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The impact of maternal depressive symptomology on child social outcomes

by

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A thesis submitted to the graduate faculty
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Program of Study Committee:
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This is to certify that the master’s thesis of

Meagan Beth Ruhl

has met the thesis requirements of Iowa State University

Signatures have been redacted for privacy
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ABSTRACT

The purpose of the present study was to examine the association between maternal depressive symptomology and social outcomes in children using a nonclinical sample. The possible mediating influence of the mothers’ parenting style on the relationship between maternal depressive symptomology and externalizing and internalizing behavior in children was of special interest. The possible moderating effects of child gender and the father’s presence in the home was also explored. The sample included 131 mothers and their third grade children. The Center for Epidemiological Studies Depression Scale (CES-D) was used to measure maternal depressive symptomology. The Parenting Dimensions Inventory (PDI) was used to measure the parenting style of the mothers. Externalizing and internalizing behavior in children was measured by teacher report using the Social Skills Rating System-Teacher (SSRS-T) form. Correlations revealed a significant relationship between maternal depressive symptomology and internalizing behavior in children, but not externalizing behavior. Correlations also revealed a significant relationship between the mothers’ parenting style (i.e. nurturant-responsiveness) and internalizing behavior in children, but not externalizing behavior. Results of hierarchical regression analyses showed the mothers’ parenting style mediated the relationship between maternal depressive symptomology and children’s internalizing behavior. Results also showed that child gender and the father presence in the home were not moderating variables. Implications for future research on the impact of maternal depressive symptomology on child outcomes are discussed.
CHAPTER 1: GENERAL INTRODUCTION

Children of depressed mothers are at a greater risk for experiencing social behavioral deficits than children of nondepressed mothers (Cox, Puckering, Pound, & Mills, 1987; Luoma et al., 2001; Weissman et al., 1986; Wright, George, Burke, and Gelfand, 2000). A majority of the evidence is based on research that examines clinical samples of depressed mothers or dichotomizes depression into two research groups (e.g. depressed or nondepressed). In addition, there is a lack of research in this area that studies a lower-income population. Finally, research examining the effects of maternal depression on child outcomes has primarily studied children’s behavior in the home or laboratory setting, where the children are in close proximity to their mothers. However, children may behave differently when in a context that is separate from home or laboratory settings that include the mothers.

The purpose of the present study was to examine the association between maternal depressive symptomology, measured along a continuum, and social outcomes in children using a nonclinical sample. The following are the specific research questions of our study: (1) Is there a relationship between maternal depressive symptomology and children’s social behavior at school? (2) Is there a relationship between mothers’ parenting style and children’s social behavior at school? (3) Does parenting style play a mediating role in the relationship between maternal depressive symptomology and children’s social outcomes? (4) Do child gender and family income play moderating roles in the relationship between maternal depressive symptomology and children’s social outcomes?
Thesis Organization

There are two papers that are suitable for publication included in this thesis: a review of the literature on the relationship between maternal depressive symptomology and child outcomes (Chapter 2), and an empirical study examining the impact of maternal depressive symptomology on children's social behavior in the school environment (Chapter 3). A general introduction (Chapter 1) precedes the papers. A general conclusion (Chapter 4) and an Appendix follow. The instruments used to assess maternal depressive symptoms, parenting quality, and children's social behavior are included in Appendix A. Tables summarizing descriptive variables, correlations, and hierarchical regression analyses are included in Appendix B.
References


CHAPTER 2: THE IMPACT OF MATERNAL DEPRESSIVE SYMPTOMOLOGY ON CHILD SOCIAL OUTCOMES: A LITERATURE REVIEW

Meagan B. Ruhl and Susan M. Hegland

Introduction

Research has examined the impact of maternal depression on child developmental outcomes. Studies in this area have found that maternal depression has a negative influence on the development of children. For example, maternal depression has been found to adversely affect children’s psychological well-being. Children of depressed mothers experience higher rates of depression, anxiety, and other psychological disorders than children of nondepressed mothers (Weissman et al., 1986). Research has also suggested that maternal depression adversely affects children’s social emotional competence (Cox, Puckering, Pound, & Mills, 1987; Luoma et al., 2001; Weissman et al., 1986; Wright, George, Burke, and Gelfand, 2000). Much of the research linking maternal depression to child development examines clinical samples of depressed mothers or dichotomizes depression into two groups (e.g., depressed or nondepressed). In addition, much of the research that has examined the relationship between maternal depression and child outcomes has focused on middle to upper-income populations.

This review investigates that literature related to the relationship between maternal depressive symptomology and children’s development, with an emphasis on children’s social behavioral outcomes. We will begin this literature review by examining the incidence and characteristics associated with maternal depression. We will also examine the parenting behaviors that have been found to be associated with maternal depression and how those
parenting behaviors may influence children's social outcomes. Finally, we examine some of the limitations of the reviewed research and suggest possible directions for future research.

Maternal Depression

According to the DSM-IV, major depression, often referred to as clinical depression, is a very common mental illness (American Psychiatric Association, 1994). Women in the childbearing ages may be at a particular risk for developing depression. The rate of major depression in women is nearly twice the rate of major depression in men. The average age at onset for major depression is the mid-20's.

Symptoms associated with depression include, but are not limited to, a feeling of ongoing sadness or despair, loss of interest and/or pleasure in activities, weight loss or gain, thoughts of death or suicide, disrupted sleeping patterns, and irritability. According to the DSM-IV (1994), to be clinically depressed, one must experience five or more of the symptoms for more than two weeks.

There are many possible causes of depression. Genetic factors contribute to the development of depression. Having a family history of depression increases the likelihood of a person developing the illness himself or herself. Brain biochemistry also plays a role in the development of depression. Individuals with major depression tend to have an imbalance of particular brain chemicals known as neurotransmitters (DSM-IV, 1994)

In research, depression has been assessed using two prominent methods. First, depressive symptomology can be measured using a self-report questionnaire, such as the Beck Depression Inventory (BDI; Beck, 1982) or the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), with scores falling above a particular cutoff score indicating the presence of significant depressive symptoms. Second, depression can be
assessed using diagnostic interview techniques that assess for the presence of the DSM-IV (1994) criteria for depressive disorders.

Having a depressive disorder differs from experiencing depressive symptoms. That difference lies in the duration and severity of the symptoms. A person can experience depressive symptoms for a brief period of time and not be considered clinically depressed. If symptoms last for an extended period of time, however, a person may be regarded as having a depressive disorder. For example, according to the DSM-IV (1994), symptoms must last for more than two weeks before a major depression diagnosis can be made.

**Parenting Behaviors Associated with Depression**

There are certain parenting behaviors that have been found to be linked to depression. Gelfand and Teti (1990) reviewed several studies that linked certain parenting behaviors to maternal depression. Mothers experiencing clinical depression or depressed moods may be more preoccupied with themselves and may be less attentive to their children. Depressed mothers provide less support, structure, guidance, and rule enforcement than nondepressed mothers. Depressed mothers also behave more harshly and may experience guilt, resentment, and a loss of affection toward their children and other members of the family (Gelfand & Teti, 1990).

A meta-analytic review of 46 observational studies examined the relationship between maternal depression and parenting behavior (Lovejoy et al., 2000). The researchers also examined the potential moderating effects of the timing of depression (current compared to lifetime), definition of depression (diagnosis compared to self-report of depressive symptoms), socioeconomic status, age of the child, and methodological factors related to the reviewed studies (duration and type of observation).
The researchers found that depression was most strongly related to hostility and irritability toward the child. Depression was related, to a lesser extent, to disengagement from the child. In addition, depression was weakly negatively related to positive interactions.

When examining potential moderating effects, only the timing of depression moderated the relationship between depression and negative parenting behaviors. The relationship between maternal depression and negative parenting behaviors was significantly stronger for women experiencing current depression than for women who experienced past depression. There were no moderating effects for disengaged behavior.

The relationship between depression and positive behavior was moderated by socioeconomic status, the age of the child, and the length and type of observation. The findings of the meta-analysis showed that mothers of young children experience the most parenting deficits. Depressed mothers displayed more hostile/coercive behaviors across all child ages than nondepressed mothers. However, depressed mothers displayed more disengagement to infants and preschoolers than to older children.

In contrast to what the researchers predicted, the effect sizes were similar for clinically diagnosed depression and self-reported depressive symptomology. The researchers suggested that mothers whose scores on self-report depression inventory were above a given cutoff score would also meet the diagnostic criteria for major depression. In addition, the parenting behaviors examined may not be exclusively associated with mothers with a depressive disorder. The behaviors may also be associated with mothers experiencing depressive symptoms, but who do not meet diagnostic criteria and/or other affective and psychiatric disorders.
Socioeconomic status did moderate the relationship between maternal depression and positive interaction. Depression did not lead to a decrease in positive interaction unless the mother was under financial stress. This finding suggests that low SES adds to the risk of parenting deficits in depressed mothers.

The researchers suggested that future studies should attempt to clarify whether or not parenting behaviors are associated with a particular disorder (e.g. major depression), or if the behaviors are associated with more global dimensions. Research should also focus on the effects of social support, stress, and parenting attitudes on parenting behaviors. Specific characteristics of depressive episodes should also be examined (e.g. length and number of previous episodes.

**Effects of Maternal Depression on Children**

Numerous researchers have studied the effects of maternal depression on children using primarily clinical populations. The effects on children of various ages have been examined. The results suggest that maternal depression adversely affects children’s social emotional competence. Maternal depression also adversely affects children’s psychological well-being, as higher rates of depression, anxiety, and other psychological disorders have been found for children of depressed parents than children of nondepressed parents.

The potential impact of maternal depression on children’s social development has been of particular interest. For example, Goodman, Brogan, Lynch, and Fielding (1993) examined the effects of maternal major depression on children’s self-concept, self-control, and peer interactions. The sample consisted of 96 Caucasian, middle-income families with a child between the ages of five and 10 years old. Two groups of mothers were in the study; the first group included mothers who had been diagnosed with major depression during the
child’s lifetime, while the second group included mothers who had no history of any psychiatric disorders.

Parents were interviewed to assess for past and present psychiatric disorders using the Schedule for Affective Disorders—Life Time Version (SADS-L). Scores obtained from scales measuring self-perceived competence and perception of control operationally defined the children’s self-concept. Children in kindergarten through second grade completed the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (Pictorial PCS). The Self-Perception Profile for Children was completed by children in third grade or above. The Preschool and Primary Internal-External Control Scale (PPNSIE) and the Children’s Nowicki-Strickland Internal-External Control Scale (CNS-IE) were completed by the children to measure their perception of self-control. Teachers’ reports on children’s self-control were also obtained using the Child Behavior Q-Sort and the Child Behavior Check List (CBCL). To examine peer relationships the children were administered the Intention Cue Detection Task and the Social Problem-Solving Test. Teachers were also asked to rate the popularity of the children.

A multivariate analysis of variance (MANOVA) was used to test the effects of maternal depression on children’s self-concept, self-control, and peer relationships. The children’s age, gender, and the mothers’ marital status were controlled for. The results showed that maternal depression was related only to lower teacher reports of popularity. Children’s social and self-competence greatly varied. The majority of the variance in children’s social competence was explained by the fathers’ psychiatric health and the marital status of the parents. These results suggest that there are multiple moderating factors that
may increase the likelihood that maternal depression will affect a child’s social and emotional competence in the early school grades.

Shaw, Vondra, Hommerding, Keenan, and Dunn (1994) examined the relationship between family adversity and behavior problems in infants and toddlers. In this study, the impact of maternal depression on children was explored and relationships between maternal depressive symptoms and externalizing and internalizing behaviors were found. The non-clinical sample was drawn from participants in the Woman, Infants, and Children (WIC) Nutritional Supplement Program. One hundred mother and child pairs were recruited to participate. The majority of the sample was Caucasian (61%) and the remaining were African-American. The majority of the families had yearly earnings of $12,000 or less (72.5%). Fifty-four percent of the mothers were divorced, separated, or single.

This study consisted of three laboratory assessments when the children were 12, 18, and 24 months old. In addition, a home visit was made when the children were 15 months old. When the children were 36 months, the mothers were sent and asked to complete the Achenbach Child Behavior Checklist (CBCL). The CBCL measures internalizing and externalizing behavior in children.

Mothers completed the Background Information Questionnaire at the time of recruitment. The mothers also completed the Beck Depression Inventory (BDI), the Infant Characteristics Questionnaire at the time of recruitment and when the children were 12, 18, and 24 months old. The BDI was revised so that mothers reported depressive symptoms in the past six months rather than the past week. This revision was made to detect recurrent symptoms. The ICQ measured the extent to which the mothers perceived their infants to be difficult.
At the 12-month laboratory assessment, the mothers were asked to complete the Marital Adjustment Test. This test measured the mothers' satisfaction with intimate relationships. The wording on the Maternal Adjustment Test was changed so that an intimate relationship could include a boyfriend, girlfriend, or relative. The word “marriage” was replaced with “close relationship”. At the recruitment and the 18-month laboratory assessment, the mothers completed the Personality Research Form (PRF). The PRF measured the mothers’ aggressiveness, defensiveness, and social desirability. The mothers also completed the Child-Rearing Disagreements Scale (CRD) at the 24-month laboratory assessment. According to this measure, a co-parent could include a boyfriend, ex-husband, mothers, or live-in relatives or friends.

Multivariate analyses and multiple regressions were used to examine the data. The results showed that an increase in family stress resulted in increased behavior problems in children. Maternal depressive symptoms and maternal personality risk predicted mother reports of externalizing behavior in boys. Maternal depressive symptoms, difficult infant temperament, and low family income predicted mother report of internalizing behavior in boys. For girls, mother reports of externalizing and internalizing behaviors were strongly predicted by difficult infant temperament, marital dissatisfaction, and childrearing disagreements. Child rearing disagreements at the 24-month assessment strongly predicted externalizing and internalizing behaviors for both boys and girls at age three.

The results showed that low family income had the greatest effect on the behavior outcomes of boys than girls. However, other family relationship stressors that accompany financial adversity, including depressive symptoms experienced by mothers, affect the outcome of both boys and girls.
In addition, Weissman et al. (1986) examined the impact of parental depression on children’s general health, mental health, and social functioning. The participants of the study included 220 children (ages 6 to 23) and their parents. A comparison was made between children of families that had no history of major depression \((n = 67)\) and children of families in which one or both parents had been treated for at least one episode of major depression \((n =153)\). All families participating in the study were demographically comparable. More than 80% of the parents were from middle to upper-income families. The majority (80%) of the parents also had completed a minimum of a high school education and were married at the time of the study.

The researchers interviewed mothers in order to obtain information about prenatal, birth, and postnatal experiences. Information about the children’s medical history was also obtained. The children were also assessed using the Affective Disorders and Schizophrenia for School-Aged Children, Epidemiologic Version (K-SADS-E). Children were also given the Peabody Picture Vocabulary Test, Form M. Children who were under the age of 17 were also given the Weschler Intelligence Scale for Children-Revised vocabulary and block design subtests.

According to the analysis of the reports of perinatal histories, mothers from depressed families were younger when their children were born and had more medical problems during their pregnancies than mothers in nondepressed families. Mothers from depressed families also reported experiencing more difficult events during childbirth. According to maternal report, children of mothers from depressed families were also less active during the first month than children of mothers from nondepressed families. Mothers from depressed
families also reported more development delays, injuries, and hospitalizations of their children.

Children of depressed and nondepressed parents did not differ in IQ scores; however, children of depressed parents had more school problems and were more likely to be in special education classes than children of nondepressed parents. According to the psychological assessments, children of depressed parents had higher rates of major depression, anxiety disorders, and psychiatric diagnoses than children of nondepressed parents. In addition, according to parent reports, children of depressed parents made more suicide attempts than children of nondepressed parents. These results can be contrasted to the Goodman et al. (1993) findings. Goodman et al. found fewer effects of maternal depression when studying a clinical population using measures that did not include mother report. Weissman et al. (1986), however, found greater effects of maternal depression when studying a clinical population using measures that included mother report. This contrast suggests that mothers are more likely to report more negative behaviors in their children than other observers.

Wright et al. (2000) also examined the relationship between maternal depression and children's social functioning. The researchers were particularly interested in the effect of early maternal depression on children's adjustment to school. The longitudinal study included a sample of teachers and mothers of 29 children. The children were five to eight years of age. Mothers were categorized into depressed and nondepressed groups. Depressed mothers are those who were diagnosed and treated for unipolar depression at the time of recruitment, had Beck Depression Inventory (BDI) scores of ten or higher during three early
assessment periods of the study, and had average BDI scores of 15 or higher for all three early assessments.

The School Adaptation Interview of Mothers and Teachers (SAI-M and SAI-T) was used to assess for the children’s adaptation to the school environment. Four subscales of adjustment were created: (1) Academic Functioning, (2) Adjustment and Problem Behaviors, (3) Peer Relations, and (4) Mother’s Involvement. Teachers also rated children’s social skills using the Social Skills Rating System (SRSS). The frequency of internalizing and externalizing behaviors was also assessed using Teacher’s Report Form (TRF).

A univariate ANCOVA was used to analyze the relationship between the history of maternal depression and child adjustment, controlling for family income and the mothers’ current BDI scores. The researchers found that the children of depressed mothers were doing less well academically, displaying more adjustment and behavior problems, and had poorer peer relations than children of nondepressed mothers. Children of depressed mothers were more likely to display externalizing behaviors than internalizing behaviors. Mother and teacher reports were similar. Mothers who had a history of depression also reported poorer school adjustment and greater behavior problems in their children than nondepressed mothers. Both the mother and teacher reports indicated that there were no differences in school involvement between the depressed and nondepressed mothers. The findings of this study suggest that maternal depression, at clinical levels, has a negative effect on children’s adjustment to school settings. However, readers should interpret these results with caution because of the small sample size that was used.

The timing of the mothers’ experience of depression may also influence children’s developmental outcomes. Luoma et al. (2001) explored the relationship of maternal
depression at three different time periods (prenatal, postnatal, and current) to the social functioning of children. First time mothers were recruited from maternity clinics in Tampera, Finland. The final sample of 147 mothers and their children were primarily Caucasian and from upper-income families.

The mothers completed the Edinburgh Postnatal Depression Scale (EPDS) at three time points: prenatal, postnatal, and when their children reached eight to nine years old. Mothers also completed the Child Behavior Checklist (CBCL) to assess the children’s social competence from the mothers’ perspective. Teachers rated the children’s social functioning by completing the Teacher’s Report Forms (TRF).

A logistic regression was used in the analysis. Teacher reports of low adaptive functioning and mother reports of low social competence were associated with current symptoms of depression in mothers. The mothers’ experience of depressive symptoms predicted externalizing and internalizing behavior in the children. Reoccurring depressive symptoms during the prenatal period predicted externalizing behavior and overall problematic outcomes in the children. The results suggest that depression occurring during pregnancy may have greater negative consequences on children’s social competence than depression during other stages of children’s lives.

**Linking Maternal Depression to Child Social Outcomes**

From a theoretical perspective, attachment theory has provided a conceptual base for much of the research linking maternal depression to child social maladjustment (Bowlby, 1969). Maternal depression has been associated with a lack of empathetic responsiveness to the child’s needs (Gelfland & Teti, 1990; Lovejoy, Graczyk, O’Hare, & Neuman, 2000). According to attachment theory, the insensitive parenting of the mother contributes to the
formation of an insecure attachment between the mother and child (Belsky, Rovine, & Taylor, 1984; Cohn, Cambell, Matias, & Hopkins, 1990). Due to an insecure attachment, the child may develop an “internal working model” of the mother that is characterized by her insensitive, and possibly harsh, behaviors (Gelfand & Teti, 1989). The child’s internal representation of the mother may generalize into other social relationships. Research has indicated that children with insecure attachments are more likely to respond negatively to peers and less likely to display social competence than children with secure attachments (Fagot, 1997). In summary, maternal depression is characterized by parenting behaviors that may result in an insecure attachment between the mother and child. The parenting behaviors that are often associated with depression may act as a mediator in the relationship between maternal depression and children’s social outcomes.

Cox et al. (1987) explored the possible role of parenting behavior in the relationship between maternal depression and children’s social development using a longitudinal design. The study included a sample of 49 clinically depressed mothers and 27 control mothers drawn from an urban, working class population. Each mother had a two-year old child.

Maternal responsiveness, control, and the quality of mother-child activity were assessed by observing mothers interacting with their children in their homes. Two home observations were initially made within one month. The children’s cognitive development was also assessed. Interviews and observations were repeated six months later.

The researchers also obtained information about the mothers’ earlier and current experiences. The information obtained by the interviews included the mothers’ perceptions of their relationship with their own mothers during childhood, frequency of truancy, and age at
birth of first child. Mothers were also asked to provide information about housing, their local environment, and the quality of their marriages.

Children of depressed mothers displayed more emotional and behavior problems than children of the control mothers. Children of depressed mothers also showed more expressive language development delays. When observing mother-child interactions, the researchers found that depressed mothers were less responsive to their children than control mothers. During mother-child interactions, children of depressed mothers displayed more distress than the children of the control mothers. When analyzing the life circumstances of the mothers, depressed mothers reported more past and present adverse life events than mothers in the control group. The results suggest that lowered levels of maternal responsiveness may mediate the relationship between maternal mental illness and children's social competence.

In summary, the general finding of the reviewed studies is that maternal depression negatively affects children's social competence and psychological health. In a sample of two-year old children, Luoma et al. (2001) found that the occurrence of maternal depression during the prenatal period may have the most long-term effects on child outcomes. This finding suggests that depression occurring during pregnancy may have greater negative consequences on children's social competence than depression during other stages of children's lives. The studies have primarily targeted clinically depressed mothers and their children from Caucasian, middle to upper-income populations. When comparing the effects of clinical depression to nonclinical depressive symptomology, clinical depression has been associated with greater negative consequences to child outcomes. However, if parenting behaviors mediate the relationship between maternal depression and child social behavioral outcomes, there may be no differences in the effects of clinical depression and nonclinical
depressive symptomology. Deficits in parenting behavior may be associated with mothers experiencing depressive symptoms, but who do not meet diagnostic criteria for affective disorders (Lovejoy et al., 2000).

In order to study the relationship between maternal depressive symptoms and child outcomes and the possible mediating effects of parenting quality on that relationship, it is important to review the research on the impact of parenting quality on child development.

**Effects of Parenting Quality on Children**

Many researchers have studied the effects of parenting quality on children using maternal and teacher report and observational methods. A wide range of child ages has been examined. The results have generally concluded that maternal negative affect and parenting behaviors adversely affects child outcomes. Maternal negative affect and parenting behaviors has been associated with poorer social and behavioral functioning in children.

Fabes, Leonard, Kupanoff, and Martin (2001) studied how parents in distress affect their children’s social competence. The study included a sample of 57 preschool children and their parents. The majority of the participants came from a Caucasian, middle-income population. Researchers made in-class observations of the children over a five-month period. The children’s degree of negative emotionality during peer interactions was recorded. Negative emotions were defined as anger, sadness, and fear. Teachers were also asked to rate the children’s level of emotional reactivity. Teachers also rated the children’s level of social competence by completing the preschool version of the Social Competence Scale for Children. Finally, parents were asked to complete the Coping with Children’s Negative Emotions Scale. This scale assessed the parents’ responses to their children’s expression of negative emotions.
When examining the gender differences in the rates and intensity of the expression of negative emotions, the researchers found that boys were more likely to express negative emotions than girls. However, when girls expressed negative emotions, they did so more intensely than boys.

How the parents responded to their children was also related to how the children emotionally responded in their peer interactions. Harsh responding by the parents and parental distress was positively related to children’s frequency and intensity of negative emotional expression. There were interaction effects between harsh parental coping, parental distress, and children’s negative emotional expression. When the level of parental distress was low to moderate, harsh parental response was not significantly related to children’s negative emotional response. A regression analysis was used to predict children’s negative emotional expression. Main effects for emotional reactivity were found. Children who were rated as being more emotionally reactive by their teachers also expressed negative emotions more intensely in their peer interactions. Parents of children who expressed negative emotions intensely reported using harsher parenting and felt more distress when exposed to their children’s display of negative emotion.

A regression analysis was also used to predict social competence. Harsh parenting, parental distress, and high emotional reactivity were predictors of low levels of social competence. There was a stronger relationship between harsh parenting and low social competence as parental distress increased.

The moderating effect of parental distress was predicted to be mediated by the intensity of the children’s negative emotional expression. After controlling for intensity, the relationship between the interaction of harsh parenting and parental distress and the
children's social competence was not significant. These results suggest that intensity of negative emotionality does mediate the relationship between harsh parenting and parental distress to children's expression of negative emotions and the children's level of social competence. The direction of the relationship could be debated. Parents who are experiencing high levels of distress may be more likely to respond harshly to their children's displays of negative emotions. However, parents may also be affected by their children's intense expressions of negative emotion. Their children's intense expressions may lead to the parent feeling increased distress and may lead to the use of more harsh parenting practices.

In addition to examining parenting behavior, Carson and Parke (1996) examined the relationship between negative affect in parent-child interactions and children's social competence. The sample consisted of 41 preschool children and their parents. The participants were primarily Caucasian and lived in a large, urban area.

Data were obtained using observational and self-report measures. Teachers rated children's social competence. Observations of mother-child and father-child interactions during play were also made at two points of time. The observations were videotaped and displays of both parent and child affect were coded into two categories: negative and other.

When analyzing the observational data, the researchers focused on frequency and likelihood reciprocal negative affect sequences. Pearson correlations were used to examine the relationship between reciprocal negative affect and the children's social competency ratings. Separate correlations were computed for mother-child interaction and father-child interactions. Results showed that parents who used negative affect had children who were also likely to use negative affect. Reciprocal negative affect was related to lower social
competence, regardless of which parent was involved in the negative affect sequence. The results suggest a possibility that children model affect displayed by their parents.

In summary, the general finding of the reviewed studies is that parental negative affect and behavior adversely affects children's social competence at all age ranges. A wide range of ages has been studied as target populations have included preschool to adolescent children. Samples have consisted primarily of Caucasian, middle to upper-income participants. Social competence has primarily been measured by teacher and parent reports and parent-child interactions have been measured by observational methods. The studies reviewed support the idea that the harsh, less responsive parenting behaviors of depressed mothers can negatively impact children's social outcomes.

Conclusion

As this review indicates, there is strong evidence that supports the conclusion that children of depressed mothers are at greater risk for experiencing more social behavioral problems than children of nondepressed mothers. A majority of the evidence is based on research that examines clinical samples of depressed mothers or dichotomizes depression into two groups (e.g., depressed or nondepressed) based on scores on a self-report questionnaire. Future research should measure depressive symptomology along a continuous scale rather than as a dichotomy. This measure would allow researchers to examine the relationship between differing degrees of depressive symptomology and the social behaviors of children.

In addition, much of the research that has examined the relationship between maternal depression and child outcomes has focused on middle to upper-income populations. Future research should continue to examine the relationship between maternal depression and child
outcomes in lower-income populations. Mothers who are economically disadvantaged are likely to feel a high level of stress, which may increase their risk for developing depression. These mothers may also be less likely to be able to seek out the professional or medical help they need to be clinically assessed and treated for depression than mothers from middle to upper-income populations due to the lack of financial resources.

Finally, this review indicates that research examining the effects of maternal depression on child outcomes has primarily studied children's behavior in the home or laboratory setting, where the children are in close proximity to their mothers. Future research needs to continue to examine children's behavior in other settings that do not include the mothers. Children may behave differently when in a context that is separate from home or laboratory settings that include the mothers.

In summary, additional research is needed in the area of maternal depression that defines depression along a continuum of depressive symptomology in a sample of the general population. Also, the effects of maternal depressive symptomology on child social outcomes need to be further examined in lower-income populations in order for intervention and treatment programs to be implemented in this high-risk population. Finally, our understanding of how contexts outside of the home setting may protect or alter child social outcomes may benefit by examining children's social behavior in contexts separate from the mothers, such as the classroom environment.
References


CHAPTER 3: THE IMPACT OF MATERNAL DEPRESSIVE SYMPTOMOLGY ON CHILD SOCIAL OUTCOMES

Meagan B. Ruhl and Susan M. Hegland

Introduction

Many researchers have examined the effects of maternal depression on the social development of children. Several studies have concluded that children of depressed mothers are more likely to display social behavioral problems than children of nondepressed mothers (Cox, Puckering, Pound, and Mills, 1987; Goodman, Brogan, Lynch, & Fielding, 1990; Luoma, Tamminen, Kuakonen, Laippala, Puura, Salmelin, & Almqvist, 2001; Wright, George, Burke, & Gelfand, 2000).

Research that has examined the impact of maternal depression on children’s social outcomes has primarily studied maternal depression in clinical populations (Cox et al., 1987; Goodman et al., 1993; Weissman et al., 1986). For example, Goodman et al. (1993) examined the effects of maternal major depression on children’s self-concept, self-control, and peer interactions. The mothers were interviewed to assess for past and present psychological disorders, including major depression, using the Schedule for Affective Disorders—Life Time Version (SADS-L). The researchers concluded that there are multiple risk factors, such as the parents being single and psychiatric problems of fathers, that may increase the likelihood that maternal depression will affect a child’s social and emotional competence in the early school grades.

Researchers also commonly measure depressive symptomology using a dichotomous scale (Luoma et al., 2001; Wright et al., 2000). Mothers are divided into depressed or nondepressed groups based on scores that represent the mothers’ level of depressive
symptomology. For example, Luoma et al. (2001) explored the relationship of maternal depression at three different time periods (prenatal, postnatal, and current) to the social functioning of children. Mothers were categorized into either the depressed or nondepressed group according to their scores on the Edinburgh Postnatal Depression Scale (EPDS). Mothers who scored higher than the cutoff score were characterized as being depressed. The results of this study showed that the mothers’ experience of depressive symptoms predicted externalizing and internalizing behavior in the children. Reoccurring depressive symptoms during the prenatal period predicted externalizing behavior and overall problematic outcomes in the children.

When comparing the effects of clinical depression to nonclinical depressive symptomology, clinical depression has been associated with greater negative consequences to child outcomes. However, if parenting behaviors mediate the relationship between maternal depression and child social behavioral outcomes, there may be no differences in the effects of clinical depression and nonclinical depressive symptomology. Deficits in parenting behavior may be associated with mothers experiencing depressive symptoms, but who do not meet diagnostic criteria for affective disorders (Lovejoy, Graczyk, O’Hare, & Neumann, 2000). In contrast to using traditional measures of maternal depression, measuring depressive symptomology along a continuous scale rather than as a dichotomy would allow researchers to examine the relationship between differing degrees of depressive symptomology and the social behaviors of children.

Several studies that have examined the relationship between maternal depression and child outcomes have targeted middle to upper-income populations (Cox et al., 1987; Goodman, et al., 1993; Luoma et al., 2001; Weissman et al., 1993; Wright et al., 2000).
However, mothers who are economically disadvantaged may have a greater risk of developing depressive symptomology than mothers who are less economically disadvantaged due to the high level of stress that accompanies financial hardship (National Institute on Mental Health, 2000). Mothers from lower-income populations might also be less likely to be assessed and treated for depression than mothers from middle to upper-income populations due to the lack of available financial resources.

Research that has examined the effects of maternal depression on child outcomes has primarily studied children’s behavior in the home or laboratory setting, where the children are in close proximity to their mothers (Cox et al., 1987; Weismann et al., 1986) For example, Cox et al. (1987) used in-home observational methods to examine the relationship between maternal depression and the behavior of children. The results of the longitudinal study showed the children of depressed mothers displayed more emotional and behavioral problems than children of the nondepressed mothers. The children of depressed mothers also showed more expressive language development delays. In this particular study, the children were observed in close proximity to the mothers. Children may behave differently when in a context that is separate from home or laboratory settings that include the mothers. Studying children’s behavior in other settings may provide insight as to how particular environments, such as the school environment, may buffer children from the possible effects of maternal depression.

Studies have also indicated that particular parenting behaviors have been associated with maternal depression. In a meta-analytic review of 46 observational studies that examined the relationship between maternal depression and parenting behavior, Lovejoy et al. (2000) found that depressed mothers displayed more hostile/coercive behaviors toward
their children than nondepressed mothers. In a review of research that examined parenting behaviors linked to maternal depression, Gelfand and Teti (1990) reported that mothers experiencing clinical depression or depressed moods are more preoccupied with themselves and be less attentive to their children. Depressed mothers provide less support, structure, guidance, and rule enforcement than nondepressed mothers. Depressed mothers also behave more harshly and may experience guilt, resentment, and a loss of affection toward their children and other members of the family.

According to attachment theory, the insensitive parenting of the mother contributes to the development of an insecure attachment between the mother and the child (Belsky, Rovine, & Taylor, 1984; Cohn, Cambell, & Hopkins, 1990). The parenting behaviors associated with insecure attachment may affect how the child relates to his/her peers in social settings. Research has indicated that children with insecure attachments are more likely to respond negatively to peers and less likely to display social competence than children with secure attachments (Fagot, 1997). When examining the effects of maternal depression on child social outcomes through the attachment theory perspective, maternal depression is characterized by parenting behaviors that are likely to result in an insecure attachment between the mother and child. The parenting behaviors associated with maternal depressive symptomology may mediate the relationship between maternal mental illness and children’s social behavioral outcomes (Cox et al., 1987).

The purpose of the present study was to examine the association between maternal depressive symptomology and social outcomes in children using a nonclinical sample. In this study, we measure maternal depressive symptomology along a continuum using scores obtained by the CES-D rather than using a dichotomous measure of depression. There was a
range of CES-D scores in this study, indicating that the mothers experienced varying degrees of depressive symptomology. For our first hypothesis, we predicted that maternal depressive symptomology would be related to social behavioral outcomes in children. For our second hypothesis, we predicted that parenting style would also be related to social behavioral outcomes in children. We also predicted that that parenting style would mediate the relationship between maternal depressive symptomology and internalizing and externalizing behavior in children. A mediator variable is a mechanism through which an independent variable influences a dependent variable. A variable is classified as a mediator if the following three conditions are met: (1) Variations in the independent variable account for significant variations in the presumed mediator; (2) Variations in the presumed mediator account for significant variations in the dependent variable; (3) There is no longer a significant relationship between the independent and dependent variable when the mediator variable is controlled. If the relationship between the independent variable and the dependent variable is zero, there is a strong effect of a mediator. If the relationship is not zero, there are multiple mediating variables influencing the relationship between the independent and dependent variables (Baron & Kenny, 1986). Finally, we also explored the potential moderating effects of child gender and family income on the relationship between maternal depressive symptomology and children’s social outcomes; however, no predictions were made about the possible moderating effects. Because of the limited range of income-to-needs ratios and problems with multicollinearity, father presence was tested as a moderator variable rather than family income.
Method

Participants

The data analyzed in the present study was collected as part of a larger longitudinal study examining children's transition from Head Start to elementary school. The study included 194 families from a small Midwestern city. The children participating in the study were organized into two cohorts. Cohort 1 began kindergarten in 1992 or Cohort 2 began kindergarten in 1993. The data used for the present study was gathered when both cohorts were in the third grade. Half of the children in the sample attended Head Start. The other half of the children did not attend Head Start and were randomly selected from children of the same gender, age, classroom and neighborhood of the Head Start children.

The relationship between maternal depression and child social behaviors during the third grade year was the focus of the present study. The sample included 131 mothers and their third grade children. We chose to study third grade children because these children were the oldest children in the original sample; therefore, they had been subjected to the greatest socialization effects of school. Families were excluded from the study if the father was the sole caretaker in the home (n = 37). Thirty-eight families were lost from the original sample to attrition.

Measures

Maternal depressive symptomology. The Center for Epidemiological Studies Depression Scale (CES-D) was used to measure maternal depressive symptoms. This self-report instrument is used to measure current levels of depressive symptomology in the general population (Radloff, 1977). The CES-D is composed of 20 items that measure the frequency of present depressive symptoms. Respondents are asked to indicate the frequency
with which they experienced each symptom during the past week using a four-point scale. The scale ranges from 0 (rarely/none of the time) to 3 (most/all of the time). To avoid the tendencies toward response sets, four items on the CES-D are worded positively. An overall depression score is obtained by summing the 20 items. Scores may range from 0 to 60, with higher scores indicating higher levels of depression. The mean-item scores for each mother was used in the analysis.

Radloff (1977) reported the major components associated with depressive symptomatology that have been identified through clinical research and factor analysis. The components identified include depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance.

Radloff (1977) reported that general and clinical populations samples scored differently on the CES-D; persons in the clinical sample scored significantly higher than persons in the general population sample. According to Radloff (1977), the CES-D significantly correlates with other depression measures, providing support for convergent validity. Also, the CES-D negatively correlates with the Marlow-Crown Social Desirability scale, providing support for discriminant validity (Radloff, 1977).

Radloff (1997) reported a .85 coefficient alpha for the general population and a .90 coefficient alpha for the clinical population, suggesting high internal consistency. Test-retest reliabilities ranged from .51 to .67 for 2- to 8-week intervals and from .32 to .54 for 2- to 12-month intervals.

Radloff (1977) also tested the reliability and validity of the CES-D scale within subgroups of the population by conducting repeated analyses on three age groups (under 25,
25 to 64, and over 64), two races (African-American and Caucasian), three education levels (less than high school and greater than high school), gender, and two “need help” groups. The coefficient alphas were .80 or greater for all subgroups, again providing support for internal consistency.

Previous researchers (Petterson & Albers, 2001) have used the CES-D as a dichotomous measure by categorizing respondents scoring 16 as depressed, as indicated by the cutoff score proposed by Radloff (1977). In the present study, the CES-D is used as a continuous scale to allow full use of all of the collected data and to evaluate the relationship between all levels of depressive symptomology and children's social behaviors.

**Parenting quality.** The Parenting Dimensions Inventory (PDI) was created to assess the behaviors and attitudes of caregivers (Slater & Power, 1987). The original PDI is a self-report instrument used to measure the following nine dimensions of parenting: nurturance, sensitivity, non-restrictive attitude, type of control, amount of control, maturity demands, involvement, consistency, and organization. A shortened version of the PDI was used to measure parenting quality in the present study. This version of the PDI measures the following four components: nurturance, consistency, responsiveness, and nonrestrictiveness. This 26-item questionnaire asks caregivers to rate how self-descriptive each statement is on a 6-point scale. The scale ranges from 0 (“not at all descriptive of me”) to 6 (“highly descriptive of me”). To avoid response bias, 15 of the 26 items were reverse coded. Mean item scores for each participant were used in the analysis.

Slater and Power (1987) reported the Cronbach’s alpha for this parenting scale was .79, providing support for internal consistency. In addition, the Cronbach’s alpha for each component was reported as followed: .75 for nurturance, .68 for responsiveness, .71 for
nonrestrictiveness, and .71 for consistency (Slater and Power, 1987). According to Slater and Power (1987), scores on the PDI did predict parent ratings on the Child Behavior Checklist, establishing concurrent validity. Slater and Power (1987) also found significant correlations between mothers’ scores on the PDI and both fathers’ and best friends’ ratings of maternal behavior, suggesting convergent validity. A confirmatory analysis was done by Slater and Power (1987) to verify the factor structure. No evidence was cited for test-retest reliability. Preliminary work suggests that some of the subscales have lower reliability and ceiling effects. Therefore, additional psychometric analyses are needed or some subscales should not be used. The literature reviewing the parenting behaviors associated with maternal depression has focused on the level of warmth and responsiveness of the mother (Cox et al., 1987; Gelfand & Teti, 1990; Lovejoy et al., 2000). For the purpose of this study, the PDI subscales of nurturance and responsiveness were conceptually combined to create a measure of nurturant-responsiveness (Cronbach’s alpha = .85).

Child social competence. We were interested children’s social behavior outside of the home, away from the mothers; therefore, we are examining the possible effects of maternal depressive symptomology on children’s social outcomes at school. For that purpose, teachers were asked to rate the children’s externalizing and internalizing behavior using the SSRS-T form. The SSRS-T form also includes 18 items that assess behavior problems of children. These items are categorized into three subscales: Externalizing (6 items); Internalizing (6 items), and Hyperactivity (6 items). Sample items from each subscales include: “Has temper tantrums”, “Appears lonely”, and “Fidgets or moves excessively.” The scale ranges from 0 (“never”) to 2 (“always”). The Coefficient alphas for the three problem behavior subscales and for the total scale are .88, .78, .87, and .88,
respectively, providing support for internal consistency (Gresham & Elliott, 1990). Test-retest reliabilities ranged from .76 to .83, based on a 4-week time period. In the present study, only Externalizing and Internalizing Scales were analyzed. Hyperactivity scores were not used, because past research suggests that maternal depression is most linked to externalizing and internalizing behavior in children (Luoma et al., 2001; Wright et al., 2000). Mean item scores for each child were used in the analysis. The Coefficient alphas for two subscales (Externalizing and Internalizing) in the present study were .99 and .99 respectively, providing support for internal consistency.

According to Gresham and Elliott (1990), criterion-related validity studies concluded that validity coefficients for the total scale score of .75 with the Walker-McConnell Scale of Social Competence and School Adjustment (Walker & McConnell, 1988), .64 with the total score of the Child Behavior Checklist-Teacher Report Form (Achenbach & Edelbrock, 1983), and .70 with the Harter Teaching Rating Scale (Harter, 1985).

Procedure

After receiving approval from the Iowa State University Human Subjects Committee, families and schools located in a small Midwestern city were sent letters of recruitment inviting them to participate in a longitudinal study that was part of the National Head Start Transition Project. The longitudinal study would examine children’s transition from Head Start through third grade. The parents of children in kindergarten and Head Start were sent individual letters that included stamped, addressed return letters to indicate their willingness to participate. The return letters also asked the parents to indicate the age and sex of their children. All the families with children in Head Start and all the families with children in kindergarten were invited to participate in the study; 80% of Cohort 1 (children entering
kindergarten in 1992) and 90% of Cohort 2 (children entering kindergarten in 1993) agreed to participate. A random selection of children was taken from the non-Head Start families who had agreed to participate. The random selection of non-Head Start children from each classroom matched the number, age, neighborhood, and the sex of the Head Start children. Parent interviews were arranged by phone calls or door-to-door contact because 25% of the families did not have telephone service in their homes.

The graduate research assistants first completed training on all of the instruments to ensure that the instruments were consistently administered in the same manner by each research assistant. After the training, the graduate research assistants conducted in-home interviews with the parents. Signed informed consent forms were collected during the first home visit. The instruments used in the study were administered orally due to the differences in literacy levels of the parents. Each family was given $20 for each parent interview. Data for this study were collected in the spring of the child's third grade year. The data for Cohort 1 was collected in the spring of 1996 and the data for Cohort 2 was collected in the spring of 1997.

The teachers were given individual assessment packages for each child who participated in the study and were allowed two weeks to complete the assessments. The teachers were given five dollars for each completed child assessment questionnaire they returned.

Results

The present study consisted of a sample of 131 mothers and their third grade children. This sample includes families with complete data on teacher reports of children's social skills and complete data on mother reports of maternal depressive symptomology. The mean age
of the children was 9.13 years (SD = .32, range = 8.58 to 9.96). Fifty-seven percent of the children were male and 43% were female. In addition, fifty-seven percent of the mothers were single parents and approximately 44% were married with the father present in the home. The sample was primarily Caucasian. Additional descriptive statistics are listed in Table 1.

Marital status (i.e., father presence) and income-to-needs ratio were highly correlated, \( r = .41, p < .01 \). A total of 57\% (n = 74) of the children were living in single parent, mother-headed households. Only 25\% of the children were living in households with income above 200\% of poverty. Because of the limited range of income-to-needs ratios and problems with multicollinearity, father presence was tested as a moderator variable rather than income-to-needs ratio. In addition, social skills scores correlated highly with externalizing scores, \( r = -.73, p < .01 \) (See Table 2); therefore, only externalizing and internalizing scores were used in the analyses.

A hierarchical regression analysis was run to identify predictors of externalizing behavior in children (See Table 3). Father presence and child gender were entered into the first model. Father presence was a statistically significant predictor of children’s externalizing behavior. Children in homes where fathers were present displayed less externalizing behavior than children in homes where fathers were absent. Child gender was also found to be a statistically significant predictor of externalizing behavior. Boys displayed more externalizing behavior than girls. After controlling for father presence and child gender in the second model, maternal depressive symptomology was not found to be a statistically significant predictor of externalizing behavior in children. Contrary to predictions, zero-order correlations showed that neither maternal depressive symptomology nor nurturant-
responsiveness was statistically significantly correlated with externalizing behavior. In the third model, nurturant-responsiveness was tested as a predictor of externalizing behavior in children after controlling for father presence, child gender, and maternal depressive symptomology. Nurturant-responsiveness was not found to be a statistically significant predictor and did not mediate the relationship between maternal depressive symptomology and externalizing behavior in children. In the fourth and fifth models, the moderating effects of both child gender and father presence on the relationship between maternal depressive symptomology and externalizing behavior were tested; however no interaction effects were found.

A second hierarchical regression was run to identify predictors of internalizing behavior in children (See Table 4). Father presence and child gender were entered into the first model. Father presence was found to be a statistically significant predictor of children's internalizing behavior. Zero-order correlations showed that father presence was also statistically significantly correlated with internalizing behavior, \( r = -.18, p < .05 \) (See Table 2). Children in homes where the father was present displayed less internalizing behavior than children in homes where the father was absent. Child gender was not found to be a statistically significant predictor of internalizing behavior. Both boys and girls displayed similar levels of internalizing behaviors at school, as rated by teachers. A zero-order correlation showed that maternal depressive symptomology was statistically significantly correlated to internalizing behavior in children, \( r = .24, p < .01 \) (See Table 2). In the second model, after controlling for father presence and child gender, maternal depressive symptomology was still found to be a statistically significant predictor of internalizing behaviors at school, as rated by their teachers. Mothers with higher levels of depressive
symptomology had children who displayed more internalizing behavior than did mothers with lower levels of depressive symptomology. In the third model, nurturant-responsiveness was found to be a statistically significant predictor of internalizing behavior in children after controlling for father presence, child gender, and maternal depressive symptomology. A zero-order correlation showed that nurturant-responsiveness was statistically significantly correlated with internalizing behavior in children, $r = -0.32, p < .01$ (See Table 2). Nurturant-responsiveness partially mediated the relationship between maternal depressive symptomology and internalizing behavior in children and accounted for an additional 7% of the variance in predicting children’s internalizing behavior. In the fourth and fifth models, the moderating effects of both child gender and father presence on the relationship between maternal depressive symptomology and internalizing behavior were tested; however no interaction effects were found. Depressive symptoms, as reported by the mother, increased the likelihood that the child displayed internalizing behavior at school, as rated by the teacher, regardless of the child’s gender. In addition, the mother’s depressive symptoms increased the likelihood that the child displayed internalizing behavior, regardless of whether the father was present or absent in the home.

Discussion

The purpose of the present study was to examine the association between maternal depressive symptomology and social outcomes in children using a nonclinical sample. In this study, maternal depressive symptomology was measured along a continuum using scores obtained by the CES-D rather than using a dichotomous measure of depression. This measurement allowed us to examine the impact of varying degrees of maternal depressive symptomology.
symptoms on children’s internalizing and externalizing behavior at school, as rated by teachers.

For our first hypothesis, we predicted that maternal depressive symptomology would be positively related to externalizing and internalizing behavior in children as measured by teachers. Supporting this hypothesis, we found that maternal depressive symptomology was positively related to internalizing behavior in children. Higher levels of depressive symptoms were associated with higher rates of internalizing behavior in children. However, higher levels of depressive symptoms were not associated with increased rates of externalizing behavior in children. In the current study, children of mothers who experienced depressive symptoms were more likely to display internalizing behavior than externalizing behavior.

This finding contrasts with results of past researchers who found that school-age children of depressed mothers were more likely to display externalizing behaviors than internalizing behaviors (Luoma, Tamminen, Kaukonen, Laippala, Puura, Salmelin, & Almqvist, 2001; Shaw, Vondra, Hommerding, Keenan, & Dunn, 1994; Wright, George, Burke, & Gelfand, 2000). Possible explanations for these contradictory findings may be due to differences between our study and these studies. The Wright et al. (2000) study used a longitudinal design. The depressed mothers group had been diagnosed and treated for unipolar depression. These mothers also had Beck Depression Inventory (BDI) scores falling above the recommended cut-off score at all three assessment periods. Seventy-four percent of the mothers in our sample scored below the recommended cut-off score of 16 for depression. There is a possibility that higher levels of maternal depressive symptoms affect children’s social outcomes differently than lower levels of maternal depressive symptoms. Similar to Wright et al. (2000), Luoma et al. (2001) also used a longitudinal design. Mother
and teacher reports of externalizing and internalizing behavior of children were both analyzed. Only the mother reports of externalizing behavior were found to be significantly related to the mother's experience of depressive symptoms. The difference between our findings and the findings of Luoma et al. (2001) may be due to the use of mother versus teacher reports of child behavior. Mothers and teachers may be more likely to report different types of behavior in children. In addition, children may behave differently at school than at home.

Another possible explanation for the differences in findings may be difference of the age level of the children studied. The effects of maternal depressive symptomology on children's social outcomes may vary according to children's ages. Shaw et al. (1994) examined the effects of maternal depressive symptoms on child outcomes at age three in a low-income population. The measure of externalizing and internalizing behavior in the children was based on the self-report of the mother. The sample of children Shaw et al. (1994) studied is younger than the children in our sample. Gresham and Elliott (1990) reported that mean SSRS-T externalizing scores of children decreased between preschool and second grade in both boys and girls; furthermore, internalizing scores of children increased between preschool and second grade. This trend may be due to the socialization effects of school. In the school environment, children may learn that "acting out" is not acceptable behavior in the classroom. For example, fighting with peers, temper-tantrums, and acting disrespectful toward teachers is discouraged. The decrease in externalizing behavior with age has also been found to be a developmental change that occurs in childhood. Research by Hartup suggests there is a gradual decline in aggressive behaviors over the elementary school years (as cited in Damon & Eisenberg, 1998).
Another difference between our study and the Shaw et al. (1994) study is that Shaw et al. (1994) examined the effects of earlier maternal depressive symptoms on later child development. Our study examined the effects of current maternal depressive symptoms on child social outcomes. There is a possibility that the effects of maternal depressive symptomology vary according to the timing of the depressive symptoms. There may be a lagged effect in which the impact of maternal depressive symptoms on the child's social outcomes is not seen until later in the child's development.

For our second hypothesis, we predicted that parenting style would be significantly related to children's social outcomes. We found that nurturant-responsiveness was significantly negatively related to children's internalizing behavior. As the mothers' levels of nurturant-responsiveness increased, children's levels of internalizing behavior in school decreased. No relationship was found between parenting style and externalizing behavior in children. This finding supports past research that suggests that the negative parenting styles that have been found to be associated with maternal depression (Lovejoy, Craczyk, O'Hare & Neuman, 2000) are related to poor social and behavioral functioning in children (Carson & Parke, 1996; Fabes, Leonard, Kupanoff, & Martin, 2001).

Our third hypothesis was that parenting style would mediate the relationship between maternal depressive symptoms and children's social outcomes. In support of our hypothesis, we found that the levels of nurturant-responsiveness did mediate the relationship between maternal depressive symptomology and children's internalizing behavior at school, as rated by teachers. These results support earlier findings by reported by Cox, Puckering, Pound, and Mills (1987) and Gelfand and Teti (1990). Cox et al. (1987) found that, in comparison with nondepressed mothers, depressed mothers interacted with their children more harshly in
their homes; furthermore, depressed mothers reported more social dysfunction in their children than did nondepressed mothers. Gelfand and Teti (1990) found that mothers who experienced depressed moods were less attentive and less affectionate; furthermore, they responded more harshly to their children.

We also wanted to examine the possible moderating effects of child gender and family income-to-needs ratios on the relationship between maternal depressive symptomology and children's social competence. We found that marital father presence and income-to-needs ratio were highly correlated. Due to the limited range of income-to-needs ratios and a more equal proportion of fathers present and father absent homes, father presence was tested as a moderator variable rather than income-to-needs ratio. Our analysis did not find moderating effects of child gender or father presence on the relationship between maternal depressive symptomology and either externalizing or internalizing behavior of children.

This finding may be surprising, considering past research has found marital status and child gender to be moderating variables. For example, Shaw et al. (1994) found that maternal depressive symptoms predicted externalizing and internalizing behavior in boys only. However, as mentioned earlier, Shaw et al. (1994) examined the effects on earlier maternal depressive symptoms on child outcomes at age three; furthermore, rates of externalizing behavior and internalizing behavior were based on mother report. Future research should continue to examine possible gender differences when examining the effects of maternal depressive symptomology on the social behavior of children at school.

Goodman et al. (1993) found that the majority of variance in five to ten-year old children's social competence was explained by the fathers' mental health and marital status,
not maternal depression. Goodman et al. (1993) measured children's social competence in the school environment. This finding can be contrasted to our finding that marital status was not an influential moderating variable. However, in the Goodman et al. (1993) study, mothers either were diagnosed with major depression or had no history of depression. Depression was not measured along a continuous scale. Social competence did not include measures of internalizing and externalizing behavior. The differences in our findings may be due to the difference in the level of depressive symptoms and the differences in the measure of children's social outcomes. Future research should continue to examine the possible impact of father presence on the relationship between varying degrees of maternal depressive symptoms and children's social outcomes.

Limitations of the Present Study

One limitation of the present study relates to the extent to which the findings can be generalized. The sample is not representative of the general population. The sample of this study was taken from a larger study sample of Head Start families and children. In general, the participants of this study had lower incomes and education levels than the general population. However, a lower-income population was studied because of the under representation of lower-income samples in the literature. In addition, lower-income populations must be studied due to the increased risk of developing depression in these groups.

Another limitation of this study concerns the possible effect of the verbal administration of the CES-D on the mothers' CES-D scores. The measure was verbally administered because of the low literacy rates of the parents in the sample. However, the interpersonal setting may have exacerbated social desirability tendencies; the mothers may
have been uncomfortable answering the questions and may have underreported depressive symptoms. Support for this explanation may be found in the lower average CES-D score, compared with scores cited in prior studies (e.g. Ratloff, 1977).

Another concern of the present study is the omission of measurement of harsh parenting practices from the PDI scale. The nurturant-responsiveness variable in this study did not include questions that would measure the extent in which a mother used harsh physical punishment or threatening behavior. Generally, measures used to research parenting style include items that measure physical punishment and threatening behavior (Lovejoy et al., 2000).

**Implications for Future Research and Practice**

Future research should continue to compare mother versus teacher reports of externalizing and internalizing behavior when examining the effects of maternal depressive symptoms on children’s social development. Therapists or other professionals involved with the child and family will need to consult with both the parents and the teacher in order to gain a greater understanding of how the child acts in different contexts. In addition, future research should continue to examine the effects of maternal depressive symptomology at different time points in the mothers’ lives on children’s social outcomes for different age groups of children. This research will help professionals plan customized interventions tailored to the needs of each age level. Knowing there are greater effects on children when a mother experiences depressive symptoms at a particular period in her life can enable professionals to identify the risk that accompanies those depressive symptoms. Assessment for depression at those time points may be crucial for the purpose of identifying and treating symptoms. Prevention and treatment programs for mothers can be implemented to protect
the mothers against developing depression during those time periods that increase the risk of the children being negatively impacted by the symptoms. Research should also continue to utilize continuous measures of depressive symptomology (ranging from no symptoms to severe symptoms) and compare the effects of the various levels symptoms on children’s social outcomes. This research can help professionals to assess the child’s risk for being affected by the depressive symptoms; furthermore, this research can help professionals to implement appropriate interventions that can prevent or decrease the potential detrimental effects on the child.

The present study consisted of a sample of families that participated in a larger study of the effects of Head Start on children. Readers of this study should be careful not to overgeneralize the findings beyond this particular population. In order to compare these findings with a literate population, future research should include studies that measure maternal depressive symptoms using verbal administration of the CES-D in literate samples.

Future researchers should also continue to examine the effects of maternal depressive symptoms on child outcomes in lower-income populations. Mothers who are economically disadvantaged are likely to feel added stress that may increase their risk for developing depression. These mothers may also be less likely or able to seek the professional or medical help they need to be clinically assessed and treated for depression than mothers from middle to upper-income populations due to the lack of financial resources. Mental health agencies should consider implementing programs that provide support and education to these mothers. By providing mothers with support and education, the possible deficits in children’s developmental outcomes could be prevented.
Researchers should also continue to explore the impact schooling has on the relationship between maternal depressive symptomology and children’s social development. Perhaps the effects of maternal depressive symptoms on children’s social outcomes decrease over time as children attend school. The school environment may have a greater influence on the child’s behavior than the maternal depressive symptoms, thereby creating a buffering effect.

The natural development of children should also be considered when reviewing this area of research. As Hartup’s research indicates, there are developmental trends that suggest that externalizing behavior decreases with age (as cited in Damon & Eisenberg, 1998).

In addition, readers should keep in mind that the relationship between maternal depressive symptomology and children’s outcomes may not be a unidirectional relationship. Mothers influence the behavior of their children, but children also influence the behavior of mothers. Mothers’ parenting style and mental well-being may be influenced by the behavior of their children.

Finally, this study only measures depressive symptoms and nurturant-responsiveness of mothers. Research that focuses only on the impact of mothers’ mental health and parenting style on children has the potential to contribute to the notion of “mother-blaming” in our society. Future research should examine these characteristics in fathers as well as mothers.
References


CHAPTER 4: GENERAL CONCLUSIONS

Research has examined the impact of maternal depression on children’s developmental outcomes. Much of the current literature examines the relationship between maternal depression and child outcomes in clinical populations or measures maternal depressive symptomology using a dichotomized scale and classifies mothers into depressed or nondepressed groups. Research that has examined the effects of maternal depression on child outcomes has primarily studied children’s behavior at home or in a laboratory setting, where the children are in close proximity to the mothers. The purpose of this study was to examine the relationship between maternal depressive symptomology, based on a continuous measure, and children’s social outcomes in the school setting.

Our results showed a positive relationship between maternal depressive symptomology and internalizing behavior in children as rated by teachers; furthermore, a relationship was not found between maternal depressive symptomology and externalizing behavior. Our results also found that parenting style was related to children’s social behavior. Nurturant-responsiveness was found to be significantly related to children’s internalizing behavior. Nurturant-responsiveness was also found to mediate the relationship between maternal depressive symptomology and children’s internalizing behavior at school. Our results did not indicate moderating effects of child gender or father presence on the relationship between maternal depressive symptomology and either externalizing or internalizing behavior of children.

We suggest that future research continue to compare mother versus teacher reports of externalizing and internalizing behavior when examining the impact of maternal depressive symptoms on children’s social outcomes. We also suggest that future research continue to
examine the effects of maternal depressive symptomology at different time points in the mothers’ lives on children’s social development for different age groups of children. Research should also continue to utilize continuous measures of depressive symptoms and compare the effects of the varying levels of symptoms on child outcomes. We also suggest that future research include lower-income populations when studying the impact maternal depressive symptomology on children’s social development, as much of the past research has studied middle to upper-income populations. Researchers should also explore the possible buffering effects of the school environment on the relationship between maternal depressive symptomology and children’s social behavior. Current research focuses primarily on the impact of mothers’ mental health and parenting style on children. We suggest that future research study the effects depressive symptoms of fathers, as well as mothers, on children’s development.

The current study identifies the need for therapists or other professionals involved with a child or family to consult with both the parents and the teacher in order to gain a greater understanding of how the child acts in different contexts. Our study also identifies the need for mothers in lower-income populations to be assessed for depression and to be provided appropriate treatment in order to prevent the possibly damaging effects on children’s development. Finally, the current study highlights the professionals’ need to assess a child’s risk for being affected by maternal depressive symptoms and the need to implement appropriate interventions that can prevent or decrease the potential detrimental effects to the child.
APPENDIX A: SURVEY INSTRUMENTS
CES-D Scale

**Instruction for Questions:** Below is a list of the ways you might have felt or behaved.

Please tell me how often you have felt this way during the past week.

(0) Rarely or None of the Time (Less than 1 Day)
(1) Some or a Little of the Time (1-2 Days)
(2) Occasionally or a Moderate Amount of Time (3-4 Days)
(3) Most or All of the Time (5-7 Days)

**During the past week:**

1. I was bothered by things that usually don’t bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with help from my family or friends.
4. I felt that I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt that everything I did was an effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people dislike me.
20. I could not get “going.”
PDI Scale

**Instruction for Questions:** Please rate the extent to which the following statements describe you.

(1) Not at all Descriptive of Me  
(2) Slightly Descriptive of Me  
(3) Somewhat Descriptive of Me  
(4) Fairly Descriptive of Me  
(5) Quite Descriptive of Me  
(6) Highly Descriptive of Me

1. I encourage my child to talk about his (or her) troubles.
2. I always follow through on discipline for my child, no matter how long it takes.
3. Sometimes it is so long between the occurrence of a misbehavior and an opportunity for me to deal with it that I just let it go.
4. I do not allow my child to get angry with me.
5. There are times I just don’t have the energy to make my child behave as he (or she) should.
6. My child can often talk me into letting him (or her) off easier than I had intended.
7. My child convinces me to change my mind after I have refused a request.
8. I think a child should be encouraged to do things better than other children.
9. My child and I have warm intimate moments together.
10. I encourage my child to be curious, to explore, and to question things.
11. I find it interesting and educational to be with my child for long periods.
12. I don’t think children should be given sexual information.
13. I believe that a child should be seen and not heard.
14. I believe it is not always a good idea to encourage children to talk about their worries because it can upset them even more.
15. I encourage my child to express his (or her) opinions.
16. I make sure my child knows that I appreciate what he (or she) tries to accomplish.
17. I let my child know how ashamed or disappointed I am when he (or she) misbehaves.
18. I believe in toilet training a child soon as possible.
19. I believe that most children change their minds so frequently that it is hard to take their opinions seriously.

20. I have little or no difficulty sticking with my rules for my child even when close relatives (including when grandparents) are there.

21. When I let my child talk about his (or her) troubles, he (or she) ends up complaining even more.

22. I expect my child to be grateful to his (or her) parents, and appreciate all the advantages he (or she) has.

23. Once I decide how to deal with a misbehavior of my child, I follow through on it.

24. I respect my child’s opinion and encourage him (or her) to express it.

25. I never threaten my child with a punishment unless I am sure I will carry it out.

26. I believe that once a family rule has been made, it should be strictly enforced without exception.
SSRS-Teacher Form (Problem Behavior Scale)

**Instructions for Questions:** Please rate the frequency in which the child displays the following behaviors.

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<tr>
<th>Behavior</th>
<th>Never</th>
<th>Sometimes</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fights with others.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Has low self-esteem.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Threatens or bullies others.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Appears lonely.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is easily distracted.</td>
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<tr>
<td>6. Interrupts conversations of others.</td>
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<tr>
<td>7. Disrupts ongoing activities.</td>
<td></td>
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<tr>
<td>8. Shows anxiety about being with a group of children.</td>
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</tr>
<tr>
<td>9. Is easily embarrassed.</td>
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</tr>
<tr>
<td>10. Doesn’t listen to what others say.</td>
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</tr>
<tr>
<td>11. Argues with others.</td>
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</tr>
<tr>
<td>12. Talks back to adults when corrected.</td>
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<tr>
<td>14. Has temper tantrums.</td>
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<td>15. Likes to be alone.</td>
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<td>16. Acts sad or depressed.</td>
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<tr>
<td>18. Fidgets or moves excessively.</td>
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Table 1

*Descriptive statistics for parent and child variables*

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Table 2

*Correlations Among Family Predictors and Child Outcomes*

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*Note. n = 131
*p < .05. **p < .01.*
Table 3

*Parenting and Children's Externalizing Behavior (N = 131)*

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Table 3 (Continued)

**Parenting and Children's Externalizing Behavior (N = 131)**

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Father presence x maternal depressive symptomology

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Table 4

Parenting and Children's Internalizing Behavior (N = 131)

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