

Participants

The sample consisted of $N = 20$ preschool-aged children. Of this sample, $n = 10$ preschooler's whose mothers are diagnosed with BPD and $n = 10$ preschooler's in the control group. The BPD mothers of the sample were recruited from inpatient and outpatient clinics in the Knoxville, TN area. The control mothers were recruited from local schools and Boys and Girls clubs. Of the sample, $n=11$ males and $n=9$ females, regardless of mother's BPD status. The average age of the sample was 4.75 years, with an age range of 4-6. The mean yearly family income across the sample was \$29,263.20. Finally, the percentage of race across the sample was 90% Caucasian and 10% African American.

The participants were matched for age, gender, race, and yearly family income. The participants were found to not be significantly different according to these variables (Table 1). None were found to be significantly different.

Table 1. *Demographic characteristics of participants.*

Variables	Maternal BPD (<i>n</i> = 10)		Control (<i>n</i> = 10)		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Age (in years)	4.7		4.8		.44
Family Yearly Income	32,166.80	25,628.17	49,799.60	35,593.26	2.43
	%		%		χ^2
Gender (female)	50		60		.20
Gender (male)	50		40		.20
Race (Caucasian)	80		100		2.22
Race (African American)	20		0		2.22

Measures

Demographic Interview. This interview includes questions concerning family income, race, and a broad maltreatment question concerning whether/or not the family has had any involvement with DCS. It was adapted from the Mt. Hope Family Center's Interview (MHFC, 1995).

SCID-II Interview. This interview with the mother is conducted after an initial screening and is used to determine the BPD status of the mother. Each mother is given this interview to ensure that mothers of participants in the index group (the maternal BPD group) do have BPD, and, conversely, that mothers of participants in the control group do not have BPD. The interview was conducted and scored by Jenny Macfie, PhD. BPD

was coded for in the presence/absence form, where presence of maternal BPD = 1 and absence of maternal BPD = 0.

Maltreatment Interview. This interview with the mother is used to establish the presence or absence of maltreatment to the child as seen by the mother. This interview can determine the presence or absence of physical abuse, emotional abuse, mental abuse, sexual abuse, and neglect and the developmental period in which the maltreatment occurred (Cicchetti, Toth, Manly, 2002.)

DCS Maltreatment Records. Researchers of this study approach Department of Children Services with the written signed consent form of the mother. DCS then provides information on the (1) type of maltreatment (i.e., physical abuse, sexual abuse, and/or neglect), (2) perpetrator, and (3) date that the case(s) was (were) opened, if the family does indeed appear in the DCS records.

Maltreatment Coding System. This manual was written to help researchers classify the severity, subtype, and frequency of maltreatment experienced by children based on parental informant, medical information, and DCS information. In the current research, information obtained from the Demographic Interview, the Maltreatment Interview, and the DCS records were combined and used with the Maltreatment Coding System to determine the subtype, severity, developmental period of maltreatment experienced by the participants.

An example of factors that would determine the severity for the subtype neglect are (1) Low: medical care not maintained, occasionally misses meals, home environment dirty, inappropriate clothing for weather, inadequate supervision for short periods of time, (2) Medium: frequently misses meals/is hungry, moderately severe medical problems

untreated, inadequate supervision for extended periods of time in relatively safe environment or for short periods of time in a dangerous environment, and (3) High: child has non-organic failure to thrive or malnourishment, congenitally drug addicted, home environment extremely dangerous or house is condemned, no medical care for potentially life-threatening illness, unsupervised in potentially life-threatening environment/situation (Manly et al, 1994).

When coding for the maltreatment subtype, a presence/absence approach was used, where present = 1 and absent = 0. The variables that were coded for were physical abuse, sexual abuse, neglect, and a physical abuse/sexual abuse composite. It should be noted that there was a possible overlap between variables of the different subtypes, except in the pure neglect sample. That is to say that children coded as having physical abuse present may also have sexual abuse and neglect present; thus, the child has not been maltreated in a solely physically abusive nature. In contrast, the pure neglect sample consisted of children who experienced maltreatment in form of neglect only. The composite variable was created to test the relationship of an action taken against the child versus an absence of care, as seen in neglect.

Each researcher coded 20% sample ($n=5$) and then compared results to determine the reliability of coding. Kappas for coding for maltreatment ranged from .25 to 1.00, with a mean of .88.

MacArthur Story-Stem Battery (MSSB) (Bretherton et al, 1990). This measure involves twelve total story-stems (eleven coded stories and one warm-up story) that are used to determine the parental representations and attachment. The procedure for administering the narratives are as follows: (1) the child examiner matches the child dolls

to the gender of the child that is being examined, (2) the child examiner introduces the child to the doll characters (Mom, Dad, Grandma, Susan/George, and Jane/Bob), (3) the child examiner gives the story prompt, and (4) the child examiner prompts the child to complete the story and/or clarify an unanswered or unclear part of the narrative (e.g., if the child does not address an injury presented in the stem, the child examiner would prompt: "What do they do about the hurt knee?")

Following is a description of the story-stems and elements that are extracted from them.

- (1) *Birthday Party* (warm-up story): This story is used to introduce the doll characters and to have the child become accustomed to using the dolls and props to tell and show the events in each of the following stories.
- (2) *Spilled Juice*: In this story, the child reaches across the dinner table and spills juice all over himself or herself and the floor. It is used to elicit the parental response to the child's transgression.
- (3) *Hurt Knee*: In this story, the family goes to the park where there is a large rock. The child climbs the rock, falls off, and hurts his or her knee. The story is used to code for mastery and pride, and parental empathy toward the child.
- (4) *Monster in the Bedroom*: The child is told to go to his or her room and go to bed. Upon entering the room, the child finds a monster. This story is used to code for parental helpfulness/effectiveness and empathy.
- (5) *Departure*: The family meets in front of the house to say goodbye to the parents who are leaving on a trip; the children will be left with their

grandmother in the parents' absence. This story is used to code for how the child deals with separation from parents.

- (6) *Reunion* (continued from *Departure*): The parents return from their trip. This story is used to code for child attachment to the parents.
- (7) *Lost Keys*: The child enters the living room to find the parents arguing over a lost set of keys. This story is used to code for how the child deals with and interprets parental conflict.
- (8) *Hot Gravy*: The mother is preparing dinner and tells the child to stay away from the stove. The child disobeys and spills hot gravy all over the floor and himself or herself, creating an injury. This story is used to code for transgression and parental empathy toward the child versus authority.
- (9) *Horsie Story*: One child has a new toy rocking horse which the other child wants to play with as well. The result is a fight, involving pushing, among the children. This story is used to code for parental authority, empathy, and helpfulness/effectiveness.
- (10) *Looking for Barney* (the dog): The child goes outside to play with his or her new dog, Barney, only to find him missing. This story is used to code for how the child deals with loss.
- (11) *Barney Returns* (continuation of *Looking for Barney*): The next day, Barney comes back home. This story is used to code for how the child deals with reunions.

- (12) *The Exclusion Story*: The parents send the child to his or her room to play with some toys so that they may have some “alone time.” This story shows how the child deals with exclusion from the parental relationship.

MacArthur (MSSB) Coding of Parental Representations. This manual was used to determine the child’s representation of the parents. Positive representations include parental actions that can be classified as (1) Protective (i.e., child is protected from possible harm as in saying something similar to “Don’t run with those scissors.”), (2) Caretaking (i.e., engaging in caretaking activities such as putting a band-aid on the hurt knee), (3) Affectionate (i.e., warm, caring, supportive and affirming and has a range of descriptions such as hugging, kissing, and complimenting the child), and (4) Helpful (i.e., gives child concrete help such as getting rid of the monster in the bedroom). Negative representations include parental actions that can be classified as (1) Harsh or punitive (i.e., involves aggression or exaggerates disciplinary actions to the point of implied threats, severe beating, or killing), (2) Rejecting (i.e., the parent physically pushes the child away in rejection of the child’s plea for closeness or help), and (3) Ineffectual (i.e., the parent is either unable or unwilling to help the child, for instance, get rid of the monster in the bedroom). Each of these aspects were coded from the child’s completion of the narrative (Robinson et al, 1996) and the codes were summed across all 11 narratives.

Dr. Jenny Macfie coded the preschool narratives for positive and negative parent representations. Kappas ranged from .65 to 1.00, with a mean of .86.

Results

Hypothesis 1. First, we hypothesized that preschool-aged children whose mothers have BPD will have experienced more childhood maltreatment, in the forms of sexual abuse, physical abuse, and neglect, than will comparison children whose mothers do not have BPD. In order to test for overall maltreatment, we conducted a chi square test for differences in the experience of maltreatment between children whose mothers have BPD and those who did not. There was a significant difference, $X^2(1, N = 20) = 6.67, p \leq .01$, such that 100% of children whose mothers have BPD experienced maltreatment, while 50% of children whose mothers do not have BPD experienced maltreatment. Further, a correlation was conducted to assess whether or not BPD and maltreatment are associated. The correlation revealed a positive correlation, $r = .58, p \leq .01$.

Moreover, we tested for differences in the experience of subtypes of maltreatment (physical abuse, sexual abuse, neglect, neglect only (pure neglect), and a composite of physical and sexual abuse) in order to determine where this difference in maltreatment is occurring between the groups. We conducted a chi square test for each subtype and maternal BPD and found a significant difference, $X^2(1, N = 20) = 2.22, p \leq .01$, for neglect versus maternal BPD such that children of mothers with BPD are significantly more likely to be experiencing neglect. Further, the chi square test for pure neglect versus BPD revealed a marginally significant difference, $X^2(1, N = 20) = 3.53, p \leq .10$, such that children whose mothers have BPD are more likely to be experiencing only the subtype of neglect versus children whose mothers do not have BPD. In addition, there was a marginal significant difference, $X^2(1, N = 20) = 3.20, p \leq .10$, for the composite variable (presence of physical abuse and sexual abuse) versus maternal BPD such that

children of mothers with BPD are marginally significantly more likely to be experiencing physical abuse, sexual abuse, or both than children whose mothers do not have BPD.

Hypothesis 2. Second, we hypothesized that the experience of childhood maltreatment will be reflected in fewer positive and greater negative representations of mothers and fathers in the children's narratives. In order to assess whether the experience of maltreatment is associated to children's narrative representations, a series of six correlations were conducted across both groups of children. The experience of maltreatment was negatively correlated with positive representations of mothers, $r = -.52$, $p \leq .05$, marginally negatively correlated with positive representations of both parents, $r = -.40$, $p \leq .10$, marginally positively correlated with negative representations of mothers, $r = .43$, $p \leq .10$, and positively correlated with negative representations of both parents, $r = .46$, $p \leq .05$.

A second set correlations was conducted to assess whether the experience a specific subtype of maltreatment (physical abuse, sexual abuse, neglect (not to be confused with the pure neglect variable used in the chi square tests), and the physical abuse and sexual abuse composite) is associated to child narratives. A series of 4 correlations was conducted across both groups of children. The correlation of the physical abuse subtype was negatively correlated to positive representations of mothers, $r = -.47$, $p \leq .05$. The correlation of the neglect subtype was negatively correlated to positive representations of mothers $r = -.47$, $p \leq .05$, marginally negatively correlated to positive representations of fathers, $r = -.40$, $p \leq .05$, negatively correlated to positive representations of both parents, $r = -.48$, $p \leq .05$, positively correlated to negative representations of mothers, $r = -.55$, $p \leq .05$, and positively correlated to negative

representations of both parents, $r = -.46, p \leq .05$. The correlation of the sexual abuse subtype was marginally negatively correlated to positive representations of mothers, $r = -.42, p \leq .10$. Finally, the composite of physical abuse and sexual abuse was marginally negatively correlated to positive representations of mothers, $r = -.43, p \leq .10$.

Discussion

Hypothesis 1. The results of the chi square and correlation of overall presence of maltreatment versus BPD supported the first hypothesis of the present research. It appears that there is a greater occurrence of maltreatment in maternal BPD homes when compared to homes without maternal BPD. Possible reasons for the greater frequency of maltreatment in maternal BPD homes is the childhood experiences of the mothers; perhaps these mothers are continuing the cycle of maltreatment (Egeland et al, 1988) or, perhaps, just the presence of a mental illness may be a cause of the greater frequency of maltreatment in maternal BPD homes (Links et al, 1992).

Further, the results suggest that the subtype of neglect, whether or not it is occurring with the other subtypes, is the distinguishing subtype between the maternal BPD and control groups. This finding may be attributed to the attachment aspect of BPD, since BPD is thought to be, in part, an attachment disorder (Fogny et al, 2000). Perhaps the BPD mother did not have a secure attachment with her parent(s) and is unable to form a secure attachment with her child by neglecting the child's physical and/or emotional needs. Furthermore, considering the requirements for forming a secure attachment, of main importance in this case being the presence and responsiveness of the attachment figure (Greenberg, Cicchetti, & Cummings, 1990), the results found of a

higher frequency of neglect in maternal BPD homes shows that children in this group are at greater risk for developing an insecure attachment to their mother.

Additionally, the composite variable of physical abuse and sexual abuse yielded marginally significant results. It should not be overlooked that neither physical abuse nor sexual abuse alone was significant, unlike in the case of neglect. This may be due to the interpersonal nature (relationship between perpetrator and victim is one of abusive action) of both physical abuse and sexual abuse. Both of these subtypes are similar in that some action is being imparted on the child. This action taken against the child may be due to the affective instability, inappropriately intense anger, and/or lack of control of anger that are characteristics of BPD (American Psychiatric Association, 1994). Thus, she, due to a lack of emotional control, responds to the child's needs by physical action against that child in the form of physical and/or sexual abuse.

Hypothesis 2. The results concerning the second aspect of the present research support the second hypothesis that maltreatment is related to representations of parents in child narratives. It was found that maltreatment is associated to fewer positive representations of parents and greater negative representations of parents. The lack of positive representations of parents may be attributed to the maltreatment subtype of neglect, as neglect appears, from findings in the present research, to be very frequent among child with mothers who have BPD. Additionally, perhaps the significance of negative parent representations is associated with the presence of physical abuse and/or sexual abuse. The correlations of the subtypes of maltreatment versus representations of parents appear to support this; however, further validation is required.

Limitations. While the results of the present research support the hypotheses of this research, there are, inevitably, limitations. The first limitation was the small sample size that was used. It is possible that if the research used a larger sample size, results may have moved from marginally significant to significant on the .05 or .01 level and/or non-significant results may have been found to be marginally significant or significant on the .05 or .01 level. Also, a larger sample size may provide more cases of single subtypes of maltreatment present, thusly showing the possible outcomes attributed to specific subtypes. Moreover, a larger sample size would help to validate the significant findings of the small sample size in the present research.

In addition, while the sources for determining the maltreatment experienced by the participants was thought to be sufficient, additional sources for this information (i.e., medical reports) would aid in the identification of maltreatment episodes.

Future Research. Future research possibilities stemming from the present research include research on the link between maternal BPD and the experience of child maltreatment. While the present research found some significant results, too many limitations prevent the findings from leading to valid conclusions. The present findings, therefore, add support to the importance of research in this area as it is crucial for the mental health of children who may be experiencing maltreatment.

Another possibility for future research stemming from the present research is the effect of maltreatment subtype on the narrative representations of parents. The significant results obtained from the present research raise questions as to whether or not the results obtained are due to a fluke that was made significant because of the small

sample size or if there truly is a significant trend. Further, this would provide insight into some of the specific detrimental effects of the subtypes of maltreatment.

Additionally, future research on the usefulness of preschooler narratives by department of children services to identify children who are being maltreated. This would be based on the parental representations presented in the narratives and additional variables (i.e., parental aggression, attachment, etc) found in the narratives that could provide insight.

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