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Maternal Depressive Symptoms in Relation to Dimensions of Parenting in Low-Income Mothers

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Relations between maternal depressive symptoms and parenting were examined in low-income, inner-city mothers and their 18- to 24-month-old toddlers. Maternal depressive symptoms were measured using the Center for Epidemiological Studies Depression Scale (CES–D) depression inventory, and 3 dimensions of parenting were assessed from maternal interviews and home visits: (a) provision of age-appropriate play materials, (b) organization of the home environment, and (c) quality of mother–child interactions. Maternal depressive symptoms related inversely to the quality of mother–child interactions, but did not relate to the provision of play materials and organization of the home environment. High scores on the CES–D were associated with less sensitivity, engagement, affection, and more rigidity in mothers; with less compliance, affection, engagement, and gentleness in children. In addition, higher CES–D scores were associated with less mutual communication, reciprocity, and enjoyment in the dyad. Neither socioeconomic status, maternal IQ, nor absence–presence of a partner related directly to parenting. These findings suggest that maternal depressive symptoms play a key role in the quality of mother–child interactions.

Parenting styles exert an early and powerful influence on the cognitive, social, and emotional growth of children. Earlier research on parenting focused on the global influences of parenting on children's development (Hunt, 1961; Thompson & Grusec, 1970). More recently, there has been a heightened appreciation of the multiple dimensions that comprise the complex process of parenting (Kochanska, 1997; Tamis-LeMonda, 1996; Wachs, 1991). This emphasis represents a shift away from studying the general effect of parenting toward studying the specific nature, antecedents, and outcomes of parenting. Three dimensions of parenting were the focus of this investigation: (a) the provision of age-appropriate play materials, (b) the organization of the home environment and, (c) the quality of mother–child interactions. Of primary interest was whether maternal depressive symptoms, in a population of low-income women, affect these parenting dimensions during the toddler years. We predicted that maternal depressive symptoms would exert differential effects on the three parenting dimensions, and that effects would be greatest in the context of associated risks—specifically, low maternal IQ, extreme poverty, and the absence of a partner in the home.

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To date, few studies have focused on depressive symptoms in relation to multiple dimensions of parenting, and most investigators have examined middle-class mothers and clinically diagnosed populations. Low-income mothers face numerous risks that may exacerbate the presence of depressive symptoms and its effect on parenting. Moreover, the vast majority of studies on parental depression (or depressive symptoms) have focused on parents of infants, leaving a dearth of information as to how depression affects parenting during children's second and third years of life.

Provision of Age-Appropriate Play Materials

Given the pervasiveness of play across time and culture, it is not surprising that investigators have considered play materials to be a relevant component of toddlers' environments (Lubeck & Chandler, 1990; Wachs, 1985). Play materials serve as a vehicle for learning and social interaction (Wachs, 1985) by posing problems that can be conceptualized as discrepancies between what the child knows and what is novel (Wohlwill & Heft, 1986). Optimal discrepancies motivate the child to resolve inconsistencies through further object exploration, leading to advancement to higher levels of functioning (Lubeck & Chandler, 1990).

Three aspects of play materials have been found to affect children's cognitive development: availability (i.e., the accessibility of toys), variety (i.e., difference in shapes, sizes, colors, and types of toys), and responsiveness (i.e., the extent to which toys are responsive to children's manipulations). Toy availability predicts children's play sophistication and exploration (Parks & Bradley, 1991; Wachs, 1985; Wohlwill & Heft, 1986), and variety in age-appropriate play materials predicts children's cognitive, exploratory, and language development (Wachs, 1985). The presence of responsive play materials has been associated with children's cognitive and motivational development during the first 3 years of life (Wachs, 1986; Wachs & Gruen, 1982), a finding that parallels the importance of parental responsiveness in children's developmental achievements.

Organization of the Home Environment

Homes characterized by structure, order, exposure to outside events, regularity, and safety have been shown to predict positive developmental outcomes in children. Structure includes the configuration and establishment of specific play areas for children, allotment of specific play times, and choice and placement of toys within reach of children, all of which are thought to support children's exploration of novel and challenging objects (Stevens & Bakeman, 1985). Order refers to an environment that is stimulating, but not chaotic, in which children's anxiety is minimized so that they might engage in frequent play and exploration (Wachs, Uzgiris, & Hunt, 1971). Disorganized caregiving environments often result in irregular and insufficient daily routines, which may be deleterious for a child's emotional, cognitive, and physical development (Crittenden, 1989; Peterson, 1987). Regularity refers to consistency in daily routines including meal times, nap times, and bath times, all of which have been found to relate to preschool children's abilities to follow directions, get along with other children and maintain alertness in school (Egeland, Kalkoske, Gottesman, & Erikson, 1990). Exposure refers to providing children with outside experiences and social encounters that expand their understanding of the world (Egeland et al., 1990); such experiences relate to Bayley scores in 24-month-old children (Bradley & Caldwell, 1984). Finally, safety refers to an environment that is free from hazards such as exposed plugs, dangerous windows, and broken objects. Safety enables children to remain free of harm and to feel comfortable about exploring their environments, thereby supporting curiosity and learning (Alpern & Lyons-Ruth, 1993; Caldwell & Bradley, 1984).

The Quality of Mother–Child Interactions

Finally, and perhaps most centrally, the actual quality of mother–child interactions, as indicated by maternal sensitivity, physical contact, flexibility, responsiveness, affect, and consistency is central to the well-being of children. Sensitivity refers to a mother's awareness of her child's needs and emotions, and her ability to interact at a pace that is comfortable and appropriate for her child. Sensitive interactions foster security of attachment in children and support achievements in language and cognition (Bornstein & Tamis-LeMonda, 1989; Tamis-LeMonda, 1996). Physical contact refers to a mother's positive and reassuring touch of her child. Children who receive infrequent physical contact have been found to suffer from low self-esteem and anxiousness (Stern, 1971). Flexibility refers to a mother's willingness to bend the rules, to accept her child's initiatives, and to be imaginative in her interactions. Dyads with a flexible exchange of communication are more securely attached and children of flexible mothers are more competent in their social engagements (George & Main, 1979). Responsiveness refers to a mother's contingent and appropriate reactions to her child's actions. Mothers who more often respond to their children have children with greater language and cognitive abilities months and years later (Baumwell, Tamis-LeMonda, & Bornstein, 1997; Meadow-Orlans & Spencer, 1997; Tamis-LeMonda, Bornstein, & Baumwell, in press; Tamis-LeMonda, Bornstein, Kahana-Kalman, Baumwell, & Cyphers, 1998). Affective tone refers to a mother's emotional tone when talking to and interacting with her child. Negative tones influence children's affective states (Fleming, Ruble, Flett, & Shaul, 1988; Rohner, 1985). Consistency refers to the amount of variability in a mother's mood; behaviors that are unpredictable can be disconcerting to a young child (Field, 1984; Meadow-Orlans & Steinberg, 1993; Stern, 1985).

In summary, a mother's provision of age-appropriate play materials, organization of the home environment, and quality of her interactions are all central to the healthy cognitive, social, and emotional development of her child. It is likely that a mother's ability to provide such experiences for her child will be challenged when her resources are under stress. Most notably, maternal depressive symptoms may severely compromise parenting (Belsky, 1984), particularly in low-income families in which other risk factors are prevalent.

Depressive Symptoms and Parenting

Maternal depression is a widespread problem in the United States. The major symptoms of the disorder are dysphoria, feelings of hopelessness and helplessness, low interest in activities, poor concentration, lethargy,

psychomotor retardation or agitation, loss of appetite, and sleep disturbance (Leadbeater & Linares, 1992). Approximately 10% to 12% of all mothers are clinically depressed at any given time (Coyne & Downey, 1991; Downey & Coyne, 1990; Weissman, Leaf, & Bruce, 1987), and women who live in poverty experience rates of depression as high as 30% (Leadbeater & Linares, 1992; Pound, Puckering, Cox, & Mills, 1988). Notably, up to 50% of women in low socioeconomic status (SES) households report depressive symptoms (Leadbeater & Linares, 1992), and such women are typically left undiagnosed and untreated.

Depressive symptoms have been shown to profoundly compromise parenting competence (Downey & Coyne, 1990; Egeland et al., 1990; Erikson, Sroufe, & Egeland, 1985; Sroufe & Rutter, 1984), though their effect on specific dimensions of parenting are less clear. It is likely that the effects of depressive symptoms will be strongest when coupled with other risk factors (Sameroff & Seifer, 1983), such as low maternal IQ, low SES, and the absence of a partner (Pound et al., 1988). For example, maternal IQ may in part explain relations between parenting and child outcomes as mothers with higher IQs have been shown to better understand the needs of their children and to be more supportive caregivers (Brooks-Gunn, Klebanov, & Liaw, 1995). Second, low SES adversely affects parenting, psychological well-being and developmental outcomes in children (Brooks-Gunn et al., 1996; Brooks-Gunn et al., 1995; Duncan, Brooks-Gunn, & Klebanov, 1994; McLoyd, 1998; McLoyd, Jayaratne, Cebello, & Borquez, 1994). Finally, the presence of a supportive partner in the home is associated with consistency in discipline, more patience, and less exhaustion in mothers (Furstenberg, Brooks-Gunn, & Chase-Landsdale, 1989; Lamb, Sternberg, & Thompson, 1997; Marsiglio, 1995).

This Study

This study contributes to the literature on parenting determinants in several ways. First, it provides a more detailed understanding of the specific effects of depressive symptoms on parenting. Which dimensions of the child's environment are most affected by depressive symptoms? Parenting is a complex, multidimensional process that requires more than one measure to adequately capture the subtleties of what comprises a child's early experiences. Although many researchers have identified relations between depression and maternal insensitivity and disengagement, few have looked at maternal depressive symptoms in relation to multiple dimensions of children's early experiences.

Second, depressive symptoms are assessed in a community sample of low-income, nonreferred women, a population that is understudied in the parenting literature. Therefore, a broader range of women exhibiting depressive symptoms is examined, rather than comparing clinical to nonclinical populations (Lee & Gotlieb, 1989). Research on depression has most typically been conducted on clinical populations. The clustering of depressed symptoms in nonclinical populations often goes undetected and untreated—particularly in poorer populations. Therefore, even though the prevalence of depressive symptoms is especially high in poor women, lack of education and proper mental health care result in low diagnosis or misclassification of symptoms as stress or somatic complaints (Lamb et al., 1997).

Third, we focused on the parenting of toddlers between the ages of 18 and 30 months, a developmental period characterized by important transitions in children's play, language, communication, motivation, and exploration. Though there exists substantial research on postpartum maternal depression, few investigators have examined the effect of maternal depressive symptoms on somewhat older children. At this time, the provision of age-appropriate play materials, organization of the home environment, and quality of mother–child interactions may be especially critical to young children's developmental achievements.

Finally, we considered the role of maternal depressive symptoms in the context of risk factors that are frequently associated with depression. We conceptualized depressive symptoms to be the most salient predictor of parenting, potentially mediating (or moderating) links between other risk factors and parenting (e.g., low IQ, low SES, and partner absence).

Method

Participants

Fifty-three mothers and their 18- to 30-month-old toddlers (28 boys and 25 girls) recruited from a hospital clinic in a large metropolitan city participated in a hospital clinic visit and a home visit. Inclusionary criteria included a mother not living in a shelter and being proficient in English; at least 18 years of age at the time of her child's birth; White, Latino, or African American; and the primary caretaker of her child by self-definition. All children were receiving routine medical care and none had any chronic medical problems, neurological problems, gross developmental delays, or a history of lead poisoning. If these criteria were met, the study was further described to the mother, and she was offered $15, a copy of the videotape of the play interaction in the home, feedback on the developmental assessment,[1] and a children's book.

Mothers' average age was 27.3 years (*SD* = 6.82), and they had completed, on average, the 11th grade in

[1]Licensed pediatricians associated with this research were trained and authorized to provide feedback on the Bayley Scale.

high school (*SD* = 1.44). Thirty seven percent of the mothers had a partner (i.e., biological father, boyfriend, or spouse who was not the biological father) living in the home. Mothers were from lower socioeconomic strata as assessed using the Two-Factor Hollingshead Index (1965; *M* = 56.8, *SD* = 13.27, social class = IV, range = 11–77). Eighty percent of the dyads were Latino; the remaining 20% were either African American (9%) or White (11%). Forty seven percent of the mothers spoke English, 40% were Spanish and English speaking, and the remaining 13% spoke Spanish with proficiency in English. To be considered "proficient," the mother had to be able to converse in English with the experimenter and respond to all research questions. The 13% of the mothers who demonstrated proficiency in English often spoke Spanish on their videotaped interaction with their children, therefore the videotaped interaction was coded by a trained researcher and a bilingual trained researcher. This group of mothers was compared to those mothers for whom English was their primary language on all measures of parenting. Because the two groups did not statistically differ on any measures, findings are reported on the entire group.

Procedures

All dyads were scheduled first for a clinic visit and then a home visit within 2 weeks of one another.

Clinic visit procedure. Mothers and children were scheduled for a morning visit at the clinic that lasted approximately 2½ hr. Mothers and children were taken into a large room with a small child's table with child-sized chairs. Child and mother were seated next to each other at the table, and the child was then administered the Mental Scale of the Bayley Scales of Infant Development–II (Psychological Corporation, 1969/1993) by trained researchers and clinicians. During Bayley administration, the mother was asked to resist answering for her child. After the testing of her child, she was asked various demographic questions, while her child was kept occupied by another experimenter. Mothers were then administered the Stimulation Questionnaire (StimQ) to assess the provision of age-appropriate play materials to children (Mendelsohn et al., 1994), the Standard Progressive Matrices IQ (Raven, Court, & Raven, 1992), and the Center for Epidemiological Studies Depression Scale (CES–D; Radloff, 1977). The StimQ and the CES–D were administered to mothers by researchers who were unaware of the child's Bayley test score. At the conclusion of the clinic visit, the child was given an age-appropriate book, and another visit was scheduled for the following week in the home. For purposes of this study, focus is on the demographic measures, maternal depressive symptoms, and parenting.

Home visit procedure. The home visit was conducted by two researchers who were not involved in the clinic visit. This ensured that researchers were unbiased. The visit lasted approximately 1½ hr. First, one experimenter administered the Home Observation for Measurement of the Environment (HOME; Bradley & Caldwell, 1976b), which took approximately 45 min. A second researcher also scored the HOME independently for purposes of reliability. Next, the mother and child were asked to sit on the floor for a 10-min videotaped session of unstructured free play with a standard set of toys (a doll, a small doll blanket, a doll bottle, a sponge, two spoons, two forks, three plates, a bowl, a comb, a hairbrush, two plastic dolls, a plastic telephone, a teapot and teapot cover, three teacups, three plates, four blocks, four nesting barrels, and a Fisher-Price bus with little people). The mother was told to disregard the experimenter as much as possible, to remain seated next to her child for the entire 10 min, and that the extent of her actually playing with her child was up to her—that is, she could be more or less involved in her child's play, depending on what was ordinarily most comfortable to her. The aim of the instruction was to encourage the mother to engage (or not engage) with her child in as natural a manner as possible.

Independent Measures

CES–D. Maternal depressive symptoms were measured using the CES–D, a self-report measure that inquires about the presence or absence of negative and positive thoughts, feelings, and behaviors during the prior week (Radloff, 1977). The CES–D was chosen to assess depression because it is brief, valid, has high internal consistency, adequate test–retest reliability, and has been extensively used with poor community samples (Alpern & Lyons-Ruth, 1993; Brody et al., 1994; Lyons-Ruth, Zoll, Connell, & Grunebaum, 1986; Reis, 1987). The scale was read aloud to mothers at the time of the clinic visit. There are 20 items scored on a scale from 0 to 3; 16 are negatively worded and 4 are positively worded, and thus reverse coded. Total scores range from 0 (*absence of depressive symptoms*) to 60 *(severe depressive symptoms and frequent occurrence*). A cutoff of 16 has been established as a criterion for depression; individuals who score above the cutoff are considered to be clinically depressed (Radloff, 1977). Because this was a small, nonclinical population, we choose to examine the impact of depressive symptoms using the CES–D as a continuous measure, rather than classifying mothers as depressed or nondepressed.

Maternal IQ—Standard progressive matrices (SPM). The SPM test was constructed as an index of IQ (Raven et al., 1992). One of the appeals of the SPM is that it is purported to be unbiased culturally. It is a

nonverbal measure of IQ, which was appropriate for this study because many of the participants were bilingual. The internal consistency of the SPM for similar populations samples ranges from .89 to .97, depending on age. It demonstrates strong test–retest reliability (Miao & Huang, 1990), as well as concurrent validity with the Wechsler Adult Intelligence Scales (WAIS; Wechsler, 1944) IQ. Mothers in this study had an average IQ on the nonverbal Ravens scale of 36.8 (*SD* = 8.3). Possible scores range from 0 to 60. A score of 36.8 is equivalent to an IQ of approximately 90, which is categorized as low–average on the WAIS–III–R (3rd ed., revised; Wechsler, 1944).

Hollingshead Two-Factor Index. SES was determined using the Hollingshead Two-Factor Index (Hollingshead, 1965) of social status. The Hollingshead Index is an objective, easily applicable procedure to estimate the positions individuals occupy in the status structure of society. The Hollingshead Two-Factor Index was used because a large percentage of the mothers in this study were single and therefore a four-factor index, which assumes two parents, was deemed to be inappropriate. In instances in which there were two parents, the higher status parent's score was used. The Hollingshead is based on education and employment, and ranges from a score of 11 (*high*) to 77 (*low*).

Absence or presence of a partner in the home. Absence or presence of a partner in the home was obtained from a demographics questionnaire that asked, among other things, whether there was a spouse (i.e., biological father, boyfriend, or spouse who was not the biological father) in the household, and whether the mother was single or married. Other types of partners such as grandmothers or sisters were not considered in this study.

Dependent Measures

Age-appropriate play materials. The first dimension of parenting, provision of age-appropriate play materials, was assessed using the StimQ. StimQ was developed and validated on low-income, culturally diverse populations by a team of pediatricians at Bellevue Hospital in New York City (Dreyer, Mendelsohn, & Tamis-LeMonda, 1996). StimQ is a self-report measure that has 39 questions, takes 30 min to administer, and 5 min to score. For the purposes of this study, The Availability of Learning Materials Subscale of the StimQ was used. This subscale asks about materials for symbolic play, art, adaptive and fine motor skills, materials to promote language, and materials that are life size (e.g., a child's-sized chair or table). The internal consistency of StimQ, test–retest reliability, interrater reliabilities, and concurrent validity are moderate to strong (Mendelsohn et al., 1994). In this study, interrater reliability was based on three random reliability checks ranging from 81% to 94% for the Availability of Learning Materials Scale.

Organization of the home environment. Organization of the home environment was assessed using the HOME (Bradley & Caldwell, 1984). The HOME takes approximately 1 hr to administer in the home of children and mothers. There is extensive literature on the strong reliability and predictive validity of the HOME total and subscale scores (Bradley & Caldwell, 1976a, 1976b, 1984; Bradley, Corwyn, & Whiteside-Mansell, 1996). In particular, high-risk, low SES populations such as the one in this study have HOME scores that correlate strongly with later development (Bradley & Corwyn, 1999; Ramey, Farran, & Campbell, 1979). For purposes of this study, Subscale 3 (Organization of the Environment) was used, as this is the only brief, yet widely validated, measure of home organization. The internal consistency of Subscale 3 for this study using Cronbach's alpha was .85. Interrater reliability, based on percentage of agreement for items on Subscale 3 was attained for all 53 visits, and ranged from 83% to 98%.

Quality of mother–child interaction. The third dimension of parenting, quality of mother–child interaction, was assessed from the 10 min of unstructured play using a scale developed by Meadow-Orlans and Steinberg (1993). This scale includes six bipolar ratings of maternal style: touch versus no touch, sensitive versus intrusive, involved versus passive, flexible versus rigid, positive affect versus negative affect, consistent versus inconsistent; four ratings of the child: compliant versus resistant, positive versus negative affect, involved versus disengaged, gentle versus aggressive; and three ratings of the dyad: mutually enjoys interaction versus mutually does not enjoy interaction, good mutual communication versus poor mutual communication, and frequent reciprocal interaction versus no reciprocal interaction. Each aspect of the interaction is rated on a 5-point Likert scale ranging from 1 (*low*) to 5 (*high*). In this study, the internal consistencies for the mother, child, and dyad scales were .80, .90, and .94, respectively.

In this study, training to reliability on this instrument entailed two coders achieving agreement within 1 point of each other on the 5-point scale for all 13 dimensions. The coders practiced on tapes of mother–child interaction that were not part of this study before coding the interactions for this study. Scores were compared after viewing each dyad. If there was a discrepancy of 1 point or more, the difference was discussed, and the videotape was jointly recoded. Mothers' use of touch was the most frequently discrepant score, but did not affect overall reliability. Interrater reliability was calculated based on percentage of agreement between two raters for all 53 videotapes. Reli-

ability was 89% for mother, 83% for child, 91% for dyad, and 95% for the overall score of the interaction.

Results

The results are organized around two central questions: First, what is the relation between the various risk factors of depressive symptoms (low maternal IQ, low SES, absence of a partner in the home) and the three dimensions of parenting (i.e., provision of age-appropriate play materials, organization of the home environment, and quality of mother–child interaction)? Second, what are the unique, joint, and interactive contributions of depressive symptoms and other risk factors to dimensions of parenting? To address the first question, descriptive statistics and intercorrelations are presented for all measures. To address the second question, a series of regressions are presented in which depressive symptoms and an additive risk score (comprised of maternal IQ, SES, and spouse presence or absence) are entered simultaneously to assess their separate and additive contributions to parenting.

Descriptive Statistics and Intercorrelations

Table 1 presents descriptives on depressive symptoms and the other three risk factors. Approximately 30% of the sample could be classified as clinically depressed (mothers who have a score of 16 or above on the CES–D; $n = 16$), and an additional 25% exhibited depressive symptoms (mothers with scores between 9 and 16, $n = 13$). Therefore, 55% of the women in the study exhibited some level of depressive symptoms. Because of the present focus on depressive symptoms, the CES–D was examined as a continuous variable.

Table 1 also presents composite scores for the quality of interaction for mother, child, and dyad. Analysis of the item scores (13 items) was lengthy and revealed similar results to the composite scores for mother, child, and dyad; therefore, only the composite scores are presented. The mother total score could potentially range from 7 to 35; therefore, the mothers' average score of 10.9 was low. Both the average child total of 12.4 and the average dyad total of 7.9 fell in the middle of the potential range of scores. The second dimension of parenting, provision of age-appropriate play materials, which ranges from a potential minimum of zero and a maximum of 23, was skewed to the lower limits, with a range of 0 to 7. The third dimension of parenting, organization of the home environment, has a potential range of 0 to 6. The HOME scores for this sample ranged from 3 to 6 (zero indicates poor organization, and 6 indicates good organization), with the majority of mothers scoring a 5 or 6. Mothers' scores were skewed toward the upper limit, suggesting that the homes in this sample were more likely to be organized than not.

Table 1. *Descriptives On Predictors of Parenting and Parenting Dimensions*

Independent and Dependent Measures	*M*	*SD*
Maternal Depression	12.26	12.53
Maternal IQ	36.87	8.25
Socioeconomic Status	57.70	13.27
Presence of Partner in the Home	47%	—
Play Materials	4.16	2.00
Organization of the Home	4.53	1.65
Mother Quality of Interaction	10.92	3.50
Child Quality of Interaction	12.44	3.51
Dyad Quality of Interaction	7.92	3.09

Note: $N = 53$.

Table 2 presents intercorrelations among all variables. Depressive symptoms were inversely though not significantly associated with SES. Presence of a partner in the home was associated with higher SES, a finding that accords with the research of others (Brooks-Gunn, Klebanov, & Liaw, 1995; Liaw & Brooks-Gunn, 1994). The three composite scores for the mother–child quality of interaction covaried strongly (see Table 2), but did not relate to the provision of age-appropriate play materials or to the organization of the home environment. The provision of age-appropriate play materials related posi-

Table 2. *Correlations Between Predictors and Dimensions of Parenting*

Independent and Dependent Measures	1	2	3	4	5	6	7	8	9
1. Play Materials	—	.30*	.04	.22	.19	.07	.05	.05	–.13
2. Organization of the Home	—	—	.03	.06	.10	.05	–.06	.06	–.11
3. Mother Interaction	—	—	—	.85**	.88**	–.52**	–.22	.20	.00
4. Child Interaction	—	—	—	—	.90**	–.52**	–.06	.19	.11
5. Dyad Interaction	—	—	—	—	—	–.49**	–.06	.21	–.01
6. Maternal Depressive Symptoms	—	—	—	—	—	—	–.04	–.23	.06
7. Maternal IQ	—	—	—	—	—	—	—	–.17	.17
8. Socioeconomic Status	—	—	—	—	—	—	—	—	.28*
9. Presence of Partner in the Home	—	—	—	—	—	—	—	—	—

Note: $N = 53$.
*$p < .05$. **$p < .01$.

tively to the organization of the home environment, $r(52) = .31$ $p < .05$.

With respect to relations between depressive symptoms and parenting, the three composite scores for mother, child, and dyad related to CES–D scores, whereas neither provision of age-appropriate play materials nor organization of the home environment did. Twelve of the 14 individual items that comprise the composite scores indicated significant correlations with depression, range of rs = –.31 to –.54, ps < .05 to .001. The correlations of the individual mother items with depression were: flexibility, r = –.54; affect, r = –.40; consistency, r = –.17 (nonsignificant); participation, r = –.47; sensitivity, r = –.45; touch, r = –.31; and activity level, r = –.01 (nonsignificant). The correlations of the individual child items with depression were: gentleness, r = –.38; participation, r = –.48; compliance, r = –.49; and affect r = –.47. The correlations of the individual dyad items with depression were: reciprocity, r = –.49; interaction, r = –.45; and communication r = –.46.

To determine how many mothers engaged in sustained toy play with their children, the item participatory versus disengaged was examined. Of the 53 mothers, 35% did not engage in play (a score of 1 or 2) with their children, 28% were moderately engaged (a score of 3) with their children, and 37% were highly engaged (a score of 4 or 5) with their children. Mothers who were flexible, displayed positive affect, participated in the interaction, were sensitive to their children, and often touched their children were less likely to have depressive symptoms than mothers who did not exhibit these qualities during interactions with their toddlers. In contrast, depressive symptoms were not associated with maternal consistency or maternal activity level: rs(52) = .17, *ns;* and rs(52) = –.01, *ns,* respectively. Similar to the significant finding for mother items, children who were gentle, more often participated in play, were compliant with their mothers' suggestions, and exhibited positive affect had mothers with lower depression scores than children who were aggressive, nonparticipatory, noncompliant, and negative. Finally, dyads characterized by reciprocity, mutual enjoyment, and mutual communication were less likely to have mothers with depressive symptoms than were dyads characterized by poor reciprocity, poor mutual enjoyment, and poor communication.

We next examined associations between maternal IQ, SES, absence or presence of a partner, and the three dimensions of parenting. Of 57 correlations, only 2 were significant. Given the large number of correlations, these relations are likely spurious and, therefore, are not interpreted.

Hierarchical Regressions

In the next set of analyses, three regressions were calculated, one for each of the composites of the interaction measure: mother total, child total, dyad total. In each regression, maternal IQ, SES, and presence or absence of a partner were entered as a block in the first step of the equation. In the second step of the regression, depressive symptoms was entered as a continuous variable to assess its unique effect on the specific interaction measure over and above the other risk factors. In the third step of the regression, the interaction between the three risk measures and depressive symptoms were examined to determine whether the effects of depressive symptoms were particularly strong in the context of these risks.

Paralleling results obtained at the zero-order level, depressive symptoms significantly accounted for variance in the three composite scores over and above the contributions of the other risk factors (see Table 3). For the mother total, depressive symptoms accounted for 27% unique variance, $F(1, 50) = 18.25$, $p < .01$; for the child total, depressive symptoms also accounted for 27% unique variance, $F(1, 50) = 18.58$, $p < .01$; for the dyad total, depressive symptoms accounted for 24% unique variance, $F(1, 50) = 15.80$, $p < .01$. Neither maternal IQ, SES, nor absence or presence of a partner in

Table 3. *Relation Between the Quality of the Interaction and Depression and the Risk Factors*

Predictors	Total R^2	R^2 Change	F Change	β	Overall F
Mother Total	29%	—	—	—	6.40
Risk Factors	—	0%	.09	.14	—
Depressive Symptoms	—	27%*	18.25*	–.54*	—
Interaction	—	0%	.02	.02	—
Child Total	28%	—	—	—	6.30
Risk Factors	—	3%	1.32	–.06	—
Depressive Symptoms	—	27%*	18.58*	–.53*	—
Interaction	—	1%	.46	.09	—
Dyad Total	24%	—	—	—	5.10
Risk Factors	—	1%	.37	.01	—
Depressive Symptoms	—	24%*	15.80*	–.50*	—
Interaction	0%	.11	.04	—	

Note: $N = 53$.
**$p < .01$.

the home contributed to the quality of parent–child interactions. Similarly, interactions between depressive symptoms and these variables were not significant. In short, the most meaningful predictor of mother–child interactions was mothers' depressive symptoms, a finding that accords with Belsky's (1984) emphasis on psychological factors as the most central determinants of parenting.

Discussion

The objective of this study was to assess whether maternal depressive symptoms differentially relate to three dimensions of parenting deemed central to children's early development: provision of age-appropriate play materials, organization of the home environment, and the quality of mother–child interactions. We predicted that mothers with depressive symptoms would provide their children with fewer age-appropriate play materials and less organized home environments, and would demonstrate less sensitive interactions than mothers without depressive symptoms.

We did not uncover an association between maternal depressive symptoms and mothers' provision of age-appropriate play materials. This finding does not support the idea that disinterest and low attunement in mothers with depressive symptoms interferes with their ability to provide age-appropriate play materials for them (Sameroff & Seifer, 1983). Similarly, depressive symptoms were not associated with disorganization in the home, as others have suggested (Egeland et al., 1990; Panaccione & Wahler, 1986). It is possible that the provision of age-appropriate play materials or organization of the home environment are better explained by factors other than depression, such as family size. Another possibility is that the measures we used to assess organization of the home and provision of play materials were limited. For example, the subscale of the HOME that determines organization includes only six questions, which may not adequately capture the organization of the home. In addition, the StimQ is a relatively new measure that relies on self-report, and mothers may have misreported what play materials are available to their children.

As expected, however, mother–child interactions suffered dramatically in the context of maternal depressive symptoms, a finding that accords with the observations of others (Campbell, Cohn, & Meyers, 1995; Cohn, Campbell, Matias, & Hopkins, 1990; Cohn & Tronick, 1983; Downey & Coyne, 1990; Field, 1984; Fleming et al., 1988; Leadbeater, Bishop, & Raver, 1996; Lee & Gotlieb, 1989; Lyons-Ruth, Easterbrooks, & Cibelli, 1997; Panaccione & Wahler, 1986; Teti, Gelfand, Messinger, & Isabella, 1995). Specifically, depressive symptoms were associated with less sensitivity, less engagement, less flexibility, and less positive affection in mothers, and with less mutuality, less reciprocity, and less enjoyment in dyads. It is interesting to note that one of the only maternal behaviors found not to relate to depression in this study was maternal activity level. Examination of this variable revealed that the standard deviation for mothers with depressive symptoms was nearly twice that of mothers without, a finding that accords with the dual characterization of depressed mothers' parenting proposed by Cohn and colleagues (Cohn, Matias, Tronick, Lyons-Ruth, & Connell, 1986).

Depressive symptoms also predicted less compliance, less positive affect, less engagement, and less gentleness in toddlers, suggesting that young children are highly attuned to and influenced by their mothers' affect and parenting (Breznitz & Friedman, 1988; Pound et al., 1988; Teti et al., 1995), and that child–mother attachment are compromised in the face of depressive symptoms. Given the transactional nature of mother–child relations, it is critical to consider whether and how children's behaviors might further affect their mothers' sense of competence and interactions and contribute to their mother's depressive symptoms.

Another aim of the study was to assess maternal depressive symptoms in the context of other risk factors. We predicted that mothers with low IQs, low SES, and the absence of a partner in the home would be especially prone to the effects of maternal depressive symptoms, and that depressive symptoms would explain relations between other risk factors and parenting (particularly SES). These speculations were based on findings that mothers who experience multiple risks exhibit heightened depressive symptoms, hostility, and intrusiveness toward their infants (Lyons-Ruth et al., 1997; Lyons-Ruth et al., 1986). However, the lack of significant relations between other risks and parenting circumvented our ability to test t symptoms. It may be that the homogeneous nature ofhe moderating and mediating role of depressive our sample obscured relations that exist between risk factors and parenting. Studies that have included a broader range of income strata have found SES to be predictive of maternal depressive symptoms (e.g., Lee & Gotlieb, 1989). It may also be that certain indicators of risk in low-income mothers, such as the absence of a partner, are buffered in the presence of other types of support, such as that provided by grandparents (e.g., McLoyd, 1998).

This study is characterized by several limitations, most notably the assessment of a relatively small sample of mothers that necessitated focus on a few, select variables. Consequently, other contributing factors to the characterization and understanding of parenting may have been overlooked. For example, family size has been shown to be an important predictor of par-

enting in Latino and African American populations, either because it acts as a family stressor (Brody et al., 1994; Reis, 1987) or as a buffer to depression. Unfortunately, data on family size was unavailable, and so its potential influence on the dimensions of parenting remains to be examined. Similarly, dimensions of mothers' mental health, such as self-esteem, may be central to portrayals of parenting in low-income families (e.g., Brody & Flor, 1997). The concurrent nature of this study limits investigation of causal mechanisms among mothers' depressive symptoms, parenting and child development, and underscores the need for longitudinal research in this area.

Notably, mothers in this study were largely Latina, and this may have effected the results and generalizability of findings. Depressive symptoms such as worry, irritability, and fatigue might be interpreted and understood differently across cultural groups. Moreover, answering questions about depressive symptoms might require a certain level of English proficiency and might vary with a mother's education level. For example, some of the mother's were proficient in English and this may have affected their responses to CES–D questions. Furthermore, norms for what is accepted as or considered to be good parenting varies across cultures. Latinos may not place as much value or emphasis on some of the dimensions emphasized in our coding of mother–child interactions, such as participation in play, flexibility, or mutual communication. As such, our characterizations of the parenting styles of these mothers might not capture the range of behaviors thought to indicate positive mothering in Latinas. Therefore, the identification of depressive symptoms and assessment of sensitive parenting within a cultural framework is complex and warrants extensive exploration in further investigations.

Nonetheless, this research contributes to the literature in several ways. First, although parenting interactions have been examined in relation to depressive symptoms, organization of the home environment and provision of age-appropriate play materials have been less often studied. Our findings suggest that these two dimensions of parenting are less affected by low SES and depressive symptoms than is the quality of mother–child interactions. Similarly, Reis (1987) found that depressive symptoms (as measured by the CES–D) correlated with punitive attitudes toward parenting, but did not relate to measures on the HOME. Second, the sample of participants we assessed represents an understudied and underrepresented group of urban, minority mothers and their children. There is a bias in the literature toward studying depressive symptoms in middle-class or clinically diagnosed mothers, though noteworthy exceptions exist (Conger et al., 1984; Lubeck & Chandler, 1990; Reis, 1987). There is a strong likelihood that women with clinical depression would suffer an even more dramatic decrease in parenting competence in comparison to mothers who have only a clustering of depressive symptoms. As such, our findings likely represent a lower limit of depression's effect on parenting. Third, this study adds to the relative gap in knowledge about the effects of maternal depressive symptoms on parenting during children's second and third years of life. Given the fact that mothers' sensitivity at this time contributes in powerful ways to children's emerging social and cognitive competencies, more studies are needed to examine the effects of depressive symptoms on outcomes during this developmental stage. Finally, the powerful effect of depressive symptoms on parenting, over and above that of other risks, reinforces the notion that mothers' psychological functioning is a potent predictor of parenting sensitivity (Belsky, 1984), and is relevant to preventive interventions with mothers suffering from depressive symptoms.

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