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Depressive symptomatology in childhood and adolescence

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Abstract
Antecedents of depressive symptomatology in childhood and adolescence were examined in a prospective longitudinal study of at-risk youth (n = 168) from families of lower socioeconomic status. Relations between family context factors, maternal depressive symptoms, and depressive symptoms in childhood and adolescence were examined, with a focus on early family relationship factors rarely available for analysis in longitudinal data sets. Results suggest the possibility of etiological differences between depressive symptoms in childhood and in adolescence. Depressive symptomatology in childhood was predicted by the overall family context. Cumulative effects of maternal depressive symptomatology, early care lacking in emotional supportiveness, abuse, and family stressors were observed. Depressive symptomatology in adolescence, on the other hand, was specifically associated with maternal depression and early care lacking in emotional supportiveness. Moreover, an intriguing sex difference emerged: maternal depressive symptomatology was strongly associated with depressive symptomatology in adolescence for females, but for males supportive early care appeared more relevant.

At one time, depressive disorder was considered to be nonexistent in childhood due to the lack of a well-developed superego, but it has since been widely accepted that depressive disorders phenomenologically similar to those found in adolescents and adults can be identified reliably in children (Cantwell, 1982; Cantwell & Carlson, 1979; Nolen–Hoeksema & Girgus, 1994). Depression in adolescence appears to be linked with depression in adulthood, with little evidence suggesting a fundamental distinction between depressive disorders in these consecutive developmental periods (Harrington, Fudge, Rutter, Pickles, & Hill, 1990; Newman, Moffitt, Caspi, Magdol, Silva, & Stanton, 1996). However, the relation of childhood depression and depression in adolescence is less clear. While similar clusters of symptoms may be seen in both children and adolescents who are diagnosed with depressive disorders, notable age and sex trends suggest the possibility of meaningful differences between child and adolescent depression.

Depression has been found to be relatively rare in childhood, with prevalence rates below 4% in children under 12 years of age, becoming more prevalent in adolescence (Angold & Rutter, 1992; Harrington, 1994; Rutter, 1986; Sroufe & Rutter, 1984). Somewhere between 5 and 15% of adolescents show moderate to severe depressive disorder (Brooks–Gunn & Petersen, 1991). Moderate stability in depression from childhood to adolescence has been found using a wide variety of methodologies (McGee, Feehan, Williams, & Anderson, 1992; Offord, Boyle, Racine, Fleming, Cad-

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man, Blum, Byrne, Links, Lipman, MacMillan, Grant, Sanford, Szatmari, Thomas, & Woodward, 1992; Rutter, Tizard, Yule, Graham, & Whitmore, 1976; Verhulst & Van der Ende, 1991, 1992).

While rates of depression in girls and boys are similar in childhood, with a possible slight male preponderance (McGee et al., 1992), the sex ratio changes in adolescence, resulting in more depression among females (Angold & Costello, 1995; Angold & Rutter, 1992; Angold & Worthman, 1993; Sroufe & Rutter, 1984). The female preponderance appears to be found consistently by mid-adolescence (age 15 or 16 years; Angold & Rutter, 1992; Angold & Worthman, 1993; McGee et al., 1992).

The differences, with respect to the prevalence and the sex ratio, between child and adolescent depression suggest the possibility that child and adolescent depression may differ in core aspects as well, despite similarity at the symptom level. This possibility has been investigated in studies conducted at the Institute of Psychiatry in London over the past 30 years. Harrington, Rutter, and Fombonne (1996) observed that depressive disorders with onset prior to puberty were more likely to be associated with adverse family environments than depressive disorders with postpubertal onset. Harrington and colleagues noted a pressing need for replication of this potentially important distinction in prospective longitudinal studies. Any true differences in the etiology of child and adolescent depression are highly relevant to a better understanding of juvenile depression and to the development of effective intervention approaches.

Several aspects of the family environment, including parent–child relationships, maltreatment, and maternal depression, have been considered with respect to depression in children and adolescents. Family relationships are central to many of the factors that have been studied. Even maternal depression, a factor related to an individual rather than to a relationship, may have effects on family relationships and may, in this manner, contribute to depression in offspring.

Caretaker–Child Relationships

The early relationship with the primary caretaker is considered to be strongly implicated in later depression due to its salience beginning in infancy (Cummings & Cicchetti, 1990; Hammen, 1992). Expectations concerning the self and others, as well as patterns of emotional regulation, develop in the social and emotional context of the relationship with the primary caregiver, traditionally the mother (Sroufe, 1996). Toth, Manly, and Cicchetti (1992) suggested that "disruption in or the unavailability of adequate caregiving provides a unifying framework for understanding the occurrence of depression" (p. 98).

The child's sense of self in the context of significant relationships is rooted in early relationships with parents (Bowlby, 1969/1982). Children who receive more sensitive and supportive care may be more likely to consider themselves worthy of love and care than children whose primary relationships involve less support. While supportive care may be important throughout childhood and adolescence, the early years may be especially critical due to the generally more limited spheres of influence impinging on the child. Prior to extensive experience with teachers and peers, the family context of the child is often the primary source of information for the child's expectations relating to relationships with others.

The quality of the child's early internal representation of self in the context of the primary relationship may be critical to the development of healthy self-esteem, unperturbed by later experiences (Cummings & Cicchetti, 1990). Children who receive less supportive care may, over time, develop a precarious sense of self-esteem, highly vulnerable to subsequent experiences. In this manner, a liability in the caretaker relationship may become a vulnerability factor, involving low self-esteem, within the child. While low self-esteem is just one aspect of depressive disorder, it has often been considered a central symptom.

In addition to effects on self-esteem, a supportive early primary caregiving relationship is an important context for the development of emotion regulation (Sroufe, 1996). Supportive parenting involves helping an infant regulate emotion as the infant develops the ability to self-regulate. An infant who is not parented sensitively may have difficulty learning to regulate emotion. There is strong

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evidence that parental maltreatment is associated with dysregulation (Rogosch, Cicchetti, Shields, & Toth, 1995). Deficits in this area may be associated with a wide range of psychopathology, including depression (Sroufe, 1996).

Family relationships characterized by less support, less cohesion, and more criticism, hostility, and rejection have been associated with depression in children and adolescents (Asarnow, Tompson, Hamilton, Goldstein, & Guthrie, 1994; Garrison, Waller, Cuffe, McKeown, Addy, & Jackson, 1997; Garrison, Jackson, Marsteller, McKeown, & Addy, 1990; Kaslow, Deering, & Raxusin, 1994; McCauley & Myers, 1992; Puig–Antich, Lukens, Davies, Goetz, Brennan–Quattrock, & Todak, 1985). Unfortunately, in many of the recent studies of children and adolescents with depression, assessment of parent–child relationships has been based on information provided by parents or adolescents. A commonly noted weakness of studies relying on self-report of family relationships is the possible role of depression on information processing. During a depressed mood (of the parent or the youth), perceptions of parent–youth relationships may be negatively biased. Parent perceptions may also be influenced by the frustrations of parenting a depressed child rather than the actual support provided to the child. There is a strong need for studies in which observational methods are used to directly assess the quality of parent–child relationships. In addition, there is little evidence bearing on the question of whether impaired family relationships are antecedent to depression, rather than merely correlated or the result of depression. This question, with important implications for early intervention, can be addressed only by prospective longitudinal studies measuring family relationships prior to depression.

While much of the existing research focuses on the mother–child relationship, higher levels of emotional support received by the mother from others may increase the overall quality of care experienced by the child in early childhood, particularly when the mother is the primary caretaker. Lower levels of emotional support experienced by the mother have been associated with childhood depression in a clinical sample (Goodyer, Wright, & Altham, 1988).

Maltreatment

Toth and colleagues (1992) have suggested that "children who have experienced child maltreatment reflect an extreme on the continuum of caretaking casualty" (p. 98). Physical abuse has been consistently associated with depression in children in several recent studies (Kaufman, 1991; Okun, Parker, & Levendosky, 1994; Toth et al., 1992). Some mechanisms linking physical abuse and depression may be similar to possible mechanisms linking less extreme variations in supportive care and juvenile depression. Toth and colleagues (1992) suggested that negative representational models of the self in relation to others may develop and the self-system may show abnormalities. Negative self-perceptions and expectations may result from the abuse itself as well as from negative experiences in other contexts, which may be related to physical abuse (Okun et al., 1994). Other mechanisms may be specific to extreme deficits in supportive care. For example, parental aggression toward children may communicate rejection and may erode a child's sense of control within relationships (Okun et al., 1994).

It is more difficult to place sexual abuse on a continuum of caretaking casualty, although surely it is traumatic for the child. Sexual abuse may be perpetrated by family members other than parents, or by nonfamily members. But regardless of the nature of the association between sexual abuse and supportive parenting, sexual abuse may interfere with the child's experience of support, particularly when the perpetrator is a parent. Trickett and Putnam (1993) suggest that sexual abuse may decrease a child's feelings of self-worth and may engender feelings of loss of control. Sexual abuse in children and adolescents has been associated with depressive symptoms, along with a variety of other psychological problems (Kendall–Tackett, Williams, & Finkelhor, 1993; Toth & Cicchetti, 1996; Trickett & Putnam, 1993).

A recent prospective longitudinal investigation of maltreatment and psychopathology provides evidence that early maltreatment is

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strongly related to later psychopathology (Egeland, 1997). Egeland found that sexual abuse, physical abuse, and psychological unavailability of caretakers in early childhood were strongly related to a wide range of psychopathology in adolescence. There was a trend toward a higher rate of depressive and anxiety disorders, in comparison to externalizing disorders, among adolescents who had experienced sexual abuse early in life. With respect to depression, 64% of sexually abused preschool children were diagnosed with depressive disorders at age 17 years. Depressive disorders were also found in 40% of children who had been physically abused and in 40% of children who had experienced psychologically unavailable care, in comparison with 31% of control children, a nonsignificant difference.

Maternal Depression

In addition to findings suggesting that adverse family environments may differentiate between depressive disorders of prepubertal and postpubertal onset, Harrington and colleagues found that both prepubertal and postpubertal cases were associated with an increased family loading for depressive disorders (Harrington et al., 1996). Maternal depression, in particular, has been associated with an increased risk of depressive disorders in children (Dodge, 1990). While maternal depression may be transmitted genetically to offspring, there is evidence that genetic factors alone cannot explain the link between parental depression and childhood problems (Downey & Coyne, 1990). A contextual factor that has received considerable attention is impairment in parenting.

Weissman and Paykel (1974) noted that the depressed mother's own needs for nurturance and care can interfere with her ability to provide nurturance for her children. Emotional uninvolvement, along with the helplessness, irritability, and hostility often associated with depression are likely to interfere with the parenting function. Downey and Coyne (1990) summarized findings from observational studies of parenting behavior of depressed parents, noting that the behavior and affective expression of depressed mothers "is constricted and their speech is flat as compared with other mothers. They respond less positively, less frequently, and less quickly to their children's efforts to engage their attention" (p. 63). In addition, depressed mothers "show heightened levels of child-directed hostility and negativity, and their attempts to control child behavior are marked by coercion rather than by negotiation" (p. 63). Zahn–Waxler, Cole, and Barrett (1991) hypothesized that depressed mothers use a guilt-inducing parenting style coupled with high expectations of their children, which may result in heightened guilt, empathy, and feelings of responsibility in children. It should be noted that there does not appear to be a strong distinction between the parenting difficulties of mothers with actual depressive disorder and mothers with milder elevations in depressive symptomatology (Downey & Coyne, 1990).

Goals of the Present Study

The present study was designed to investigate antecedents of depressive symptomatology in childhood and adolescence, with a focus on early family relationship factors rarely available for analysis in longitudinal data sets. A major methodological advance of this study is the use of observational measures during the first 3.5 years of life to assess the supportiveness of early caregiver–child relationships. Errors of retrospective reporting and informant biases were avoided through the use of observational data and a common set of criteria that could be uniformly applied to all of the early caregiver–child relationships.

A major goal of this study was to examine the associations between the early family context, maternal depression, and depressive symptomatology in childhood and adolescence in a prospective longitudinal study of at-risk youth from families of lower socioeconomic status. Early family context factors included in this investigation were the emotional support provided to the child in the context of the relationship with the mother, the emotional support the mother received from others for her caretaking role, and maltreatment of the child. Life stress experienced by the mother was also included as a more general measure of the family context. Addi-

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tionally, we sought to determine whether the same antecedents that would be associated with a continuum of depressive symptomatology in childhood and adolescence would be linked with cases of clinical levels of depressive symptomatology examined with respect to the period of onset.

We expected that a less supportive early family context would be linked with depressive symptomatology in childhood and would show weaker, though significant, association with depressive symptomatology in adolescence. Similarly, more adverse family environments were expected in youth with childhood depression than in youth with adolescence-onset depression. These predictions are consistent with observations of Harrington and colleagues (1996) and were considered particularly sound in the present study because most of the antecedents were factors relating to the early family environment and were thus more proximal to measures of childhood depression. We further expected that associations between depressive symptoms and the early family context would diminish with maternal depressive symptomatology taken into account. There was little basis for prediction of the unique variance explained by family context factors. This gap in the literature was explicitly noted by Seifer (1995).

Finally, we sought to determine whether there were any sex differences in the associations between antecedents and depressive symptomatology in children and adolescents. Due to previous observations that personality or attitudinal assessments of the mother tend to predict developmental outcomes in childhood for females but not for males in our sample (Sroufe & Egeland, 1991), we were particularly interested in whether there would be stronger associations between maternal depression and depressive symptoms in females than in males.

Methods

Participants

Participants were 168 children (91 males, 77 females) drawn from a longitudinal study of children and families at the University of Minnesota (Egeland & Brunnquell, 1979). The sample consisted of children of primiparous mothers recruited while receiving prenatal care at public health clinics in Minneapolis in 1975. At the time of delivery, the mothers ranged in age from 15 to 34 years ($M = 20.61$, $SD = 3.57$), and 63% of the mothers were single. Thirty-five percent of the mothers had not completed high school. Eighty-four percent of the mothers were Caucasian, 11% were African American, and the remaining 5% were American Indian or Latino.

There were no significant differences between the present sample and the remaining participants initially included in the longitudinal study with respect to gender of participants, maternal age at the time of delivery, or marital status at the time of delivery. There was, however, a significant difference with respect to educational status of the mothers at the time of delivery. Forty-eight percent of the mothers who were not retained in the present sample had not completed high school, compared to 35% of the mothers in the present sample ($\chi^2 = 3.96$, $df = 1$, $p < .05$). There was also a significant difference with respect to race of mothers of the participants. Mothers of participants not retained in the present sample were 72% Caucasian, 20% African American, and 8% American Indian or Latino. Significantly fewer children of African American mothers were retained in the present sample than were initially included in the study ($\chi^2 = 5.69$, $df = 2$, $p < .05$).

Measures of depressive symptomatology

A variety of measures used in the longitudinal project provide data on depressive symptomatology. These include behavior checklists completed by the mother, teachers, and the subject and diagnostic interviews with the mother and the subject. Information relating to how data from these measures were used in the present study will be provided following a description of each type of measure.

Achenbach behavior checklists. The Teacher Report Form (TRF), Child Behavior Checklist (CBCL), and Youth Self Report (YSR), normed on large national samples, are widely

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used for measuring child behavior problems (Achenbach, 1991a, 1991b, 1991c; Achenbach & Edelbrock, 1983, 1986). All three forms yield scores for total problem behaviors and for empirically derived subscales, including an "Anxious/Depressed" scale. Despite the inclusion of items suggesting anxiety, this scale has been found to discriminate between major depression and separation anxiety. Rey and Morris–Yates (1992) suggest that "this factor taps mainly a depression construct, despite the fact that, at face value, item content corresponds to a mixture of anxiety and depressive symptoms" (p. 14). Using the existing empirically derived Anxious/Depressed scale makes it possible to use the established *t* scores to identify cases with clinically significant levels of symptomatology.

The CBCL was completed by the child's mother when the child was in first grade. The TRF was completed by the child's teacher toward the ends of first, second, and third grades. At age 16 years, the adolescent's English teacher completed the TRF, the mother completed the CBCL, and the adolescent completed the YSR.

Children's Depression Rating Scale—Revised (*CDRS*). The CDRS is a 15-item semistructured interview concerning depressive symptomatology (Poznanski, Cook, & Carroll, 1979). A set of probing questions allows the interviewer to rate the intensity of 15 symptoms, which include capacity to have fun, social withdrawal, sleep disturbance, appetite or eating patterns, excessive fatigue, physical complaints, irritability, guilt, self-esteem, depressed feelings, morbid ideation, suicidal ideation, weeping, schoolwork, and hypoactivity. The CDRS has been validated on referred samples (Poznanski, Cook, Carroll, & Corzo, 1983) and has been shown to reliably identify children who meet widely used criteria for depression (Poznanski, Grossman, Buchsbaum, Banegas, Freeman, & Gibbons, 1985).

The mother version of the CDRS was administered by graduate research assistants at the completion of second grade. Both the mother and the child versions were administered at the completion of third grade.

Correlations between the mother version of the CDRS and the TRF in second and third grade, conducted in order to determine whether there was some consensus among the rating scales and interview measures during these consecutive years, ranged from $r = .20$, $p \leq .05$, to $r = .68$, $p \leq .001$.

Kiddie Schedule for Affective Disorders and Schizophrenia—Modified Present State/Epidemiological version (*K-SADS-MCP*). The K-SADS-MCP is a semistructured diagnostic interview which provides ratings of symptoms and diagnoses of major depressive disorder and dysthymic disorder at the time of the assessment. The version of the K-SADS that was used was adapted to the *Diagnostic and Statistical Manual of Mental Disorders,* third edition, revised (DSM-III-R; American Psychiatric Association, 1987) by Ambrosini, Metz, Prabucki, and Lee (1989). Although K-SADS diagnoses were made with reference to the DSM-III-R, symptoms and diagnoses of major depressive disorder and dysthymic disorder are likely to be quite consistent with the fourth edition of the DSM (DSM-IV) due to the fact that there were few changes in criteria (American Psychiatric Association, 1994). One change in criteria worth noting is the specification of the boundary between bereavement and major depressive disorder in the DSM-IV. In the present study, depressive disorders were diagnosed without regard to significant deaths.

Although the K-SADS may be considered a self-report instrument due to the fact that the adolescent is the reporter, information is gathered in the context of a comprehensive semistructured diagnostic interview conducted by a trained interviewer. The interviewer guides the adolescent's disclosure of relevant information and makes judgments regarding the clinical significance of each symptom that is reported.

The K-SADS was administered at age 17.5 years by advanced graduate students who underwent an extensive training program and ongoing supervision by experts in its administration. A present depression severity score was extracted from the KSADS (Chambers, Puig–Antich, Hirsch, Paez, Ambrosini, Ta-

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brizi, & Davies, 1985). The summary scale consisted of 12 items related to mood, anhedonia, pathological guilt, difficulty concentrating, psychomotor agitation, psychomotor retardation, insomnia, hypersomnia, suicidal ideation, fatigue, anorexia, and increased appetite. Chambers et al. (1985) report both test–retest reliability and internal consistency (Cronbach's alpha) coefficients to be .72 for this scale.

Aggregation of data on depression

Continuous measures of depression were used in the investigation of factors predicting juvenile depression. These measures, labeled "child depression" and "adolescent depression," provided reasonable ranges for use in hierarchical multiple regression analyses. In the investigation of differences between child and adolescent depression, subjects were classified into groups based on dichotomous consideration of clinically significant levels of depressive symptomatology in childhood and in adolescence, as described below.

Child depression: Continuous measure. A continuous measure of depressive symptomatology in childhood was determined by standardizing the seven depression ratings in childhood. The highest rating was used as an index of the most severe depressive symptomatology experienced during childhood.

Adolescent depression: Continuous measure. A continuous measure of depressive symptomatology in adolescence was determined by standardizing the four depression ratings in adolescence. The highest score was used as a severity index of the most severe depressive symptomatology experienced during adolescence.

Child and adolescent depression group classification. In childhood, determination of depression group status was evaluated for first, second, and third grade separately. Two measures were used to assess levels of depressive symptomatology in both first and second grade, and three measures were used in third grade. Criteria for each age were clinical cutoff on at least one measure (2 standard deviations above the mean) and at least 75% of the threshold score on the other measure(s) collected at the same time frame. Child depression status was assigned if criteria for clinical levels of depressive symptomatology were met for any of the three time periods assessed.

In adolescence, determination of depression group status was evaluated for ages 16 and 17.5 years separately. Three measures were used to assess levels of depressive symptomatology at age 16 years and one at age 17.5 years. Criteria for adolescent depression status at age 16 years were clinical cutoff on at least one measure (2 standard deviations above the mean) and at least 75% of the threshold score on at least one of the other measures. Criterion for adolescent depression at age 17.5 years was clinical cutoff. Adolescent depression status was assigned if criteria for clinical levels of depressive symptomatology were met for one of the two time periods assessed.

Using these criteria, subjects were classified into four groups: participants who were not depressed in either childhood or adolescence, participants depressed both in childhood and in adolescence, participants depressed in childhood only, and participants depressed in adolescence only.

It should be noted that the use of cutoffs to create groups was intended to allow a glimpse of how antecedents for clinically significant levels of depressive symptomatology may vary depending on the age of onset. Although cases identified as depressed by the methods of this study are very likely to represent diagnosable depressive disorder, the use of the term "depression" in referring to these groups does not refer to diagnosed depressive disorder.

Antecedent factors

Antecedents emphasizing the quality of important family relationships were selected a priori from the longitudinal data set containing measures obtained through interviews, questionnaires, and direct observation. There was a particular focus on early antecedents

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occurring between the ages of 1 and 5 years in the selection of variables.

Supportive early care. Data relating to infant emotional support were gathered in observations at 12, 18, 24, 30, and 42 months of age.

At 12 and 18 months, the quality of the infant's attachment to the mother was assessed using the Strange Situation procedure (Ainsworth & Wittig, 1969). The Strange Situation is a standardized laboratory procedure that provides a basis for classifying attachment behavior of an infant towards the primary caretaker as "secure" or "insecure." The behavior of an infant classified as secure suggests that the infant has confidence in the mother as a secure base for exploration and has an expectation that the mother will provide comfort if the infant is distressed. An infant classified as insecure generally manifests poor quality exploration and a tendency either to avoid mother when distressed or to seek contact with some ambivalence, failing to be comforted by contact.

Strange Situation assessments were videotaped and coded by independent experienced coders. Two additional scorers were used to establish scoring agreement. Agreement on attachment type (secure or one of two subtypes of insecure attachment) with independent rescoring of the entire 12-month sample was 89%. Agreement with independent rescoring of 25 randomly selected 18-month assessments was 92%. Disagreements were resolved by the more experienced coder after reviewing the videotape.

In order to combine data on attachment behavior obtained at 12 months and at 18 months, the number of times the infant's attachment was assessed as secure (ranging from zero to two) was used as an indication of the probability that the infant's attachment style was truly secure during this time period. The attachment behavior of all participants in the present study was coded in at least one of the two assessments. If a classification were not available for a subject at one of the assessments, then the classification made in the other assessment was used. In these cases ($n = 20$), the highest security score that could be received was a 1.

At 24 months, the emotional support provided by the mother was assessed in a laboratory procedure in which the child was presented with a series of problem-solving opportunities associated with rewards (Matas, Arend, & Sroufe, 1978). Solutions to the two preliminary problems are relatively straightforward, designed to be easy for most 2-year-olds. For example, the first problem involved an apparatus with a slot between two boards. An attractive prize was placed in the slot and the child was given a long stick to push it out. After the context for problem-solving was set by the first two problems, two problems of greater complexity were presented to the child. The latter of these involved a clear plexiglass box with a board inserted at one end, forming a lever. A reward was placed on the end of the board inside the box. The child was required to push down the end of the board outside the box in order to raise the reward up through a hole in the top surface of the box. The child was provided with a block which could be placed on the free end of the board. The block could be used to weight the lever down in order to keep the reward up in the hole so that the child could reach it. The third and fourth problems (i.e., those of greater complexity) were designed to require the toddler to seek assistance from the mother in order to derive a solution.

The entire procedure was videotaped and the third and fourth problems were scored on a variety of scales including a 7-point scale measuring the extent to which the mother served as a supportive presence. A high score on this scale indicated that the mother provided emotional support, facilitating a positive and enjoyable learning experience, regardless of how difficult the task was for the child. A highly supportive presence was characterized by a balance between the encouragement of autonomous work, through the provision of a secure base, and a level of involvement ensuring that the child would receive emotional or instructive assistance when needed. Scores on the supportive presence scale were summed across the third and fourth problems, resulting in a total score ranging from 0 to 14.

The supportive presence variable has been validated extensively as an index of the overall quality and effectiveness of the mother–

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child pair at this developmental period (Erickson, Sroufe, & Egeland, 1985). Assessments were coded by two independent coders, resulting in a Pearson product–moment reliability coefficient of .92 ($n = 69$).

At 30 months, the Caldwell Home Inventory (Caldwell, Heider, & Kaplan, 1966) was administered in the homes of participant families by trained observers. The Caldwell Home Inventory is a 48-item inventory with six subscales designed to sample certain aspects of the social, emotional, and cognitive support available to a young child (birth to 3 years) within the home environment. The subscale "Emotional and Verbal Responsivity" relates to the supportiveness of the relationship with the mother. This subscale consists of 11 items scored 1 (*yes*) or 0 (*no*), which are summed to provide a subscale score. These items include ratings of the quantity and quality of interactions between the mother and child and of the mother's implicit and explicit communication of affection to her child.

The internal consistency estimate (Kuder–Richardson 20 formula) of the Home Inventory total scales was calculated to be .93, and the total score has been found to be relatively stable over an 18-month period ($r = .70$).

At 42 months, emotional support provided by the mother was assessed in a laboratory procedure, called "Teaching Tasks," in which the mother was asked to provide instructions and assistance to the child in a series of four problem-solving tasks designed to be just beyond the independent problem-solving ability of most children. In one task, the mother instructed the child to think of and name objects that have wheels. In another task, the mother instructed the child to correctly place objects on a three-dimensional board according to color, size, and shape. The procedure was videotaped and scored on a variety of scales by two independent raters. These raters observed all four tasks and then made ratings on 7-point scales which were combined to make 14-point scales. In independent trials, the level of interrater agreement for any rater or scale, corrected for chance, exceeded 75% and was judged to be acceptable (Bakeman & Gottman, 1987).

Two of the scales pertain to the degree of emotional support provided by the mother: the "supportive presence" scale and the "hostility" scale. The supportive presence scale takes into account expressions of positive regard and emotional support as well as the presence of a calm reassuring style when the child experiences difficulty. The hostility scale reflects the presence of expressions of anger or rejecting behaviors during the procedure, with higher scores indicating greater expressed hostility. (Spearman–Brown reliability estimates of the final composite scores on supportive presence and hostility for 87 participants were .87 and .80, respectively.) A high level of supportive presence is likely to be substantially eroded by a high level of hostility. The emotional support actually experienced by the child in this case may be similar to that experienced when there is a low level of supportive presence and little or no hostility. Because hostile maternal behavior is likely to interfere with the emotional support experienced by the child, scores on these two scales were combined by subtracting the hostility rating from the supportive presence rating.

A single variable indicating the supportiveness of the early relationship with the mother was constructed, incorporating relevant data from 12, 18, 24, 30, and 42 months described above. Standard scores were created for the attachment variable, the 24-month supportive presence variable, the 30-month emotional responsivity variable, and the 42-month emotional support variable, and the mean of the standard scores was calculated for all subjects.

Supportive later relationship. At age 13 years, the quality of mother–child relationships was assessed in a laboratory procedure that involved a series of group tasks. These included the joint creation of an antismoking campaign, a collaborative Q-Sort of the qualities of an ideal person, completions of simple object assemblies by the parent while blindfolded and instructed by the adolescent, and discussion of possible effects of imaginary events (J. Sroufe, 1991). This procedure was videotaped and coded on a variety of scales, including two major 7-point scales. The first scale assesses the freedom the participants have to operate with naturalness and spontaneity within family relationships. The second scale measures the degree to which the rela-

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tionship supports the needs of the individual. Interrater reliabilities for these scales were r = .61 and r = .63, respectively (n = 129). (Because the majority of assessments were rated by two coders, the final conferenced data are likely to be somewhat more reliable than indicated by the correlation coefficient.) The mean of the scores on these two balance scores was used as an indication of the likelihood that family relationships at this age could have provided emotional support to the early adolescent.

Parenting support. Data relating to the emotional support for parenting provided to the mother during the early childhood of the subject was gathered in assessments conducted when the child was 12, 18, 24, 30, 42, 48, 54, and 64 months of age. An interview conducted with the mother in each of these assessments included questions regarding how much support for parenting the mother was receiving from others, including intimate partners who may or not have been the fathers of the children. Sample questions from these interviews include "If you have a problem with your child, who do you turn to?" and "With whom are you now living? Does he help in taking care of the child?" Responses to questions such as these were used, along with information that emerged in other parts of the overall assessment, to rate the overall quality of emotional support available to the mother on a 7-point scale, with higher scores indicating better support. Exact agreement among three raters was 69%, and exact agreement or 1-point discrepancy was 84%. Correlations among emotional support ratings at the eight assessment periods ranged from r = .15 (*ns*) to r = .93 ($p \leq .001$), with high correlations among assessments prior to 54 months and lower correlations with the 54- and 64-month assessments. The median Pearson correlation coefficient for assessments up to 54 months was equal to .83 ($p \leq .001$), and the median Pearson correlation coefficient between the 54- or 64-month assessment and other assessments was equal to .25 ($p \leq .01$).

Abuse. Physical abuse by, and psychological unavailability of, primary caregivers in early childhood made known to investigators was recorded with reference to two periods: birth to 24 months, and 24–64 months. Information relating to sexual abuse was available for the latter time period only. Data used for classification determinations of the presence of abuse were compiled from a variety of sources, including observations in the home, interviews, and child protection records (Egeland & Sroufe, 1981; Erickson, Egeland, & Pianta, 1989). Physical and sexual abuse were defined in accordance with state and national laws. Determinations of psychological unavailability were made if parents were judged to be emotionally unresponsive to their children based on home and laboratory observations (Egeland & Sroufe, 1981).

The abuse variable ranged from 0 to 5, reflecting the number of periods in which the child experienced physical abuse, sexual abuse, or psychological unavailability. For example, a child who experienced physical abuse prior to 24 months and between 24 and 64 months, psychological unavailability between 24 and 64 months, but no sexual abuse, would receive a 3 for abuse.

Maternal stress. Maternal life stress was measured using a version of Cochrane and Robertson's (1973) Life Events Inventory adapted for use with a sample of lower socioeconomic status (Egeland & Deinard, 1975). Maternal stress relating to potentially stressful areas of life, such as employment, health, deaths, finances, legal trouble, family relationships, and chemical dependency, was assessed with 39 or 40 items administered in an interview format. Each stressful event experienced by the mother was later weighted on a 0–3 scale, according to the intensity of disruption stemming from the particular event, and a total score, ranging from 0 to 120, was calculated by summing weighted item scores. Interrater agreement was calculated using the equation 1 − (number of disparate points) / (number of total possible scoring disparities). Calculated for three raters using 10% of the files, agreement was 98%.

A variable measuring early maternal stress was obtained by calculating the mean of available standard scores on the Life Events

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Table 1. *Descriptive statistics for independent and dependent variables*

Variables	Mean	*SD*	Range	*n*
Maternal depression	0.28	1.13	–0.99–4.67	168
Supportive early care	0.00	.63	–2.07–1.35	168
Supportive later	9.32	1.71	6.00–14.00	158
Relationship parenting support	0.06	.98	–2.64–2.91	168
Abuse	–0.02	.98	–0.48–5.30	168
Early maternal stress	–0.01	.96	–2.03–3.73	168
Later maternal stress	0.00	.94	–1.73–3.12	168
Child depression	1.18	1.05	–0.77–4.50	168
Adolescent depression	0.85	1.19	–0.80–5.40	168

Scale at 12, 18, 30, 42, 48, 54, and 64 months. Later maternal stress was calculated in a similar manner, using data from remaining Life Events Scales administered at ages 6, 7, 8, 11, 16, and 17 years.

Maternal depression. The Beck Depression Inventory (BDI) was administered to the mother when the child was 7 and 8 years of age (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21-item self-report instrument in which the participant rates herself on a 4-point scale (0–3) on characteristics associated with depression (such as pessimism and self-dislike) with regard to the past week. Individual item scores are summed to produce a total BDI score. The BDI is well-validated and an internal consistency reliability coefficient of .86 has been reported (Beck & Beamesderfer, 1974; Beck, Steer, & Garbin, 1988). (Beck & Beamesderfer, 1974, did not report test–retest reliability, arguing that memory could bias findings over the short term and that natural fluctuations in the condition would reduce coefficients over any appreciable duration.) The mean depression score from the two assessments was used as an index of maternal depressive symptomatology in this study.

Descriptive statistics. Descriptive statistics for independent and dependent variables are provided in Table 1.

Data analysis

Zero-order correlations among and between predictor variables and dependent variables were conducted in order to inform multiple regression analyses. (The supportive later relationship variable was not significantly correlated with dependent variables and was therefore excluded from multiple regression analyses.)

The contributions of maternal depression and family context factors to child and adolescent depression (continuous measures) were explored in parallel hierarchical multiple regressions. Sex was entered first in each multiple regression in order to allow variance that could potentially be predicted at birth to be captured. The interaction between sex and maternal depression was entered on the second step in order to determine how much variance could be attributed to interaction effects before entering maternal depression. Maternal depression was entered next, before family relationship variables, in order to allow examination of effects of the relationship variables beyond effects of maternal depression. Family relationship variables were ordered from variables measuring the full range of early family relationship factors to variables measuring extremes on a quality of care continuum. Specifically, the support available to the infant through the relationship with the mother ("supportive early care") and the emotional support for parenting received by the mother from others ("parenting support") were entered on the fourth and fifth steps; abuse was entered on the sixth step. The family relationship variables were followed by variables measuring the broader family context. Early maternal stress was entered on the seventh step. The adolescent depression regression

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Table 2. *Zero-order correlations among independent variables used in regressions (N = 168)*

	Maternal Depression	Support Early Care	Parenting Support	Abuse	Maternal Stress	
					Early	Later
Maternal depression	1.00	−.19**	−.19**	.18*	.17*	.36***
Supportive early care		1.00	.22**	−.34***	−.14	−.18*
Parenting support			1.00	−.32***	−.34***	−.29***
Abuse				1.00	.26***	.30***
Early maternal stress					1.00	.49***
Later maternal stress						1.00

Note: Two-tailed Pearson correlation coefficients.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

also included later maternal stress, entered on the eighth step.

A series of one-way analyses of variance was conducted in order to determine whether groups defined on the basis of the period of onset of clinically significant levels of depressive symptomatology differ in relation to predictor variables used in the hierarchical multiple regression analyses. Family context factors were used in a set of planned comparisons between participants with childhood onset of depression and participants with adolescent onset of depression as well as between each of these groups and controls.

Results

Age and sex trends

A correlation of $r = .22$ ($p < .01$) between the continuous measures of child depression and adolescent depression indicated modest stability in depression from childhood to adolescence in this high-risk sample. Similar stability correlations were found for males and females, although statistical significance was reached only in the correlation for females ($r = .20$, *ns,* and $r = .25$, $p < .05$, respectively).

The composition of groups defined by dichotomous consideration of clinical levels of depressive symptomatology in childhood and in adolescence was consistent with age and sex trends observed using continuous measures. Eight participants, including 3 males and 5 females, were depressed in both childhood and in adolescence. Twenty-four participants were depressed in childhood only (13 males and 11 females). Adolescence-onset depression was observed in 22 subjects, including 10 males and 12 females. The remaining 114 subjects, including 65 males and 49 females, did not show evidence of depressive disorder in childhood or adolescence.

Intercorrelations among independent variables

Zero-order correlations among maternal depression, supportive early care, parenting support, abuse, early maternal stress, and later maternal stress were largely low to moderate, with the exception of a nonsignificant correlation between early maternal stress and supportive early care and a high correlation between early and later maternal stress (see Table 2).

Factors predicting child depression

Zero-order correlations between independent variables and depression in childhood are included in Table 3. Maternal depression, supportive early care, parenting support, abuse, and early maternal stress were all significantly correlated with depression in childhood. Broken down by sex, all of these variables remain significant for males, while maternal depression and supportive early care do not remain significant for females considered separately.

Results of the hierarchical multiple regression analysis predicting depression in childhood from family context factors are provided in Table 4. Sex, entered first in the multiple regression, did not significantly predict child

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Table 3. *Zero-order correlations between independent variables and depression in childhood and adolescence*

	Total Sample		Males		Females	
	Childhood	Adolescence	Childhood	Adolescence	Childhood	Adolescence
Maternal depression	.24**	.29***	.26**	.15	.21	.41***
Supportive early care	−.22**	−.31***	−.27**	−.40***	−.17	−.22
Supportive later	N/A	−.06	N/A	−.09	N/A	−.01
Relationship parenting support	−.26***	−.15	−.27**	−.17	−.24*	−.12
Abuse	.30***	.18*	.31**	.19	.30**	.18
Early maternal stress	.29***	.13	.28**	.07	.30**	.17
Later maternal stress	N/A	.27***	N/A	.27**	N/A	.28*

Note: Two-tailed Pearson correlation coefficients. $N = 168$ for the total sample (91 males, 77 females) for all variables except supportive later relationship, for which $n = 158$ (85 males, 73 females). N/A, not applicable.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 4. *Multiple regression analyses predicting depression in childhood from family context factors*

Step	Independent Variables	R^2 Change	β	*B*	*T*	Overall R^2	Overall *F*	*df*
1.	Sex	.00	.01	.03	0.16	.00	0.03	1, 166
2.	Sex		–.02	–.05	–0.30			
	Interaction	.05	.22	.13	2.86**	.05	4.10*	2, 165
3.	Sex		.00	.00	–0.03			
	Interaction		–.07	–.04	–0.30			
	Maternal depression	.01	.31	.29	1.28	.06	3.29*	3, 164
4.	Sex		.01	.02	0.14			
	Interaction		–.06	–.03	–0.24			
	Maternal depression		.26	.24	1.07			
	Supportive early care	.03	–.18	–.31	–2.39*	.09	3.96**	4, 163
5.	Sex		.02	.04	0.23			
	Interaction		–.24	–.14	–0.99			
	Maternal depression		.40	.37	1.65			
	Supportive early care		–.14	–.24	–1.83			
	Parenting support	.04	–.21	–.23	–2.70**	.13	4.75***	5, 162
6.	Sex		.03	.06	0.37			
	Interaction		–.26	–.15	–1.07			
	Maternal depression		.39	.37	1.67			
	Supportive early care		–.09	–.14	–1.09			
	Parenting support		–.17	–.18	–2.08*			
	Abuse	.03	.20	.21	2.49**	.16	5.12***	6, 161
7.	Sex		–.01	.01	0.07			
	Interaction		–.24	–.14	–1.02			
	Maternal depression		.37	.34	1.58			
	Supportive early care		–.08	–.14	–1.07			
	Parenting support		–.12	–.13	–1.46			
	Abuse		.17	.18	2.13*			
	Early maternal stress	.03	.17	.19	2.22*	.19	5.20***	7, 160

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

depression, but the interaction between sex and maternal depression was predictive (i.e., maternal depression was correlated with child depression for males), accounting for 5% of the variance in child depression. The interaction term did not remain significant when maternal depression was entered on the third step, and maternal depression did not predict child depression with the interaction term taken into account. Supportive early care was significant on entry, accounting for 3% of the variance. Parenting support, entered on the fifth step, was also significant at entry, accounting for 4% of the variance, and remained significant when abuse was entered on the sixth step. Abuse and early maternal stress were significant at entry on the sixth and seventh steps. In the final equation, abuse and early maternal stress remained significant, with the equation accounting for 19% of the total variance.

Factors predicting adolescent depression

Zero-order correlations between independent variables and depression in adolescence are included in Table 3. Parenting support and early maternal stress were not significantly correlated with depression in adolescence. (Supportive later relationship, explored only in the zero-order correlations, was also not significantly correlated with depression in adolescence.) Maternal depression was moderately correlated with depression in adolescence, with a notable sex difference: maternal depression was highly correlated with depres-

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sion in females but was not significantly correlated with depression in males. A reverse pattern was found for supportive early care, with a moderate correlation for males and a correlation falling short of significance for females. There was a low correlation between early abuse and depression in adolescence for the total sample (which was not significant in the subsamples of males and females). Later maternal stress was moderately correlated for both males and females.

Results of the multiple regression analysis predicting depression in adolescence from family context factors are provided in Table 5. Sex, entered first in the regression, did not significantly predict adolescent depression, but the interaction between sex and maternal depression was highly predictive (i.e., maternal depression was highly correlated with adolescent depression for females), accounting for 10% of the variance in adolescent depression and remaining significant until the last step of the regression. Maternal depression, entered on the third step, did not predict adolescent depression with the interaction term taken into account. Supportive early care was significant on entry, accounting for 7% of the variance. Supportive early care remained significant in the final equation. Parenting support, entered on the fifth step, did not predict depression in adolescence. Early abuse and early and later maternal stress were not significantly predictive on entry following the interaction term and supportive early care. The total variance accounted for in this multiple regression was 19%.

Factors relating to age of onset

Results of planned comparisons involving comparisons between subjects with childhood onset of clinically significant levels of depressive symptomatology and participants with adolescence onset and between each of these groups and the control group are provided in Table 6. Early abuse significantly differentiated between childhood and adolescence onset, with higher levels of early abuse in the childhood onset group. (The mean abuse score for participants in the adolescence onset group was near zero.) Early maternal stress also significantly differentiated between childhood and adolescence onset, with higher levels of early maternal stress found in the childhood group. All of the variables considered, with the exception of parenting support, significantly differentiated between the childhood onset group and the control group, with higher levels of maternal depression, abuse, and early maternal stress, and less supportive early care in the childhood onset group. However, only maternal depression differentiated between subjects in the adolescence onset group and the control group: a higher level of maternal depression was found in the adolescence onset group.

Discussion

A relatively high percentage (19%) of participants in the present sample had clinically significant levels of depression in childhood. While considerably higher than rates of depressive disorder found in epidemiological studies, we believe that the rate of childhood depression observed in this study is consistent with the high-risk status of the sample. The instability in family circumstances and considerable number of stressors experienced by this sample are likely to have affected the overall emotional climate in the family, increasing the likelihood of depressive disorder in childhood and resulting in a rate of childhood depression toward the upper end of the range generally observed in epidemiological studies.

The proportion of participants with clinically significant levels of depressive symptomatology did not change much from childhood to adolescence in the present sample: 18% of participants were depressed in adolescence. This rate is close to the upper end of the range observed in epidemiological studies. Additionally, the commonly observed change in the sex ratio emerged. In childhood 18% of males and 21% of females were depressed, while by adolescence 14% of males and 22% of females were depressed. A higher percentage of continuity in depressive symptomatology from childhood to adolescence for females over males appears to have played a role in the preponderance of females with

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Table 5. *Multiple regression analyses predicting depression in adolescence from family context factors*

Step	Independent Variables	R^2 Change	β	*B*	*T*	Overall R^2	Overall *F*	*df*
1.	Sex	.00	.06	.14	0.75	.00	.57	1, 166
2.	Sex		.01	.02	0.10			
	Interaction	.10	.32	.21	4.23***	.10	9.25***	2, 165
3.	Sex		.00	–.01	–0.03			
	Interaction		.46	.30	1.94*			
	Maternal depression	.00	–.15	–.16	–0.64	.10	6.28***	3, 164
4.	Sex		.02	.04	0.23			
	Interaction		.48	.32	2.12*			
	Maternal depression		–.23	–.24	–1.00			
	Supportive early care	.07	–.27	–.51	–3.70***	.17	8.51***	4, 163
5.	Sex		.02	.04	0.23			
	Interaction		.48	.32	2.02*			
	Maternal depression		–.22	–.24	–0.96			
	Supportive early care		–.27	–.51	–3.61***			
	Parenting support	.00	.00	.00	–0.04	.17	6.76***	5, 162
6.	Sex		.02	.05	0.26			
	Interaction		.48	.32	2.00*			
	Maternal depression		–.22	–.24	–0.96			
	Supportive early care		–.26	–.49	–3.30***			
	Parenting support		.01	.01	0.09			
	Abuse	.00	.05	.05	0.57	.17	5.67***	6, 161
7.	Sex		.02	.03	.19			
	Interaction		.48	.32	2.01*			
	Maternal depression		–.23	–.24	–0.98			
	Supportive early care		–.26	–.48	–3.28***			
	Parenting support		.02	.02	.21			
	Abuse		.04	.05	.48			
	Early maternal stress	.00	.04	.05	0.47	.18	4.87***	7, 160
8.	Sex		.02	.04	.23			
	Interaction		.43	.28	1.78			
	Maternal depression		–.22	–.23	–0.94			
	Supportive early care		–.25	–.48	–3.24***			
	Parenting support		.02	.03	0.28			
	Abuse		.02	.03	0.26			
	Early maternal stress		–.02	–.03	–0.27			
	Later maternal stress	.02	.15	.19	1.71	.19	4.68***	8, 159

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

clinical levels of depressive symptomatology in adolescence. Thirty-one percent of females with childhood depression also showed depression in adolescence, compared to 19% of males with childhood depression. A higher percentage of adolescence-onset cases in females over males also appears to have been involved. Sixteen percent of females showed adolescence onset, compared to 11% of males. (Although provocative, these percentages should be interpreted with care because depressive symptomatology was not captured for every year of childhood and adolescence.)

The results of the present investigation suggest the possibility of etiological differences between depressive symptoms in childhood and in adolescence. Differences in patterns of predictors of depressive symptoms in childhood and in adolescence suggest some support for the observation that prepubertal-onset depressive disorders may be more likely to be associated with adverse family environments than postpubertal-onset depressive disorders (Harrington et al., 1996), particularly

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Table 6. *Planned contrasts: Factors distinguishing between childhood and adolescence onset and factors distinguishing childhood and adolescence onset groups from controls*

	Group Means							
Independent Variables	0[a]	1[a]	2[a]	3[a]	*F*	*df*	Contrast[b]	*T*
Maternal depression	0.09	0.69	0.67	0.65	3.30*	3, 164	1	–0.09
							2	–2.37*
							3	–2.18*
Supportive early care	0.10	–0.62	–0.18	–0.12	4.82**	3, 164	1	1.55
							2	3.67***
							3	1.57
Parenting support	0.18	–0.43	–0.30	0.02	2.39	3, 164	N/A	N/A
Abuse	–0.17	0.66	0.44	–0.04	4.17**	3, 164	1	–2.12*
							2	–3.37***
							3	–0.56
Early maternal stress	–0.14	0.37	0.68	–0.18	5.94***	3, 164	1	–2.59**
							2	–3.23**
							3	0.17

[a]Groups: 0, depression is not present in childhood or adolescence (n = 114: 65 males, 49 females); 1, depression is present in childhood and in adolescence (n = 8: 3 males, 5 females); 2, depression is present in childhood only (n = 24: 13 males, 11 females); 3, depression is present in adolescence only (n = 22: 10 males, 12 females).
[b]Contrasts: 1, groups 1 and 2 versus Group 3 (childhood versus adolescence onset); 2, groups 1 and 2 versus Group 0 (childhood onset versus control); 3, group 3 versus Group 0 (adolescence onset versus control).
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

with adverse *early* family environments. It appears to be the overall family context that predicts depressive symptomatology in childhood. For example, while maternal depression was associated with deficits in supportive early care, parenting support, abuse, and overall maternal stress, each of these variables also predicted depressive symptoms beyond the effects of maternal depression. The cumulative effects of various aspects of the family context relating to relationships and emotional functioning, in the absence of a clear emphasis on particular factors, further suggest that it may be the overall extent to which developmental needs are not addressed that is relevant to depressive symptomatology in childhood. Early care lacking in emotional supportiveness, the presence of abuse, family stressors, and maternal depressive symptomatology are all likely to interfere with responsiveness to developmental needs, increasing the probability of depressive symptoms. (Maternal depression may also be transmitted genetically.) Of course, it is not necessarily the case that the direction of effects is one way (Hammen, Burge, & Stansbury, 1990). It is possible that depressive symptoms exhibited by the child influence the family context as well or that interactions between depression and family context lead to more severe problems in both.

While early aspects of the family context are just as relevant to depressive symptomatology in adolescence, it does not appear to be the overall extent of liability in the family context that is important but the particular effects of maternal depression and supportive early care. The emergence of these factors as important antecedents of depressive symptomatology in adolescence is particularly interesting given that both maternal depression and supportive early care were measured in childhood. (A supportive parent–youth relationship in adolescence was *not* associated with depressive symptoms in adolescence.)

Intriguing sex differences with respect to these factors suggest the possibility of specific pathways to depressive symptomatology in male and female adolescents. Maternal depressive symptomatology is strongly associated with depressive symptomatology in adolescence for females but not for males. For males, it is a lack of supportive early care that is linked with depressive symptomatology in adolescence. In the present sample, supportive

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early care was not associated with depressive symptoms in females.

Specific associations between maternal depression and adolescent depression for females and between supportive early care and adolescent depression for males are consistent with past findings from our longitudinal study. Sroufe and Egeland (1991) noted that parent–child involvement, quality of interaction, and household stress have predicted developmental outcomes for boys, whereas factors relating to the personality and attitudinal dimensions (including confidence and autonomy) have been more predictive for girls. "Girls seem to be influenced primarily by the person their mother is, perhaps through the process of identification" (Sroufe & Egeland, 1991, p. 81). It may be that by adolescence, when identity formation is a salient issue, females are influenced by the identity of their same-sex caretaker, perhaps identifying with depressive behavior manifested by the caretaker over the course of childhood and adopting similar depressive cognitive assumptions and behavior. This is particularly likely given evidence that depressed mothers may involve their daughters more than their sons in their difficulties. Radke–Yarrow, Richters, and Wilson (1988) identified a subgroup of depressed mothers who used daughters as comfort objects, often combining physical affection with sadness in their interactions. Female adolescents may also have a tendency to cope with maternal depression by becoming overinvolved. They express more sadness, worry, and feelings of responsibility for the depression, and are more likely to provide active support to their mothers, than male adolescents (Klimes–Dougan & Bolger, 1998). In this manner, maternal depression may combine with the higher levels of empathy, guilt, and prosocial and reparative behaviors motivated by feelings of responsibility that are found in girls to increase the risk of transmission of depression from mothers to daughters (Zahn–Waxler, in press).

The gender intensification theory (Hill & Lynch, 1983) offers a possible explanation of why a stronger association between maternal depression and adolescent depression in females than in males might emerge in adolescence. The gender intensification theory suggests that "there is an acceleration of gender-differential socialization during adolescence, perhaps at the onset of puberty or shortly after" (Hill & Lynch, 1983, p. 201). Relatively stable depressive traits of the mother may assume greater importance for females than for males in adolescence in the context of an increased focus on gender. There is evidence that endorsement of more characteristics typically associated with the male sex role, such as confidence, competence, and instrumentality, is associated with lower levels of depressive symptoms in adolescents as well as in adults (Allgood–Merten, Lewinsohn, & Hops, 1990; Craighead & Green, 1989). In addition, masculine characteristics have been found to account for a substantial amount of the sex differences in depressive symptoms (Allgood–Merten et al., 1990). Females with depressed mothers who appeared passive, dependent, and helpless over the course of childhood may be less likely than other adolescents to experience themselves as confident and competent, characteristics typically associated with the male sex role and with less depressive symptomatology.

It is also possible that a sex-linked genetic diathesis emerges in adolescence, contributing to the link between maternal depression and depression in female adolescents. In this vein, Cadoret (1983) suggested that "if there is a genetic diathesis it may not manifest early in life but that it does appear by adolescence or adulthood" (p. 65). Alternatively, a more general genetic diathesis could interact with sex-linked stressors of adolescence to produce a genetic link between maternal depression and depression in female adolescents. Longitudinal investigations of these possibilities would be of great value.

For males, it seems to be what the caretaker did rather than who the caretaker was during childhood that is most relevant to depressive symptomatology in adolescence. Males may incorporate into their sense of self aspects of how they have been treated by the caretaker over the course of childhood. In the absence of supportive care, they may come to believe that they are unworthy of love and

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support. These beliefs may become schemas that guide identity development in adolescence or lead to a cognitive framework that supports the development of depressive symptoms in the context of stressors in adolescence. A lack of supportive early care may also affect the development of emotion regulation, increasing the likelihood of later mood-related problems.

Notwithstanding previous findings of sex differences in our sample, it is somewhat surprising that an association between supportive early care and depressive symptomatology did not manifest for females, particularly given the links between maternal depressive symptoms and supportive early care and between maternal depressive symptoms and depressive symptoms in female adolescents. It is possible that the pattern of sex differences reported here is specific to households in which the primary caretaker is the female parent or to households characterized by single parents and multiple changes. For example, it could be that in these cases, identification with the mother overshadows potential effects of supportive early care for female adolescents. It would be interesting to examine sex differences in more stable two-parent households and in households in which the primary caretaker is a male parent.

The pattern of family context predictors of depression found using continuous measures of depressive symptomatology was generally consistent with results obtained when groups defined by the period of onset of clinically significant levels of depressive symptomatology were examined. Maternal depression, supportive early care, abuse, and early maternal stress all differentiated between the childhood onset group and the control group. But only maternal depression differentiated between the adolescence onset group and the control group. The variables indicative of more extreme or global aspects of the early family context (abuse and early maternal stress) further differentiated between childhood onset and adolescence onset.

Given the longitudinal nature of the present investigation and the use of different types of developmentally appropriate measures of depressive symptomatology at different times, it is possible that differences in the measures may have contributed to the present findings. The aggregation of multiple measures should, however, have reduced any error relating to differences between childhood and adolescence measures of depressive symptomatology.

Measurement differences may be more relevant with respect to the early and later measures of the quality of parent–child relationships. While the quality of emotional support available to the infant was assessed at several different times, the quality of the mother–adolescent relationship was determined in a single assessment. Even if the use of multiple paradigms within the single assessment is taken into account, the early relationship variable is likely to be more robust. It is possible that significant associations between the support available in later relationships and depressive symptomatology were thus obscured. Interpretation of present findings is, therefore, best limited to possible influences of the early family context. (This is particularly important because later measures of maltreatment and maternal depressive symptomatology are not included.)

Implications for Intervention and Further Studies

The results of the present study underscore the relevance and importance of early interventions aimed at the family system to the prevention of child depression in youth from lower SES families. Moreover, the findings reported here provide evidence that interventions aimed at deficiencies in family supportiveness in the early years in addition to interventions targeting clear cases of physical or sexual abuse could influence rates of depression. Further research on processes linking maternal depression in various developmental periods and adolescent depression is necessary in order to inform the development of interventions in this area. In the meantime, given findings of impaired parenting by depressed mothers, it is reasonable to assume that intervening in maternal depression is likely to benefit the children as well as the

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mother (Cicchetti, Toth, & Rogosch, 1999).

It should be noted that there may be multiple pathways to depression that involve a wide variety of antecedent factors. Egeland, Pianta, and Ogawa (1996) found evidence of both multifinality and equifinality in predicting to depressive and anxiety disorders in adolescence from internalizing, externalizing, and mixed symptomatology in childhood. Some cases of depression in adolescence may begin as comorbid internalizing problems and externalizing problems, and various other combinations of symptoms over time are possible. Future investigations that take into account other types of symptoms and examine antecedents of comorbid conditions common in childhood would be worthwhile. It is possible, for example, that comorbid externalizing problems in males (Harrington et al., 1996) may contribute to the sex differences reported here. Finally, while a thorough understanding of the role of the early family environment in later depression is of great importance, exploration of other factors that may be linked to various pathways of depression may be crucial to the delineation of a comprehensive model of juvenile depression (Cicchetti & Toth, 1998).

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