

Revisiting the Accuracy Hypothesis in Families of Young Children With Conduct Problems

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Revisited the accuracy hypothesis in an examination of the relation between maternal depressive symptomatology and child conduct problems. All data were gathered as part of the pretreatment assessment in an outcome study of families with clinic-referred children with conduct problems (age 3 to 6). The mothers varied in their depressive symptomatology, from not at all symptomatic to severely symptomatic. Correlations indicated that with increasing depressive symptomatology, mothers (N = 97) displayed a higher rate of physical negative behaviors towards their child and reported more child conduct problems. Regression analyses revealed that at the lowest levels of maternal depressive symptomatology there was a discrepancy between mothers' reports of child behavior problems and child deviant behaviors observed during mother-child interaction. In contrast, at higher levels of depression, mothers' reports of child behavior were consistent with laboratory observations of their child's behavior. These findings provide evidence to support the accuracy hypothesis in reference to mothers who display a high degree of depressive symptomatology, but the results also call into question the validity of maternal report in families with children with conduct problems.

Ineffective parenting and child conduct problems are clearly linked (Azar & Wolfe, 1989; Franz, McClelland, & Weinberger, 1991; Guterman, 1997; Pettit, Bates, & Dodge, 1997). Maternal depression is an important contextual variable that has been found to interfere with parenting skills (Beardslee, Bemporad, Keller, & Klerman, 1983; Sheppard, 1994) and has therefore been implicated as a significant risk factor for child outcome (Bor et al., 1997; Forehand & Brody, 1985; Jacob & Johnson, 1997; Webster-Stratton, 1991; Weissman et al., 1984). Webster-Stratton (1988; Webster-Stratton & Hammond, 1988) found that depressed mothers interacted with their children with more criticism and antagonistic, hurtful, and aversive behaviors and reported using more daily spankings than nondepressed mothers. Patterson, Chamberlain, and Reid (1982) speculated that aversive maternal behavior may be the most salient element in the coercive process that characterizes families of children with conduct problems.

Researchers have posited a pathway linking maternal depression and child conduct problems that involves maternal perceptions of child maladjustment (Anthony, 1983; Forehand, Lautenschlager, Faust, & Graziano, 1986). Maternal perceptions may influence

child behavior via their effect on maternal behaviors toward the child, or they may simply influence mothers' reports of their child's behavior. Maternal reports are frequently used to assess child behavior under the assumption that such reports are valid. Yet, this view has been challenged by findings showing only modest relations between maternal report and other sources (see Achenbach, McConaughy, & Howell, 1987). Situational factors, informant-specific factors, or both may account for the discrepancy between reports of child behavior by different sources.

Maternal depression has received considerable attention as an informant-specific factor influencing the perception and reporting of child behavior. During the past decade, the use of maternal report has been challenged by a wave of studies questioning the accuracy of depressed mothers' reports about their children's behavior (Breslau, Davis, & Prabucki, 1988; Cundall, 1987; Fergusson, Lynskey, & Horwood, 1987; Frankel & Harmon, 1996; Gross, Conrad, Fogg, Willis, & Garvey, 1995; Webster-Stratton, 1988). These studies concluded that mothers' perceptions of their children's conduct problems were significantly inflated by the mothers' depression. Out of this body of evidence grew the distortion hypothesis, which predicts that as maternal depression increases, discrepancies between maternal reports and criterion measures of child behavior increase.

In Richters's (1992) review, he evaluated 17 studies that claimed evidence in support of the distortion hy-

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pothesis and dismissed their findings as untenable. He evaluated these studies on the basis of two criteria: (a) demonstration of depression-related disagreements between mothers' ratings and independent, validated criterion ratings and (b) the superiority of criterion ratings over mothers' ratings. Richters found that none of the 17 studies met these necessary and sufficient criteria for demonstrating distortion in depressed mothers' ratings of their children and concluded that there was no empirical foundation for the widespread belief that depressed mothers have distorted perceptions of their children's problems.

Richters (1992) also reviewed studies that presented evidence counter to the distortion hypothesis. The accuracy hypothesis asserts that maternal depression leads to increased reporting precision and that depressed women see their children more realistically than nondepressed women. A handful of studies were published in support of the hypothesis (Angold et al., 1987; Billings & Moos, 1985; Conrad & Hammen, 1989; Ivens & Rehm, 1988; Richters & Pellegrini, 1989; Weissman et al., 1987), but Richters questioned the studies' conclusions. Richters determined that the five distortion-negative studies did not present data that would allow for a determination of accuracy. First, he observed that only two (40%) of the studies found greater mother-informant agreement in depressed compared with nondepressed mothers, whereas the remaining 60% found only comparable mother-informant agreement across varying levels of depression. Second, he noted that the two studies that appeared to offer direct support for the accuracy hypothesis were limited because the depressed and nondepressed groups did not have comparable ranges of severity of child behavior problems. There was a restricted range of child behavior scores for the nondepressed mothers and a wide range of child behavior scores for depressed mothers, which increased the likelihood that nondepressed mothers would show lower agreement with informants on child behavior measures than depressed mothers.

The controversy surrounding the association between maternal depression and maternal perceptions has continued, with more recent studies reporting support for both the distortion (Boyle & Pickles, 1997; Fergusson, Lynskey, & Horwood, 1993) and the accuracy hypotheses (Lovejoy, 1991). None of these studies, however, addressed the problem of differential variability in the range of child conduct problems in their community samples.

This study was designed to examine the relations among maternal depression, maternal behavior toward the child, and maternal perceptions of child maladjustment in a sample of families with young children diagnosed with Oppositional Defiant Disorder (ODD), increasing the likelihood that the sample would have comparable levels of severity of child be-

havior problems across degrees of maternal depressive symptomatology. We had three hypotheses: First, with increasing depressive symptomatology, mothers will use more negative parenting behaviors during interactions with their children with conduct problems. In this study, the term *children with conduct problems* refers to children with ODD who may or may not have additional symptoms associated with Attention Deficit Hyperactivity Disorder (ADHD) or Conduct Disorder (CD). Second, mothers with greater depressive symptomatology will perceive their children as having more severe conduct problems. These first two hypotheses were based on the earlier findings of Webster-Stratton (1988) with a similar sample. Third, with increasing levels of maternal depressive symptomatology, mothers will be more likely to report child behavior problems that are confirmed by independent observations of the child's behavior. Several studies have assessed maternal accuracy by comparing maternal reports to the reports of multiple informants (Fergusson et al., 1993; Jensen, Traylor, Xenakis, & Davis, 1988; Sylvester, Hyde, & Reichler, 1987; Tarullo, Richardson, Radke-Yarrow, & Martinez, 1995), but they resulted in inconsistent results, perhaps because maternal depression and child behavior problems are significantly associated. By using observed child behaviors with the mother as the criterion, we were able to explore the distortion controversy using direct observations of child behavior, thus decreasing informant and situational variability inherent in multiple informant methodology. The third hypothesis was based on the adult depression literature, which has provided substantial evidence to support the notion of depressive realism (Alloy & Abramson, 1979; DeMonbreun & Craighead, 1977; Lewinsohn, Mischel, Chaplin, & Barton, 1980; Lovejoy, 1991; Mischel, Ebbesen, & Zeiss, 1973; Nelson & Craighead, 1977; Tabachnik, Crocker, & Alloy, 1983). Our study was designed to address Richters' (1992) critique of past distortion-negative studies by using a regression analysis to examine the extent of mother-criterion agreement by level of depressive symptomatology in a sample of children who all exhibited severe, clinically significant conduct problems. This final hypothesis revisits the distortion controversy in a sample of families with children with conduct problems.

Method

Participants

Participants were 97 families of 3- through 6-year-old children who had been clinic-referred for treatment of conduct problems and had been screened for inclusion in a larger study (Schuhmann, Foote, Eyberg,

Boggs, & Algina, 1998). All children met the following inclusion criteria: (a) diagnosis of ODD according to the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev. [DSM-III-R]; American Psychiatric Association, 1987) Structured Interview for Disruptive Behavior Disorders (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991); (b) standard score equivalent ≥ 70 on the Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981; $M SS = 92$, $SD = 17.82$); and (c) standard score equivalent for both parents of ≥ 70 on the Wonderlic Personnel Test (Dodrill, 1981; parents' $M SS = 103$, $SD = 13.96$). Children with a history of severe physical or mental impairments (e.g., deafness, blindness, autism) were not included in the study.

Some families had incomplete observational data, as shown in Table 1. The majority of children (80%) were boys, a figure representative of clinic-referred children with conduct disorders. The mean age of the children was 58.1 months ($SD = 13.0$). The racial and ethnic composition of the families was: 78% Caucasian, not of Hispanic Origin; 14% African American, not of Hispanic Origin; and 8% Hispanic, Asian, or mixed. The mean Hollingshead score was 34 ($SD = 13$). The Hollingshead (1975) Four Factor Index is a measure of a family's socioeconomic status, which yields a score based on parents' education, occupation, sex, and marital status. In this sample of preschool children with ODD, 66% received a comorbid diagnosis of ADHD, 22% received a comorbid diagnosis of CD, and 10% received comorbid diagnoses of both ADHD and CD. Other psychological diagnoses were not assessed in these young children. Mothers of the referred children varied widely in depressive symptomatology. Their scores on the Beck Depression Inventory (Beck, 1972) ranged from 0 to 39 with a mean score of 12 ($SD = 9$). Over half (56%) of the mothers scored within the nondepressed range, 24% were within the mildly depressed range, 10% were within the moderately depressed range, and 10% were within the severely depressed range (Beck, Steer, & Garbin, 1988). Other descriptive statistics of the families are shown in Table 1.

Measures

DSM-III-R Structured Interview for Disruptive Behavior Disorders. The DSM-III-R Structured Interview (McNeil et al., 1991) was designed to determine whether a child meets the DSM-III-R criteria for ODD, CD, or ADHD. Parents describe the frequency and duration of each of the symptoms categorized under these disorders. In this study, diagnoses of ODD and CD were defined as in the DSM-III-R. Diagnoses of ADHD were defined using Barkley's (1990) criteria for preschoolers. Using these criteria, the children were required to have displayed 10 of the 14 DSM-III-R ADHD symptoms for ≥ 1 year to be diagnosed with ADHD. Interrater reliability for the DSM-III-R Structured Interview was assessed by comparing the interview data collected by the assessor with the data collected by a trained undergraduate research assistant who independently observed and coded videotapes of the interviews. High levels of interrater reliability have been demonstrated for this measure (McNeil et al., 1991). In this study, percent agreement reliability was 0.99 for specific symptoms, 0.99 for duration of symptoms, and 1.0 for the presence versus absence of the disorder.

Wonderlic Personnel Test. The Wonderlic is a 50-item test designed as a screening scale of adults' intellectual abilities (Dodrill, 1981). The items cover subject matter including vocabulary, visual-spatial tasks, reasoning, abstraction, and calculation problems. The test score is the number of items answered correctly in 12 min. In a sample of 120 normal adults, the Wonderlic estimate of intelligence was found to correlate .93 with the Wechsler Adult Intelligence Scale (WAIS; Wechsler, 1981) Full Scale IQ and to be within 10 points of the WAIS IQ for 90% of the participants (Dodrill, 1981). Differences in age, sex, education, level of intelligence, and emotional adjustment did not significantly affect the observed correlation with the WAIS.

Table 1. Descriptive Statistics for Sample of Families of Conduct-Disordered Children

	Maternal BDI Score	Maternal ECBI Intensity Score	Maternal Physical Negative Behaviors	Maternal Critical Statements	Maternal Total Verbalizations
Maternal BDI Score	—				
Maternal ECBI Intensity Score	.26*	—			
Maternal Physical Negative Behaviors	.22*	.25*	—		
Maternal Critical Statements	.02	.10	.24*	—	
Maternal Total Verbalizations	-.25*	-.14	-.04	.43**	—
<i>n</i>	97	97	92	92	92
<i>M</i>	11.68	174.99	2.50	13.51	98.03
<i>SD</i>	9.02	26.02	4.20	11.59	32.73

Note: BDI = Beck Depression Inventory; ECBI = Eyberg Child Behavior Inventory.

* $p < .05$. ** $p < .01$.

Peabody Picture Vocabulary Test–Revised. The Peabody Picture Vocabulary Test–Revised (PPVT–R; Dunn & Dunn, 1981) is a standardized test that measures receptive language in individuals of 2.5 years and older. Each item consists of four pictures, one of which corresponds to a stimulus word presented orally by the examiner. The respondent is required to indicate the picture that best matches the stimulus word. Split-half reliability coefficients for children range from .67 to .88. Several studies have demonstrated significant correlations between the PPVT–R and the Wechsler Intelligence Scale for Children, 3rd Edition (Altepeter, 1989; Carvajal, Hayes, Miller, Wiebe, & Deloise, 1993).

Eyberg Child Behavior Inventory. The Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) is a 36-item parent-report measure of conduct problem behavior. The ECBI assesses behavior on an Intensity Scale and a Problem Scale. The Intensity Scale measures the frequency with which the conduct problem behaviors occur and is a measure of severity of child conduct problems. A score above 132 indicates clinically significant conduct problem behavior. The Intensity Scale is internally consistent and stable over time. The construct validity has been supported by demonstrations of convergent and discriminant validity in many studies (Eyberg & Pincus, 1999).

Beck Depression Inventory. The Beck Depression Inventory (BDI; Beck, 1972) is a 21-item self-report measure of adult depressive symptomatology. Past studies have found adequate reliability and construct validity for this measure (Beck et al., 1988; Shaw, Vallis, & McCabe, 1985). The severity of depression can be assessed according to four levels: not depressed (0–9), mildly depressed (10–15), moderately depressed (16–23), and severely depressed (24–63; Beck et al., 1988).

Dyadic Parent–Child Interaction Coding System II. The Dyadic Parent–Child Interaction Coding System II (DPICS–II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994) is a behavioral coding system designed to assess the quality of parent–child social interaction. It provides an observational measure of parent and child behaviors during three 5-min standard situations that vary in the degree of parental control required (5 min of child-directed play, 5 min of parent-directed play, and 5 min of clean up). Identical categories may be coded for both parent and child. These categories include verbalizations (e.g., command, praise, critical statement), vocalizations (e.g., laugh, yell) and physical behaviors (e.g., destructive behavior, positive touch). Scores for each behavior

were determined using a sum of the frequency counts of each occurrence across all three 5-min situations. Several sequences of behavior may also be coded, such as compliance and noncompliance to commands. Scores for sequences of behavior were determined using ratios. For example, the number of compliance behaviors was summed across the three situations and divided by the total number of alpha commands, yielding a compliance score. Alpha commands were defined as commands that provided the child an opportunity for compliance. Adequate reliability and construct validity have been demonstrated for this system (Bessmer, 1996; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994; Foote, 1999) and norms are available (Bessmer, 1996; Foote, 1999). Bessmer and Foote have identified several DPICS–II code categories and summary categories that distinguish nonreferred from referred families. Four graduate student coders were trained to 80% agreement with criterion tapes before coding family interactions for this study. Coder training involved weekly meetings and 3 hr of weekly homework for approximately 12 weeks for each of the coders. Coders were not informed of the hypotheses of the study.

For the analyses examining the association between maternal depression and maternal behaviors, the DPICS–II behavior codes of maternal critical statement and maternal physical negative behavior were used. The decision to use these variables was based on previous research that has shown them to be accurate discriminators of depressed and nondepressed mothers (Webster-Stratton, 1988). To make certain that associations between specific verbalization categories and maternal depressive symptomatology were not simply due to a general tendency for the more depressed mothers to talk less, the summary category labeled *maternal total verbalizations* (the sum of all maternal verbalizations) was used to examine the relation between depressive symptomatology and quantity of verbal behavior. For the analyses examining the accuracy of maternal perceptions, five child behaviors were clustered into a summary category labeled *child deviant behavior*, which consisted of the sum of the five behaviors. The decision to use this summary variable was based on previous studies in which negative child behavior discriminated clinic versus nonclinic families (Dumas & Wahler, 1983; Griest, Forehand, Wells, & McMahon, 1980; Patterson, 1980). Child deviant behavior consisted of critical statements, smart talk, whining, yelling, and physical negative behavior. Destructive behavior was not included in the child deviant behavior summary variable due to its low reliability estimate (Bessmer, 1996).

Reliabilities for the DPICS–II categories in this study were examined using the kappa statistic because it corrects for chance agreements. According to Fleiss (1981), kappa values above .75 are considered excel-

lent, values between .60 and .75 are considered good, and values between .40 and .60 are considered fair. As shown in Table 2, kappa reliabilities for the seven individual DPICS–II behavior codes used in this study, calculated for 50% of the observations of each situation, ranged from .48 (child critical statement) to .82 (child whine).

Procedure

The families referred for treatment were seen for an intake evaluation that included a clinical interview followed by the DSM–III–R Structured Interview. The Wonderlic was administered to each parent and the PPVT–R was administered to the referred child. The parents were also asked to complete the demographic questionnaire, the ECBI, and the BDI. Each parent was then videotaped in three standard situations with their child: 10 min of child-directed play, 10 min of parent-directed play, and 5 min of clean-up. The first 5-min observation of the child-directed and parent-directed interactions were used as warm-up periods to allow the families to become accustomed to the situations and were not coded. Only 5 min of each situation were coded.

Results

Analyses

To examine the relations among maternal depressive symptomatology, maternal behaviors with their child, and maternal report of child behavior, Pearson correlations were used. Correlations were based on 97 families, with missing data resulting in differences in the number of participants for some analyses. To examine the degree of accuracy of maternal reporting, a simultaneous regression analysis was performed on maternal report of child behavior problems. Observed child deviant behavior, maternal depressive symptomatology, and the interaction term (Observed Child Deviant Behavior × Maternal Depressive Symptomatology) were used as predictor variables,

Table 2. Reliability of the Dyadic Parent–Child Interaction Coding System II Behavior Codes

Category	κ
Maternal Critical Statement	.70
Maternal Physical Negative Behavior	.64
Child Critical Statement	.48
Child Smart Talk	.64
Child Whine	.82
Child Yell	.75
Child Physical Negative Behavior	.65

with maternal depressive symptomatology retained as a continuous variable to increase the statistical power of the analysis. The regression analysis was based on all data available from the 97 mother–child dyads. Comparisons or correlations at the .05 level or less were considered significant.

Correlational Analyses

The correlation between the maternal BDI scores and total maternal verbalizations during parent–child interaction yielded a significant negative correlation (see Table 1). To test the first hypothesis, predicting a positive association between maternal depressive symptomatology and negative parenting, we examined correlations between the self-report depressive symptomatology measure and the frequency of both maternal critical statements and maternal physical negative behaviors during observed mother–child interactions. BDI scores were significantly correlated with observed maternal physical negative behaviors, but not with maternal critical statements, as shown in Table 1.

To test the second hypothesis, we examined correlations between the measure of maternal depressive symptomatology (BDI) and maternal report of child behavior (ECBI). ECBI Intensity scores were significantly correlated with BDI scores (see Table 1).

Regression Analysis of Maternal Perceptions and Child Behavior

To test the third hypothesis, predicting increasingly accurate maternal report of child conduct problems with higher levels of maternal depressive symptomatology, we conducted a simultaneous multiple regression using maternal report of child behavior as the criterion variable. As shown in Table 3, the interaction term revealed that at lower levels of maternal depressive symptomatology, there was a discrepancy between maternal report of child behavior and independent observations of the child’s behavior. Figure 1 illustrates this interaction

Table 3. Simultaneous Regression Analysis Predicting Maternal Perceptions of Child Behavior From Observed Child Deviant Behavior and Maternal Depressive Symptomatology

Variables	B	SE B	β
Observed Child Deviant Behavior	.69	.23	.71*
Beck Depression Inventory Score	.97	.37	.34*
Observed Child Deviant Behavior × Beck Depression Inventory Score	–.01	.01	–.65*
F	5.34**		
R ²	.16		
Adjusted R ²	.13		

*p < .05. **p < .01.

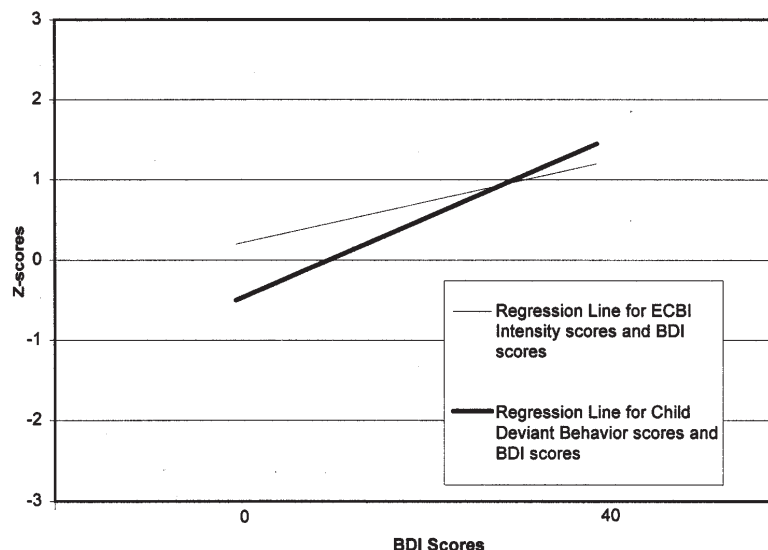


Figure 1. Z scores of maternal ratings of child behavior and z scores of observed child deviant behaviors as a function of maternal depressive symptomatology.

by using z-score conversions of the raw scores from the ECBI and DPICS-II. Mothers with lower levels of maternal depressive symptomatology generally reported more child behavior problems than were observed within a controlled laboratory playroom. In contrast, at higher levels of depression, maternal report of child behavior problems was consistent with independent observations of child behavior.

Discussion

In this study, we examined the relations among maternal depressive symptomatology, maternal behavior toward the child, and maternal perceptions of child behavior in families of young children referred for conduct problems. Unlike in many earlier studies examining these associations (e.g., Boyle & Pickles, 1997; Frankel & Harmon, 1996; Harnish, Dodge, & Valente, 1995; Lovejoy, 1991), all of the children had severe conduct problems whereas the mothers' level of depressive symptomatology varied widely, from not at all symptomatic to severely depressed. All children in our study met diagnostic criteria for ODD, and the majority also had comorbid diagnoses of ADHD or CD or both. This constellation of diagnoses is representative of the severe behavior problems typically seen in young clinic-referred children, and therefore the depressive symptomatology of the mothers is representative of the psychopathology seen in mothers of young clinic-referred children with conduct problems (Speltz, McClellan, DeKlyen, & Jones, 1999). Our study suggests that approximately one third of mothers of children with conduct problems report clinically significant levels of depressive symptomatology.

Our first hypothesis, that increasing levels of maternal depressive symptomatology would be associated with negative parenting behaviors with children with conduct problems, was only partially supported. Despite previous findings linking maternal depressive symptomatology and irritability (Hops et al., 1987; Rosenblum, Mazet, & Benony, 1997), we did not find that mothers with more depressive symptomatology were more critical with their children. This unexpected finding may be partially due to the tendency of mothers with greater self-reported depressive symptomatology to emit fewer verbal behaviors of any type with their children. Examination of mothers' physical behavior showed that the mothers who reported more depressive symptomatology demonstrated more physical negative behaviors (e.g., pushing, restraining, and hitting) when observed with their preschoolers with conduct problems than did mothers who reported fewer depressive symptoms.

Our examination of maternal behavior in families with clinically referred preschoolers yielded results that are consistent with several studies showing high levels of aversive interaction in families of children with conduct problems (Dadds, Sanders, Morrison, & Rebgetz, 1992; McFarland & Sanders, 2000; Patterson et al., 1982) and in those with depressed mothers (McFarland & Sanders, 2000; Webster-Stratton, 1988; Webster-Stratton & Hammond, 1988; Zuravin, 1989). Compared to normative mother-child interactions (Bessmer, 1996), the number of critical statements given by mothers in this sample was high, with mothers of nonreferred children giving less than one critical statement during each 5-min interaction (Bessmer, 1996) and the mothers in our sample averaging four during each 5-min interaction. Depressed mothers

have been found to be irritable, uninvolved, and intolerant of children's disruptive behavior (Hops et al, 1987; Lovejoy, 1991; Patterson, 1980), and several theorists have suggested a possible link between maternal depression and child abuse (Lahey, Conger, Atkeson, & Treiber, 1984; Whipple & Webster-Stratton, 1991). For example, Zuravin (1989) found that moderately depressed mothers were more likely than nondepressed mothers to be physically violent with their children.

Our study suggests that a significant amount of verbally aversive behavior is evident in interactions between mothers and their young children with conduct problems, and it appears that when mothers also show high levels of depressive symptomatology, they are more likely to show physically aversive control. Because the data from this study are correlational, the direction of influence in these links cannot be determined. The children's highly disruptive behavior problems are likely to contribute to maternal depression as well. It is essential that we gain a better understanding of the parent and child factors related to disrupted parent-child interaction so that preventive intervention strategies can be designed to break the cycle of parental psychopathology and disrupted discipline.

Consistent with past research (Lang et al., 1996; Rogers & Forehand, 1983; Webster-Stratton, 1988), the results of this study supported our second hypothesis that mothers' self-reported depressive symptomatology would be associated with their perceptions of their child's deviant behavior. With increasing levels of depressive symptomatology, mothers rated their children as exhibiting more conduct problems. To examine the association between the severity of their depressive symptoms and their perceptions of child behavior more closely, we conducted a simultaneous regression analysis to determine whether the link between observed and reported child behavior was moderated by the mothers' level of depressive symptomatology.

Our results show that mothers with higher levels of depressive symptomatology perceived their child's deviant behaviors more accurately and realistically than mothers with lower levels of depressive symptomatology, supporting the accuracy hypothesis and disconfirming the distortion hypothesis in our sample of preschoolers with conduct problems. With increasing depressive symptomatology, mothers' perceptions increasingly paralleled their child's behaviors observed during mother-child interactions in the laboratory playroom. These findings have implications for all researchers and clinicians who face the possibility of bias when depending on parent report.

These results also call into question the validity of maternal report at low levels of depressive symptomatology for mothers of children with conduct problems. Mothers with lower levels of depressive symptomatology were found to overreport their children's con-

duct problems, when compared to independent observations of their child's behavior. These findings are consistent with earlier reports of depressive realism (Lewinsohn et al., 1980), in which the perceptions of depressed individuals were accurate in comparison to the perceptions of nondepressed individuals. Yet, research examining maternal perceptions and maternal depression has produced several discrepant findings that are difficult to reconcile. Although our method met Richter's criteria, our model accounted for only 16% of the variance. Future research should examine other symptoms of psychopathology and expand the scope of study to include variables within the family system. Such variables may include parental stress, level of social support, and parenting style.

One limitation of this study is our reliance on self-report instruments to measure maternal depressive symptomatology. Measurement methods vary in their detection of severity and symptomatology (Dumas & Gibson, 1990; Geisser, Roth, & Robinson, 1997). We are unable to conclude that our results would apply if an alternative method, such as clinician ratings, were used to define depressive symptomatology. In comparison to self-report scales, interview measures of depression have been found to have higher validity due to the greater extent of information available to the interviewer (Katz, Shaw, Vallis, & Kaiser, 1995).

There is a great need to study the interplay of maternal depressive symptomatology and child conduct problems longitudinally so that we may better understand where we can most effectively intervene to prevent escalating maternal depressive symptomatology and child problem behavior. Further study with older children will be an important future direction for this line of research. Our understanding of family functioning must also include an evaluation of all family members and the context in which the interactions occur. By going beyond the study of dyadic interactions, we can further our understanding of the complexity involved in family systems.

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