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Effect of Maternal Borderline Personality Disorder on Emotional Availability in Mother-Child Interactions

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To the Graduate Council:

I am submitting herewith a thesis written by Rebecca Devan Trupe entitled "Effect of Maternal Borderline Personality Disorder on Emotional Availability in Mother-Child Interactions." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

Jenny Macfie, Major Professor

We have read this thesis and recommend its acceptance:

Deborah P. Welsh, Paula J. Fite

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

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A Thesis Presented for
the Master of Arts
Degree
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Abstract

Individuals with borderline personality disorder (BPD) experience severe and pervasive disturbances in the development of attachment relationships, identity, and emotion regulation. Given these deficits, mothers diagnosed with BPD are likely to experience significant difficulties in parenting their children. The present study examined the effect of maternal BPD and borderline personality features on emotional availability in interactions between mothers with BPD and their 4- to 7-year-old children. In a low socioeconomic status (SES) sample of $n = 35$ children of mothers diagnosed with BPD and $n = 35$ normative comparisons, groups were compared on maternal and child emotional availability, and self-reported maternal borderline personality features were assessed across the sample as a whole. No significant differences in emotional availability were found between groups. Across the sample as whole, however, maternal borderline personality features of affective instability, identity disturbance, negative relationships, and self-harm were significantly correlated with maternal intrusiveness and maternal hostility. Maternal borderline personality features of affective instability and negative relationships were significantly associated with maternal sensitivity, child responsiveness, and child involvement. Results are discussed in terms of putative precursors to BPD and preventive interventions.

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Chapter 1. Introduction and Literature Review

Individuals with borderline personality disorder (BPD) may experience stormy and volatile relationships, affective instability, identity disturbances, and self-destructive behavior (American Psychiatric Association, 2000). Given these pervasive psychological and emotional deficits, and given that BPD affects women in their child-bearing years, it is likely that a mother diagnosed with BPD may face considerable challenges in fulfilling the tasks of parenting and promoting her child's development (Macfie, 2009; Macfie & Swan, 2009; Newman & Stevenson, 2005; Newman, Stevenson, Bergman, & Boyce, 2007).

Moreover, from a developmental psychopathology perspective (Cicchetti, 1984; Sroufe & Rutter, 1984), study of the children of women with psychological disorders like BPD may yield important insight into the understanding of links between early adaptations and later disorder, as these children comprise a group at high risk for developing the disorder themselves (Lenzenweger & Cicchetti, 2005; Macfie, 2009; Newman & Stevenson, 2005). Exploring both typical and atypical development provides opportunities for uncovering pathways towards and away from various disorders. From such a perspective, studying development in the children of mothers with BPD may help identify factors that might make the development of disorder more likely, thereby aiding in the development of effective preventive interventions (Cicchetti, 1984; Sroufe & Rutter, 1984).

In keeping with this perspective, there is an important need to understand the parenting challenges faced by mothers with BPD so as to identify potential risks to their offspring that may lead to later disorder or maladjustment. It is theorized that the attachment, affective, and identity disturbances inherent in BPD are likely to impact the quality of maternal caregiving, placing the

dyad at risk for dysfunctional patterns of mother-child interaction (Macfie, 2009; Newman & Stevenson, 2005). One domain that may be negatively impacted by BPD is emotional availability. Emotional availability is a relational construct involving emotional expression and responsiveness between parent and child (Biringen & Robinson, 1991; Biringen, Robinson, & Emde, 1998; Easterbrooks & Biringen, 2000). The construct is conceptualized to include maternal sensitivity, maternal structuring, maternal intrusiveness, maternal hostility, child responsiveness to mother, and child involvement of mother as important for understanding the quality and health of the parent-child relationship (Biringen, 2000; Biringen & Robinson, 1991).

Deficits in emotional availability have been associated with a wide range of negative influences on a child's early development, placing the child at risk for insecure and disorganized attachment, difficulties with emotion regulation, increased aggression, and difficulties in interpersonal adjustment (Biringen et al., 2005; Easterbrooks & Biringen, 2000; Little & Carter, 2005; Swanson, Beckwith, & Howard, 2000; Ziv, Aviezer, Gini, Sagi, & Koren-Karie, 2000). Moreover, we know from previous studies that mothers with BPD demonstrate intrusive and insensitive behavior with their 2-month old infants (Crandell, Patrick, & Hobson, 2003), and that these infants are more likely to demonstrate disorganized patterns of infant-mother attachment at 13-months (Hobson, Patrick, Crandell, Garcia-Perez, & Lee, 2005). The effect of BPD on the mother-child relationship beyond infancy is, however, unknown. The present study investigates the effect of maternal BPD and maternal borderline personality features on emotional availability in interactions between mothers with BPD and their 4- to 7-year-old children.

Borderline Personality Disorder (BPD)

Compared to the extensive studies of the offspring of mothers with depression, there have been few empirical studies of the risk of psychopathology in children of mothers with BPD. A severe and chronic mental disorder, BPD is based on a constellation of clinical features across several domains, characterized by chronic instability and impulsivity in the individual's interpersonal relationships and regulation of emotions. Other diagnostic criteria include frantic efforts to avoid real or imagined abandonment, recurrent suicidal or self-injurious behavior, chronic feelings of emptiness, and brief paranoid states or severe dissociation (American Psychiatric Association, 2000).

A large nationally representative study found that BPD affects approximately 5.9% of the general population (Grant et al., 2008), a prevalence rate twice as high as previously reported (American Psychiatric Association, 2000). In clinical populations, the disorder affects approximately10% of outpatient mental health clinic populations and 20% of psychiatric inpatients (American Psychiatric Association, 2000). Although BPD occurs with equal rates across men and women, women with BPD appear to experience more substantial mental and physical disability (Grant et al., 2008). Of those diagnosed, 8-10% will commit suicide (American Psychiatric Association, 2000). The most common course of BPD follows a path of chronic instability marked by episodes of serious emotional dysregulation and impulsivity, coupled with high levels of use of health and mental health resources (American Psychiatric Association, 2000).

A diagnosis of BPD thus reflects pervasive disturbances in relationships, identity, and emotion regulation. It is likely that individuals with BPD experience frequent emotional turmoil,

as well as substantial impairment in social and occupational domains (Lenzenweger & Cicchetti, 2005). Although clinical samples have often been used to document the various dysfunctions associated with a diagnosis of BPD, it may also be important to examine individuals with borderline personality features—individuals who posses characteristic features that are prominent in BPD, but may or may not necessarily meet the full diagnostic criteria (Morey, 1991; Zeigler-Hill & Abraham, 2006). Indeed, it has been suggested that personality disorders may be best conceptualized along a continuum of personality structures, rather than as discrete categorical diagnoses (Widiger, 1992; Widiger & Trull, 2007). The Borderline Features scale of the Personality Assessment Inventory (Morey, 1991), which was designed to assesses features of BPD along a self-report continuum, correlates very highly with BPD diagnosis. In keeping with this dimensional perspective, it may be useful to examine borderline personality features in both clinical and nonclinical samples, as individuals in these populations may possess differing levels of the features that are associated with BPD. In nonclinical samples, borderline personality features have been shown to be associated with higher levels of interpersonal distress (Trull, 1995), as well as unstable self-esteem, unstable negative affect, and labile reactivity to social interactions (Zeigler-Hill & Abraham, 2006). Thus, individuals with borderline personality features may experience difficulties in domains similar to the dysfunction experienced by individuals with BPD (Zeigler-Hill & Abraham, 2006).

BPD & Parenting

It has been suggested that individuals who spend considerable time with a person affected by BPD, such as their children, may be subjected to significant stresses and strains associated with the impact of BPD on the family (Lenzenweger & Cicchetti, 2005). The core features of

BPD may have an immediate impact on parenting, affecting the parent's capacity to manage emotional responses, process and attend to child communication, and promote attachment security and child development. Mothers with BPD appear to have difficulties understanding and responding to their infant's emotional state, making it more likely that they will misinterpret or even avoid the infant's communication. Processing and responding in an empathic way to the emotional communications of their infants may be particularly challenging for these mothers (Newman & Stevenson, 2005). Additionally, mothers with BPD may struggle to modulate the range and intensity of emotions that are aroused in the parenting relationship, leading them to feel estranged, anxious, overwhelmed, or even angry with their infant from birth (Newman & Stevenson, 2005). Moreover, the families of mothers with BPD are more likely to experience instability and disruption in their home environments, which may further affect the parenting capacities of the mother with BPD (Feldman et al., 1995). Mothers with BPD, therefore, can be seen as parents at high risk for having attachment and relationship difficulties with their children, as well as dysfunctional patterns of mother-child interaction and communication (Newman & Stevenson, 2005).

Risk to Offspring of Mothers with BPD

Although research and theory suggest that the parenting skills of women with BPD may be impaired by the mood lability, irritability, impulsivity, and reality distortion that characterize the disorder, relatively few empirical studies have examined the effects of maternal BPD on child development. In empirical studies, children of mothers with BPD are more likely to be diagnosed with psychiatric disorders such as impulse-control disorders, attention disorders, and disruptive behavior problems in middle- to late-childhood (M. Weiss et al., 1996). Furthermore,

child and adolescent offspring (ages 11-18) of mothers with BPD exhibit high rates of emotional and behavioral problems, such as anxiety, depression, problems with attention, aggression, and delinquency (Barnow, Spitzer, Grabe, Kessler, & Freyberger, 2006).

In terms of representations of the self, other, and relationships, preschool-aged children of mothers with BPD tell stories that characterize the caregiver-child relationship with more role reversal, fear of abandonment, and negative parent-child relationship expectations, and represent themselves as more incongruent, shameful, and emotionally dysregulated than do normative comparisons (Macfie & Swan, 2009). Moreover, children (ages 11-18) of mothers with BPD tend to perceive their mothers as overly protective, and describe themselves as having very low self-esteem (Barnow et al., 2006).

To date, only three studies have directly examined interactional patterns between mothers with BPD and their children. As mentioned previously, we know from studies with both 2- and 13-month-old infants that mothers with BPD as a group demonstrate more insensitivity, more intrusiveness, and less awareness of the infant's need for emotion regulation, and that their infants are less available for positive engagement with mother (Crandell et al., 2003; Hobson et al., 2005). We also know that 80% of infants of mothers with BPD are more likely to display disorganized attachment to their mothers at 13 months (Hobson et al., 2005). These findings suggest that mothers with BPD have particular difficulty navigating the domains of sensitivity and intrusiveness in their interactions with their infants. Moreover, it seems likely that these mothers will face challenges in providing emotionally available relationships to their children overall. However, these studies were limited by small sample sizes, with $n = 8$ and $n = 10$

mothers in the BPD groups, and control groups that were not precisely matched on demographic factors.

In the most recent study, Newman and colleagues (2007) investigated emotional availability in mothers with BPD and their 3- to 36-month-old infants during free play sessions. Using the same construct of emotional availability utilized here, they found that mothers with BPD demonstrated less sensitivity and less optimal structuring in their interactions with their infants. Moreover, their infants were less responsive to and involving of their mothers. In addition, the mothers with BPD reported feeling less satisfied, less competent, and more distressed. Interestingly, in this sample no differences were found for hostility or intrusiveness. Again, these preliminary findings were limited by a small sample size (n = 14 mothers in the BPD group). Furthermore, the groups were not matched on demographic variables, and significant group differences were accounted for by creating a composite "social disadvantage" variable, rather than controlling for significant differences between groups.

Together, these three studies of mothers with BPD and their infants support the view that mothers with BPD find the interactional and emotional aspects of parenting to be challenging. The findings suggest that the offspring of mothers with BPD are exposed to a combination of risk factors, placing them at greater risk for behavioral, emotional, and somatic problems, as well as more severe psychopathology. All of this existing research, however, has focused only on small samples of interactions between mothers with BPD and their infants. To date, no studies have examined emotional availability in the relationships between mothers with BPD and their children as they move beyond infancy and into early- to-middle childhood. As children approach ages 4 to 7, they move beyond the developmental task of attachment into the domains

of self and emotional regulation (Sroufe, Egeland, Carlson, & Collins, 2005). Studies of how maternal BPD or maternal borderline personality features might affect mother-child interactions at this stage of development are lacking, and represent a significant gap in existing research.

Emotional Availability

The construct of emotional availability provides a unique framework for observing patterns of interaction between mothers with BPD and their children. A dyadic construct, emotional availability refers to emotional openness, warmth, mutual understanding, and communication between a parent and a child, and emphasizes the bidirectional quality of emotional dialogue between partners in a relationship (Biringen, 2000; Biringen & Robinson, 1991). Characterized by emotional "attunement," emotional availability reflects not only the parent's emotional signals, but also the emotional signals sent by the child, and the parent's ability to interpret and understand the child's emotional experience (Biringen, 2000; Biringen & Robinson, 1991; Easterbrooks & Biringen, 2000). It denotes the overall quality of the affective relationship between parent and child (Biringen, 2004).

Emotional availability is geared specifically towards research and the assessment of parent-child interactions, from infancy through age 8 (Biringen & Robinson, 1991; Biringen et al., 1998). A growing body of research using this construct shows that emotional availability is associated with the quality of the attachment relationship in infancy (Easterbrooks & Biringen, 2000), as well as other aspects of development in early- to middle-childhood years, such as emotion regulation, social relationships, and classroom adjustment (Biringen, 2000; Biringen et al., 2005; Little & Carter, 2005).

Theoretical Background of Emotional Availability

The construct of emotional availability utilized here is influenced both by early writings on emotional availability in the clinical literature and by elements of attachment theory (Biringen, 2000; Biringen & Robinson, 1991). Historically, the term emotional availability was used to describe the degree of emotional expressiveness, responsiveness, and attunement within the relationship between therapist and patient (Emde, 1980; Emde & Easterbrooks, 1985). In applying this concept to the parent-child relationship, Emde and his colleagues placed importance on the role of emotions and emotional communication, deeming emotion to be a "sensitive barometer" of the relationship between a parent and a child (Emde & Easterbrooks, 1985, p. 80).

Within the parent-child relationship, emotional availability refers to the mother's supportive presence during her child's exploratory behavior, and her acceptance of a broad range of emotional expressions by the child. Emde and colleagues theorized that the mother's physical and emotional availability played an important role in promoting the child's self and emotional expression (Emde, 1980; Emde & Easterbrooks, 1985). Mahler, Pine, and Bergman (1975) used emotional availability in a similar vein to describe a supportive maternal presence in the context of the child's exploratory forays and practice of autonomy. As the mother's supportive encouragement and acceptance facilitates her child's explorations, her emotional availability is used to provide a secure base for the child (Mahler et al., 1975).

In addition to being influenced by earlier ideas about emotional availability, the current conceptualization of emotional availability is consistent with attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969/1982; Bretherton, 1992; Easterbrooks & Biringen,

2000). Attachment theory proposes that experience with an emotionally accessible and responsive caregiver helps infants come to regulate their own emotions adaptively, first within the dyad and then independently (Ainsworth et al., 1978; Bowlby, 1969/1982; Easterbrooks & Biringen, 2000). Most notably, emotional availability incorporates Mary Ainsworth's construct of maternal sensitivity, a fundamental element for the development and maintenance of a secure attachment relationship. Maternal sensitivity, characterized by warmth and attunement, is an important attribute of the attachment figure, and involves the mother's clarity of perception about her infant's signals, and her prompt responsiveness to them (Ainsworth et al., 1978; Biringen, 2000; Bretherton, 1992).

Another important component of attachment theory used in the development of emotional availability was the concept of secure base behavior. In healthy parent-child interactions, secure base behavior refers to a balance between exploration and connection. Securely attached children are able to use their attachment figure as a secure base for exploration of the environment and as a safe haven to which to return for reassurance (Bretherton, 1992). Moving away from the parent is possible because the child is confident that the parent will remain available, and moving towards is possible because the child is sure of the parent's acceptance and welcome (Ainsworth et al., 1978; Biringen, 2000; Bretherton, 1992).

Research Conceptualization of Emotional Availability

The current research conceptualization of emotional availability, as it is utilized here, integrates components of attachment theory within the framework of clinical emotional availability perspectives. Emotional availability incorporates factors above and beyond maternal sensitivity and secure base behavior for understanding the quality of the parent-child relationship

from infancy to early childhood (Biringen, 2000; Biringen & Robinson, 1991). Emotional availability, as it is used here, more broadly encompasses other aspects of behavior that may contribute to individual differences in the quality of the parent-child relationship. It is a *dyadic* construct which refers to emotional exchange between interactive partners (Biringen, 2000). In addition to examining the role of the primary caregiver, the construct of emotional availability also includes the child's contribution to the emotional regulation of the relationship (Biringen et al., 1998; Easterbrooks & Biringen, 2000).

An emotionally available mother uses a sensitive, structuring, nonintrusive, and nonhostile style of caregiving that facilitates the child's ability to successfully regulate emotion and behavior. This in turn enables the child to reciprocate in a responsive and involving manner towards the mother. Although parent and child aspects of emotional availability are viewed on separate dimensions, they are conceptualized in terms of the dyadic relationship. Emotional availability is characterized by congruence, mutual interaction, and positive shared meaning, rather than discordance between partners. Thus, an overly sensitive mother coupled with an unresponsive child would not comprise an emotionally available dyad—neither parent nor child can "look good" on their own (Biringen, 2000; Biringen et al., 1998; Easterbrooks & Biringen, 2000).

Each dimension of emotional availability is embedded within an emotional framework, taking into account the bidirectional expression and communication of emotional signals. Both the maternal and child dimensions are judged holistically within the context of the interaction, and viewed in terms of a balance of emotional connection and autonomy between parent and child. It is worth noting that optimal emotional availability does not mean constant sensitivity or

responsiveness; instead, an optimal degree of parental and child emotional availability reflects moderate, flexible qualities that vary depending on age and context (Biringen et al., 1998; Easterbrooks & Biringen, 2000).

Emotional Availability and Child Development

There is a growing body of empirical research that suggests that emotional availability is related to the quality of attachment, as well as to other meaningful aspects of the parent-child relationship, across age spans of 12 months to 7 years (Biringen, 2000, 2004). Studies investigating the link between emotional availability and attachment have often used the Strange Situation procedure (Ainsworth et al., 1978) to assess for attachment security in infancy.

In general, studies using the Strange Situation have found emotional availability to be positively associated with infant attachment security, demonstrating significant links with observed assessments of emotional availability and observed assessments of attachment (Easterbrooks, Biesecker, & Lyons-Ruth, 2000; Swanson et al., 2000; Ziv et al., 2000). In these studies, dyads with more optimal parental and child emotional availability show more securely-attached infants. Swanson and colleagues (2000) demonstrated significant links between high caregiver intrusiveness and avoidant and disorganized attachment in a sample of drug-abusing mothers. Similarly, in a study of Israeli dyads, mothers who were less sensitive, less optimally structuring, and more intrusive were more likely to have insecurely or ambivalently attached infants, who were in turn lower in responsiveness to and involvement of mother (Ziv et al., 2000). Furthermore, a longitudinal study by Easterbrooks and colleagues found that infant attachment security predicted emotional availability in later interactions: securely attached 18-month-old infants and their parents showed greater emotional availability at a 7-year follow-up.

In contrast, mothers of disorganized infants were less sensitive and less appropriately structuring than mothers of secure infants. Moreover, as 7-year-olds, children who were disorganized in their attachment as infants continued to be less optimally involving of their mothers than children who were secure as infants (Easterbrooks et al., 2000). In sum, studies on emotional availability and attachment provide a pattern of findings suggesting that infants and children who have emotionally available relationships with their parents or caregivers are more likely to also show secure patterns of attachment, while dyads who have less emotionally available relationships are more likely to experience disruptions in the attachment system.

Sequelae of Deficits in Emotional Availability

Consistent with the research on emotional availability and attachment, parent-child relationships characterized by deficits in emotional availability place the child at risk for poorer psychological adjustment across several areas of development. In a study of emotion regulation and reactivity in 12-month-old infants, Little and Carter (2005) found that infants from dyads with lower emotional availability had greater difficulty regulating their emotional states both during and after an emotionally challenging event. In particular, greater maternal hostility was significantly associated with infant difficulty in regulating distress when the mother was not present. These findings suggest that even at a young age, the mother's emotional availability towards her infant has a noticeable affect on the infant's ability to regulate his or her own emotions in an adaptive way, particularly during distressing conditions.

A study of emotional availability and social development found that deficits in emotional availability were predictive of poorer adjustment in kindergarten (Biringen et al., 2005). Maternal hostility, low child responsiveness to mother, and low child involvement of mother

during preschool were correlated with higher levels of aggression in the kindergarten classroom. Additionally, children demonstrating poorer emotional availability towards their mothers were more likely to be aggressive with their classmates, and/or be the target of aggression by other peers. This suggests that children who are less emotionally responsive to and involving of their mothers prior to kindergarten entry are more likely to have problems with aggression and adjustment in the classroom one year later (Biringen et al., 2005). The findings highlight the impact that less emotionally available caregiver relationships during early childhood years can have on later child adjustment and development.

Groups at High-Risk for Deficits in Emotional Availability

There is evidence to suggest that maternal factors, such as mental illness, maltreatment, substance use, and socioeconomic status, may be associated with dysfunctional patterns of mother-child interaction (Crittenden & Bonvillian, 1984; Lyons-Ruth, Connell, Zoll, & Stahl, 1987). Mothers with BPD, in particular, are likely to face challenges in these areas, due to the pervasive psychological and emotional deficits associated with the disorder (Newman & Stevenson, 2005). Such high-risk mothers are likely to have greater difficulties providing emotionally available relationships to their children. For example, depressed mothers are often rated as hostile and intrusive, insensitive, withdrawing, or showing negative affect, and their infants often exhibit distress and avoidance of mother (Downey & Coyne, 1990; Easterbrooks et al., 2000). Moreover, mothers with anxiety, depression, or comorbid disorders show poor reciprocity, increased intrusiveness, and greater maternal distress in interactions with their infants (Feldman, 2007). It is likely that mothers with BPD, who experience mood disturbance and affective instability, may demonstrate similar disturbances in interactions with their children.

Child maltreatment is another risk factor that may be linked to the development of BPD symptoms (Carlson, Egeland, & Sroufe, 2009). Maltreating mothers are likely to experience dysfunctional interactions with their children. In a sample of high-risk mothers and their 9-to-18-month-old infants, maternal risk status was differentially associated with maternal sensitivity (Crittenden & Bonvillian, 1984). Abusive and neglecting mothers were less sensitive to infant cues, but showed two distinctly different patterns of responses: abusing mothers were generally more active, interfering, and hostile, whereas neglecting mothers were more uninvolved, passive, and withdrawn. Their infants, in turn, were less willing to engage in interaction with their mothers, and demonstrated poorer psychological adjustment (Crittenden & Bonvillian, 1984).

Moreover, a separate study of maltreating mothers found a similar style of hostile and intrusive caregiving, in which they demonstrated hostility toward their infants in subtle ways and interfered with their infants' goals and activities. Their infants were more resistant to and avoidant of interactions with mother (Lyons-Ruth et al., 1987). In a longitudinal study, infants of intrusive mothers later showed poorer academic, social, emotional, and behavioral adjustment in their early school years (Egeland, Pianta, & O'Brien, 1993). It is likely that mothers with BPD may have similar difficulties with sensitivity, hostility, and intrusiveness in their interactions with their children.

Mothers with BPD are at risk for difficulties with substance abuse, as substance use is a common symptom of the disorder (American Psychiatric Association, 2000). Studies find that substance-abusing mothers also show patterns of hostile intrusiveness, as well as poorer quality of instruction, low maternal confidence, and diminished child persistence (Johnson et al., 2002;

Swanson et al., 2000). Similarly, mothers of low-income and low socio-economic status are typically less sensitive, more interfering and overdirective, and more hostile, both in dyads with infants (Crittenden & Bonvillian, 1984; Ziv et al., 2000) and dyads with preschool-aged children (Biringen et al., 2000; Crittenden & Bonvillian, 1984; Ziv et al., 2000).

The existing research suggests that mothers with BPD are likely to constitute a particularly high-risk group for disturbances in emotional availability, as the core symptoms of the disorder may interfere with the mother's capacity for emotional expressiveness and responsiveness in her relationship with her child. Furthermore, mothers with BPD are likely to face challenges in building on a foundation of emotional availability to help their children work through developmental tasks of emotion regulation and expressions of autonomy. It has been theorized that the problems with emotion dysregulation, unstable attachment relationships, and identity disturbance evident in individuals with BPD may make it difficult for mothers with BPD to help their children successfully navigate through similar developmental domains in early childhood (Macfie, 2009; Sroufe et al., 2005). Thus, it is expected that the pervasive difficulties associated with BPD are likely to interfere with emotional availability, placing the children of mothers with BPD at risk for future problems with emotion regulation, interpersonal relationships, and psychological adjustment (Barnow et al., 2006; Little & Carter, 2005; Macfie, 2009; M. Weiss et al., 1996; Zanarini et al., 1997).

Present Study

In the current study, research on emotional availability was extended to children ages 4-7 whose mothers have BPD. Children ages 4 to 7 whose mothers have BPD were compared with a comparison group of children whose mothers do not have BPD. It was hypothesized that 1) mothers with BPD would be less emotionally available to their children when compared to mothers without BPD. Specifically, it was hypothesized that mothers with BPD would demonstrate less sensitivity, less appropriate structuring, more intrusiveness, and more hostility than would comparisons. Additionally, it was hypothesized that 2) the children of mothers with BPD would demonstrate less optimal emotional availability when compared to children of mothers without BPD. Specifically, it was hypothesized that children of mothers with BPD would display less optimal responsiveness to and less optimally involvement of their mothers than would comparisons.

In addition to measuring a diagnosis of BPD categorically, BPD features were assessed continuously from maternal self-report in order to assess their association with emotional availability. Across the sample as a whole, it was hypothesized that BPD features (maternal affective instability, maternal identity disturbance, maternal negative relationships, and maternal impulsive self-harm) would be 3) significantly correlated with maternal emotional availability measures of sensitivity, structuring, hostility, and intrusiveness, as well as 4) significantly correlated with child emotional availability measures of responsiveness to and involvement of mother.

Chapter 2. Method

Participants

The sample consisted of $N = 70$ children (ages 4-7) and their mothers, recruited from both rural and urban areas in a 5-county region: $n = 35$ children whose mothers had BPD (16 boys, 19 girls), and $n = 35$ children whose mothers did not (19 boys, 16 girls). The children's average age was 5 years, 4 months ($SD = 10.8$ months, range 4 years 0 months to 6 years 11 months). Across the low income sample ($M = \$31, 841$), 3% of participants were African American, 9% were biracial, and 11% were Hispanic. The groups were matched on demographic variables, including child age, family income, presence of partners, number of adults and number of children in the home, and maternal education. See Table 1 for descriptive statistics and tests of group differences.

Mothers with BPD were recruited from two sources: clinicians in mental health settings and directly from the community. Referring clinicians included therapists, psychiatrists, nurse practitioners, case managers, and other mental health professionals (i.e., from hospitals, private practice, community outpatient clinics, homeless shelters, professional organizations). Additionally, mothers with BPD were recruited directly from the community. Flyers posted in community locations listed questions about symptoms of BPD, including "Do you fear abandonment in relationships? Do you find it difficult to control your anger? Are you very impulsive? Do your relationships have extreme ups and downs? Have you hurt yourself or threatened to do so?" Mothers who met these criteria and had a child aged 4-7 were invited to apply for the study.

Comparison participants were also recruited from two sources: programs for children and directly from the community. Programs for children included preschools, Head Start, and Boys' and Girls' Clubs. Comparison mothers were recruited directly from the community with posted flyers that listed information about the study. The flyers invited mothers with a child aged 4-7 to take part in a study on parent-child interactions.

Procedures

Home Visit. All potential participants were screened with a brief telephone interview administered by a doctoral-level graduate student to assess for study eligibility. After the phone screening, participants completed an initial home visit lasting approximately an hour and a half, which took place in the participant's home or an alternative meeting place (if requested). During the home visit, two research assistants met with the participant and obtained informed consent, a preliminary maternal self-report screen for BPD symptoms, and demographic information. Mothers were compensated with a gift card for their participation in the home visit.

Laboratory Visit. Eligibility for a laboratory visit was determined based on maternal self-report of BPD symptoms (present in BPD group, not present in comparison group). If eligible, the participant and her child were then invited to the university's research lab to take part in a laboratory visit lasting approximately three hours. During the laboratory visit, maternal psychopathology was assessed via a clinical interview, and mother and child dyads were videotaped during a 20-minute interaction task. For their participation in the lab visit, mothers were compensated with an additional gift card and children were given a small toy.

Measures

Demographics. Demographic information was collected with a maternal interview (MHFC, 1991). See Table 1 for details.

Psychiatric diagnosis. BPD diagnosis was measured categorically (yes, no). To assess for BPD, mothers completed a preliminary self-report screen during the home visit (First, Gibbon, Spitzer, Williams, & Benjamin, 1997). This initial assessment of BPD was followed up during the lab visit with the Structured Clinical Interview for DSM-IV-TR Axis II Disorders, SCID-II (First et al., 1997). The SCID-II is a semi-structured interview designed to assess, evaluate, and diagnose the presence of personality disorders. The SCID-II has been found to yield reliable diagnoses for personality disorders, although the reliability varies by administration setting, interviewer training, and by personality disorder diagnosis (First et al., 1997). For test-retest reliability of BPD diagnosis, one study reported kappas as low as 0.02 (R. D. Weiss, Najavits, Muenz, & Hufford, 1995); however, the majority of studies have reported more substantial agreement, with ranges of kappas from 0.48 (First et al., 1995), 0.79 (Arntz et al., 1991), 0.87 (Malow, West, Williams, & Sutker, 1989), and 0.91 (Maffei et al., 1997).

Borderline personality features. In addition to measuring BPD diagnosis categorically, borderline personality features were assessed continuously across the sample using the Borderline Features Scale of the Personality Assessment Inventory (Morey, 1991). The PAI is a 344-item self-report measure of psychopathology and personality traits. Designed to reflect the multi-faceted nature of personality functioning, the PAI has shown high internal consistency in census, college, and clinical samples (Morey, 1991). The Borderline Features Scale of the PAI includes 4 subscales that pertain to characteristic features of borderline personality functioning:

affective instability, which assesses intense and unmodulated emotional experiences, especially anger; *identity disturbance*, which measures confusion about identity and lack of an integrated sense of self; *negative relationships*, which assesses acute dependence, fear of abandonment, and mistrust; and *self-harm*, which measures impulsivity and tendencies to hurt the self when distressed.

A raw score of 38 (t-score of 70) on the Borderline Features Scale of the PAI has been used as a cut-off for determining the presence of prominent features of BPD in nonclinical samples (Morey, 1991; Trull, 1995). Scores at or above this cutoff indicate clinically significant features of BPD, as well as general symptoms of impulsivity, emotional lability, feeling misunderstood by others, anger, suspiciousness, anxiety, neediness, and ambivalence towards others (Morey, 2003). In the current sample, BPD diagnosis (yes/no) was significantly correlated with *affective instability,* $r = .57, p < .01$, *identity disturbance, ,* $r = .60, p < .01$, *negative relationships,* $r = .46, p < .01$, *self-harm,* $r = .611, p < .01$, and *total borderline features,* $r = ..67, p < .01$.

Mother-child interaction. Mothers were observed interacting with their children during a 20-minute filmed interaction task. The mother-child interaction included both a storytelling task (10 minutes) and a puzzle-solving task (10 minutes). Both mother-child interactions were filmed through a one-way mirror. For the storytelling task, mothers were given a textless storybook and provided with the following instructions: "Please read this book to your child. It does not have any words, so read the story in a way that makes sense to you." The books used were *A Boy, a Dog, a Frog, and a Friend*, by Mercer and Marianne Mayer, or *Frog On His Own* by Mercer Mayer. Because the books did not contain written text for the mother to read out loud to the

child, it was expected that they would elicit a greater variety of mother and child behaviors during the interaction.

For the puzzle-solving task, children were given puzzles to solve. The puzzles were administered one at a time, advancing in level of difficulty. Mothers were provided with the following instructions: "This puzzle is for your child to complete, but feel free to give any help you think your child might need"; these instructions were repeated each time the child moved on to the next puzzle. During both of the interaction tasks, the examiner stepped out of the room so that mothers and children could complete the tasks privately.

Emotional Availability Scales. The Emotional Availability Scales, 3rd edition (EAS; (Biringen et al., 1998), were used to code the videotaped mother-child interactions and assess the quality of emotional availability in the dyads. The storytelling task and puzzle-solving task were each coded separately using the Middle Childhood Version of the EAS. See Table 2 for means and *SD*s for each group on both interaction tasks.

Designed to assess the emotional availability construct through observations and ratings of parent-child interactions, the EAS consists of six globally rated dimensions, each concerned with emotional communication and interaction in the parent-child dyad. The four maternal scales consist of sensitivity, structuring, nonintrusiveness, and nonhostility, and the two child scales are comprised of responsiveness to and involvement of mother (Biringen et al., 1998). Both the maternal and child dimensions are judged holistically across the interaction, rather than as frequency counts of discrete behaviors. The anchor points of the scales are defined in whole points, but can be coded by half-points as well. The psychometric properties of the EAS have been well established (Biringen, 2000) and have demonstrated both short- and long-term

reliability and continuity across contexts of observations (Biringen et al., 2005; Bornstein, Gini, Putnick et al., 2006; Bornstein, Gini, Suwalsky, Putnick, & Haynes, 2006). Maternal variables assessed included the dimensions of sensitivity, structuring, intrusiveness, and hostility. Child variables included the dimensions of responsiveness and involvement (Biringen et al., 1998).

Maternal sensitivity. Maternal sensitivity refers to the mother's awareness of and contingent responsiveness to communications of the child, affective quality of interactions, quality of conflict negotiations, and creativity during play; scores ranges from 1 (*highly insensitive*) to 9 (*highly sensitive*). A highly sensitive mother is successful at reading the child's emotional cues, is emotionally responsive to the child, and demonstrates genuine, authentic, and congruent interest and pleasure in interactions, whereas a highly insensitive mother displays few strengths in these areas and is either passively or harshly disconnected in interactions. Midrange scores indicate inconsistent sensitivity, in which the mother appears "apparently sensitive" but lacks a real connection that is in the best interests of the child.

Maternal structuring. Maternal structuring denotes the ability of the mother to appropriately facilitate, scaffold, or organize the child's play, exploration, or routine by providing rules, regulations, and a supportive framework for interaction without overwhelming the child's autonomy; scores range from 1 (*nonoptimal*) to 5 (*optimal*). A mother with high scores on maternal structuring is able to successfully structure interactions in ways to which her child is emotionally and behaviorally receptive. In contrast, a mother who demonstrates low scores on structuring is unable to provide an adequate scaffold for the child and may appear

permissive and indulgent. Inconsistent structuring, in which the mother attempts to structure but the attempts are unsuccessful, falls in the mid-ranges of the scores.

Maternal intrusiveness. Maternal intrusiveness was assessed using the Maternal Nonintrusiveness scale of the EAS (Biringen et al., 1998). The Nonintrusiveness scale measures the quality of intrusiveness in the interaction, beginning with the least optimal behaviors and increasing to the most optimal behaviors. It assesses the degree to which the mother is able to be available to the child during the interaction without interrupting the child by being interfering, overprotective, or overdirective, or overstimulating; scores range from 1 (*intrusive*) to 5 (*nonintrusive*). High scores on nonintrusiveness suggest a mother who is able to "be there" for the child without overpowering the interaction, although high scores may also indicate a mother who is too passive to intrude. Scores in the middle denote mothers who are more directive but do not clearly take over, while low scores refer to a mother who controls the interactions and does not leave space for the child to explore or lead.

Maternal hostility. Maternal hostility was assessed using the Maternal Nonhostility scale of the EAS (Biringen et al., 1998). The Nonhostility scale measures the quality of hostility in the interaction, beginning with the least optimal behaviors and increasing to the most optimal behaviors. It refers to the mother's ability to talk to or behave with the child in a way that is generally patient, pleasant, and harmonious, and not rejecting, abrasive, impatient, or antagonistic; scores range from I (*markedly hostile*) to 5 (*nonhostile*). A nonhostile mother is able to regulate her emotional responses in peaceful ways, whereas a markedly hostile mother demonstrates expressions of covert hostility as well as clear and obvious overt acts of hostility (e.g., threatening, frightening, or demeaning behavior, physical punishment, harshness).

Midrange scores indicate covert expressions of hostility (e.g., impatience, discontent, resentment, boredom, irritation) and a pervasive low-level negative affect.

Child responsiveness to mother. Child responsiveness refers to the child's age- and context- appropriate ability and interest in exploring on his or her own and responding to the mother's bids in an affectively available way, as well as the extent of the child's own enjoyment of the interaction; scores range from 1 (*nonoptimal*) to 7 (*optimal*). High scores on responsiveness indicate an optimal balance between responsiveness to the parent and autonomous activities; this child responds to the mother's bids with an affectively positive stance. Low scores suggest serious concerns about the child's emotional and behavioral connection with the mother. There are two types of nonoptimal responsiveness: a child who is unresponsive and/or avoidant of the mother, and a child who is overresponsive to the mother's bids for interaction.

Child involvement of mother. Child involvement assesses the child's ability and willingness to attend to and engage the mother in interaction; scores range from 1 (*nonoptimal*) to 7 (*optimal*). A child who scores high on involvement shows a balance between involvement of the mother and autonomous pursuits, and is able to invite the mother into play in a comfortable, affectively positive, and nonurgent way. In contrast, a child who scores low on involvement may be either avoidant of drawing the mother into play or overinvolving of the mother.

Coding and reliability. Mother-child interaction tasks were coded independently by a doctoral-level graduate student who was trained and certified as reliable by Zeynep Birigen, one of the authors of the EAS (Biringen et al., 1998). The storytelling task and puzzle-solving tasks

were scored independently, yielding separate emotional availability scores for each task. For purposes of interrater reliability, 20% of the interaction tasks were randomly selected and rated by a 2nd trained reliable coder. Intraclass correlation coefficients were calculated for interrater reliability on each dimension of emotional availability, with correlations ranging between $r_i = .60$ and $r_i = .86$ (sensitivity, $r_i = .78$; structuring, $r_i = .60$; nonintrusiveness, $r_i = .76$; nonhostility, $r_i = .86$; responsiveness, $r_i = .79$; and involvement, $r_i = .80$). Any residual differences between coders were resolved by discussion.

Chapter 3. Results

Descriptive Statistics.

Demographic variables. To assess for group differences, t-tests were conducted with BPD status as the independent variableand child age, family income, and number of adults and children in the home as the dependent variables. Chi-squares were utilized to calculate categorical differences between groups on child gender, child minority ethnic background, presence of partners, and maternal education. There were no significant group differences on demographic variables. See Table 1 for means, standard deviations, and tests of significance.

Emotional availability. Means and standard deviations were calculated for maternal and child emotional availability dimensions in the sample as a whole and by group. See Table 2 for descriptive statistics.

Borderline personality features. Means and standard deviations were calculated for the maternal borderline personality features of affective instability, identity disturbance, negative relationships, self-harm, and total borderline features. See Table 3 for descriptive statistics. As can be seen, the means for total borderline features in both the BPD group ($M = 60.17$, $SD = 10.41$) and the comparison group ($M = 45.23$, $SD = 5.58$) exceeded the clinical cutoff of 38, indicating the presence of prominent borderline personality features in both groups.

Hypothesis Testing.

Hypothesis 1. To examine the effect of maternal BPD on maternal emotional availability during both the storytelling and puzzle-solving tasks, a multivariate analysis of variance (MANOVA) was conducted using maternal BPD status (BPD, no BPD) as the independent variable and the maternal emotional availability variables of *sensitivity*, *structuring*,

intrusiveness, and *hostility* as the dependent variables. No significant differences were found between mothers with BPD and mothers without BPD on either the storytelling task (Wilks's approximate $F(4, 65) = 1.28, p = .29, \eta^2 = .07$) or puzzle-solving tasks (Wilks's approximate $F(4, 65) = 0.31$, $p = .87, \eta^2 = .02$). Univariate *F* tests for BPD status revealed a marginally significant effect for maternal hostility on the storytelling task ($F = 4.53, p = .04, \eta^2 = .06$). However, this finding should be interpreted cautiously, as the overall multivariate *F* value was not significant. See Table 2 for group means, univariate F-tests, effect sizes and observed power.

Hypothesis 2. To examine the effect of maternal BPD on child emotional availability during both the storytelling and puzzle-solving tasks, a MANOVA was conducted using maternal BPD status (BPD, no BPD) as the independent variable and the child emotional availability variables of *responsiveness to* and *involvement of* mother as the dependent variables. No significant differences were found between children of mothers with BPD and children of mothers with BPD on either the storytelling task (Wilks's approximate $F(2, 67) = 1.19, p = .31$, $\eta^2 = .03$) or puzzle-solving task (Wilks's approximate $F(2, 67) = 0.03, p = .97, \eta^2 = .00$). See Table 2 for group means, univariate F-tests, effect sizes and observed power.

Hypothesis 3. To examine the effects of the maternal borderline personality features of *affective instability*, *identity disturbance*, *negative relationships*, and *self-harm* on maternal emotional availability during each interaction task, two-tailed Pearson bivariate correlations were calculated across the sample as a whole. See Table 4 for correlation coefficients.

Affective instability. As hypothesized, the maternal borderline features of *affective instability* were significantly correlated with maternal intrusiveness ($r = -.23, p < .05$) and maternal hostility ($r = -.36, p < .01$) during the storytelling task. *Affective instability* was

marginally significantly correlated with maternal sensitivity ($r = -.23, p < .10$) and maternal structuring ($r = -.23, p < .10$) during this task.

On the puzzle-solving task, the maternal borderline features of *affective instability* were significantly correlated with maternal intrusiveness ($r = -.31, p < .05$) and maternal hostility ($r = -.25, p < .05$). *Affective instability* was marginally significantly correlated with maternal sensitivity ($r = -.23, p < .10$) during this task. However, contrary to hypothesis, *affective instability* was not significantly correlated with maternal structuring during the puzzle-solving task.

Identity disturbance. As hypothesized, the maternal borderline features of *identity disturbance* were significantly correlated with maternal intrusiveness ($r = -.27, p < .05$) and maternal hostility ($r = -.37, p < .01$) during the storytelling task. *Identity disturbance* was marginally significantly correlated with maternal sensitivity ($r = -.21, p < .10$) during this task. However, contrary to hypothesis, *identity disturbance* was not significantly correlated with maternal structuring during the storytelling task.

Similarly, on the puzzle-solving task, the maternal borderline features of *identity disturbance* were significantly correlated with maternal intrusiveness ($r = -.26, p < .05$) and maternal hostility ($r = -.28, p < .05$). Contrary to hypothesis, *identity disturbance* was not significantly correlated with maternal sensitivity or maternal structuring during this task.

Negative relationships. As hypothesized, the maternal borderline features of *negative relationships* were significantly correlated with maternal sensitivity ($r = -.32, p < .01$), maternal intrusiveness ($r = -.39, p < .01$), and maternal hostility ($r = -.39, p < .01$) during the storytelling task. *Negative relationships* were marginally significantly correlated with maternal structuring (r

= -.22, $p < .10$) during this task.

Similarly, on the puzzle-solving task, the maternal borderline features of *negative relationships* were significantly correlated with maternal sensitivity ($r = -.27$, $p < .05$), maternal intrusiveness ($r = -.28$, $p < .05$), and maternal hostility ($r = -.34$, $p < .01$). Contrary to hypothesis, *negative relationships* were not significantly correlated with maternal structuring during this task.

Self-harm. As hypothesized, the maternal borderline personality features of *self-harm* were significantly correlated with maternal intrusiveness ($r = -.26$, $p < .05$) and maternal hostility ($r = -.35$, $p < .01$) during the storytelling task. Contrary to hypothesis, *self-harm* was not significantly correlated with maternal sensitivity or maternal structuring.

Again, contrary to hypothesis, the maternal borderline personality features of *self-harm* were not significantly correlated with maternal sensitivity, maternal structuring, maternal intrusiveness, or maternal hostility during the puzzle-solving task. See Table 5 for correlation coefficients.

Hypothesis 4. To examine the effects of the maternal borderline personality features of *affective instability*, *identity disturbance*, *negative relationships*, and *self-harm* on child emotional availability during each interaction task, two-tailed Pearson bivariate correlations were calculated across the sample as a whole. See Table 4 for correlation coefficients.

Affective instability. As hypothesized, the maternal borderline features of *affective instability* were significantly correlated with child responsiveness to mother ($r = -.32$, $p < .01$) and child involvement of mother ($r = -.29$, $p < .05$) during the storytelling task. *Affective instability* was marginally significantly correlated with child responsiveness ($r = -.23$, $p < .10$)

and child involvement ($r = -.23, p < .10$) during the puzzle-solving task.

Identity disturbance. Contrary to hypothesis, the maternal borderline features of *identity disturbance* were not significantly correlated with child responsiveness to and child involvement of mother, on either the storytelling task or puzzle-solving task.

Negative relationships. As hypothesized, the maternal borderline features of *negative relationships* were significantly correlated with child responsiveness to mother ($r = -.28, p < .05$) and child involvement of mother ($r = -.28, p < .05$) during the storytelling task. Contrary to hypothesis, *negative relationships* were not significantly correlated with child responsiveness or child involvement on the puzzle-solving task.

Self-harm. Contrary to hypothesis, the maternal borderline features of *self-harm* were not significantly correlated with child responsiveness to and child involvement of mother, on either the storytelling task or puzzle-solving task. See Table 4 for correlation coefficients.

Chapter 4. Discussion

The present study was designed to examine the effect of maternal BPD on emotional availability in interactions between mothers with BPD and their 4- to 7-year-old children. The study extends developmental research on the children of mothers with BPD from infancy to early childhood, an age where children move into navigating the developmental tasks of emotional and self regulation (Sroufe et al., 2005). It was expected that maternal BPD would be associated with less optimal maternal and child emotional availability when compared to mothers without BPD and their children. Furthermore, it was hypothesized that maternal borderline personality features would be correlated with lower levels of emotional availability.

Across the sample as whole, findings suggest difficulties with emotional availability for children of mothers with borderline personality features. Results found significant correlations between maternal borderline personality features and both maternal and child emotional availability during mother-child interactions. These findings suggest that mothers' higher levels of affective instability, identity disturbance, negative relationships, and self-harm are associated with less emotionally available relationships with their young children.

Of note, in the current sample, all of the borderline personality features—affective instability, identity problems, negative relationships, and self-harm—were correlated with increased intrusiveness and hostility during the interaction tasks. Higher levels of borderline features were associated with mothers' interfering, controlling, overdirective, and overstimulating behaviors, as well as with mothers' expressions of covert and overt hostility, during interactions with their young children. These findings suggest that mothers with features of BPD may have difficulties with appropriate emotional boundaries in their relationships with

their children, both in terms of being able to "step back" and accept the child's need for autonomy and exploration, and with modulating her own negative emotional responses.

Interestingly, only mothers' affective instability and negative relationships were significantly correlated with maternal sensitivity and child measures of responsiveness and involvement, suggesting that affective and relational features may have more impact on the quality of emotional communication and expression within a parent-child dyad. The intense emotional experiences, fears of abandonment, mistrust, and dependence reported by the mothers in the current sample were associated with difficulties in emotional exchange and social interaction between mother and child. Mothers' higher levels of affective instability and negative relationships were related to mothers' difficulties in reading emotional signals, responding to emotional cues, and communicating positive shared affect. These borderline features were also associated with children's behavior towards their mothers, with higher levels of affective instability and negative relationships associated with avoidant, disengaged, withdrawn, and oppositional behaviors. This finding is perhaps not surprising, considering that individuals with BPD experience core deficits in the domains of emotion regulation and attachment relationships, which are likely to make navigating the emotional terrain of the parent-child relationship more challenging. These results suggest that mothers with features of BPD, particularly affective instability and negative relationships, may face challenges in building a "special," emotionally attuned connection with their children to use as a foundation for facilitating social and emotional development.

Contrary to hypothesis, however, the findings did not support the hypothesis that mothers with BPD and their children, as a group, would demonstrate deficits in emotional availability

when compared to mothers without BPD and their children. Results found no significant differences in maternal or child emotional availability between groups based on maternal BPD status. Mothers with BPD and their children did not show significantly less emotional availability when compared to mothers without BPD and their children. It is worth noting, however, that mothers with BPD and their children all had lower mean scores on the dimensions of maternal sensitivity, maternal intrusiveness, maternal hostility, child responsiveness, and child involvement when compared to the comparison group. These mean scores were also lower than the mean scores of mothers with BPD reported in Newman et al.'s (2007) recent study of emotional availability in mothers with BPD and their infants.

The comparison group in the current sample demonstrated mean scores of emotional availability that are lower than the mean scores of emotional availability that have been previously found in nonclinical samples (Biringen et al., 2005; Bornstein, Gini, Putnick et al., 2006; Bornstein, Gini, Suwalsky et al., 2006). In fact, the levels of emotional availability demonstrated by the current comparison group resembled levels of emotional availability found in samples of mothers with a history of abuse (Moehler, Biringen, & Poustka, 2007), mothers with insecure attachment status (Biringen et al., 2000), or mothers in at-risk samples (Oyen, Landy, & Hilburn-Cobb, 2000; Swanson et al., 2000). One possible explanation for the lack of significant group differences and lower mean scores overall in the comparison group may be that, in general, mothers with low-income, low socio-economic status, and fewer years of education typically display less sensitivity, more intrusiveness and interference, and more hostility in interactions with their children, when compared to mothers with fewer social risk factors (Biringen et al., 2000; Crittenden & Bonvillian, 1984; Little & Carter, 2005; Ziv et al.,

2000).

Another possible explanation for the lack of significant differences between groups may be that both the BPD mothers and the comparison mothers had endorsed borderline personality features that exceeded the clinically significant cut off score. The mothers in the comparison group possessed prominent features of BPD, which may have affected their emotional availability during interactions with their children in ways similar to that of the mothers with BPD. The findings underscore the importance of examining borderline personality features in individuals who may not meet the full diagnostic criteria for BPD, as they may also experience observable impairments in their daily functioning.

Developmental Precursors to BPD

The present study is consistent with previous research findings that mothers with BPD are more insensitive and more intrusive in their interactions with their infants (Crandell et al., 2003; Hobson et al., 2005; Newman et al., 2007). The findings add to a more comprehensive understanding of the difficulties and challenges mothers with BPD are likely to face in parenting their young children. Moreover, they lend support to the utility for using a dimensional perspective to conceptualize personality disorders, as the findings suggest that mothers with borderline personality features— individuals who may or may not meet the full diagnostic criteria for BPD—also experience significant disruptions in their interactions with their young children. Importantly, a mother's affective instability, negative relationships, identity confusion, and self-harm were associated with hostile intrusiveness towards her child, while her affective instability and negative relationships were associated with avoidant and disengaged patterns of behavior in her child.

The current study suggests that children of mothers with borderline personality features are already developing maladaptive patterns of interpersonal relatedness with their mothers, as early as age 4. The child's responsiveness to and involvement of relational partners plays a critical role in regulating social interactions, preparing the child to be an active participant in relationships and promoting engagement in other relationships (Biringen & Robinson, 1991). A child who does not respond to a mother's bids for interaction or invite her into play will have fewer opportunities for coming to regulate his own emotions adaptively. Likewise, a child who does not elaborate on mother's bid for interactions or create opportunities for her to expand his play will not receive optimal responsiveness and accessibility from his mother in return. Thus, a child who does not show positive responsiveness and comfortable involvement of her mother in interactions may grow up to have difficulties regulating her emotions and her behaviors as she moves out into the world and encounters new types of social relationships. These deficits in emotional availability and dysfunctional patterns of interaction may make them more vulnerable for developing borderline personality features as children or adolescents, thereby increasing the likelihood that they will develop BPD as adults (Crick, Murray-Close, & Woods, 2005).

The current research suggests that children of mothers with BPD may be at risk for experiencing disruptions in the parent-child relationship. It has been theorized that BPD and borderline personality features may develop from the combination of an emotionally vulnerable child and an emotionally unsupportive environment (Heard & Linehan, 1993). Patients with BPD report experiencing caregiver relationships characterized by emotional underinvolvement, insensitivity, invalidation, intrusive control, neglect, and conflict (Fruzetti, Shenk, & Hoffman,

2005). In addition, individuals with BPD report higher rates of childhood physical, emotional, and sexual abuse. Moreover, they describe their parents as neglectful and underinvolved, withdrawing from them emotionally, treating them inconsistently, denying their thoughts and feelings, placing them in the role of parent, failing to provide them needed protection (Zanarini, 2000; Zanarini et al., 1997). These findings suggest that, in addition to more serious factors, individuals with BPD may not have experienced emotionally available relationships from their parents.

It has been theorized that the fundamental aspects of BPD (e.g., unstable, intense interpersonal relationships, feelings of emptiness, bursts of rage, fear of abandonment, intolerance for aloneness, lack of stable sense of self) may stem from impairments in the underlying attachment organization (Fonagy, Target, & Gergely, 2000; Levy, 2005). Core deficits of BPD occur in the domains of attachment, emotion regulation and representations (of the self, others, and relationships), which would normally develop within the context of stable family systems and nurturing attachment relationships (Bradley & Westen, 2005). In contrast, insensitive and unempathic parental interaction during infancy can contribute to impaired emotional development and self-regulation (Newman & Stevenson, 2005). Several patterns of dysfunctional parenting behavior have been associated with the development of BPD, including poor parental emotional sensitivity and intrusive control (Melges & Swartz, 1989)—the same qualities of parenting behavior seen in the current sample. Thus, disruptions in the quality of the parent-child relationship, such as deficits in emotional availability, may have implications for the development of BPD or borderline personality features.

Preventive Interventions

Individuals with BPD utilize mental health resources at a greater rate than individuals with any other psychiatric disorder, with the exception of schizophrenia (Swartz, Blazer, George, & Winfield, 1990). Given the significant burden that individuals with BPD place on the mental health care system, there is an important need for research to inform preventative interventions. Furthermore, considering the substantial social stigma directed towards individuals diagnosed with BPD, efforts directed towards treating and minimizing the individual, family, and social distress associated with this disorder are crucial (Lenzenweger & Cicchetti, 2005).

Even with recent strides in treatment (Bateman & Fonagy, 1999, 2001, 2008; Gunderson, 2001; Levy et al., 2006; Linehan, 1993), many clinicians continue to recoil at the prospect of treating individuals with BPD. A greater understanding of the etiology and developmental risk factors for BPD is needed to inform the design and implementation of preventive interventions. Results of the current study suggest the importance of interventions with children whose mothers have BPD or borderline personality feature—interventions designed to target the quality of the parent-child relationship, as well as help modify the mother's affective instability, negative patterns in relationships, and confusions about self-image and identity.

There are limited reports of parent-infant interventions for high-risk populations. Dyadic child-parent psychotherapy (Fraiberg, Adelso, & Shapiro, 1975; Lieberman, 1992; Lieberman, Silverman, & Pawl, 2000) is an attachment-based therapy that has been successful at increasing attachment security in mother-toddler pairs (Cicchetti, Toth, & Rogosch, 1999; Toth, Rogosch, Manly, & Cicchetti, 2006) During dyadic psychotherapy, a mother and her young child (infant, toddler, or preschooler) meet together with a therapist. It is thought that by involving the child in

therapy, mothers can be made aware of the impact of their caregiving behaviors on their child's development (Lieberman et al., 2000). The mother feels understood by the therapist, and in the process learns more about her child's feelings, beliefs, and needs, so that the mother-child relationship becomes a greater source of security to the child. Both a mother with BPD and her child may benefit, allowing development to return to a more adaptive pathway. Dyadic therapy may also target the mother's borderline personality features (affective instability, negative relationships, and identity disturbance), particularly as they relate to her degree of sensitivity, intrusiveness, and hostility in her interactions with her child. Similarly, interventions designed specifically to improve emotional availability in the mother-child relationship—particularly those aimed at increasing sensitivity and decreasing intrusiveness and hostility—may also be warranted for young children whose mothers have borderline personality features.

Strengths and Limitations

Strengths of the current study included filmed and reliably coded observational data of children, rather than relying on adult observer report measures. Moreover, larger numbers of children were sampled in the same developmental period compared with previous studies of children whose mothers have BPD: in fact, the study reported on the largest sample of children of mothers with BPD in the same developmental period to date. Furthermore, in addition to using categorical diagnoses of BPD asses via clinical interview, continua of borderline personality features were assessed using a self-report measure. Categorical diagnoses are meaningful to clinicians, but symptoms assessed on a continuum have more statistical power, can be assessed for all participants, and more offer more clinical utility to clinicians. In addition,

because mothers with BPD were recruited from both clinical referrals and directly from the community, the sample is widely generalizable to low-SES populations as a whole.

Limitations of the current study include the fact that other risk factors for deficits in emotional availability, such as depression or other psychological disorders, were not controlled for. Depressed mothers show deficits in emotional availability, particularly in the maternal domains of sensitivity and structuring (Easterbrooks et al., 2000); they also demonstrate patterns of hostility, intrusiveness, withdrawal, and negative affect (Downey & Coyne, 1990). It is possible that maternal depressive symptoms may have contributed to behaviors observed during the interaction tasks by both the BPD and comparison mothers.

Another possible limitation includes the use of semi-structured interaction tasks (storytelling and puzzle-solving), as they may have imposed a structure on the interaction and elicited a narrower, more specific range of behaviors from mother and child. Thus, the types of emotional availability behaviors observed may have been skewed by the nature of the task. A free-play interaction session may have provided opportunities to observe a wider range of emotional availability behaviors.

Finally, the use of a low SES comparison group seems to have been both a strength and a limitation of the current study. Mothers were recruited from low SES backgrounds in an effort to more closely match the group of comparison mothers with the group of mothers with BPD on demographic factors like family income and maternal education. Because BPD is more prevalent in individuals from low SES backgrounds, this increases the external validity of the sample (Grant et al., 2008). However, because these demographic variables are also associated with observable deficits in emotional availability, they may have contributed to lower scores of

emotional availability in the comparison group, making it more difficult to find group differences. Perhaps the use of various at-risk groups for comparison—such as depressed mothers and low SES mothers—in addition to a middle SES comparison group would help further differentiate the qualities of emotional availability in mothers with BPD in future samples.

Conclusion

A developmental psychopathology perspective makes it possible to study development in at-risk samples, such as the children of mothers with BPD, and learn more about pathways both towards and away from various disorders. The development in children of mothers who have BPD may yield insight into understanding the impact of BPD on parenting. Overall, the results of the current study indicate that maternal borderline personality features are significantly associated with maternal and child emotional availability. Mothers' affective instability, identity disturbance, negative relationships, and identity disturbance were associated with maternal hostility and intrusiveness in interactions with their children, while affective instability and negative relationships were correlated with maternal insensitivity. Likewise, mothers' affective instability and negative relationships were associated with children's unresponsiveness to and uninvolvement of mother in interaction. The usefulness of using emotional availability to examine the quality of the mother-child relationship was extended to interactions between mothers with BPD and their young children. Following these children over time will help us to better understand the impact of maternal borderline personality features on children's emotional and self development, and under what circumstances such problems might lead to the development of BPD.

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Appendix

Table 1. Demographic differences between BPD and comparison groups

Variable	Whole Sample *N* = 70 *M (SD)*	BPD *n* = 35 *M (SD)*	Comparisons *n* = 35 *M (SD)*	*t*
Child Age (years)	5.37 (.90)	5.31 (.90)	5.42 (.90)	0.52
Family Yearly Income ($)	31, 841 (27, 855)	30, 018 (19, 192)	33, 664 (34, 633)	0.55
# Adults in Home	1.83 (.78)	1.83 (.79)	1.83 (.79)	.000
# Children in Home	2.47 (1.16)	2.63 (1.26)	2.31 (1.05)	1.13
				λ^2
Child Gender (girls)	50%	54%	46%	0.51
Child Minority Ethnic Background	11%	11%	11%	0.00
Mother Graduated High School	89%	83%	94%	2.26
Mother Has Partner	77%	77%	77%	0.00

Table 2. Group differences on emotional availability variables: group means, univariate F-tests, effect sizes, and observed power

Emotional Availability Variable	Whole Sample *N* = 70 *M (SD)*	BPD *n = 35* *M (SD)*	Comparisons *n = 35* *M (SD)*	*F (df)*	η^2	Observed Power
Storytelling Task						
Maternal				(1, 68)		
Sensitivity	5.23 (2.09)	4.97 (2.07)	5.54 (2.10)	1.31	.019	.20
Structuring	3.11 (1.13)	2.94 (1.22)	3.29 (1.03)	1.62	.023	.24
Intrusiveness	4.04 (1.03)	3.90 (1.09)	4.19 (0.96)	1.36	.020	.21
Hostility	4.08 (1.07)	3.81 (1.17)	4.34 (0.89)	4.53*	.062	.56
Child				(1, 68)		
Responsiveness	4.50 (1.74)	4.23 (1.90)	4.77 (1.54)	1.72	.025	.25
Involvement	4.51 (1.71)	4.21 (1.84)	4.80 (1.54)	2.08	.030	.25
Puzzle-Solving Task						
Maternal				(1, 68)		
Sensitivity	5.06 (2.19)	4.93 (2.15)	5.19 (2.27)	0.24	.003	.08
Structuring	3.23 (1.05)	3.23 (1.05)	3.23 (1.07)	0.00	.000	.05
Intrusiveness	3.54 (1.15)	3.43 (1.23)	3.64 (1.06)	0.61	.009	.12
Hostility	3.89 (1.12)	3.79 (1.17)	3.99 (1.07)	0.56	.008	.11
Child				(1, 68)		
Responsiveness	4.41 (1.74)	4.39 (1.79)	4.44 (1.72)	0.02	.000	.05
Involvement	4.46 (1.80)	4.44 (1.90)	4.49 (1.71)	0.01	.000	.05

* $p < .05$

Table 3. Maternal borderline personality features

Borderline Personality Features	Whole Sample *N* = 70 *M (SD)*	BPD *n = 35* *M (SD)*	Comparisons *n = 35* *M (SD)*
Affective Instability	13. 79 (3.07)	15.51 (2.92)	12.06 (2.10)
Identity Disturbance	13.19 (4.34)	15.77 (4.22)	10.60 (2.59)
Negative Relationships	14.91 (2.58)	16.09 (2.12)	13.74 (2.49)
Self-Harm	10.81 (3.27)	12.80 (3.64)	8.83 (0.62)
Total Borderline Features	52.70 (11.20)	60.17 (10.41)	45.23 (5.58)

Table 4. Correlations between maternal and child emotional availability variables and maternal borderline features (PAI), by interaction task, across the sample as a whole (N = 70)

Emotional Availability Variables	Maternal Borderline Features (PAI)			
	Affective Instability	*Identity Disturbance*	*Negative Relationships*	*Self-Harm*
Storytelling Task				
Maternal				
Sensitivity	-.23†	-.21†	-.32**	-.07
Structuring	-.23†	-.14	-.22†	.00
Intrusiveness	-.24*	-.27*	-.39**	-.26*
Hostility	-.36**	-.37**	-.39**	-.35**
Child				
Responsiveness	-.32**	-.19	-.28*	-.14
Involvement	-.29*	-.15	-.28*	-.10
Puzzle-Solving Task				
Maternal				
Sensitivity	-.23†	-.19	-.27*	-.01
Structuring	-.11	-.08	-.18	-.09
Intrusiveness	-.31*	-.26*	-.28*	-.16
Hostility	-.25*	-.28*	-.34**	-.13
Child				
Responsiveness	-.23†	-.12	-.18	.00
Involvement	-.23†	-.11	-.17	.00

*$p < .05$; **$p < .01$, † $p < .10$.
PAI = Personality Assessment Inventory.

Vita

Rebecca Trupe was born in Fairfax, VA. Growing up, she lived with her father, mother, and sister in Pittsboro, NC, and Statesboro, GA. After graduating from Southeast Bulloch High School in Brooklet, GA, she attended the University of Georgia in Athens, GA, where she majored in psychology. Rebecca received the degree of Bachelor of Science in Psychology in December 2005, graduating *summa cum laude* as a First Honor Graduate. In the fall of 2006, she entered the graduate program in Clinical Psychology at the University of Tennessee, Knoxville. Rebecca graduated with a Master of Arts degree in Psychology in August 2010. Rebecca is continuing her education at the University of Tennessee, Knoxville, with a Doctor of Philosophy in Psychology.