

# Towards a family process model of maternal and paternal depressive symptoms: exploring multiple relations with child and family functioning

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**Background:** Research has focused on maternal dysphoria and child adjustment. However, family process models indicate gaps in the study of paternal dysphoria, broader family functioning, and diverse child outcomes. **Method:** A community sample of 235 mothers and fathers of kindergarten children completed measures of depressive symptoms, family functioning and child adjustment. Teachers also provided measures of child adjustment. **Results:** Supportive of pervasive effects even in a community sample, increased parental depressive symptomatology was related to increased marital conflict, insecure marital attachment, less parental warmth, more psychological control in parenting, and multiple child problems. Child gender moderated child outcomes differently for paternal and maternal dysphoria. Marital relations, but not parenting, mediated child outcomes. **Conclusions:** Marital problems may be especially reactive to parental depressive symptomatology, so that mediational processes affecting child functioning become evident even in family contexts of relatively low risk. **Keywords:** Depression, parenting, marital relations, gender, internalizing problems, externalizing problems, social adjustment, mediation, moderation.

Parental dysphoria places children at risk for adjustment problems. For example, children of depressed mothers have been shown to suffer greater rates of depression, anxiety, alcohol problems, and social impairment (Martins & Gaffan, 2000; Murray, Fiori-Cowley, Hooper, & Cooper, 1996; Weissman, Warner, Wickramaratne, Moreau, & Olfson, 1997). The prevalence of depression suggests that a high number of children may be at risk for these problems. One in five women and one in ten men will experience a depressive episode during their lifetimes; furthermore, 80% of depression is recurrent (Goodman & Gotlib, 2002). Dysphoria may be especially common in women with small children (Brown & Harris, 1978).

Individuals suffering from sub-clinical levels of depressive symptoms are even more numerous, thus increasing the potential prevalence of effects on child and family functioning. Many adults experience sub-clinical levels of symptoms that cause distress or impairment in family, work or social situations but relatively little is known about their significance for families (Farmer, McGuffin, & Williams, 2002). Accordingly, an important direction towards expanding understanding of effects of parental dysphoria is to examine broader relations between parental depressive symptomatology and multiple dimensions of child socio-emotional and family functioning. Study of these relations in community samples offers a promising avenue towards increased understanding of more widespread

implications of parental depressive symptomatology for children and families.

Although links between parental dysphoria and children's adjustment problems have been established, the processes involved are not clear. Family process models of the effects of maternal dysphoria on children implicate parenting, marital functioning and child individual differences as pathways of risk. However, research has focused on maternal dysphoria, with relatively little known about effects of paternal dysphoria (Phares, Duhig, & Watkins, 2002). Examination of relations to paternal dysphoria is important for family-wide models of parental dysphoria and child adjustment. Limited past research suggests that paternal functioning may incur its own risk for children. In addition, many family studies focus only on parenting, although theory and research have consistently implicated marital conflict as another family process affected (Cummings & Davies, 1999; Downey & Coyne, 1990). In addition, examination of child outcomes has focused on internalizing and externalizing problems, although a greater range of socio-emotional functioning, including effects on relations with peers, merits examination (Parke et al., 2001).

Various frameworks suggest that parenting is affected by parental dysphoria (Cummings & Davies, 1994; Garber & Martin, 2002; Goodman & Gotlib, 1999; Lyons-Ruth, Wolfe, Lyubchik, & Steingard, 2002b). Links between dysphoria and parenting problems are frequently reported (Embry & Dawson,

2002). For example, Lyons-Ruth, Lyubchik, Wolfe, and Bronfman (2002a) found that depressed mothers less frequently cuddled, played with, read to or played music for their children; were less able to provide regular daily routines; were more irritated by their children; and were more likely to physically or verbally aggress towards their children. Depressed parents have been found to be more negative, guilt-inducing, critical, unsupportive and intrusive with their children and to demonstrate more negative affect (Cummings & Davies, 1999). However, less is known about the effects on fathers' parenting, comparisons of relative effects on mothering and fathering, and the extent to which parenting problems may mediate the effects of parental depressive symptomatology on child functioning in community samples.

Parental dysphoria may also influence family functioning by heightening problems in the marital relationship. Goodman and Gotlib (1999) and Garber and Martin (2002) view marital conflict as one of a number of environmental stressors to which depressed parents may expose their children. For Cummings and Davies (1994) and Lyons-Ruth et al. (2002b), however, marital conflict plays a more central role. Considerable research supports an emphasis on marital conflict in a family process model of the effects of parental dysphoria. Couples in which one partner suffers from dysphoria report lower levels of marital satisfaction (Dickstein et al., 1998) and tend to experience greater frequency of marital discord and higher rates of divorce (Barnett & Gotlib, 1988; Gotlib & Beach, 1995). Relatedly, such problems may relate to lower quality of attachment between the parents (Cowan, Cohn, Cowan, & Pearson, 1996). Marital attachment is increasingly considered as a construct and is an important theoretical framework for understanding romantic relationships (Cassidy & Shaver, 1999). When one's 'secure base' suffers from depressive symptoms, insecure attachment may result; dysphoria may be associated with perceptions that partners are unavailable, unreliable and unpredictable (Anderson, Beach, & Kaslow, 2002; Cummings & Cicchetti, 1990). For example, the lack of sexual interest that is associated with dysphoria may threaten the intimacy and closeness that fosters secure attachment (Hazan & Zeifman, 1994).

Children in these families, because of their increased exposure to marital conflict and insecure marital attachment, may come to feel that family stability and their own well-being is threatened. This insecurity in family relationships may translate into adjustment problems (Cummings & Davies, 1999). Research conducted by Cummings, Davies, and colleagues reports ample evidence of the negative effects of marital conflict on children's behavioral, emotional, and social functioning (Cummings & Davies, 1994; Cummings, Davies, & Campbell, 2000; Davies, Harold, Goeke-Morey, & Cummings, 2002). Moreover, evidence continues to accumulate suggesting that

marital conflict may mediate the relationship between parental psychopathology and child adjustment (Davies, Dumenci, & Windle, 1999; Downey & Coyne, 1990; Hammen, 2002; McElwain & Volling, 1999). Much less research has examined the role of marital attachment in child outcomes. Based on the link between dysphoria and marital attachment (Anderson et al. 2002), marital attachment may be an important pathway for child outcomes.

However, effects may be more subtle in community samples and may not necessarily take the form of clinically significant emotional or behavioral problems, suggesting the importance of examining sub-clinical indices of children's socio-emotional functioning, such as asocial behavior, prosocial behavior, and relations with peers (Parke et al., 2001). Although research has tended to focus on parenting effects, marital functioning may be even more sensitive to parental symptomatology than parenting, given the very close relations commonly reported between parental depressive symptomatology and marital relationship problems, including marital conflict (Cummings et al., 2000; Whisman, 2001). Thus, in relatively low risk community samples, marital conflict or other marital relationship disturbances may be especially likely among family processes to be sensitive to parental depressive symptomatology and mediate effects on children's functioning.

Family process models also include a number of moderators of the relationship between parental dysphoria and child adjustment. One potential moderator is child gender (Cummings & Davies, 1994; Goodman & Gotlib, 1999). Findings on the relationship between parental dysphoria, child gender, and child adjustment reveal interesting patterns (e.g., Davies & Windle, 1997), including that boys may be more vulnerable in early and middle childhood while girls become more vulnerable during adolescence (Cummings & Davies, 1999). In addition, boys may be more likely to develop behavior problems while girls may be more likely to develop emotional problems (Cummings & Davies, 1994).

The purpose of this project is to build upon previous models of the effects of parental dysphoria on children (Cummings & Davies, 1994; Goodman & Gotlib, 1999; Lyons-Ruth et al., 2002b). Although there is evidence indicating that parenting, marital functioning and gender play important roles in the potential adverse effects of parental dysphoria, few studies have considered these constructs simultaneously. The present study also extends past work by examining the influence of parental depressive symptomatology in a community sample of mothers and fathers.

## Methods

### Sample

Participants were 235 families from a mid-size Midwestern town and large New England city and their

surrounding areas. Families were recruited through schools, postcards sent to several local neighborhoods, flyers placed at daycare agencies, and booths at community functions. Research staff made efforts to recruit a representative sample of families by targeting areas with low SES and ethnically and racially diverse populations. The resulting sample reflects the demographic characteristics in the counties from which the sample was drawn. Families were eligible to participate if they met the following criteria: Couples must have been living together for at least three years, have one child currently enrolled in kindergarten, and were able to complete questionnaires in English. Participating children included 107 boys and 129 girls. The original sample included one additional family, but this family was excluded from the present study because the couple was not in a stable relationship. Of the participating couples, 88.1% were married and 11.9% were cohabiting. Couples had been living together for an average of 11 years. Mean age of male parents was 36.8 years and 35 years for female parents. The majority of participants were White (76.5%); 16.7% were Black, 3.8% were Hispanic and 2.1% were of other or mixed race. Total family income ranged from less than \$6,000 a year ( $n = 3$ ; 1.3%) to more than \$75,000 a year ( $n = 50$ ; 21.2%). The median and mode family income was between \$40,000 and \$54,999 a year ( $n = 66$ ; 28.0%). Approximately 95% of women and 88% of men were the participating children's biological parents.

### Procedure

These data were collected during two laboratory visits, in which families completed a number of questionnaires, observations, and other tasks. For the first visit, mothers, fathers, and participating children were in attendance. For the second visit, only mothers and children attended. Fathers were asked to complete their second packet of questionnaires at home and have the mothers bring them to the second visit in a sealed envelope. All parents granted permission for teachers to complete additional measures.

### Measures

*Parental depressive symptoms.* Male and female participants completed the Centers for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) as a self-report measure of depressive symptomatology. Scores range from 0 to 60, with higher scores indicating higher levels of depressive symptoms. Within the current sample, alpha was .86 for men and .87 for women. Mean scores were 8.38 ( $SD = 7.57$ ) for men and 8.97 ( $SD = 7.97$ ) for women. In this sample, 13.7% of men and 16.7% of women had scores of 16 or above, indicating potentially serious levels of dysphoria.

*Parenting.* Two dimensions of parenting based on parental report (mothers, fathers) were assessed: emotional availability and psychological control. Psychological control refers to parenting that uses guilt and withholding of love to control children's behavior. Psychological control was measured using paternal and maternal report of the Intrusiveness, Control through

Guilt, and Instilling Persistent Anxiety Scales of the Children's Report of Parental Behavior Inventory (CRPBI; Margolies & Weintraub, 1977). Higher scores indicate greater psychological control. Mean scores on the scales ranged from 10.56 to 21.91 in this sample. Within the current sample, alphas ranged from .67 to .75.

Parental emotional availability consists of the Warmth and Affection Subscale of the Parental Acceptance-Rejection Questionnaire (PARQ; Rohner, Saavedra, & Granum, 1991) and the Positive Parenting Subscale of the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996). The Warmth and Affection Subscale consists of twenty items, rated on a five-point Likert-type scale. Higher scores indicate greater parental warmth and affection. Mean scores were 84.40 ( $SD = 9.28$ ) and 84.25 ( $SD = 6.83$ ) for fathers and mothers, respectively. Reliability was high in the current sample ( $\alpha = .88$  for mothers and .91 for fathers). The Positive Parenting Subscale consists of six items rated on a five-point Likert-type scale, with higher scores indicating greater use of positive parenting. Mean scores were 24.50 ( $SD = 3.19$ ) and 25.74 ( $SD = 2.53$ ) for fathers and mothers, respectively. Within the current sample, reliability was adequate ( $\alpha = .73$  for mother and .80 for fathers).

*Marital functioning.* Two dimensions of marital functioning were assessed: conflict and attachment. Marital conflict consists of mother and father report of the O'Leary-Porter Scale (OPS; Porter & O'Leary, 1980). The OPS is a measure of children's exposure to conflict and consists of ten items; higher scores reflect children's greater exposure to hostile marital conflict ( $M = 11.95$ ;  $SD = 4.71$ ). For this sample, alpha is .81 for mothers and .80 for fathers.

Spousal attachment consists of the Spousal Attachment Styles Questionnaire (SASQ; Becker, Billings, Eveleth, & Gilbert, 1997). This measure consists of three subscales: Preoccupied Attachment, Fearful Attachment, and Secure Attachment. Items are rated on a seven-point Likert-type scale, with higher ratings indicating greater preoccupation, fearfulness, or security. Mean scores on the scales ranged from 12.13 to 41.50. Within this sample, alphas ranged from .72 to .85.

*Child adjustment.* Mothers, fathers, and teachers completed the Internalizing and Externalizing Scales of the Child Behavior Checklist (CBCL; Achenbach, 1991) as a measure of children's emotional and behavioral problems, respectively. Higher scores indicate greater problems. Mean score for internalizing problems was 6.61 ( $SD = 4.25$ ) and for externalizing problems was 8.40 ( $SD = 5.62$ ). In this sample, alphas for the three reports of externalizing problems ranged from .88 to .92. Alphas for the three reports of internalizing problems ranged from .84 to .88.

Mothers, fathers, and teachers also completed the Asocial, Prosocial and Peer Exclusion Scales of the Child Behavior Scale (CBS; Ladd & Profilet, 1996) as measures of children's social adjustment. Within the current sample, alphas range from .72 to .92. Higher scores indicate higher levels of prosocial behavior ( $M = 17.94$ ;  $SD = 1.98$ ), asocial behavior ( $M = 7.60$ ;  $SD = 1.33$ ), or peer exclusion ( $M = 7.95$ ;  $SD = 1.35$ ).

### Data reduction

To reduce the number of correlations and hypothesis tests about gender, scores were averaged across maternal and paternal reports (correlations between reports are provided in parentheses) for secure ( $r = .49$ ,  $p < .001$ ), fearful ( $r = .35$ ,  $p < .001$ ) and preoccupied ( $r = .13$ ,  $p > .05$ ) attachment, parental intrusiveness ( $r = .27$ ,  $p < .01$ ), control through guilt ( $r = .34$ ,  $p < .001$ ), instilling persistent anxiety ( $r = .25$ ,  $p < .001$ ), warmth ( $r = .22$ ,  $p < .001$ ) and positive parenting ( $r = .22$ ,  $p < .001$ ). For tests of gender as a moderator, scores were averaged across all three reporters (mothers, fathers, and teachers) for children's externalizing ( $r$ 's ranging from .23 to .55,  $p$ 's  $< .001$ ), and social adjustment ( $r$ 's ranging from .15 to .44,  $p$ 's  $< .05$ ). In the case of internalizing problems maternal and paternal report were significantly correlated,  $r = .49$ ,  $p < .001$  while teacher report was not significantly correlated with mother or father report. Thus, teacher report of internalizing problems was not included in the average of internalizing problems or in any additional analyses. Maternal and paternal depressive symptoms were not averaged; they were examined separately.

In model tests, scores were not averaged. Rather, the different reports were used to construct latent variables. That is, mother and father reports of each construct remained separate and were used as manifest indicators of each of the latent constructs in the model. For example, the latent construct marital conflict was indicated by mother report on the OPS and father report on the OPS. This strategy capitalizes on forming latent constructs that capture shared variance among informants (Dunn, Everitt, & Pickles, 1993; Jöreskog & Sörbom, 1989); variance due to any one informant is reflected in the error term rather than in the latent construct.

## Results

### Relations between parental dysphoria, family functioning and child functioning

Table 1 presents correlations between parental dysphoria and the other variables. Maternal and paternal depressive symptoms were associated with more child exposure to conflict, fearful and preoccupied marital attachment and less secure marital attachment. Greater parental symptoms (both in mothers and fathers) were also associated with more psychological control, including more intrusiveness, control through guilt, and instilling persistent anxiety, and less parental warmth. Finally, maternal and paternal depressive symptoms were linked to poor child adjustment, including internalizing problems, externalizing problems, exclusion by peers, and prosocial behavior (paternal dysphoria only). Note that no relationships were detected between parental symptoms and positive parenting, children's asocial behavior or between maternal symptoms and child prosocial behavior. Based on these findings, additional analyses will not include them.

**Table 1** Correlations between parental depressive symptoms and family functioning

Measure	Paternal symptoms	Maternal symptoms
Paternal symptoms	–	.219**
Maternal symptoms	.219**	–
Marital conflict		
MR	.138*	.253***
PR	.297***	.244***
Spousal attachment		
Secure	–.269***	–.246***
Fearful	.233**	.304***
Preoccupied	.199**	.246***
Parental psychological control		
Intrusiveness	.142*	.163*
Control through guilt	.157*	.148*
Instilling persistent anxiety	.214**	.291***
Parental emotional availability		
Warmth	–.167**	–.172**
Positive parenting	–.061	–.080
Child adjustment		
MR of internalizing problems	.117	.240***
PR of internalizing problems	.287***	.132
MR of externalizing problems	.092	.174**
PR of externalizing problems	.236***	.080
TR of externalizing problems	.118	.165*
MR of peer exclusion	.042	.177**
PR of peer exclusion	.097	.076
TR of peer exclusion	.215***	.108
MR of asocial behavior	.041	.119
PR of asocial behavior	.022	.047
TR of asocial behavior	.080	.056
MR of prosocial behavior	.026	–.065
PR of prosocial behavior	–.194**	–.071
TR of prosocial behavior	–.143*	–.025

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; MR = maternal report, PR = paternal report, TR = teacher report.

### Child gender as a moderator

Two series of correlations were run to detect relationships between parental depressive symptoms and child adjustment. In the first series, only boys' adjustment was considered. In the second series, only girls' adjustment was considered. Next, Fisher's  $Z$  tests compared the correlations for boys and girls. Results are presented in Table 2. The  $Z$  tests revealed significant differences in relationships on prosocial behavior and peer exclusion. Specifically, paternal symptoms had a stronger negative relationship with boys' prosocial behavior than girls',  $Z = 2.35$ ,  $p < .05$ , and maternal dysphoria had a stronger negative relationship with girls' peer exclusion than boys',  $Z = 2.07$ ,  $p < .05$ .

### Tests for mediation

Two series of mediation tests were run: one series examined parenting while the second series examined marital functioning. Tests consisted of latent variable models. The models included either maternal or paternal depressive symptoms as the independent variable. The models also included both dimensions of the construct as mediators (either

**Table 2** Child gender and child outcomes

Child outcome	Boys	Girls	Fisher's Z
Paternal depressive symptoms			
Internalizing problems	.258**	.257**	-.264
Externalizing problems	.278**	.146	-1.04
Peer exclusion	.093	.230**	1.06
Prosocial behavior	-.338***	-.040	2.35*
Maternal depressive symptoms			
Internalizing problems	.151	.271**	.947
Externalizing problems	.113	.261**	1.16
Peer exclusion	.046	.310***	2.07*

Note. \* $p < .05$ ;  $p < .01$ ; \*\*\* $p < .001$ .

parental control and emotional availability, or marital conflict and spousal attachment, respectively). Because positive parenting was not related to parental dysphoria, only warmth was included as a measure of emotional availability and was thus a manifest variable. Finally, the dependent variables were one of the dimensions of child adjustment: internalizing problems, externalizing problems, exclusion by peers or prosocial behavior (examined for paternal symptoms only). Because relationships between dysphoria and child adjustment appear to vary according to child gender, separate models were run for boys and girls. Unfortunately, many of these models could not converge because of small sample size. Thus, the models were re-run with the entire data set and these results are presented below. Models that were reasonable fits for the data (indicated by an RMSEA below .08 as recommended by Browne and Cudeck, 1993) and that included significant pathways between relevant variables were considered evidence of mediation. All of the models examining parenting as a mediator had extremely high RMSEAs (ranging between .126 and .143). Thus, only models examining marital functioning will be discussed.

### Marital functioning as a mediator

All of these models had acceptable RMSEAs, that is, below .08. Additional criteria for mediation were met for four of seven models: significant pathways were detected between the predictor variable and the mediator and between the mediator and the outcome. Marital conflict was found to mediate between maternal dysphoria and children's internalizing problems (see Figure 1). Specifically, greater maternal depressive symptoms were associated with more marital conflict,  $\beta = .31$ ,  $p < .001$ , and more marital conflict was associated with more internalizing behavior,  $\beta = .30$ ,  $p < .01$ . However, after controlling for both conflict and attachment, maternal dysphoria continued to predict children's internalizing problems,  $\beta = .23$ ,  $p < .01$ . Marital conflict also

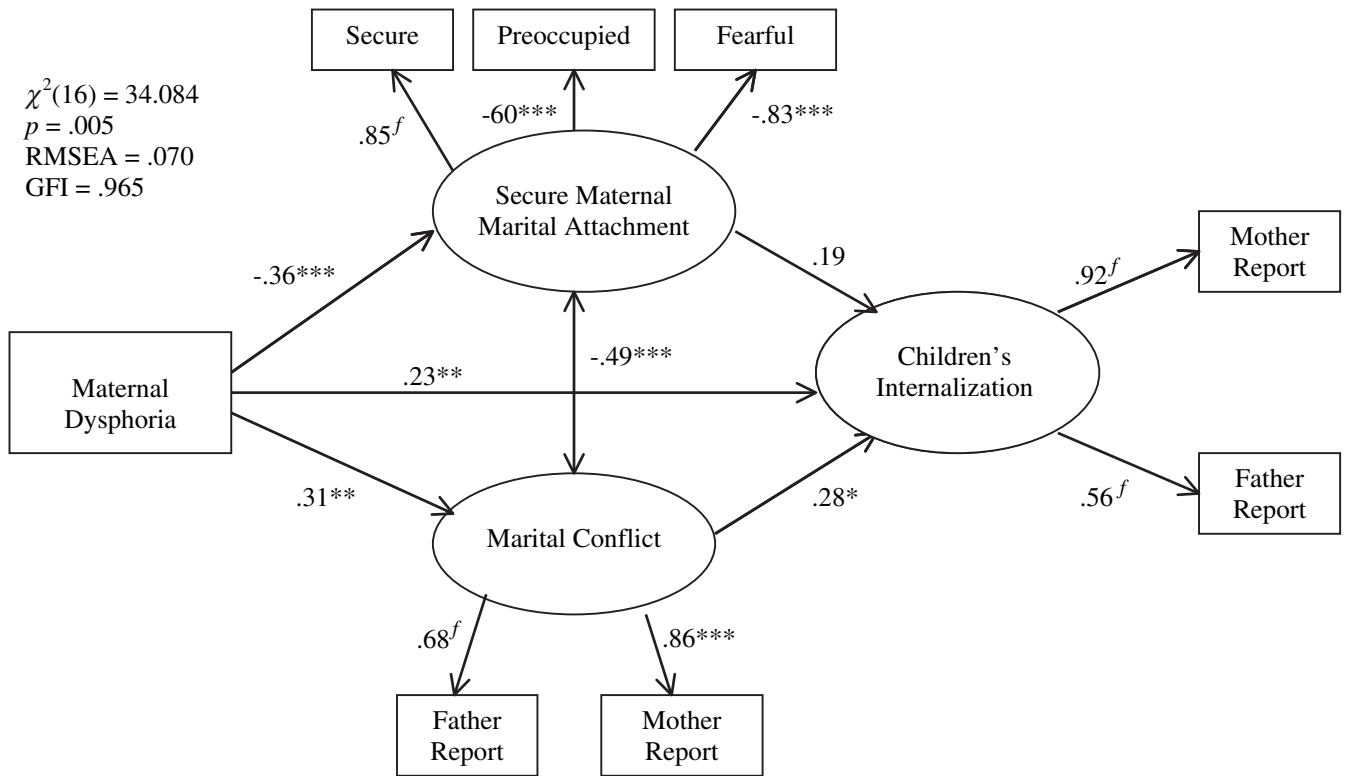
mediated between maternal dysphoria and children's externalizing problems (see Figure 2). Greater maternal symptoms were related to increased conflict,  $\beta = .32$ ,  $p < .001$ , and increased conflict was related to more externalizing problems,  $\beta = .23$ ,  $p < .05$ . Again, the relationship between maternal symptoms and child externalizing problems remained significant,  $\beta = .16$ ,  $p < .05$ . Both marital conflict and attachment mediated between maternal dysphoria and children's exclusion by peers (see Figure 3). Greater maternal symptoms were associated with more marital conflict,  $\beta = .32$ ,  $p < .001$ , which was linked to less peer exclusion,  $\beta = -.26$ ,  $p < .05$ . Maternal symptoms were also related to less secure attachment,  $\beta = -.36$ ,  $p < .001$ , which was linked to more peer exclusion,  $\beta = -.28$ ,  $p < .05$ . However, after controlling for both conflict and spousal attachment, maternal symptoms continued to predict children's exclusion by peers,  $\beta = .20$ ,  $p < .05$ .

Marital conflict and spousal attachment mediated between paternal dysphoria and children's internalizing problems (see Figure 4). Increased paternal symptoms were associated with increased marital conflict,  $\beta = .30$ ,  $p < .001$ , which was related to greater internalizing problems,  $\beta = .32$ ,  $p < .01$ . Similarly, increased paternal symptoms were associated with less secure marital attachment,  $\beta = -.35$ ,  $p < .001$ , which was related to increased internalizing problems,  $\beta = .26$ ,  $p < .05$ . However, after controlling for both marital conflict and spousal attachment, the relationship between paternal dysphoria and internalizing problems continued to be significant,  $\beta = .17$ ,  $p < .05$ . Finally, after controlling for marital attachment and conflict, paternal depressive symptoms continued to predict children's externalizing behavior,  $\beta = .22$ ,  $p < .01$ , but not peer exclusion,  $\beta = .17$ ,  $p = .056$ , or prosocial behavior,  $\beta = .12$ ,  $p = .384$ .

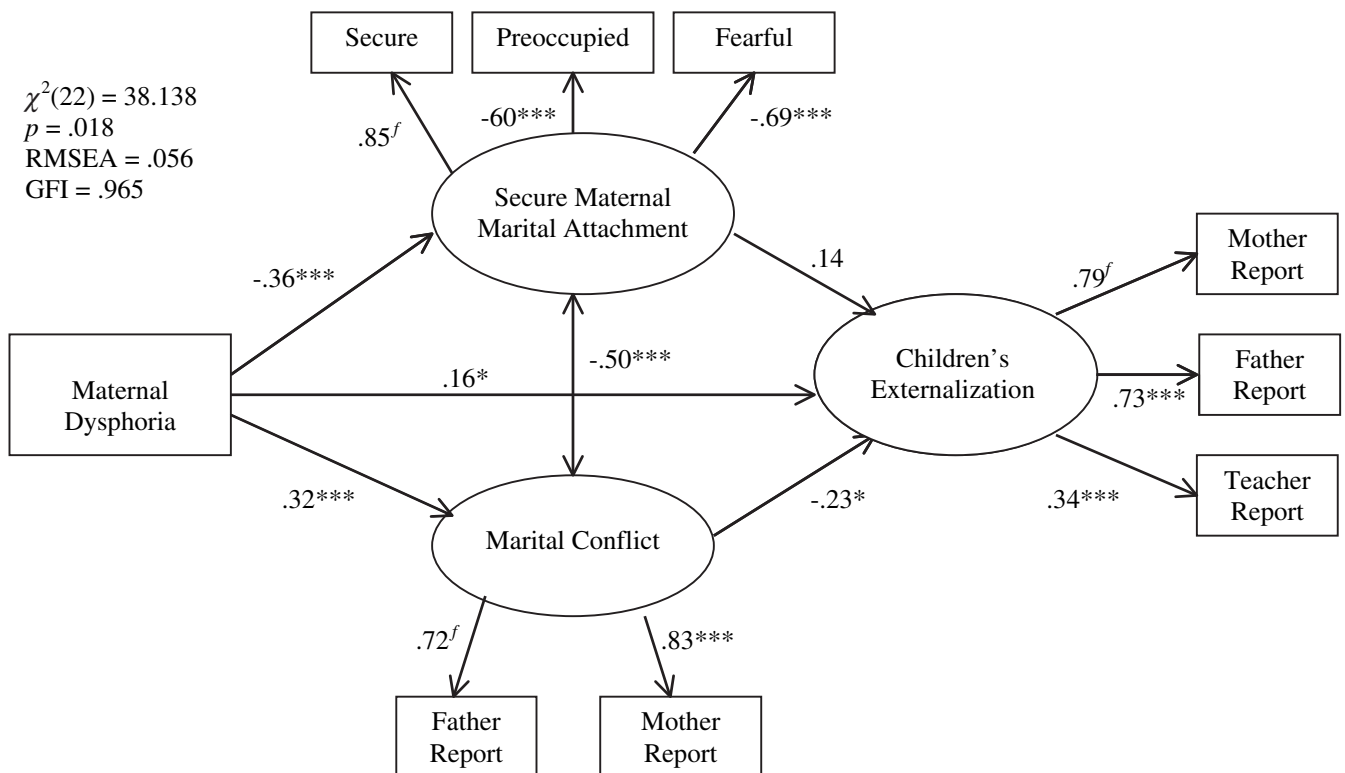
## Discussion

The zero-order correlations indicated that both maternal and paternal depressive symptoms, even in community samples, were associated with deficits in marital relations, parenting, and child functioning, including increased marital conflict, insecure marital attachment, less parental warmth, more psychological control in parenting and children's greater internalizing and externalizing problems, peer exclusion and reduced prosocial behavior. The mediational models further suggested a role of marital conflict in relations between parental dysphoria and child outcomes.

Results supported family models that include marital functioning and parent and child gender as important factors in families with parental depressive symptoms. The role of marital functioning in families with depressed parents varied as a function



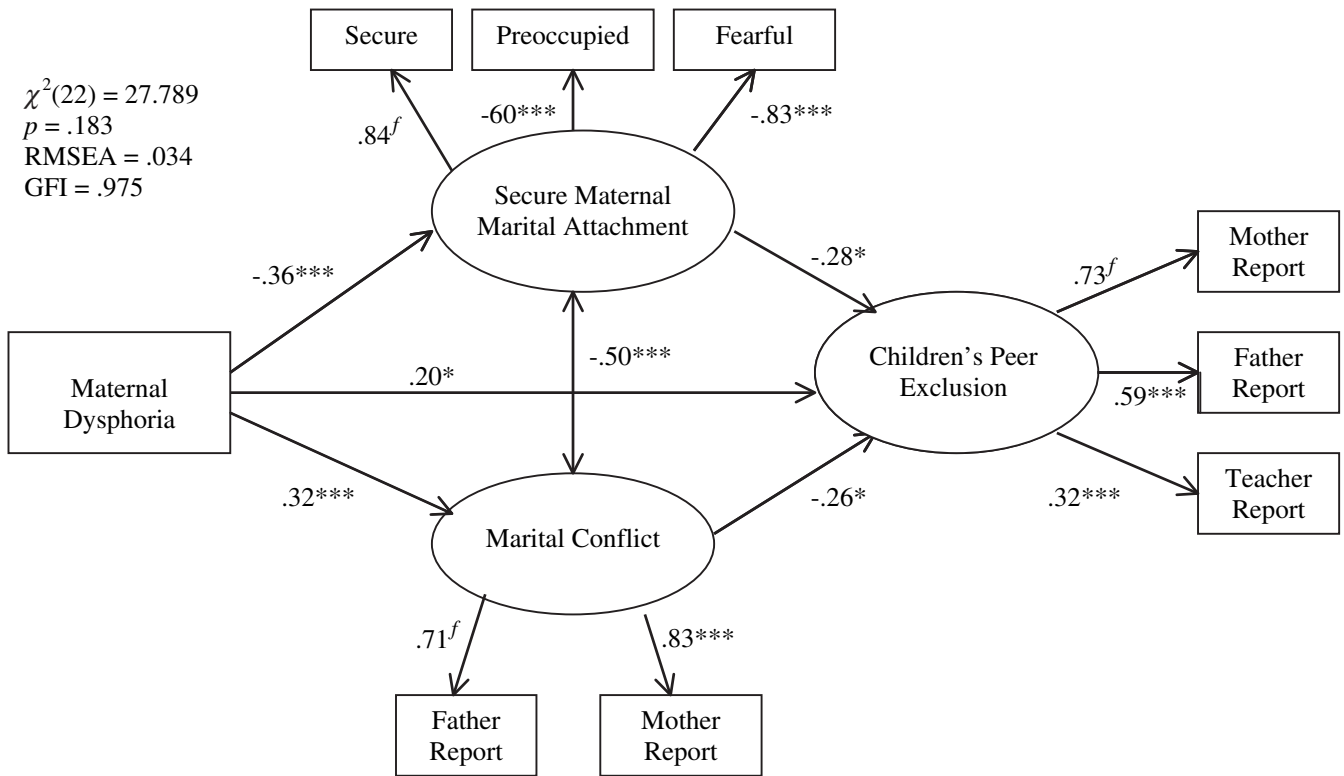
**Figure 1** Relations between maternal dysphoria, marital functioning and children's internalizing problems. Note: Coefficients are standardized estimates; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $f$  denotes fixed path



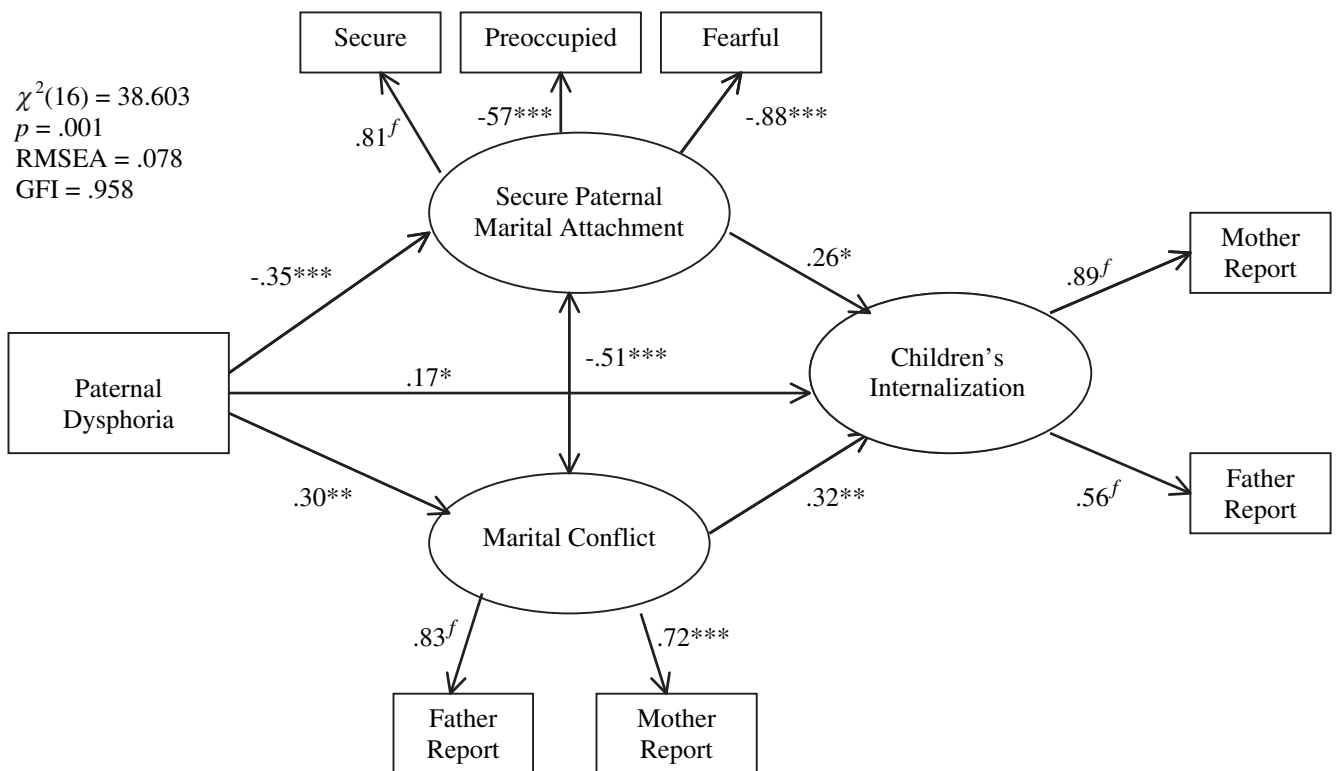
**Figure 2** Relations between maternal dysphoria, marital functioning and children's externalizing problems. Note: Coefficients are standardized estimates; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $f$  denotes fixed path

of parental gender. Few studies have examined the role of paternal depression or the separate associations of maternal and paternal symptoms. Relations

between maternal depressive symptoms and children's internalizing problems, externalizing problems and exclusion by peers were all mediated by



**Figure 3** Relations between maternal dysphoria, marital functioning and children's exclusion by peers. Note: Coefficients are standardized estimates; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $f$  denotes fixed path



**Figure 4** Relations between paternal dysphoria, marital functioning and children's internalizing problems. Note: Coefficients are standardized estimates; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $f$  denotes fixed path

marital conflict. Marital attachment also mediated between maternal dysphoria and children's exclusion by peers. The effect of paternal depressive

symptoms on children's internalizing problems was mediated by marital conflict and marital attachment. Thus, although some similarities were evident in the

role of marital functioning in mediating relations between parental depressive symptoms and child outcomes (Du Rocher Schudlich & Cummings, 2003), a more pervasive role of marital functioning was found for mothers than fathers (Papp, Goeke-Morey, & Cummings, 2004).

Differential relations were found for maternal and paternal dysphoria as a function of child gender: Maternal symptoms were more strongly related to girls' peer exclusion than boys' and paternal symptoms were more strongly (negatively) related to boys' prosocial behavior than girls'. These findings could reflect differential relationships for fathers and mothers with boys and girls, respectively, (Osborne & Fincham, 1996) as well as broader gender differences in vulnerabilities to stress. Consistent with social learning theory (Bandura, 1973), boys' prosocial behavior may be more strongly associated with paternal depressive symptoms and girls' exclusion by peers more strongly associated with maternal dysphoria. Greater girls' peer exclusion may reflect their tendency to become withdrawn in the face of stress (Zahn-Waxler, 1993). Boys may be more prone to behavioral dysregulation, contributing to reduced prosocial behavior (Cummings, Hollenbeck, Iannotti, Radke-Yarrow, & Zahn-Waxler, 1986). Thus, child gender may act as a moderating variable for potential processes affected by family stressors (Davies & Lindsay, 2001). However, because few studies have considered such moderational relations for parent and child gender, these topics deserve further study.

Results of the current study support an emphasis on the role of marital functioning in families characterized by elevated parental depressive symptomatology, especially when considering the development of emotional and social problems in children. Although parental depressive symptomatology was related to less effective parenting, analyses did not support a mediational role for parenting in this sample. These findings are consistent with previous research noting a strong link between parental dysphoria and marital functioning (Cummings et al., 2000) and between marital functioning and child adjustment, including internalizing and externalizing problems (Cummings & Davies, 1994). The correlational data are susceptible to alternative interpretations (e.g., child effects on marital and parental functioning). Also, the magnitude of correlations was small to moderate. On the other hand, other factors account for child development in community samples, reflective of the complex influences on human development. Moreover, the findings were interpretable and consistent with theory and previous research. One possible interpretation is that parental depressive symptoms affect parenting, but not to the extent that children's socio-emotional functioning is mediated by these influences on parenting when considering sub-clinical depressive

symptomatology in community samples. On the other hand, effects of parental depressive symptomatology on marital functioning may be at least moderate, even in community samples (see Whisman, 2001). Thus, effects on marital problems may be sufficient in such relatively low-problem samples to relate to children's socio-emotional functioning, especially when assessments are sensitive to sub-clinical levels of child problems.

Most research on the role of marital functioning has focused on marital conflict as a mediator of the effects of parental depressive symptoms (Cummings & Davies, 1994; Downey & Coyne, 1990), and these findings add to evidence for marital conflict as a mediator. In addition, this study broke new ground in providing evidence for reductions in positive elements of marital relations as a mediator of child outcomes (i.e., interparental attachments). Insecure attachment and depressive symptomatology have been linked conceptually and empirically in developmental psychopathology models (Cummings & Cicchetti, 1990), with the present results suggesting that attachment problems in adult relationships may be associated with depressive symptoms, with implications for children's socio-emotional functioning (Cowan et al., 1996; Lyons-Ruth et al., 2002a). Notably, marital conflict and interparental attachment security were interrelated in all mediational models, suggesting that although these are distinct elements of marital relationships, they also have substantial process relations with each other (e.g., marital conflict undermines interparental attachment security).

The majority of the findings concerning the effects of marital conflict on child outcomes in the context of parental depressive symptoms were in the expected directions. However, greater marital conflict predicted less exclusion by peers. This does not necessarily mean that children are better adjusted when exposed to greater parental symptoms. Children with whom others refuse to play may have social problems. At the same time, children readily included in play groups may be manifesting harmful conciliatory or ingratiating tendencies. These tendencies may be related to lower self-esteem or social anxiety. This study's finding that marital conflict in this context is related to greater internalizing problems supports this notion. Notably, these findings must be viewed as a function of marital conflict in the context of parental depressive symptomatology, as opposed to a more general statement about relations between marital conflict and peer relations (see Parke et al., 2001). Future research should further examine these unexpected relations to determine if they replicate, and, if replication is found, work towards identifying the processes that underlie these relations.

It is also important to note that after including marital conflict and attachment as mediators in models of the effects of parental symptoms, dysphoria continued to have direct effects on child



adjustment in several cases. One possible explanation for this finding is that exposure to parental dysphoria, in itself, has deleterious effects on the well-being of children. Consistent with extant family models of effects of parental dysphoria (e.g., Cummings & Davies, 1994), children may view parental dysphoria, independent of marital and parenting difficulties, as a threat to the family. When children feel that family stability is threatened, they may experience increased anxiety or develop maladaptive coping strategies that result in adjustment problems (Cummings et al., 2000). With regard to parenting processes as potential mediating variables, observational measures of parenting provide an additional opportunity to examine these issues in future studies.

Although previous research indicates little evidence that depressed individuals provide biased reports of child adjustment (Richters, 1992), the zero-order correlations suggest possible reporter bias. However, the model tests avoid this problem. Latent factors reflect the shared variance between indicators while unique variance becomes part of an error term, with factor loadings indicating shared variance in common across reporters (Dunn et al., 1993). Also, models in which reports do not share variance in common are a poor fit for the data (Jöreskog & Sörbom, 1989), so the fact that model fits were good also supports this interpretation.

The data presented in this study offer some intriguing information about the role of parental depressive symptoms in families. However, because the data used in this study are cross-sectional, no causal inferences can be definitively made. In addition, observationally based assessments of marital functioning and parenting may provide more sensitive indicators of the effects of these dimensions of family functioning. Future research should employ longitudinal designs and observational assessments to further elaborate on these relationships. Despite limitations, clinicians would serve their clients well by considering how factors like gender and family functioning may place children at risk in association with parental depressive symptomatology.

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## References

- Achenbach, T.M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington, VT: University of Vermont Department of Psychiatry.
- Anderson, P., Beach, S.R.H., & Kaslow, N.J. (2002). Marital discord and depression: The potential of attachment theory to guide integrative clinical intervention. In T. Joiner & J.C. Coyne (Eds.), *The interactional nature of depression: Advances in interpersonal approaches* (pp. 271-297). Washington, DC: American Psychological Association.
- Bandura, A. (1973). *Aggression: A social learning analysis*. Oxford, England: Prentice-Hall.
- Barnett, P.A., & Gotlib, I.H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin*, 104, 97-126.
- Becker, T.E., Billings, R.S., Eveleth, D.M., & Gilbert, N.W. (1997). Validity of scores on three attachment style scales: Exploratory and confirmatory evidence. *Educational and Psychological Measurement*, 57, 477-493.
- Brown, G.W., & Harris, T. (1978). *Social origins of depression*. New York: Free Press.
- Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Cassidy, J., & Shaver, P.R. (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York: Guilford Press.
- Cowan, P.A., Cohn, D.A., Cowan, C.P., & Pearson, J.L. (1996). Parents' attachment histories and children's externalizing and internalizing behaviors: Exploring family systems models of linkage. *Journal of Consulting and Clinical Psychology*, 64, 53-63.
- Cummings, E.M., & Cicchetti, D. (1990). Toward a transactional model of relations between attachment and depression. In M.T. Greenberg & D. Cicchetti (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 339-372). Chicago, IL: University of Chicago Press.
- Cummings, E.M., & Davies, P.T. (1994). *Children and marital conflict: The impact of family dispute and resolution*. New York: Guilford.
- Cummings, E.M., & Davies, P.T. (1999). Depressed parents and family functioning: Interpersonal effects and children's functioning and development. In T. Joiner & J.C. Coyne (Eds.), *The interactional nature of depression* (pp. 299-327). Washington, DC: American Psychological Association.
- Cummings, E.M., Davies, P.T., & Campbell, S.B. (2000). *Developmental psychopathology and family process: Theory, research and clinical implications*. New York: Guilford.

- Cummings, E.M., Hollenbeck, B., Iannotti, R.J., Radke-Yarrow, M., & Zahn-Waxler, C. (1986). The early organization of individual differences in aggression and altruism. In C. Zahn-Waxler, E.M. Cummings, & R.J. Iannotti (Eds.), *Altruism and aggression* (pp. 165–188). New York: Cambridge Press.
- Davies, P.T., Dumenci, L., & Windle, M. (1999). The interplay between maternal depressive symptoms and marital distress in the prediction of adolescent adjustment. *Journal of Marriage and the Family*, *61*, 238–254.
- Davies, P.T., Harold, G.T., Goeke-Morey, M.C., & Cummings, E.M. (2002). Child emotional security and interparental conflict. *Monographs of the Society for Research in Child Development*, *67*.
- Davies, P.T., & Lindsay, L.L. (2001). Does gender moderate the effects of marital conflict on children? In J.H. Grych & F.D. Fincham (Eds.), *Interparental conflict and child development: Theory, research, and applications* (pp. 64–97). New York: Cambridge University Press.
- Davies, P.T., & Windle, M. (1997). Gender-specific pathways between maternal depressive symptoms, family discord, and adolescent adjustment. *Developmental Psychology*, *12*, 163–177.
- Dickstein, S., Seifer, R., Hayden, L.C., Schiller, M., Sameroff, A.J., Keitner, G., Miller, I., Rasmussen, S., Matzko, M., & Magee, K.D. (1998). Levels of family assessment: II. Impact of maternal psychopathology on family functioning. *Journal of Family Psychology*, *12*, 23–40.
- Downey, G., & Coyne, J.C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin*, *108*, 50–76.
- Du Rocher Schudlich, T., & Cummings, E.M. (2003). Parental dysphoria and children's internalizing symptoms: Marital conflict styles as mediators of risk. *Child Development*, *74*, 1663–1681.
- Dunn, G., Everitt, B., & Pickles, A. (1993). *Modelling covariances and latent variables using EQS*. New York: Chapman & Hall.
- Embry, L., & Dawson, G. (2002). Disruptions in parenting behavior related to maternal depression: Influences on children's behavioral and psychobiological development. In J.G. Borkowski, S.L. Ramey, & M. Bristol-Power (Eds.), *Parenting and the child's world: Influences on academic, intellectual, and social-emotional development* (pp. 203–213). Mahwah, NJ: Erlbaum.
- Farmer, A., McGuffin, P., & Williams, J. (2002). *Measuring psychopathology*. Oxford: Oxford University Press.
- Garber, J., & Martin, N.C. (2002). Negative cognitions in offspring of depressed parents: Mechanisms of risk. In S.H. Goodman & I.H. Gotlib (Eds.), *Children of depressed parents: Mechanisms of risk and implications for treatment* (pp. 121–153). Washington, DC: American Psychological Association.
- Goodman, S.H., & Gotlib, I.H. (1999). Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmission. *Psychological Review*, *106*, 458–490.
- Goodman, S.H., & Gotlib, I.H. (2002). Introduction. In S.H. Goodman & I.H. Gotlib (Eds.), *Children of depressed parents: Mechanisms of risk and implications for treatment* (pp. 3–9). Washington, DC: American Psychological Association.
- Gotlib, I.H., & Beach, S. (1995). A marital/family discord model of depression: Implications for therapeutic intervention. In N.S. Jacobson & A.S. Gurman (Eds.), *Clinical handbook of couple therapy* (pp. 411–436). New York: Guilford Press.
- Hammen, C. (2002). Context of stress in families of children with depressed parents. In S.H. Goodman & I.H. Gotlib (Eds.), *Children of depressed parents: Mechanisms of risk and implications for treatment* (pp. 175–199). Washington, DC: American Psychological Association.
- Hazan, C., & Zeifman, D. (1994). Sex and the psychological tether. In K. Bartholomew & D. Perlman (Eds.), *Attachment processes in adulthood. Advances in personal relationships* (vol. 5, pp. 151–178). London, England: Jessica Kingsley Publishers, Ltd.
- Jöreskog, K.G., & Sörbom, D. (1989). *LISREL 7 user's reference guide*. Mooresville, IN: Scientific Software.
- Ladd, G.W., & Proffitt, S.M. (1996). The child behavior scale: A teacher-report measure of young children's aggressive, withdrawn, and prosocial behaviors. *Developmental Psychology*, *32*, 1008–1024.
- Lyons-Ruth, K., Lyubchik, A., Wolfe, R., & Bronfman, E. (2002a). Parental depression and child attachment: Hostile and helpless profiles of parent and child behavior among families at risk. In S.H. Goodman & I.H. Gotlib (Eds.), *Children of depressed parents: Mechanisms of risk and implications for treatment* (pp. 89–120). Washington, DC: American Psychological Association.
- Lyons-Ruth, K., Wolfe, R., Lyubchik, A., & Steingard, R. (2002b). Depressive symptoms in parents of children under age 3: Sociodemographic predictors, current correlates, and associated parenting behaviors. In N. Halfon & K.T. McLearn (Eds.), *Child rearing in America: Challenges facing parents with young children* (pp. 217–259). New York: Cambridge.
- Margolies, P.J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure? *Journal of Clinical Psychology*, *33*, 472–476.
- Martins, C., & Gaffan, E.A. (2000). Effects of early maternal depression on patterns of infant–mother attachment: A meta-analytic investigation. *Journal of Child Psychology and Psychiatry*, *41*, 737–746.
- McElwain, N.L., & Volling, B.L. (1999). Depressed mood and marital conflict: Relations to maternal and paternal intrusiveness with one-year-old infants. *Journal of Applied Developmental Psychology*, *20*, 63–83.
- Murray, L., Fiori-Cowley, A., Hooper, R., & Cooper, P. (1996). The impact of postnatal depression and associated adversity on early mother–infant interactions and later infant outcome. *Child Development*, *67*, 2512–2526.
- Osborne, L.N., & Fincham, F.D. (1996). Marital conflict, parent–child relationships, and child adjustment: Does gender matter? *Merrill-Palmer Quarterly*, *42*, 48–75.
- Papp, L.M., Goeke-Morey, M.C., & Cummings, E.M. (2004). Mothers' and fathers' psychological symptoms, marital relationships and children's psycholo-

- gical functioning. *Journal of Child and Family Studies*, 13, 469–482.
- Parke, R.D., Kim, M., Flyr, M., McDowell, D.J., Simpkins, S.D., Killian, C.M., & Wild, M. (2001). Managing marital conflict: Links with children's peer relationships. In J.H. Grych & F.D. Fincham (Eds.) *Interparental conflict and child development: Theory, research, and applications* (pp. 291–314). New York: Cambridge.
- Phares, V., Duhig, A.M., & Watkins, M.M. (2002). Family context: Fathers and other supports. In S.H. Goodman & I.H. Gotlib (Eds.), *Children of depressed parents: Mechanisms of risk and implications for treatment* (pp. 203–226). Washington, DC: American Psychological Association.
- Porter, B., & O'Leary, D. (1980). Marital discord and childhood behavior problems. *Journal of Abnormal Child Psychology*, 8, 287–295.
- Radloff, L.S. (1977). The CES-D: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385–401.
- Richters, J.E. (1992). Depressed mothers as informants about their children: A critical review of the evidence for distortion. *Psychological Bulletin*, 112, 485–499.
- Rohner, R.P., Saavedra, J.M., & Granum, E.O. (1991). Parental acceptance–rejection questionnaire: Test manual. In *Handbook for the study of parental acceptance and rejection* (pp. 17–48). Storrs, CT: University of Connecticut, Center for the Study of Parental Acceptance and Rejection.
- Shelton, K.K., Frick, P.J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology*, 25, 317–329.
- Whisman, M.A. (2001). The association between depression and marital dissatisfaction. In S.R.H. Beach (Ed.), *Marital and family processes in depression: A scientific foundation for clinical practice* (pp. 3–24). Washington, DC: American Psychological Association.
- Weissman, M.M., Warner, V., Wickramaratne, P., Moreau, D. & Olfson, M. (1997). Offspring of depressed parents: 10 years later. *Archives of General Psychiatry*, 54, 932–940.
- Zahn-Waxler, C. (1993). Warriors and worriers: Gender and psychopathology. *Development and Psychopathology*, 5, 79–90.

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