



Published in final edited form as:

*Parent Sci Pract.* 2011 ; 11(4): 239–263. doi:10.1080/15295192.2011.613722.

## Psychopathology and Parenting Practices of Parents of Preschool Children with Behavior Problems

Elizabeth Harvey, Brian Stoessel, and Sharonne Herbert

Elizabeth Harvey, Department of Psychology, Tobin Hall, 135 Hicks Way, Amherst, MA 01003. Sharonne Herbert is also at the University of Massachusetts, and Brian Stoessel is now at Columbia University Health Services

Elizabeth Harvey: eharvey@psych.umass.edu

### SYNOPSIS

**Objective**—This study investigated associations among different types of parental psychopathology and several specific parenting practices.

**Design**—Mothers ( $n = 182$ ) and fathers ( $n = 126$ ) of preschool-aged children with behavior problems completed questionnaires assessing parental psychopathology and parenting practices, and participated in observed parent-child interactions.

**Results**—Maternal depression, anxiety, substance abuse, and several different personality disorder traits were related to maternal negativity, laxness, and lack of warmth. Paranoid, schizoid, schizotypal, and borderline personality disorder symptoms predicted mothers' parenting practices, even when statistically controlling for other types of psychopathology. For fathers, those same symptoms, dependent and avoidant symptoms, and substance abuse symptoms were associated with self-reported lax parenting. Evidence emerged that psychopathology in one parent was associated with less overreactivity in the other parent.

**Conclusions**—Many aspects of parents' psychological functioning play a role in determining specific parenting practices, including personality disorder symptoms.

### INTRODUCTION

Problematic parenting practices have been implicated in the development of many forms of child psychopathology, prompting extensive research on the causes and correlates of dysfunctional parenting (Belsky & Jaffee, 2006). Parenting practices believed to play a significant role in child development include negativity (hostile, harsh parenting), warmth (nurturing, supportive, positive, affectionate, involved parenting), and laxness (inconsistent, permissive parenting; Hovee et al., 2009; McLeod, Weisz, & Wood, 2007).

Parent psychopathology may be among the most influential determinants of maladaptive parenting practices (Belsky, 1984) and has received considerable research attention (see Zahn-Waxler, Duggal, & Gruber, 2002, for a review). However, there are still a number of important gaps in the literature: (1) Because research has focused more on parental depression than on other types of psychopathology, it is unclear whether all forms of psychopathology are associated with the same types of problematic parenting practices. (2) Although both maternal and paternal psychopathology have been linked with child development, relations between parent psychopathology and parenting have been less well

studied among fathers than among mothers, despite repeated calls for more research on fathers (Phares, Fields, Kamboukos, & Lopez, 2005). (3) Research examining relations between psychopathology and parenting has not generally considered comorbid psychopathology. (4) Little is known about the relation between parents' psychopathology and their partners' parenting. The present study seeks to address these gaps.

### Parenting and Depression

Depressed parents show a wide range of compromised parenting practices, including deficient modeling of social skills and constructive coping; relational disturbances; low nurturance and sensitivity; angry, negative, and retaliatory behavior; intrusiveness; and ineffective conflict resolution (see Zahn-Waxler et al., 2002, for a review). The link between depression and parenting has been particularly well established for mothers (e.g., Cohn, Campbell, Matias, & Hopkins, 1990; Goodman & Brumley, 1990; Gordon et al., 1989; Lovejoy, 1991). Paternal depression, though less well studied, has also been associated with parenting problems, such as decreased engagement in father-child activities, more rejecting and less nurturing parenting, and more father-child conflict (Bronte-Tinkew, Moore, Matthews, & Carrano, 2007; Elgar, Mills, McGrath, Waschbusch, & Brownridge, 2007; Kane & Garber, 2004; White, Roosa, Weaver, & Nair, 2009). There is also evidence supporting a causal relation between depression and parenting. Parents whose depression is adequately treated show improved parenting (McCauley, Garber, Diamond, & Schloretdt, 2005), and negative mood inductions have been found to reduce the number of positive interactions mothers have with their children (Jouriles, Murphy, & O'Leary, 1989). In sum, research suggests that parental depression may increase parents' child-directed hostility and negativity and may have a dampening effect, reducing the effort that parents put into interacting with their children.

Despite strong evidence that depression is related to a variety of maladaptive parenting practices, parenting problems seen in depressed individuals may not be specific to depression but may be due to other psychosocial stressors (Berg-Nielsen, Vikan, & Dahl, 2002; Downey & Coyne, 1990; Lovejoy, Graczyk, O'Hare, & Neuman, 2000) or to comorbid psychiatric disorders such as substance abuse and anxiety (Weissman et al., 1996). Comorbid personality disorders have also been speculated to increase the probability of both parenting problems and depression (Zahn-Waxler et al., 2002). In fact, personality disorder symptoms have been found to predict disruptions in mother-infant interactions among affectively ill mothers (DeMulder, Tarullo, Klimes-Dougan, Free, & Radke-Yarrow, 1995). Thus, it remains unclear the extent to which comorbid psychopathology may account for the well-documented relation between maternal depression and parenting. In addition, further research is needed on depressed fathers' parenting.

### Parenting and Anxiety

The literature on the association between anxiety and parenting contains mixed findings. Parents with anxiety disorders have been hypothesized to engage in "anxiety enhancing" parenting practices such as rejection, overcontrol, and lack of warmth (Ginsburg & Schlossberg, 2002), but studies have yielded mixed support for this hypothesis. Anxious mothers have been observed to be less warm and less positive, less granting of autonomy, more critical and catastrophizing (Whaley, Pinto, & Sigman, 1999), less responsive and more avoidant (Biringen, 1990; Nover, Shore, Timberlake, & Greenspan, 1984), and more withdrawn and disengaged (Woodruff-Borden, Morrow, Bourland, & Cambron, 2002) with their children than non-anxious mothers. Research using self-reports of parenting have also found that anxious parents show disruptions in parenting, including less maternal warmth (Kashdan et al., 2004) and greater overprotection in mothers, greater rejection in fathers (Bögels & van Melick, 2004), and more intrusive, negative discipline among mothers and

fathers (Kashdan et al., 2004). However, other studies have failed to find an association between parental anxiety and parenting practices (Ginsburg, Grover, & Ialongo, 2004; Turner, Beidel, Roberson-Nay, & Tervo, 2003), and there is some evidence that anxious fathers engage in more positive parenting practices than non-anxious fathers (Merikangas, Avenevoli, Dierker, & Grillon, 1999). These inconsistent findings may result from cross-study differences in the measurement of anxiety or differences in rates of comorbid psychopathology. Thus, studies that control for comorbid psychopathology will lead to a better understanding of the association between anxiety and parenting.

### Parenting and Substance Abuse

Parent abuse of alcohol and other drugs has been consistently associated with disruptions in parenting (see Mayes & Truman, 2002). Parenting problems have been linked with alcohol abuse, particularly among fathers (Edwards, Homish, Eiden, Grohman, & Leonard, 2009; Eiden, Edwards, & Leonard, 2007), but also among mothers (Moser & Jacob, 1997; O'Connor, Sigman, & Kasari, 1993). Moreover, experimental evidence points to a causal link between alcohol intoxication and disruptions in mothers' and fathers' parenting practices (Lang, Pelham, Atkeson, & Murphy, 1999). Non-alcohol substance dependence (Bauman & Dougherty, 1983; Bernstein, Jeremy, Hans, & Marcus, 1984; Bernstein, Jeremy, & Marcus, 1986; Jeremy & Bernstein, 1984; Rodning, Beckwith, & Howard, 1991) and polysubstance abuse (Locke & Newcomb, 2004) have been consistently associated with poor maternal parenting. Though less well-studied, non-alcohol substance abuse has also been linked with poorer parenting among fathers (McMahon, Winkel, & Rounsaville, 2008). Despite the strong association between substance abuse and parenting, there is evidence that comorbid psychopathology may account for parenting problems of substance-abusing individuals. Psychosocial risk factors, including antisocial and related personality disorders, have been found to account for parenting differences between substance-abusing and control mothers (Bernstein & Hans, 1994; Hans, Bernstein, & Henson, 1999), and there is evidence that paternal depression may play a key role in the relation between fathers' alcoholism and parenting (Eiden & Leonard, 2000). However, other research has found substance abuse to be uniquely associated with maladaptive parenting for both mothers and fathers, even when statistically controlling for other comorbid psychiatric diagnoses (Johnson, Cohen, Kasen, & Brook, 2004, 2006). Thus, the literature on substance abuse and parenting highlights the need for studies that carefully partial out such co-occurring disorders so that the specific associations between psychopathology and parenting become clearer.

### Parenting and Characterological Problems

Despite hypotheses that personality disorders may have particularly important implications for parenting (Berg-Nielsen et al., 2002), scant research has focused on the parenting practices of individuals with characterological problems (i.e., Axis II pathology). Personality disorders are typically categorized into three broad clusters based on shared characteristics (DSM-IV-TR; American Psychological Association [APA], 2000). Cluster A includes paranoid, schizoid, and schizotypal personality disorders, reflecting problems with suspiciousness, social detachment, and oddness/eccentricity, respectively. Cluster B includes histrionic, narcissistic, antisocial, and borderline personality disorders, generally reflecting problems with excessive attention seeking, egocentrism, lack of empathy, manipulateness, and difficulty with emotion regulation. Cluster C includes obsessive-compulsive, dependent, and avoidant personality disorders, reflecting problems with excessive perfectionism, high levels of interpersonal neediness, and hypersensitivity to rejection, respectively.

Most studies that have been conducted on characterological problems and parenting have focused on parents with antisocial personalities. Mothers with current and/or past symptoms of antisocial personality have been observed to be less understanding and more hostile and

harsh in their parenting styles (Bosquet & Egeland, 2000) as well as less responsive with their children (Cassidy, Zoccolillo, & Hughes, 1996). Evidence that parenting practices mediate the transmission of antisocial behaviors from parents to children (Huesmann, Eron, Lefkowitz, & Walder, 1984; Johnson, Smailes, Cohen, Kasen, & Brook, 2004; Patterson & Dishion, 1988) further supports a link between antisocial personality problems and parenting practices.

Though less well-studied, some evidence also supports a link between other types of personality disorders and parenting. In a study using a large, community-based sample of mothers and fathers, Johnson, Cohen, Kasen, Ehrensaft, and Crawford (2006) investigated the self-reported parenting practices of individuals with a range of psychiatric disorders. Personality disorders were associated with parental possessiveness; inconsistent discipline; and low communication, praise, and encouragement. In addition, these associations all remained significant when statistically controlling for co-occurring depression, anxiety, and substance abuse disorders. Problematic parenting was associated with symptoms in each of the three DSM-IV-TR personality disorder clusters. Although this study constitutes an important step towards understanding the relation between characterological problems and parenting, the results need to be replicated, particularly in studies in which parenting practices are measured observationally.

### Relations Between Parent Psychopathology and Partners' Parenting

Advances in family systems theory highlight the interdependent nature of the family system wherein parents affect each others' parenting practices (Bornstein & Sawyer, 2006). Although the vast majority of studies investigating how psychopathology is associated with parenting have examined how parents' own psychopathology is related to their own parenting practices, a relatively small literature provides empirical evidence for a link between parents' well-being and their partners' parenting. For example, fathers' substance abuse has been associated with disruptions in mothers' parenting (Edwards et al., 2009; Eiden, Edwards, & Leonard, 2007; Jacob, Haber, Leonard, & Rushe, 2000), and mothers' substance abuse has been tied to disruptions in fathers' parenting (Capaldi, Pears, Kerr, & Owen, 2008; Moser & Jacob, 1997). Husbands of depressed mothers have been found in some studies to show increased engagement in parenting (e.g., Hops et al., 1987), but in other studies to show disruptions in parenting (e.g., Goodman, 2008), highlighting our relatively undeveloped understanding of partner effects in this domain.

### The Present Study

This study investigated associations between parent psychopathology and parenting practices for mothers and fathers. It focused on a sample of parents of preschool-aged children with behavior problems to target a population for whom the results of this study would have high relevance. Children with behavior problems place more psychological demands on parents, highlighting the importance of understanding the relation between psychopathology and parenting practices for this population. Parenting practices were measured using both self-report and observational measures. Psychopathology was measured dimensionally (rather than categorically) to capture subclinical levels of character pathology, which have been associated with problematic parenting (e.g., DeMulder et al., 1995; Mrazek, Mrazek, & Klinnert, 1995).

### Hypotheses

**(1) Are different forms of parental psychopathology similarly related to parenting practices?**—Although the mechanisms that account for the relations between psychopathology and parenting practices are likely to vary somewhat across specific dimensions of psychopathology, there are a number of processes that are likely shared. For

example, most forms of psychopathology are likely to diminish parents' psychological resources in general, are likely to decrease positive social interactions that might provide support for effective parenting, and may lead to other family stressors which in turn may compromise parenting. Thus, it was predicted that different dimensions of psychopathology, including depression, anxiety, substance abuse, and characterological problems would each be associated with several problematic parenting practices, including negativity, laxness, overreactivity, and lack of warmth. It was predicted that these relations would be significant for both mothers and for fathers.

**(2) Are depression, anxiety, substance abuse, and Axis II pathology independently associated with different types of parenting practices?**—It was predicted that, even after statistically controlling for comorbid psychopathology, parental depression, anxiety, substance abuse, and characterological problems would each be uniquely associated with parenting.

**(3) Are mothers' and fathers' psychopathology associated with their partners' parenting?**—It was predicted that maternal psychopathology would be associated with disruptions in paternal parenting and that paternal psychopathology would be associated with disruptions in maternal parenting. However, the direction of predicted relations was tentative because there is some evidence that parents may compensate for their partners' psychopathology by engaging in more effective parenting practices.

## METHOD

### Participants

Participants were 182 mothers and 126 fathers of 184 children with externalizing symptoms (hyperactivity and/or aggression) who were participating in the first year of a longitudinal study of young children's behavior problems. Children were all 36 to 47 months old at the time of initial screening and were 37 to 50 months at the time of the first home visit. One-hundred fourteen mothers identified themselves as European American (non-Hispanic), 42 as Latina American, 21 as African American, 1 as Asian American, and 4 as multiethnic (i.e., identified with two or more ethnicities). Eighty-five fathers identified as European American (non-Hispanic), 25 as Latino American, 14 as African American, 1 as Asian American, and 1 as multiethnic. Mothers averaged 13.45 years of education ( $SD = 2.84$ ), and fathers averaged 13.66 years of education ( $SD = 2.76$ ). Mothers' average age was 31.52 years, ( $SD = 6.86$ ), and fathers' average age was 36.46 ( $SD = 7.39$ ). Of the 182 mothers who participated, 127 (70%) were married or living with the child's father figure, and of the 126 fathers who participated, 106 (84%) were married or living with the child's mother. There were 105 couples who were married or cohabiting who both completed the measures used in this study.

### Procedure

All participants were recruited over a 3-year period by distributing screening questionnaire packets through state birth records, pediatrician offices, child care centers, and community centers throughout western Massachusetts. Children with significant externalizing problems ( $n = 199$ ) were recruited from 1752 3-year-old children whose parents completed a screening packet containing the Behavior Assessment System for Children – Parent Report Scale (BASC-PRS; Reynolds & Kamphaus, 1992) and a questionnaire assessing for exclusion criteria, parental concern about externalizing symptoms, and demographic information. The present study focused on data collected during the first timepoint of a 4-year longitudinal study and included only parents who had completed measures of parent psychopathology and parenting. A smaller control group of children was also recruited for

the larger study, but parents of those children were not included in the present study. Eligible families were scheduled for two 3-hour home visits scheduled approximately 1 week apart, and each parent was paid a total of \$200. For the first 2 years of recruitment, all families eligible for the externalizing group were invited to participate. During the last year of recruitment, African American and Latin American children who met criteria for the externalizing group were prioritized for invitations to participate, to obtain a more ethnically diverse sample. European American children who were eligible for the externalizing group were randomly selected to participate whenever there were insufficient numbers of eligible African American or Latin children to meet recruitment goals.

Inclusion criteria were: (1) parent responded *yes* or *possibly* to the question, “Are you concerned about your child’s activity level, defiance, aggression, or impulse control?” and (2) BASC-PRS hyperactivity and/or aggression subscale *T* scores fell at or above 65 (approximately 92<sup>nd</sup> percentile). Exclusion criteria included mental retardation, deafness, blindness, language delay, cerebral palsy, epilepsy, autism, or psychosis.

## Measures

**Parenting scale**—The Parenting Scale (Arnold, O’Leary, Wolff, & Acker, 1993) is a 30-item self-report scale, which yields scores for laxness (e.g., “When I say my child can’t do something...I let my child do it anyway [7] vs. I stick to what I said [1]”) and overreactivity (e.g., “When my child misbehaves...I get so frustrated or angry that my child can see I’m upset [7] vs. I handle it without getting upset [1]”). Ratings are made using a 7-point Likert scale, with anchors that vary across items. Scores were calculated by averaging across items that loaded on each factor according to the Arnold et al. (1993) factor structure, where high scores indicate dysfunctional parenting. This scale has demonstrated good internal consistency ( $\alpha = .83$  for laxness and  $.82$  for overreactivity), good test-retest reliability ( $.83$  for laxness and  $.82$  for overreactivity), and has been found to correlate with observed parent and child behavior (Arnold et al., 1993). Internal consistency was adequate in the present sample ( $.79$  for maternal laxness and  $.69$  for maternal overreactivity;  $.66$  for paternal laxness and  $.73$  for paternal overreactivity).

**Observational assessments**—Mothers and children were videotaped during 3 mother-child interaction tasks: a 5-min play task, a clean-up task, and a 10-min forbidden objects task. (Unfortunately, time constraints did not allow for videotaping fathers and their children.) Research assistants coded the parent-child play task, the clean-up task, and the first 5 min of the forbidden objects task using a coding system from which these data were drawn (more details can be obtained from the first author). Global ratings of parenting practices were made after each segment on the following dimensions: *warmth*, *negative affect*, and *laxness*. Warmth referred to the extent to which mother was positively attentive to the child; used praise, encouragement, and terms of endearment; conveyed affection; was supportive and available; was cheerful in mood and tone of voice; and/or conveyed interest, joy, enthusiasm, and warmth in interactions with the child. Warmth was rated on a scale from 1 (*no warmth*) to 7 (*high level of warmth*). Negative affect was rated from 1 (*no negative affect*) to 6 (*high level of negative affect*) and indicated irritation, annoyance, frustration, whininess, and/or an angry tone. High laxness ratings were given if mother set few limits or rules, was permissive, inconsistent, and/or failed to follow through on warnings, commands, or consequences. Laxness was rated on a scale from 1 (*not lax*) to 6 (*highly lax*). These parenting dimensions were selected because they represent parenting practices that have been consistently linked with child functioning (Hoeve et al., 2009; McLeod et al., 2007). These dimensions are also ones that have been commonly studied in the literature on the association between parent psychopathology and parenting.

Ratings were correlated across the 3 tasks for warmth,  $r(156) = .53$  to  $.69$ ,  $p < .001$ , negative affect,  $r(156) = .21$  to  $.43$ ,  $p < .01$ , and laxness,  $r(156) = .15$  to  $.31$ ,  $p < .05$ , so they were averaged across the tasks. Each videotape was coded twice by two independent raters, and scores were averaged across the two. Intraclass correlations (ICCs) were  $.79$  for warmth,  $.75$  for negative affect, and  $.80$  for laxness. Square root transformations were conducted on negative affect and laxness because these variables were skewed.

Mothers and fathers were each asked to audiotape 2 hr of interaction with their children using a micro-cassette player. Parents were instructed to select times that tended to be challenging for them as parents. A preliminary review of the tapes suggested that 30 min of tape was sufficient to capture a wide variety of behavior that was representative of the entire 2 hr, and all parents who were willing to take part in this assessment completed at least 30 min. Graduate and undergraduate research assistants were trained to code the audiotapes, and two raters overlapped for 88 participants. ICCs were then calculated to determine reliability for each code. The coding system included both event-based and global coding. In this study, the codes for parent negative affect and parent warmth were used (using definitions described earlier in the description of the videotaped code). Each instance of parent negative affect was rated on a scale from 1 (*slight*) to 6 (*strong*), and these ratings were summed across the 30 min of interaction to create a parent negative affect score ( $ICC = .60$ ). Global ratings of parent warmth ( $ICC = .53$ ) were made every 5 min and ranged from 1 (*not warm*) to 7 (*extremely warm*). A square root transformation was conducted on parent negative affect because it was skewed. (Audiotapes were not conducive to coding laxness because laxness involves nonverbal behavior, so this dimension was not included.)

For mothers, audiotape and videotape data were significantly correlated for warmth,  $r(150) = .30$ ,  $p < .001$ , and negative affect,  $r(150) = .33$ ,  $p < .001$ , so mothers' audio and video data were aggregated to create single *audio/video warmth* and *audio/video negative affect* variables. Fathers' observed warmth and negative affect scales were based on audio data only.

**Millon Clinical Multiaxial Inventory – III (MCMI-III)**—Parent psychopathology was measured using the MCMI-III (Millon, Davis, & Millon, 1997), one of the most commonly used and researched broadband continuous measures of adult psychopathology. This scale was selected because the MCMI-III contains scales that measure psychiatric symptomatology from both Axis I and Axis II disorders, with Axis I scales measuring various aspects of mood, anxiety, and substance abuse problems and Axis II scales measuring dimensions of characterological problems. Axis I scales from the MCMI-III that were examined in the present study were anxiety, somatoform, dysthymia, major depression, posttraumatic stress (PTSD), and alcohol and drug abuse disorders. (Bipolar-manic was not included because clinical interviews indicated that bipolar disorder was rare in this sample, and subclinical and clinical levels of mania are unlikely to have similar effects on families.) Axis II scales from the MCMI-III were schizoid, avoidant, depressive, dependent, histrionic, narcissistic, antisocial, compulsive, schizotypal, borderline, and paranoid personality disorders. These subscales have shown good internal consistencies (average  $\alpha = .82$ ), test-retest reliability (average test retest correlation of  $.91$ ), and generally good sensitivity in detecting clinician-based psychiatric diagnoses (Millon et al., 1997). Internal consistencies were also good in the present sample (average  $\alpha = .77$  for mothers and  $.79$  for fathers; range =  $.56$  to  $.89$ ). Most subscales have also demonstrated strong convergent validity (e.g., Craig & Olson, 2001), including strong correlations with the well-validated MMPI (Rossi, Van den Brande, Tobac, Sloore, & Hauben, 2003). Base rate (BR) scores were used, which are standard scores tied to empirically derived population prevalence rates (Millon et al., 1997). A BR score of 75 indicates the presence of a trait for personality disorder scales and the presence of a disorder for Axis I scales. The developers of the MCMI-III scaled this measure

such that the percentage of people who would receive a BR score of 75 or higher corresponded to the percentage of people in the development sample whom clinicians rated as having a trait or disorder. Separate norms were used for women and men.

**Marital conflict**—Married or cohabiting couples completed the Conflicts and Problem-Solving Scales – Violence Form (CPS-V), a short form of the Conflicts and Problem-Solving Scales (Kerig, 1996). The scale includes 69 items describing positive and negative conflict tactics, and members of the couple independently rate the degree to which each of these tactics is used by itself and by their partners. The 138 items were averaged to create an overall score indicating the degree to which the couple used positive versus negative conflict strategies. High scores indicated greater use of negative conflict strategies (positive conflict strategies were reverse-scored). Cronbach's alphas were .95 for both mothers and fathers in the present sample. Mothers' and fathers' conflict scores were standardized and averaged. When only one member of the couple completed the measure, that individual's standardized score was used to assess conflict strategies. Mothers' and fathers' reports were significantly correlated,  $r(100) = .55, p < .001$ .

### Data Reduction

Because the MCMI-III yields a large number of subscales, we explored whether closely related subscales might be combined to reduce the number of variables used in analyses. We used both theory and data to guide decisions to combine subscales. In particular, we considered DSM-IV (APA, 2000) groupings of psychopathology dimensions, the degree to which dimensions are grouped together in the psychopathology literature, as well as intercorrelations among the 18 MCMI-III subscales (anxiety, somatoform, dysthymia, major depression, posttraumatic stress, alcohol abuse, drug abuse, and schizoid, avoidant, depressive, dependent, histrionic, narcissistic, antisocial, compulsive, schizotypal, borderline, and paranoid personality).

An examination of intercorrelations among the MCMI-III subscales revealed that narcissistic, histrionic, and compulsive subscales almost always correlated negatively with other subscales, average  $r(180) = -.22$ , range =  $-.61$  to  $-.01$  for mothers and average  $r(124) = -.25$ , range =  $-.54$  to  $-.01$  for fathers, suggesting that within this nonclinical sample these subscales may measure healthy narcissism, flamboyance, and organization, respectively. These subscales were not included in subsequent analyses because they appeared to measure healthy functioning rather than psychopathology. Intercorrelations among the three cluster A personality disorder scales ranged from  $r(180) = .56$  to  $.66, ps < .001$ , for mothers, and  $r(124) = .56$  to  $.60, ps < .001$ , for fathers, and thus were standardized and averaged into a single cluster A scale. Internal consistency among the items making up these three scales (with all items from the three scales taken together) provided further support for combining them (Cronbach's alpha was .92 for mothers and .91 for fathers). The two cluster B scales were correlated for both mothers,  $r(180) = .60, p < .001$ , and fathers,  $r(124) = .64, p < .001$ , but because conceptual models of these two forms of psychopathology are so different and research literatures on these disorders are quite distinct, these subscales were kept separate. The borderline personality scale reflects problematic emotion regulation, and the antisocial personality scale reflects sociopathic qualities such as lack of empathy, manipulativeness, and impulse control problems (APA, 2000). The two cluster C personality disorder scales were correlated,  $r(180) = .61$  for mothers and  $r(124) = .50$  for fathers,  $ps < .001$ , and were therefore standardized and averaged to create a single cluster C scale. Internal consistency among the items making up these two scales provided further support for combining them (Cronbach's alpha was .86 for mothers and .83 for fathers).



Although depressive personality is an Axis II scale, it was considered with Axis I depression subscales because it assessed similar symptoms and has close theoretical ties with dysthymia (APA, 2000). Intercorrelations for major depressive disorder, dysthymic disorder, and depressive personality ranged from  $r(180) = .74$  to  $.84$ ,  $ps < .001$ , for mothers, and  $r(124) = .52$  to  $.73$ ,  $ps < .001$  for fathers, and thus were standardized and averaged to form a single depression scale. Internal consistency among the items making up these three scales provided further support for combining them (Cronbach's alpha was  $.94$  for mothers and  $.92$  for fathers).

Alcohol abuse and drug abuse were correlated,  $r(180) = .51$  for mothers, and  $r(124) = .62$  for fathers,  $ps < .001$ , so they were aggregated to create a single substance abuse scale. Internal consistency among the items making up these two scales provided further support for combining them (Cronbach's alpha was  $.77$  for mothers and  $.84$  for fathers).

Somatization was highly correlated with both depression (major depression, dysthymia, and depressive personality) and anxiety (anxiety and posttraumatic stress). We chose to consider it with anxiety dimensions to keep the depression dimension fairly homogeneous as is typical in the literature on depression and parenting. Intercorrelations for anxiety, PTSD, and somatoform disorder ranged from  $r(180) = .48$  to  $.79$ ,  $ps < .001$ , for mothers, and  $r(124) = .51$  to  $.77$ ,  $ps < .001$  for fathers, and were combined into a single anxiety scale. Internal consistency among the items making up these 3 scales provided further support for combining them (Cronbach's alpha was  $.91$  for mothers and  $.92$  for fathers). In sum, the following 7 dimensions were used in this study: cluster A, borderline personality, antisocial personality, cluster C, anxiety, depression, and substance abuse.

## Statistical Analyses

To test whether different types of psychopathology were each associated with parenting practices, correlations were conducted between each of the 7 dimensions of psychopathology and each dimension of parenting. Next, partial correlations controlling for parent education (a proxy for socioeconomic status) were calculated, because the stress associated with low socioeconomic status may be associated with both psychopathology and parenting practices and could account for relations between these two dimensions. Although the sample consisted entirely of children with behavior problems, there was still some variability in symptom severity across children. To examine whether the relations between psychopathology and parenting practices could have been due to child effects (e.g., children with more severe behavior problems causing greater parent psychopathology and disruptions in parenting), partial correlations were also conducted to control for child behavior problems (BASC hyperactivity and aggression subscales). These analyses were all conducted separately for mothers and fathers.

To compare correlations between mothers and fathers,  $r$  to  $z$  transformations were conducted comparing each maternal psychopathology-parenting style correlation with its corresponding paternal psychopathology-parenting style correlation. Because the sample consisted of both married and single parents, and the relation between psychopathology and parenting might differ for intact versus single parents, we also examined whether marital status moderated the relation between psychopathology and parenting practices. Product terms were created by multiplying a dichotomous marital status variable (married/living together versus single) times each of the psychopathology dimensions. A series of multiple regressions was conducted for each parenting style dimension. For each psychopathology dimension, the psychopathology variable, marital status variable, and psychopathology x marital status variable were entered simultaneously. In addition, because the relation between psychopathology and parenting might vary as a function of the marital context, we explored whether marital conflict moderated the relation between psychopathology and

parenting. The procedure that was used to examine the moderating effect of marital status was also used to examine the moderating effect of marital conflict (using the marital conflict variable instead of the marital status variable to create product terms).

To address whether each dimension of psychopathology was uniquely associated with each parenting dimension, taking into account comorbid psychopathology, a series of multiple regression models was conducted separately for each parenting dimension. With parenting as the criterion variable, each of the 7 dimensions of psychopathology was entered simultaneously. The regression coefficient for each psychopathology dimension provides an estimate of the relation between that dimension and the parenting variable controlling other associated psychopathology dimensions (Tabachnick & Fidell, 2007).

To examine partner effects (i.e., whether psychopathology in one parent predicts parenting practices in the other parent) and to take into account dependency in these dyadic data, Hierarchical Linear Modeling (HLM) was used to analyze actor-partner interdependence models. Only two-parent families ( $n = 105$ ) were included in this set of analyses. A level 1 model was constructed with each parenting variable as an outcome variable, and dummy-coded parent variables as predictor variables (the mother variable was scored 1 for mothers and 0 for fathers, and the father variable was scored 0 for mothers and 1 for fathers):

$$\text{Parenting}_{ij} = B_{1j}(\text{Mother}_{ij}) + B_{2j}(\text{Father}_{ij}) + r_{ij}.$$

In level 2 models, each parent psychopathology dimension was used to predict mothers' parenting ( $B_{1j}$ ) and fathers' parenting ( $B_{2j}$ ). For example, for depression, the level 2 models were:

$$\begin{aligned} B_{1j} &= \gamma_{10} + \gamma_{11} \text{ Mother depression} + \gamma_{12} \text{ Father depression} + u_{1j} \\ B_{2j} &= \gamma_{20} + \gamma_{21} \text{ Mother depression} + \gamma_{22} \text{ Father depression} + u_{2j}. \end{aligned}$$

Although the primary goal of this set of analyses was to examine cross-parent relations, same parent relations are also presented (for example, father depression predicting father parenting) to permit comparison of same-parent to cross-parent relations.

Because this study focused on multiple types of psychopathology and multiple dimensions of parenting, numerous analyses were conducted. A Benjamini-Hochberg false discovery rate correction (Benjamini & Hochberg, 1995) was used to limit Type 1 error.  $P$ -values for all primary analyses involving mothers and fathers were ordered from low ( $p_1$ ) to high ( $p_m$ ), where  $m$  represented the total number (251) of  $p$ -values. We then identified the largest  $k$  such that  $p_k < .05 * k/m$ . The adjusted alpha of  $.05 * k/m$  was .016. Because the hypotheses of the study involved clear directions, one-tailed tests were used. Relations that approached significance (as defined by  $p < .05$ ) are identified in tables.

## RESULTS

### Descriptive Statistics

Mothers' and fathers' mean scores on the MCMI-III subscales are reported in Table 1. The percentage of parents who fell at or above a BR score of 75 is also indicated. Are Different Forms of Parental Psychopathology Similarly Related to Parenting Practices?

**Simple correlations**—Correlations between parenting and psychopathology variables were computed separately for mothers and fathers and are presented in Tables 2 and 3. For

mothers, analyses were conducted separately for audiotape and videotape measures to facilitate comparison to correlations for fathers, but are also presented for combined video/audio because aggregating measures should yield a more reliable measure of the parenting constructs. Observed maternal warmth and negative affect were significantly associated with most maternal psychopathology dimensions, with generally medium-sized correlations. Maternal self-reported laxness, but not observed laxness, was also significantly related to the whole range of maternal psychopathology. Maternal self-reported overreactivity was significantly related to maternal anxiety, depression, and borderline personality. The vast majority of these relations continued to be significant ( $p < .016$ ) or approach significance ( $p < .05$ ) when controlling for maternal education and child behavior (BASC hyperactivity and aggression subscales). The relations between substance abuse and audio and video warmth, and the relation between borderline personality and videotaped warmth, were no longer significant ( $ps > .05$ ) when controlling for maternal education, but the association remained significant for the aggregate audio/video warmth. This pattern likely reflects the greater reliability of the aggregate measure of maternal warmth. The relations between maternal antisocial personality and warmth were also no longer significant when controlling for maternal education and child behavior. For fathers, the only significant relations were between self-reported laxness and cluster A, cluster C, and substance abuse. These relations remained significant when controlling for paternal education and child behavior.

**Comparison of mothers' and fathers' correlations**—Fisher  $r$  to  $z$  transformations were conducted to compare mothers' and fathers' correlation coefficients for self-report and audiotape measures of parenting. The relation between self-reported laxness and borderline personality was significantly more positive for mothers,  $r(166) = .40$ , than for fathers,  $r(123) = .13$ ,  $p = .007$ . The relation between audiotaped warmth and depression was significantly more negative for mothers,  $r(166) = -.25$ , than for fathers,  $r(106) = .03$ ,  $p = .011$ .

**Marital status and marital conflict as moderators of the relation between parent psychopathology and parenting**—There were no significant interactions between marital status and psychopathology or between marital conflict and psychopathology in predicting parenting. Are Depression, Anxiety, Substance Abuse, and Axis II Pathology Independently Associated with Different Types of Parenting Practices?

Regression analyses were conducted entering the 7 dimensions of psychopathology as predictors for each parenting dimension, to examine unique relations between each psychopathology dimension and parenting. These analyses were conducted only for mothers because simple correlations suggested no more than a weak association between paternal psychopathology and parenting for fathers. Combined audio/video variables were used for maternal warmth and negative affect because an aggregate measure should provide more reliable estimates of these constructs. Results are presented in Table 4. Cluster A traits uniquely predicted both self-reported laxness and audio/video warmth. Borderline personality traits uniquely predicted self-reported laxness. Anxiety, depression, and substance abuse did not uniquely predict any of the parenting dimensions. Although none of the 7 dimensions uniquely predicted observed negative affect, the overall model was significant.

Including variables with low predictive power in regression models increases standard errors of the estimates of the other predictors' regression weights (Berry & Feldman, 1985). Thus, estimates can be improved by removing variables with poor predictive power. We therefore explored whether model trimming might better identify those variables that best predict parenting. Variables with the highest  $p$ -values were eliminated one at a time, until all predictors had  $p$ -values less than .20 (Table 5). Cluster A traits remained the only significant

predictor of mothers' warmth and observed laxness, and cluster A and borderline personality traits were the only significant predictors of self-reported laxness.

### **Are Mothers' and Fathers' Psychopathology Associated with their Partners' Parenting?**

HLM analyses of actor-partner interdependence models indicated that greater maternal self-reported overreactivity was significantly associated with lower paternal scores on cluster C and borderline personality (Table 6). In addition, mothers' higher levels of borderline personality, antisocial personality, cluster C traits, anxiety, and substance abuse were all significantly associated with lower levels of fathers' overreactivity. All of these relations were in unexpected directions: lower levels of psychopathology were related to partners' higher overreactivity.

## **DISCUSSION**

This study investigated associations between types of psychopathology and parenting practices in a sample of mothers and fathers of preschool-aged children with behavior problems. It sought to understand both the simple and unique relations between different dimensions of psychopathology and parenting practices as well as to explore cross-parent relations between parent psychopathology and parenting.

### **Relations between Psychopathology and Parenting for Mothers**

This study replicated a large body of research linking problematic parenting practices with maternal depression (e.g., Elgar, Mills, McGrath, Waschbusch, & Brownridge, 2007). This study also corroborated findings from a smaller body of research suggesting that other forms of psychopathology may also be associated with parenting, including maternal anxiety (e.g., Woodruff-Borden et al., 2002), alcohol and drug abuse (e.g., Mayes & Truman, 2002), and personality disorders (Johnson, Cohen, Kasen, Ehrensaft et al., 2006). The present study also extended previous research by examining whether each dimension of maternal psychopathology uniquely predicted parenting practices. When controlling for other dimensions of psychopathology, maternal cluster A pathology was uniquely associated with lack of warmth and with the use of lax discipline, and maternal borderline personality was uniquely associated with lax discipline. The fact that schizotypal items were infrequently endorsed in this sample suggests that characteristics of schizoid and paranoid personality may largely account for the relation between cluster A and parenting. Further research is needed to better understand the mechanisms by which these symptoms may disrupt parenting. For example, it may be that isolative and defensive interpersonal styles carry over to the parent-child relationship and manifest as detached, lax parenting. It is also possible that parents with these traits experience less social support which may impact their parenting.

In contrast, maternal anxiety, depression, and substance abuse showed simple relations with parenting, but were not uniquely associated with parenting after controlling for other dimensions of psychopathology. These findings have implications for the large body of research documenting the relation between Axis I psychopathology and parenting problems because they suggest that certain underlying characterological problems may contribute to the parenting difficulties of mothers who struggle with these disorders. It is important to note that the degree to which various dimensions of psychopathology uniquely predict parenting depends on the context of the other dimensions included in regression models. Syndromes that are more closely related to other dimensions of psychopathology (e.g., depression and anxiety) might be less likely to uniquely predict parenting than syndromes that are less comorbid with other types of psychopathology (e.g., specific Axis II dimensions). Further research is needed to better understand the role that comorbid

psychopathology may play in relations among maternal depression, anxiety, substance abuse, and parenting.

### **Relations between Psychopathology and Parenting for Fathers**

Although there were few significant relations for fathers in the current study, the association between paternal psychopathology and self-reported lax discipline supports the notion that psychopathology can disrupt parenting for fathers. This finding is consistent with research linking paternal Axis II pathology with both inconsistent discipline and low parental communication (Johnson et al., 2006). However, paternal warmth, negative affect, and overreactivity were not significantly associated with any types of paternal psychopathology. The absence of significant associations between paternal psychopathology and paternal overreactivity was somewhat surprising given research that has linked paternal depression to increased aggravation/stress in the parenting role (Bronte-Tinkew et al., 2007).

The relation between psychopathology and parenting practices appeared to be weaker for fathers than for mothers. However, a direct comparison between correlations for mothers and fathers only yielded one significant difference; the relation between self-reported laxness and borderline personality was significantly stronger for mothers than for fathers. Thus, for fathers, relations between psychopathology and parenting were generally neither significantly different from zero nor significantly different from mothers' relations. Because more mothers than fathers participated in the present study, one plausible explanation is that the greater number of significant findings for mothers than for fathers was due to a difference in sample size. Effect sizes were small for fathers in contrast to generally medium-size effects for mothers. A larger sample may be needed to detect effects for fathers. It is also possible that the different pattern of results between mothers and fathers was due to the fact that parenting assessments were less powerful for fathers than for mothers. More findings might have been revealed if fathers had also engaged in videotape observations. The fact that mothers in this study were more likely than fathers to be single is another possible reason for different patterns of results for mothers and fathers. However, marital status was not found to moderate the relation between parent psychopathology and parenting, and a similar pattern of findings was observed when only married/cohabiting couples were examined (Table 6).

### **Psychopathology and Partners' Parenting**

There was some evidence that psychopathology was associated with less partner overreactivity, although relations between fathers' psychopathology and mothers' parenting were more consistent than relations between mothers' psychopathology and fathers' parenting. There were no significant partner relations for warmth, negative affect, or laxness. Our finding that mothers' psychopathology was associated with less overreactive parenting among fathers is consistent with research suggesting that fathers may adjust their parenting practices when their partner is depressed (Hops et al., 1987). Our findings stand in contrast to research linking maternal substance abuse to disruptions in fathers' parenting (Capaldi, Pears, Kerr, & Owen, 2008; Moser & Jacob, 1997); in the present study maternal substance abuse was associated with less overreactive parenting in fathers. A similar but weaker pattern was observed linking fathers' psychopathology (in particular, borderline and cluster C personality) to less overreactive parenting for mothers. The demands of parenting children with behavior problems may create a critical need for one parent to function well and may make it more likely that parents will step up in their parenting roles when their partners are having difficulties. More research is needed to better understand the mechanisms underlying cross-parent relations between psychopathology and parenting.

## Limitations

The findings should be interpreted in the context of several limitations of the study. First, the use of a cross-sectional design prevents causal inferences. Although psychopathology may cause parenting difficulties, other variables such as marital discord and child behavior may negatively affect both parental mood and parenting practices (Downey & Coyne, 1990; Hammen, Burge, & Stansbury, 1990; Meyers, 1999). Longitudinal studies are needed to help to tease apart the direction of causality between psychopathology and parenting. Second, these results may not generalize to parents who are dissimilar from the present sample. The relations between parenting practices and psychopathology may be different for parents and children of different backgrounds, for parents of younger or older children, or for parents who have more serious levels of psychopathology. Similarly, caution should be taken in generalizing findings to parents of children without behavior problems. Finally, the sample size of the present study may not have been sufficient for detecting some of the relations of interest, including relations for fathers and moderating effects of marital status and conflict.

## Implications for Research, Policy, and Practice

The present study suggests that parent psychopathology in its many forms may play an important role in how parents interact with young children with behavior problems. Critical next steps include examining the interplay among different types of psychopathology and identifying the mechanisms underlying the relations between psychopathology and parenting. Future research should also continue to explore how psychopathology is related to other dimensions of parenting, such as teaching, modeling, and expressing and regulating emotion. Finally, this study points to the need to expand our understanding of fathers' psychopathology and parenting. Despite calls for more research on fathers' parenting (Phares et al., 2005; Veneziano, 2003), fathers continue to be relatively neglected in the literature.

With respect to practice, child and family clinicians should think broadly about the potential determinants of maladaptive parenting. For example, treatments that target parents' entrenched characterological problems together with maternal depression may have a bigger impact on parent-child relationships, and ultimately on child functioning, than treatments focused exclusively on parents' symptoms of depression. Further research is needed to determine whether and how treatments that target parent psychopathology may positively affect parenting, and in turn child development.

## Acknowledgments

This study was supported by National Institute of Mental Health Grant R01MH60132. We are grateful to the families who participated in this study and to staff from physicians' offices and community centers who assisted in recruiting families. Thanks also to the many graduate and undergraduate research assistants who assisted with data collection and to Aline Sayer who provided statistical consultation.

## References

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders (Text revision). Washington, DC: Author; 2000.
- Arnold DS, O'Leary SG, Wolff LS, Acker MM. The Parenting Scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment*. 1993; 5:137–144. [10.1037/1040-3590.5.2.137](https://doi.org/10.1037/1040-3590.5.2.137)
- Bauman PS, Dougherty FE. Drug-addicted mothers' parenting and their children's development. *International Journal of the Addictions*. 1983; 18:291–302. [PubMed: 6874152]

- Belsky J. The determinants of parenting: A process model. *Child Development*. 1984; 55:83–96.10.2307/1129836 [PubMed: 6705636]
- Belsky, J.; Jaffee, SR. The multiple determinants of parenting. In: Cicchetti, D.; Cohen, D., editors. *Developmental psychopathology: Risk, disorder, and adaptation*. 2. Vol. 3. Hoboken, NJ: John Wiley & Sons Inc; 2006. p. 38-85.
- Benjamini Y, Hochberg Y. Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society Series B*. 1995; 57:289–300.
- Berg-Nielsen TS, Vikan A, Dahl AA. Parenting related to child and parental psychopathology: A descriptive review of the literature. *Clinical Child Psychology and Psychiatry*. 2002; 7:1359–1045.10.1177/1359104502007004006
- Bernstein VJ, Hans SL. Predicting the developmental outcome of two-year-old children born exposed to methadone: The impact of social-environmental risk factors. *Journal of Clinical Child Psychology*. 1994; 23:349–359.10.1207/S15374424jccp2304\_1
- Bernstein VJ, Jeremy RJ, Hans SL, Marcus J. A longitudinal study of offspring born to methadone-maintained women. *American Journal of Alcohol and Drug Abuse*. 1984; 10:161–193.10.3109/00952998409002779
- Bernstein VJ, Jeremy RJ, Marcus J. Mother-infant interaction in multiproblem families: Finding those at risk. *Journal of the American Academy of Child Psychiatry*. 1986; 25:631–640.10.1016/S0002-7138(09)60287-9 [PubMed: 3760412]
- Berry, WD.; Feldman, S. *Multiple regression in practice*. Newbury Park, CA: Sage Publications; 1985.
- Biringen Z. Direct observation of maternal sensitivity and dyadic interactions in the home: Relations to maternal thinking. *Developmental Psychology*. 1990; 26:278–284.10.1037/0012-1649.26.2.278
- Bogels SM, Van Melick M. The relationship between child-report, parent self-report, and partner report of perceived parental rearing behaviors and anxiety in children and parents. *Personality and Individual Differences*. 2004; 37:1583–1596.10.1016/J.Paid.2004.02.014
- Bornstein, MH.; Sawyer, J. Family systems. In: McCartney, K.; Phillips, D., editors. *Blackwell handbook of early childhood development*. Malden, MA: Blackwell Publishing; 2006. p. 381-398.
- Bosquet M, Egeland B. Predicting parenting behaviors from antisocial practices content scale scores of the MMPI-2 administered during pregnancy. *Journal of Personality Assessment*. 2000; 74:146–162.10.1207/S15327752JPA740110 [PubMed: 10779938]
- Bronte-Tinkew J, Moore KA, Matthews G, Carrano J. Symptoms of major depression in a sample of fathers of infants: Sociodemographic correlates and links to father involvement. *Journal of Family Issues*. 2007; 28:61–99.10.1177/0192513X06293609
- Capaldi DM, Pears KC, Kerr DCR, Owen LD. Intergenerational and partner influences on fathers' negative discipline. *Journal of Abnormal Child Psychology*. 2008; 36:347–350.10.1007/S10802-007-9182-8 [PubMed: 17899359]
- Cassidy B, Zoccolillo M, Hughes S. Psychopathology in adolescent mothers and its effects on mother-infant interactions: A pilot study. *Canadian Journal of Psychiatry*. 1996; 41:379–384.
- Cohn JF, Campbell SB, Matias R, Hopkins J. Face-to-face interactions of postpartum depressed and nondepressed mother-infant pairs at 2 months. *Developmental Psychology*. 1990; 26:15–23.10.1037/0012-1649.26.1.15
- Craig RJ, Olson RE. Adjectival descriptions of personality disorders: A convergent validity study of the MCMI-III. *Journal of Personality Assessment*. 2001; 77:259–271. [PubMed: 11693858]
- Demulder EK, Tarullo LB, Klimes-Dougan B, Free K, Radke-Yarrow M. Personality disorders of affectively ill mothers: Links to maternal behavior. *Journal of Personality Disorders*. 1995; 9:199–212.
- Downey G, Coyne JC. Children of depressed parents: An integrative review. *Psychological Bulletin*. 1990; 108:50–76.10.1037/0033-2909.108.1.50 [PubMed: 2200073]
- Edwards EP, Homish GG, Eiden RD, Grohman KK, Leonard KE. Longitudinal prediction of early childhood discipline styles among heavy drinking parents. *Addictive Behaviors*. 2009; 34:100–106.10.1016/J.Addbeh.2008.08.006 [PubMed: 18818023]
- Eiden RD, Edwards EP, Leonard KE. A conceptual model for the development of externalizing behavior problems among kindergarten children of alcoholic families: Role of parenting and

- children's self-regulation. *Developmental Psychology*. 2007; 43:1187–1201.10.1037/0012-1649.43.5.1187 [PubMed: 17723044]
- Eiden R, Leonard KE. Paternal alcoholism, parental psychopathology, and aggravation with infants. *Journal of Substance Abuse*. 2000; 11:17–29.10.1016/S0899-3289(99)00016-4 [PubMed: 10756511]
- Elgar FJ, Mills RSL, McGrath PJ, Waschbusch DA, Brownridge DA. Maternal and paternal depressive symptoms and child maladjustment: The mediating role of parental behavior. *Journal of Abnormal Child Psychology*. 2007; 35:943–955.10.1007/S10802-007-9145-0 [PubMed: 17577659]
- Ginsburg GS, Grover RL, Ialongo N. Parenting behaviors among anxious and non-anxious mothers: Relation with concurrent and long-term child outcomes. *Child & Family Behavior Therapy*. 2004; 26:23–41.10.1300/J019v26n04\_02
- Ginsburg GS, Schlossberg MC. Family-based treatment of childhood anxiety disorders. *International Review of Psychiatry*. 2002; 14:143–154.10.1080/09540260220132662
- Goodman JH. Influences of maternal postpartum depression on fathers and their father-infant interaction. *Infant Mental Health Journal*. 2008; 29:624–643.10.1002/Imhj.20199
- Goodman SH, Brumley E. Schizophrenic and depressed mothers: Relational deficits in parenting. *Developmental Psychology*. 1990; 26:31–39.10.1037/0012-1649.26.1.31
- Gordon D, Burge D, Hammen C, Adrian C, Jaenicke C, Hiroto D. Observations of interactions of depressed women with their children. *American Journal of Psychiatry*. 1989; 146:50–55. [PubMed: 2912250]
- Hammen C, Burge D, Stansbury K. Relationship of mother and child variables to child outcomes in a high-risk sample: A causal modeling analysis. *Developmental Psychology*. 1990; 26:24–30.10.1037/0012-1649.26.1.24
- Hans SL, Bernstein VJ, Henson LG. The role of psychopathology in the parenting of drug-dependent women. *Development and Psychopathology*. 1999; 11:957–977.10.1017/S0954579499002400 [PubMed: 10624734]
- Hoeve M, Dubas JS, Eichelsheim VI, Van Der Laan PH, Smeenk W, Gerris JRM. The relationship between parenting and delinquency: A meta-analysis. *Journal of Abnormal Child Psychology*. 2009; 37:749–775.10.1007/S10802-009-9310-8 [PubMed: 19263213]
- Hops H, Biglan A, Sherman L, Arthur J, Friedman L, Osteen V. Home observations of family interactions of depressed women. *Journal of Consulting and Clinical Psychology*. 1987; 55:341–346.10.1037/0022-006X.55.3.341 [PubMed: 3597946]
- Huesmann LR, Eron LD, Lefkowitz MM, Walder LO. Stability of aggression over time and generations. *Developmental Psychology*. 1984; 20:1120–1134.10.1037/0012-1649.20.6.1120
- Jacob T, Haber JR, Leonard KE, Rushe R. Home interactions of high and low antisocial male alcoholics and their families. *Journal of Studies on Alcohol*. 2000; 61:72–80. [PubMed: 10627099]
- Jeremy RJ, Bernstein VJ. Dyads at risk: Methadone-maintained women and their four-month-old infants. *Child Development*. 1984; 55:1141–1154.10.2307/1129983 [PubMed: 6488949]
- Johnson JG, Cohen J, Kasen S, Brook JS. Paternal psychiatric symptoms and maladaptive paternal behavior in the home during the child rearing years. *Journal of Child and Family Studies*. 2004; 13:421–437.10.1023/B:JCFS.0000044725.76533.66
- Johnson JG, Cohen J, Kasen S, Brook JS. Maternal psychiatric disorders, parenting, and maternal behavior in the home during the child rearing years. *Journal of Child and Family Studies*. 2006; 15:97–114.10.1007/S10826-005-9003-Z
- Johnson JG, Cohen P, Kasen S, Ehrensaft MK, Crawford TN. Associations of parental personality disorders and Axis I disorders with childrearing behavior. *Psychiatry*. 2006; 69:336–350.10.1521/Psyc.2006.69.4.336 [PubMed: 17326728]
- Johnson JG, Smailes E, Cohen J, Kasen S, Brook JS. Anti-social parental behaviour, problematic parenting and aggressive offspring behaviour during adulthood: A 25-year longitudinal investigation. *British Journal of Criminology*. 2004; 44:915–930.10.1093/Bjc/Azh041
- Jouriles EN, Murphy CM, O'Leary D. Effects of maternal mood on mother-son interaction patterns. *Journal of Abnormal Child Psychology*. 1989; 17:513–525.10.1007/BF00916510 [PubMed: 2808944]



- Kane P, Garber J. The relations among depression in fathers, children's psychopathology, and father-child conflict: A meta-analysis. *Clinical Psychology Review*. 2004; 24:339–360.10.1016/J.Cpr.2004.03.004 [PubMed: 15245835]
- Kashdan TB, Jacob RG, Pelham WE, Lang AR, Hoza B, Blumenthal JD, Gnagy EM. Depression and anxiety in parents of children with ADHD and varying levels of oppositional defiant behaviors: Modeling relationships with family functioning. *Journal of Clinical Child and Adolescent Psychology*. 2004; 33:169–181.10.1207/S15374424JCCP3301\_16 [PubMed: 15028551]
- Kerig PK. Assessing the links between interparental conflict and child adjustment: The conflicts and problem-solving scales. *Journal of Family Psychology*. 1996; 10:454–473.10.1037/0893-3200.10.4.454
- Lang AR, Pelham WE, Atkeson BM, Murphy DA. Effects of alcohol intoxication on parenting behavior in interactions with child confederates. *Journal of Abnormal Child Psychology*. 1999; 27:177–189.10.1023/A:1021996122095 [PubMed: 10438184]
- Locke TF, Newcomb M. Child maltreatment, parent alcohol- and drug-related problems, polydrug problems, and parenting practices: A test of gender differences and four theoretical perspectives. *Journal of Family Psychology*. 2004; 18:120–134.10.1037/0893-3200.18.1.120 [PubMed: 14992615]
- Lovejoy MC. Maternal depression: Effects on social cognition and behavior in parent-child interactions. *Journal of Abnormal Child Psychology*. 1991; 19:693–706.10.1007/BF00918907 [PubMed: 1791274]
- Lovejoy MC, Graczyk PA, O'Hare E, Neuman G. Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*. 2000; 20:561–592.10.1016/S0272-7358(98)00100-7 [PubMed: 10860167]
- Mayes, LC.; Truman, SD. Substance abuse and parenting. In: Bornstein, MH., editor. *Handbook of parenting: Social conditions and applied parenting*. 2. Vol. 4. Mahwah, NJ: Lawrence Erlbaum Associates Publishers; 2002. p. 329-359.
- Mccauley, E.; Garber, J.; Diamond, G.; Schloredt, K. Treating parents' depression: Changes in family environment and child functioning in relation to changes in parental depression. Paper presented at the Society for Research on Child Development; Atlanta, GA. 2005.
- McLeod BD, Weisz JR, Wood JJ. Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review*. 2007; 27:986–1003.10.1016/J.Cpr.2007.03.001 [PubMed: 17449154]
- Mcmahon TJ, Winkel JD, Rounsaville BJ. Drug abuse and responsible fathering: A comparative study of men enrolled in methadone maintenance treatment. *Addiction*. 2008; 103:269–283.10.1111/J.1360-0443.2007.02075.X [PubMed: 18199306]
- Merikangas KR, Avenevoli S, Dierker L, Grillon C. Vulnerability factors among children at risk for anxiety disorders. *Biological Psychiatry*. 1999; 46:1523–1535.10.1016/S0006-3223(99)00172-9 [PubMed: 10599480]
- Meyers SA. Mothering in context: Ecological determinants of parent behavior. *Merrill-Palmer Quarterly*. 1999; 45:332–357.
- Millon, TM.; Davis, R.; Millon, C. *Millon Clinical Multiaxial Inventory - III manual*. 2. Minneapolis, MN: National Computer Systems, Inc; 1997.
- Moser RP, Jacob T. Parent-child interactions and child outcomes as related to gender of alcoholic parent. *Journal of Substance Abuse*. 1997; 9:189–208.10.1016/S0899-3289(97)90016-X [PubMed: 9494949]
- Mrazek DA, Mrazek P, Klinnert M. Clinical assessment of parenting. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1995; 34:272–283.10.1097/00004583-199503000-00010 [PubMed: 7896666]
- Nover A, Shore MF, Timberlake EM, Greenspan SI. The relationship of maternal perception and maternal behavior: A study of normal mothers and their infants. *American Journal of Orthopsychiatry*. 1984; 54:210–223. [PubMed: 6731589]
- O'Connor JJ, Sigman M, Kasari C. Interactional model for the association among maternal alcohol use, mother-infant interaction, and infant cognitive development. *Infant Behavior and Development*. 1993; 16:177–192.10.1016/0163-6383(93)80016-2

- Patterson, GR.; Dishion, TJ. Multilevel family process: Traits, interactions and relationships. In: Hinde, RA.; Stevenson-Hinde, J., editors. *Relationships within families: Mutual influences*. Oxford, England: Clarendon; 1988. p. 283-310.
- Phares V, Fields S, Kamboukos D, Lopez E. Still looking for poppa. *American Psychologist*. 2005; 60:735–736.10.1037/0003-066X.60.7.735 [PubMed: 16221013]
- Reynolds, CR.; Kamphaus, RW. *Behavioral Assessment System for Children manual*. Circle Pines, MN: American Guidance Service; 1992.
- Rodning C, Beckwith L, Howard J. Quality of attachment and home environments in children prenatally exposed to PCP and cocaine. *Development and Psychopathology*. 1991; 3:351–366.10.1017/S0954579400007562
- Rossi G, Van Den Brande I, Tobac A, Sloore H, Hauben C. Convergent validity of the MCMI-III personality disorder scales and the MMPI-2 scales. *Journal of Personality Disorders*. 2003; 17:330–340.10.1521/Pedi.17.4.330.23970 [PubMed: 14521181]
- Tabachnick, BG.; Fidell, LS. *Using multivariate statistics*. 5. Boston: Allyn & Bacon; 2007.
- Turner SM, Beidel DC, Roberson-Nay R, Tervo K. Parenting behaviors in parents with anxiety disorders. *Behaviour Research and Therapy*. 2003; 41:541–554.10.1016/S0005-7967(02)00028-1 [PubMed: 12711263]
- Veneziano RA. The importance of paternal warmth. *Cross-Cultural Research: The Journal of Comparative Social Science*. 2003; 37:265–281.
- Weissman MM, Bland RC, Canino GJ, Faravelli C, Greenwald S, Hwu HG, ... Yeh EK. A cross-national epidemiology of major depression and bipolar disorder. *JAMA*. 1996; 176:293–299.10.1001/Jama.276.4.293 [PubMed: 8656541]
- Whaley SE, Pinto A, Sigman M. Characterizing interactions between anxious mothers and their children. *Journal of Consulting and Clinical Psychology*. 1999; 67:826–836.10.1037/0022-006X.67.6.826 [PubMed: 10596505]
- White RMB, Roosa MW, Weaver SR, Nair RL. Cultural and contextual influences on parenting in Mexican American families. *Journal of Marriage and Family*. 2009; 71:61–79.10.1111/J.1741-3737.2008.00580.X [PubMed: 20126298]
- Woodruff-Borden J, Morrow C, Bourland S, Cambron S. The behavior of anxious parents: Examining mechanisms of transmission of anxiety from parent to child. *Journal of Clinical Child & Adolescent Psychology*. 2002; 31:364–374. [PubMed: 12149974]
- Zahn-Waxler, C.; Duggal, S.; Gruber, R. Parental psychopathology. In: Bornstein, MH., editor. *Handbook of parenting*. 2. Vol. 3. Mahwah, NJ: Lawrence Erlbaum Associates; 2002. p. 295-327.

**TABLE 1**

## Descriptive Statistics for MCMI-III Subscales

Variable	Mothers ( <i>n</i> = 182)			Fathers ( <i>n</i> = 126)		
	<i>M</i> ( <i>SD</i> )	% BR	75 <sup>a</sup>	<i>M</i> ( <i>SD</i> )	% BR	75
Cluster A						
Schizoid	48.98 (24.24)		17.0	55.56 (24.63)		31.0
Schizotypal	35.02 (26.51)		3.3	35.19 (26.96)		3.9
Paranoid	47.49 (30.13)		19.2	42.09 (28.68)		11.8
Borderline	35.36 (24.99)		9.9	32.91 (26.41)		7.9
Antisocial	49.94 (20.70)		13.2	48.95 (21.34)		17.3
Cluster C						
Avoidant	43.51 (24.05)		14.3	46.76 (26.82)		25.2
Dependent	48.49 (22.58)		18.1	50.88 (22.45)		21.3
Anxiety						
Anxiety	44.45 (29.88)		28.6	42.20 (32.71)		29.9
Somatoform	33.90 (24.16)		4.9	38.46 (28.87)		7.1
Posttraumatic Stress	34.53 (25.73)		6.0	32.21 (25.44)		9.4
Depression						
Major Depression	31.44 (24.74)		8.2	31.62 (27.02)		3.9
Dysthymia	27.65 (24.84)		9.9	34.72 (27.94)		13.4
Depressive	42.35 (25.49)		17.6	49.44 (30.06)		31.2
Substance Abuse						
Alcohol	57.01 (29.55)		13.1	48.90 (29.39)		23.6
Drug	42.54 (26.19)		2.2	37.19 (22.66)		3.9

<sup>a</sup>Indicates the percentage of parents who had psychopathology Base Rate scores of at least 75.

TABLE 2

Correlations Between Mothers' Psychopathology and Parenting

Parent psycho-pathology	n = 180	n = 164	n = 168	n = 180	n = 164	n = 168	n = 168	n = 164	n = 169	n = 168
	Video/Audio Warmth	Video Warmth	Audio Warmth	Video/Audio Negative Affect <sup>a</sup>	Video Negative Affect	Audio Negative Affect	Video Laxness	Self-reported Overreactivity	Self-reported Laxness	
Cluster A	-.38***	-.34***	-.34***	.27**	.24**	.24***	.15 <sup>c</sup>	.07	.38***	
Borderline	-.27***	-.17 <sup>a</sup>	-.29***	.21*	.15 <sup>c</sup>	.23**	.01	.22**	.40***	
Antisocial	-.16 <sup>ab</sup>	-.09	-.18 <sup>ab</sup>	.13	.07	.17*	.01	.08	.28***	
Cluster C	-.24***	-.21**	-.23**	.14	.11	.15 <sup>c</sup>	.09	.11	.21**	
Anxiety	-.27***	-.24**	-.26***	.28**	.22**	.27***	.08	.22**	.25***	
Depression	-.26***	-.21**	-.25***	.25**	.25***	.22**	.06	.22**	.25***	
Substance Abuse	-.25***	-.19 <sup>a</sup>	-.23 <sup>ab</sup>	.23*	.22**	.21**	.06	.14 <sup>c</sup>	.28***	

<sup>a</sup>Indicate correlations that are no longer significant or approaching significance ( $p > .05$ ) when controlled for parent education.

<sup>b</sup>Indicate correlations that are no longer significant or approaching significance ( $p > .05$ ) when controlled for child behavior.

<sup>c</sup>Indicate correlations that are not significant using the false discover rate ( $p > .016$ ).

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

TABLE 3

Correlations between Fathers' Psychopathology and Parenting

Parent psycho-pathology	Audio Warmth <i>n</i> = 108	Audio Negative Affect <i>n</i> = 112	Self-reported Overreactivity <i>n</i> = 125	Self-reported Laxness <i>n</i> = 125
Cluster A	-.12	.08	.07	.23***
Borderline	-.07	.05	.07	.13
Antisocial	-.02	.14	.09	.19* <sup>a</sup>
Cluster C	-.15	.00	.10	.21*
Anxiety	-.02	.04	-.02	.15
Depression	.03	.03	.03	.17* <sup>a</sup>
Substance Abuse	-.02	.10	.04	.21*

<sup>a</sup>Indicate correlations that are not significant using the false discover rate ( $p > .016$ ).\*  $p < .05$ .

**TABLE 4**  
 Regression Models for Seven Psychopathology Variables in Predicting Maternal Parenting Practices

	Video/Audio Warmth			Video/Audio Negative Affect			Video Laxness			Self-reported Overreactivity			Self-reported Laxness		
	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$
Cluster A	-.37	.11	-.39***	.14	.11	.15	.15	.08	.22* <sup>a</sup>	-.22	.12	-.22* <sup>a</sup>	.37	.13	.31**
Borderline	-.02	.11	-.02	-.09	.12	-.11	-.10	.08	-.18	.16	.12	.19	.32	.13	.32**
Antisocial	-.02	.11	-.02	-.03	.12	-.03	-.02	.09	-.03	-.02	.12	-.02	.12	.13	.13
Cluster C	-.01	.10	.00	-.13	.10	-.14	.04	.07	.06	-.04	.10	-.04	-.05	.11	-.04
Anxiety	.02	.13	.02	.19	.14	.19	.02	.10	.03	.16	.14	.16	-.10	.16	-.08
Depression	.06	.13	.07	.07	.13	.08	-.07	.10	-.11	.13	.13	.14	-.05	.15	-.04
Substance Abuse	-.08	.15	-.08	.14	.15	.15	.08	.11	.11	.00	.15	.00	-.15	.17	-.13
	Adjusted $R^2 = .11$ ***			$R^2 = .06$ **			$R^2 = -.00$			$R^2 = .04$ * <sup>a</sup>			$R^2 = .16$ ***		

<sup>a</sup> Indicate coefficients that are not significant using the false discover rate ( $p > .016$ ).

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

**TABLE 5**  
Trimmed Regression Models for Seven Psychopathology Variables in Predicting Maternal Parenting Practices

Parent Psycho-pathology	Video/Audio Warmth			Video/Audio Negative Affect			Video Laxness			Self-reported Overreactivity			Self-reported Laxness		
	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$
Cluster A	-.37	.07	-.38***	.18	.11	.19** <sup>a</sup>	.16	.07	.24*	-.21** <sup>a</sup>	.11	-.21** <sup>a</sup>	.30	.11	.25***
Borderline							-.08	.06	-.15	.17	.09	.20** <sup>a</sup>	.25	.11	.25*
Antisocial													.19	.12	.19
Cluster C				-.13	.10	-.14									
Anxiety				.22	.11	.23** <sup>a</sup>				.23	.11	.23** <sup>a</sup>			
Depression															
Substance Abuse													-.20	.16	-.18
				Adjusted $R^2 = .14$ ***			$R^2 = .02$ ** <sup>a</sup>			$R^2 = .06$ **			$R^2 = .17$ ***		

<sup>a</sup> Indicate coefficients that are not significant using the false discover rate ( $p > .016$ ).

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

TABLE 6

Relation Between Parent Psychopathology and Partners' Parenting Among Two-Parent Families

Parent Psychopathology	Mothers' Parenting						Fathers' Parenting					
	Audio Warmth	Audio Negative Affect	Self-Reported Laxness	Self-Reported Overreactivity	Audio Warmth	Audio Negative Affect	Self-Reported Laxness	Self-Reported Overreactivity	Audio Warmth	Audio Negative Affect	Self-Reported Laxness	Self-Reported Overreactivity
	$\gamma$ (SE) df = 99	$\gamma$ (SE) df = 99	$\gamma$ (SE) df = 102	$\gamma$ (SE) df = 102	$\gamma$ (SE) df = 99	$\gamma$ (SE) df = 99	$\gamma$ (SE) df = 102	$\gamma$ (SE) df = 102	$\gamma$ (SE) df = 99	$\gamma$ (SE) df = 99	$\gamma$ (SE) df = 102	$\gamma$ (SE) df = 102
<u>Mother</u>												
Cluster A	-.33 (.11)**	.73 (.33)*	.44 (.11)***	.21 (.10)* <sup>a</sup>	-.02 (.12)	.33 (.25)	-.03 (.10)	-.21 (.11)* <sup>a</sup>				
Borderline	-.25 (.10)**	.55 (.28)* <sup>a</sup>	.36 (.10)***	.30 (.08)***	.00 (.10)	.12 (.20)	-.10 (.09)	-.27 (.09)**				
Antisocial	-.17 (.09)* <sup>a</sup>	.36 (.26)	.20 (.09)*	.11 (.07)	-.04 (.09)	.00 (.19)	-.03 (.08)	-.19 (.08)*				
Cluster C	-.22 (.11)* <sup>a</sup>	.82 (.31)**	.36 (.11)**	.32 (.09)***	-.03 (.12)	-.05 (.23)	-.03 (.10)	-.25 (.10)*				
Anxiety	-.30 (.11)**	1.03 (.29)***	.33 (.11)**	.32 (.09)***	.07 (.11)	.05 (.23)	.03 (.10)	-.25 (.10)**				
Depression	-.17 (.10)	.38 (.29)	.25 (.10)**	.17 (.09)* <sup>a</sup>	.11 (.10)	.10 (.21)	-.12 (.09)	-.12 (.09)				
Substance Abuse	-.20 (.10)* <sup>a</sup>	.45 (.29)	.28 (.10)**	.17 (.08)* <sup>a</sup>	-.02 (.10)	-.06 (.20)	-.02 (.09)	-.23 (.09)**				
<u>Father</u>												
Cluster A	.10 (.10)	-.14 (.30)	-.21 (.10)* <sup>a</sup>	-.08 (.09)	-.12 (.11)	-.09 (.23)	.16 (.09)* <sup>a</sup>	.14 (.09)				
Borderline	.14 (.09)	-.08 (.26)	-.10 (.09)	-.17 (.07)**	-.05 (.10)	-.21 (.20)	.06 (.08)	.16 (.08)* <sup>a</sup>				
Antisocial	.06 (.09)	-.13 (.24)	-.04 (.08)	-.15 (.07)* <sup>a</sup>	.00 (.09)	.08 (.18)	.05 (.07)	.13 (.08)* <sup>a</sup>				
Cluster C	.18 (.11)	-.46 (.31)	-.20 (.10)* <sup>a</sup>	-.23 (.08)**	.07 (.12)	-.29 (.24)	.15 (.09)	.14 (.10)				
Anxiety	.01 (.10)	.14 (.29)	-.08 (.10)	-.13 (.08)	.00 (.12)	-.15 (.23)	.16 (.09)* <sup>a</sup>	.05 (.09)				
Depression	.11 (.10)	-.25 (.28)	-.16 (.09)* <sup>a</sup>	.03 (.08)	-.10 (.10)	-.11 (.20)	.15 (.08)* <sup>a</sup>	.16 (.09)* <sup>a</sup>				
Substance Abuse	.08 (.10)	.05 (.30)	-.06 (.10)	-.17 (.08)* <sup>a</sup>	.00 (.11)	.01 (.22)	.09 (.09)	.11 (.09)				

<sup>a</sup> Indicate coefficients that are not significant using the false discover rate ( $p > .016$ ).

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .