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PREDICTING ADOLESCENT ADJUSTMENT: MATERNAL DEPRESSION
AND SOCIAL COMPETENCY

A thesis

by

HOLLY FORRESTER CHILDS

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PREDICTING ADOLESCENT ADJUSTMENT: MATERNAL DEPRESSION
AND SOCIAL COMPETENCY

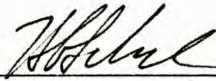
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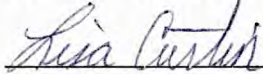
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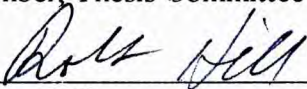
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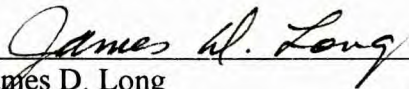
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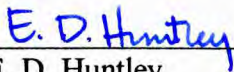
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ABSTRACT

PREDICTING ADOLESCENT ADJUSTMENT: MATERNAL DEPRESSION AND SOCIAL COMPETENCY

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Maternal depression and child adjustment are related, and the purpose of this study was to examine this relationship, adding family stress and social competency to the relationship in an effort to identify additional variables predictive of child adjustment. Maternal depression has been found to be correlated with deficiencies in children in areas such as academic achievement, peer relationships, and social skills. Family stress has also been found to impact adjustment. The relationship between maternal depression, family stress, and adjustment, focusing on the influence of social competencies on child adjustment, was examined in the present analogue study. Mothers of adolescents ages eleven through fourteen were contacted to participate in a study of child development. Mothers were asked to complete measures regarding their depressive history, their current mental health status, their family's social and environmental characteristics, and their perceptions of their child's behavior and adjustment. Adolescents were asked to complete a questionnaire regarding their social skills and two measures of nonverbal cue perception. Teachers were asked to rate the social skills, problem behaviors, and academic competence of students participating in the study.

Maternal depression accounted for half of the variance (52%) in child adjustment. However, family stress failed to make a unique contribution to the regression equation. Three of the six measures of social competency accounted for additional variance in child adjustment. Teacher ratings of academic competence, performance on the Diagnostic

Analysis of Nonverbal Accuracy Test, and the child's own assessment of their social skills combined with maternal depression to account for 74% of the variance in child adjustment. Findings offer further support for the relationship between maternal depression and child adjustment. In addition, social competency was identified as important and made an independent, unique contribution to the child's adjustment. These social competency abilities may be suitable targets for intervention with children at risk for maladjustment.

This project would not have been completed without the generous support of my thesis committee, Dr. Bob Hill, Dr. Lisa Curtin, and in particular, Dr. Henry Schneider. Dr. Schneider's ability to envision our ultimate goal, his constant optimism, and frequent encouragement has made a better student of me. I would also like to thank the faculty, students, and mothers of Owen Middle School in Black Mountain, North Carolina, along with the principal, Mr. Michael R. Washel, for allowing me the opportunity to involve them in this research.

For Travis, Jordan, and Lauren, whose willing sacrifices and steadfast support have made so many things possible. Thank you. And for the Lupfer women, past and present, whose strength and substance have always been, and continue to be, my inspiration.

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Introduction

The ability to interact successfully with peers and adults is one of the most important aspects of a child's development. In turn, major developmental theorists (e.g., Erikson, 1963; Kohlberg, 1969; Piaget, 1952) have defined stages of social and moral development during which social competence evolves. Social skills represent the tools children use to establish and maintain positive relationships with peers and adults (Gresham & Elliott, 1993).

The term "social skills" has numerous definitions, with acceptance by peers and the ability to function in the presence of others being common notions. More formally, social skills are defined as skills which facilitate socially acceptable behaviors enabling a person to interact effectively with others and avoid socially unacceptable responses from others (Gresham & Elliott, 1990). Such skills include sharing, helping, initiating relationships, requesting help, giving compliments, and saying "please" and "thank you" (Gresham & Elliott, 1990).

Socially skilled children have advantages over their less socially skilled peers. Important social outcomes related to effective social skills include peer acceptance, academic achievement, positive feelings of self-worth, and positive adaptations in school, home, and community environments (Gresham & Elliott, 1993). Children with social skills deficits are likely to experience a number of negative outcomes ranging from peer relationship difficulties to long-term psychological adjustment problems in adulthood (Williams & Corrigan, 1992).

Although it is assumed that children will acquire social skills as part of the developmental process, this is often not the case for many families in which a parent is mentally ill. Children with a mentally ill parent experience problems with both peer and adult relationships (e.g., Hammen et al., 1987; Williams & Corrigan, 1992). Further

evidence suggests that childhood social deficits are strong predictors of subsequent adjustment deficiencies, particularly in the areas of academic, social, and psychological functioning (Ogilvy, 1994).

One of the most well researched links between childhood adjustment and parental psychological functioning has been in the area of maternal depression. Social skills deficits have been noted in the children of depressed parents, particularly when the depressed parent is the mother (e.g., Anderson & Hammen, 1993; Billings & Moos, 1983). Depression is a common psychiatric disorder, accounting for 75% of all hospitalizations (Gotlib & Lee, 1990). Each year more than 100 million people worldwide develop clinically recognizable depression, 10 times greater than the incidence of schizophrenia (Gotlib & Lee, 1990). During the course of a lifetime, it is estimated that 20% of the general population will experience at least one clinically significant episode of depression (Weissman & Myers, 1978). According to the Diagnostic and Statistical Manual of Mental Disorders - IV (American Psychiatric Association, 1994), major depressive disorder is twice as common in adolescent and adult females as males.

Depressed Mothers

A number of studies have investigated the relationship between depression and social skills. For example, Coyne (1976) showed that depressed persons evoked negative reactions in strangers following brief interactions. In social situations people who were depressed spoke less often and with less intensity, they gazed at their partner less frequently, and they responded more slowly. Depressed persons were perceived as more hostile and irritable, especially in intimate relationships. They appeared depressed based on their posture, sad and anxious facial expressions, and the content of their speech. Overall, these behaviors are unlikely to foster positive relationships with significant others (Downey & Coyne, 1990).

Depressive characteristics may be particularly important in the parent-child relationship. During the past decade studies have examined the influence of maternal

depression on various aspects of children's development (e.g., Downey & Coyne, 1990; Field, 1992). Parenting is a complex social interaction, and the sustained effortful behavior involved is likely to prove difficult for depressed parents (Downey & Coyne, 1990). Cohn & Tronick (1987) described the typical nondepressed mother as fostering sustained positive integration and expressing a high level of positive affect towards her child. Hostility and aggression were noted as seldom seen. Further, nondepressed mothers maintain interaction by responding quickly and contingently with exaggerated facial expression and vocal intonation (Cohn & Tronick, 1987).

Depressed mothers have been described as experiencing difficulties in the parenting role that reflects the symptoms of their disorder (Burbach & Borduin, 1986). Depressed mothers view the role of being a parent less positively than nondepressed mothers, are negative toward the demands of parenthood, and endorse feelings of rejection and hostility toward their child (e.g., Webster-Stratton & Hammond, 1988). They perceive themselves to be less competent and less adequate than other parents (e.g., Fleming, Ruble, Flett, & Shaul, 1988). Some theorists have proposed that depression renders mothers more self-absorbed and therefore less attentive to their children's emotional needs (e.g., Billings & Moos, 1983). Compared to nondepressed mothers, depressed mothers have more difficulty communicating, expressing affect, maintaining disciplinary consistency, and facilitating their children's approach to unfamiliar situations (e.g., Cohn, Campbell, Matias, & Hopkins, 1990; Field, Healy, Goldstein, & Guthertz, 1990; Kochanska, 1991). They are more likely to interact with their children in a controlling, critical, and negative fashion, yet are conflict-avoidant when their children resist their efforts at parenting (Billings & Moos, 1983; Goodman & Brumley, 1990).

Depressed women often perceive their children as problematic to parent (Whiffen & Gotlib, 1989). The increased incidence of emotional and behavioral difficulties in children of depressed parents may serve to complicate parenting demands (e.g., Weintraub, Winters, & Neale, 1986). Children of depressed mothers report negative self-

concepts, which may be related to a tendency to internalize maternal criticism. For example, Tarullo, DeMulder, Ronsaville, Brown, & Radke-Yarrow (1995) researched affectively ill and well mothers' behavior toward two siblings in relation to child psychiatric outcome. Mothers and children were assessed longitudinally, when sibling pairs were in early to middle childhood, middle to late childhood, and late childhood to adolescence. Interaction was assessed on dimensions the authors judged central to maternal functioning at all developmental levels: engagement and critical-irritable behavior. Child outcome was measured separately by mother report and child self-report using a structured psychiatric interview. Findings indicated that depressed mothers tended to be more critical-irritable than well mothers across all time periods with both children. Specifically, older siblings' symptoms, based on the number of items endorsed in a diagnostic interview regarding diagnoses of anxiety, depression and conduct disorder, were predicted by maternal bipolar or unipolar depressive illness; younger siblings' symptoms were predicted by lower maternal engagement and higher maternal critical-irritable behavior in early childhood, in addition to maternal illness status.

Further evidence of the negative impact of maternal depression relative to parenting comes from studies of the speech of depressed mothers. Clinically depressed mothers have been found to speak less often to their three-year-old children and respond more slowly to their children's speech (Breznitz & Sherman, 1987). The length of their pauses and utterances are more variable than those of nondepressed mothers, and they are less likely to use the exaggerated intonation typical of caretaker's speech with infants. Bettes (1988) suggests that depression impedes the mothers' ability to imbue their speech with affective signals thought to play an important role in the socialization of affect modulation in children.

The effect of depression on effortful interaction is also evident in strategies used by clinically depressed or bipolar disordered mothers to resolve control episodes with their children (Kochanska, Kuczynski, Radke-Yarrow, & Welsh, 1987). Depressed mothers

choose strategies that require less cognitive effort more frequently than nondepressed mothers. These strategies include enforcing obedience unilaterally or withdrawing when faced with child resistance which maximizes short-term compliance by the child. Nondepressed mothers, by contrast, are more likely to negotiate a solution with their child, thereby maximizing long-term compliance goals (Kuczynski, 1984). Through the employment of less cognitively effortful conflict resolution strategies, depressed mothers may socialize their children to resolve interpersonal conflict through coercion or withdrawal (Downey & Coyne, 1990).

Hostility is also more pronounced in the interactions of depressed mothers with school-aged children than with younger children, possibly reflecting the more active role of older children during interactions. Gordon, Burge, Hammen, Adrian, Jaenicke, & Hiroto (1989) and Hammen, Gordon, Burge, Adrian, Jaenicke, & Hiroto (1987) found that mothers' depressive symptomatology predicted hostility toward children in a nonclinical sample.

Depressed mothers have also been noted as displaying high levels of sadness during interactions with husbands and children by the Oregon Research Institute Group (Biglan, Hops, Sherman, Friedman, Arthur, & Osteen, 1985; Biglan, Rothlind, Hops, & Sherman, 1989; Hops, Biglan, Sherman, Arthur, Friedman, & Osteen, 1987). Expressions of anger by other family members were particularly likely to evoke these indications of sadness. Mothers' displays of sadness functioned to suppress the hostility of other family members. This finding supports the view that depression may affect parenting by reducing the effort parents put into interaction with their child (Downey & Coyne, 1990). By observing the control that mothers' distress exerted over other family members' behavior, children may learn the coercive value of displaying distress.

Keitner & Miller (1990) found that family pathology evident during an acute depressive episode continued after the patient's remission, and that the course of depressive illness, relapse rates, and suicidal behavior were all affected by family

functioning. Gotlib and Lee's 1989 study was designed to examine the social functioning of depressed patients by comparing depressed psychiatric outpatients, nondepressed psychiatric outpatients, and nondepressed, nonpsychiatric community controls. Subjects completed measures of social functioning while the depressed patients met criteria for a Major Affective Disorder diagnosis and completed these same measures again seven to ten months later. Results indicated that depressed patients reported more impaired social functioning than did either the nondepressed patients or the community controls. Despite a significant reduction in depressive symptomatology, the social functioning of the depressed patients did not improve over the course of the follow-up period. This suggests that social dysfunction is specific to depression rather than characteristic of general psychiatric disorders.

In summary, speech, affect, perceptions, interactions, disciplinary strategies, levels of hostility, sadness, and family pathology are some of the areas that have been studied with regard to maternal depression. Evidence has been found to support theories which postulate that distinct cognitive, behavioral, and affective differences can be observed between depressed mothers and nondepressed mothers.

Children of Depressed Mothers

Early studies of children whose parents suffered from psychiatric disorders were conducted in an attempt to gain a better understanding of the etiology of schizophrenia. Researchers in this area observed that schizophrenia was characterized by clear patterns of familial association. A significant proportion of the offspring of schizophrenic parents were found to become schizophrenic themselves, and high concordance rates for this disorder were obtained for siblings. Thus, groups of young children who were at risk for schizophrenia by virtue of having a schizophrenic parent were identified and followed longitudinally to chart the emergence of symptoms (Gotlib & Lee, 1990).

As investigations in this area were initiated, the inclusion of psychiatric control groups became more common. Many studies included control groups composed of

children of heterogeneous psychiatric patients, but several investigations used psychiatric control groups composed exclusively of patients diagnosed as depressed. From this research base the first studies of children of depressed parents were conducted, including the Stony Brook High Risk Project (e.g., Cohler, Gallant, & Grunebaum, 1977), the Rochester Longitudinal Study (e.g., Sameroff & Zax, 1973), and the University of Rochester Child and Family Study (e.g., Fisher, 1980). The results of these projects serendipitously indicated that children of depressives demonstrate social and cognitive deficits similar to, and often greater than, impairments exhibited by children of schizophrenics (Gotlib & Lee, 1990).

Early study results indicated that school-aged children of depressed parents functioned more poorly than children of nondepressed parents in areas such as daily living, family functioning, psychological adjustment, physical health, and school adjustment (e.g., Billings & Moos, 1983; Billings & Moos, 1986; Weissman, Prusoff, Gammon, Merikangas, Leckman, & Kidd, 1984). Although provocative, these data were based on parental reports rather than direct observations or measurement of the children (Gotlib & Lee, 1990). Depressed parents' reports may be biased by a tendency to see both their parenting and their children's behavior in a negative light (Gotlib, 1983). However, evidence continued to mount that children of depressed parents were at increased risk for diagnosable psychopathology, especially depression, as well as for impairment in social and school adjustment (Hammen et al., 1987). Later studies concluded that children, especially when the depressed parent was the mother, evidence a range of behavioral problems, emotional difficulties, academic deficits, and impaired social competence throughout the course of their lives. These problems have been noted to persist even upon remission of the mother's depressive episodes (e.g., Anderson & Hammen, 1993; Field, 1992).

Biological explanations of the transmission of depressionogenic features only partially explain the association between depression in mothers and maladjustment in their

children. Little that is specific and conclusive is known of the biological transmission of depression from mother to child (Field, 1992). More complex explanations are required to account for children's risk in families compromised by maternal depression. Recent models propose that children's thoughts, feelings, perceptions, and interpretations mediate their adjustment in depressive family environments (Cummings & Cicchetti, 1990; Hammen, 1992). Cummings and Davis (1994) reported it was not the actual stress within the family that determined children's behavioral responses and adjustment, but rather the children's social cognitions concerning themselves and their family environment.

Hammen (1988) stated it was important to design studies that looked at the role of cognitions and the way in which they shape interpretations of life events, but also to investigate the childhood origins of cognitions and responses to stress. Further, Hammen (1988) advocated including the study of cognition-event processes in the interpersonal contexts in which they occur. Hammen et al. (1987) speculated that relatively negative self-concepts may lead to greater impairment of functioning in children of depressed mothers. This is proposed to occur both directly through maladaptive ways of expression and indirectly by affecting the child's sense of efficacy and persistence in learning adaptive behaviors and coping with stressors.

In a study by Goodman, Brogan, Lynch, & Fielding (1993) the role of adverse family circumstances was examined in the relationship between recurrent, unipolar major depression in mothers and developmentally appropriate indices of child social and emotional adjustment in five to ten year old children. Their findings were compatible with a multiple risk model for the relationship between maternal depression and children's social and emotional adjustment. Children of depressed mothers who were exposed to additional stressors, such as a chaotic family environment or high stress within the family, alternated between being withdrawn or compliant (overcontrolled) and aggressive (undercontrolled) in either systematic or random efforts to get attention from an otherwise unavailable, inattentive, or self-absorbed parent (Goodman et al., 1993). Additionally, Goodman et al.

(1993) found that some of the relations between maternal depression and child adjustment (e.g., the ability to detect peer intentions, ability to interact appropriately with peers, and teacher ratings of popularity), varied as a function of the child's age. Consistent with findings by Tarullo et al. (1995), the effect of the mother's depression was most often apparent in the older children in the study, suggesting that social and emotional development is affected at later ages. Further, maternal depression was related to children having been rated by their teachers as less popular.

Hammen et al. (1987) conducted a study in which children aged eight to sixteen of mothers with unipolar or bipolar disorders were compared with children of mothers who had chronic medical illness and children of normal mothers. Comparisons included diagnosis and evaluation of behavior problems, school functioning, and social competence. Compared to the other groups, children of mothers with affective disorders, particularly unipolar, had high rates of diagnosable psychopathology, especially depression. The risk for diagnosable illness appears to be attributable not just to maternal psychopathology but also to the concurrent chronic stress in the families.

In a 1992 study by Politano, Stapleton, & Correll, locus of control, anxiety, and self-esteem measures were examined for 56 children of depressed and nondepressed mothers. Findings suggested that major depression did not influence measures of locus of control in these children, but higher levels of anxiety and lower self-esteem were found in children of depressed mothers. Trait anxiety in children of depressed mothers was positively associated with mothers' depression; state anxiety in children was negatively associated with maternal depression level. The results suggest that trait anxiety is an underlying dimension of children of depressed mothers and may manifest itself in more debilitating or noticeable behaviors and across more situations.

Williams & Corrigan (1992) hypothesized that growing up in a household with alcoholic or mentally ill parents was more likely to produce lower levels of self-esteem, greater dysphoria, and more anxiety in adulthood. Undergraduate and graduate students

completed measures of anxiety, depression, social avoidance, self-esteem, and social support. Results showed that the adult children of alcoholics, mentally ill, and substance-abusing mentally ill parents had lower self-esteem and were more socially anxious than normal controls. Adult children of mentally ill parents were more depressed and showed greater trait anxiety than did adult children of alcoholics and controls.

To conclude, findings of a relationship between maternal depression and child outcome has prompted a vast amount of research. Biological explanations are only part of the whole picture. Children's thoughts, feelings, cognitions, response to family stress, and self-esteem all appear to play a role in the relationship, placing the children of depressed mothers at risk for poor adjustment at home, at school, and in the community.

Resilience

Despite being at heightened risk for maladjustment, not all children of depressed mothers develop depressive pathology, leading to the question of what distinguishes resilient from vulnerable children. Downey & Walker's 1989 study examined the association between social cognitive skills and behavioral adjustment in children with a psychiatrically disturbed or maltreating parent. Their findings are consistent with the social cognitive compensation hypothesis which proposes that social cognition compensates for risk factors. Social cognition is defined as interpersonal problem-solving competency and attributional and aggressive response biases. Interpersonal problem-solving competency refers to the ability to construct effective solutions to interpersonal problems. In this study attributional bias refers to a tendency to attribute hostile intent to the perpetrator of aversive experiences even when the underlying intent is ambiguous. Aggressive response bias, as used in this study, refers to a tendency to respond aggressively following aversive experiences, regardless of the perpetrator's intent (Downey & Walker, 1989). Downey and Walker (1989) suggest that specific social cognitive measures have the potential to modify risk for maladjustment in high-risk children. Further, these social cognitive abilities may be suitable targets for interventions designed to reduce the risk of behavioral maladjustment.

Knowledge of what is protective - what characterizes children at risk who are functioning well - may provide a basis for the development of both clinical intervention and prevention programs for children whose mothers are depressed (Beardslee & Podorefsky, 1988).

Similarly, Cummings and Davies (1994) speculate that social cognitions moderate relations between maternal depression and child adjustment. Individual differences in social cognitive skills may predict child outcomes, irrespective of the presence of familial depression and other correlational risk factors. Beardslee, Schultz, & Selman (1987) found that a significant number of adolescents with depressed parents had superior negotiation skills which may have protected them from developing psychological problems. Beardslee & Podorefsky (1988) posit that the best predictors of later functioning are often indices of adaptation rather than psychopathology, and argue that descriptions of a subject's current behavioral functioning is the first step in describing adaptation and resiliency. Protective factors in resilient youth may include constitutional factors such as temperamental characteristics as well as ways of responding, thinking, and acting (e.g., certain coping styles, positive self-esteem, and a sense of being in control). Further, interpersonal relationships requiring socially skilled behaviors have been found to be protective in relation to potential maladjustment (Beardslee et al., 1987; Cummings & Davies, 1994). Williams & Corrigan's 1992 study provided evidence that the impact of parental pathology diminished when the adult child had a large and/or satisfactory social support network.

While having a depressed mother places her child at risk, research supports the idea that there may be factors that compensate for this risk. These hypothesized factors include social cognition, social support, constitutional factors, and interpersonal relationships.

Theoretical Models

Research examining the effects of maternal depression is moving from a more general perspective to more specific aspects of the effects of maternal depression on their children's adjustment. There has been a tendency to treat social cognition and social skills

as a unidimensional construct (Cummings & Davies, 1994). Social cognition involves a number of distinct cognitive systems, including internal representations of the social world, views of the self, information processing styles, social problem-solving skills (Downey & Walker, 1989), and perceptions of social cues given by others.

Two models emphasizing information processing strategies are applicable to the studies reviewed. Hammen's 1992 developmental psychopathology model specific to depression viewed vulnerability to depressive characteristics and poor adjustment as arising in early childhood, and placed it in the context of the unfolding of events and circumstances in childhood, adolescence, and adulthood. Hammen (1992) hypothesized that many depressions, especially chronic and recurring, may have their origins in early-acquired maladaptive cognitions, social processes, and competence development. Specifically, Hammen (1992) hypothesized that vulnerability for some forms of impairing and recurring or chronic depression results from experiences that impair the attachment bond in early childhood with subsequent maladaptation of cognitive, peer, and interpersonal competencies that are predictive of later lack of adjustment due to the earlier maladjustment or lack of integration of important developmental milestones.

Several specific predictions of Hammen's (1992) model concern cognitive features: 1) schematic information processing that leads to selective perception (recall, interpretation) of information to fit pre-existing beliefs; 2) dysfunctional representations of others and the world, arising from early experiences, which lead to misperceptions of the behaviors and motives of others and provide a context for maladaptive behaviors and choices. This feature of Hammen's (1992) model is illustrated in Breznitz and Sherman's 1987 study. These authors found that depressed and well mothers reacted to mild stress in very different manners which influenced their interactions with their children. Depressed mothers reacted with signs of anxiety which confirmed to their children that they were in an anxiety-laden situation; well mothers remained calm and informed their children there was nothing to worry about. The authors concluded that children of depressed mothers

are socialized to handle stressful situations very differently than children of well mothers. They further speculate that the children of depressed women learn to react to even mild stress in an exaggerated manner.

A second applicable model is one proposed by McFall (1982) for acquiring and maintaining social skills. McFall (1982) describes social skills as sequential processes which enable a person to behave in a socially appropriate manner. He describes three sets of skills necessary for such behavior: 1) decoding skills, which involve accurate reception, perception, and interpretation of situations and other people's behavior; 2) decision skills, which involve generating response options, matching them to task demands, selecting the best option and evaluating its usefulness; and 3) enactment skills, the processes involved in carrying out the response chosen in the previous stage. If an adolescent has deficits in schematic information processing and dysfunctional representations of others, as Hammen (1992) hypothesizes, it follows that deficits will occur in their ability to successfully engage in the three stages of McFall's (1982) model. Because McFall's model is sequential, dysfunction at one stage precludes success at a later stage. Dysfunction during the first stage of this model was documented in a 1993 study by Goodman, Brogan, Lynch, and Field. This study found a hostile bias in children of depressed parents. The interpretation of intentions as hostile, according to these authors, then becomes inappropriately generalized to peer relations. Children who approach peers with a corresponding hostile or defensive stance are found, in Goodman et al.'s study (1993) to be less popular. A resulting concern is that peers may maintain the deviant behavior by coming to expect the child to be habitually inappropriate in his or her behavior.

According to McFall (1982), skill and success at each stage is necessary, but not entirely sufficient, for a person to be judged as socially competent. Because the output for each stage serves as input for the next, the logical place to begin examining skill competency is in the first stage. As the studies reviewed point out, often children of depressed mothers fail in this first step.

Statement of the Problem

Research has demonstrated that a relationship exists between maternal depression and child adjustment. The characteristics of maternal depression have been studied at length and delineated. The specific effects of maternal depression on children is a more recent topic of research, and compelling data exist correlating maternal depression with deficiencies in areas such as academic achievement, peer relationships, and social skills. Current research in this area is moving from the investigation of general or global skills to the investigation of specific aspects of skills. Through the identification of specific social skills and the outcomes associated with them, attempts can be made to predict which children may be at risk for deficits in these specific areas.

The present analogue study examined the relationship between maternal depression, family stress, and child adjustment in middle school students aged eleven to fourteen. In contrast to other studies, social skills and competencies of the children were also evaluated, including their ability to receive and interpret nonverbal social cues. It was hypothesized that these social competency variables would account for additional variance in adolescent adjustment in addition to that accounted for by maternal depression and family stress.

Method

Subjects

The sample included 50 mothers with at least one child between the ages of eleven and fourteen years. Mothers were recruited via letters sent to their homes attached to six-week report cards of students who attend a public middle school in Western North Carolina. Approximately 750 letters were sent in Appalachian State University letterhead envelopes. All mothers were invited to participate, along with their child, in a study of child development. Fifty-five mothers, a response rate of less than 7.5%, returned consent forms. Of these 55 who volunteered, 51 returned the questionnaires. Review of one set of questionnaires revealed they had been completed by a father and were excluded from the sample. Only protocols for which all measures were returned were included in the results.

The mean age of the fifty participating mothers was 40.91 years. The mean age of their children was 12.16 years. Twenty-seven of the children were male, and 23 were female. Forty-nine of the children were Caucasian, with one African American child participating. Eighty percent of the mothers were married, sixteen percent divorced, and four percent were separated.

Educational status, indicated by years of education completed, was 14.92 years for mothers and 13.44 years for fathers. Fifty four percent of mothers in the sample were college graduates and 24% of these held advanced degrees (master's or doctoral degrees). Fifty percent of fathers were college graduates with 26% holding advanced degrees.

Occupational status of mothers, according to categories of major occupational groups designated by the United States Bureau of the Census (1963) was categorized at the level of Managers, Officials, and Proprietors. Occupational status of fathers as reported by these mothers was categorized at the level of Clerical, Sales, and Kindred

Workers, slightly lower than the mothers' status. The sample can be characterized as a white, well-educated sample of self-referrals.

Procedures

Mothers were asked to read and sign informed consent forms indicating their intent to participate in this study, to allow their child to participate in this study, and to provide the name of a teacher in their child's school who had frequent contact with their child. Permission was given which allowed the teacher to be contacted in conjunction with this study to obtain an assessment of the child's social skills. The mothers who returned a signed consent form were then asked to complete questionnaires regarding their mental health status (the Symptom Checklist-90-Revised; Derogatis, 1983), their family social and environmental characteristics (the Family Environment Scale, second edition; Moos & Moos, 1981), and their child's adjustment (the Child Behavior Checklist; Achenbach & Edelbrock, 1983). Mothers also completed a brief demographic questionnaire and questions which assessed their history of depression. These materials were sent home to mothers who returned consent forms via their child. A self-addressed, stamped return envelope was attached in which materials were to be mailed back to the researcher.

Teachers who had been named as a contact by student's mothers were sent a letter of explanation, the Social Skills Rating System - Teacher Form (SSRS-T; Gresham & Elliott, 1990), a copy of the signed consent form, and a return envelope. Those teachers who participated in this study returned the SSRS-T in the envelope provided to the school office where they were collected by the school secretary and held for the researcher.

The children in the study were administered the cue perception tasks (the Receptive Facial Expression subtest; Nowicki & Duke, 1994; the Interpersonal Perception Task - 15; Costanzo & Archer, 1993) and a questionnaire regarding their social skills (the Social Skills Rating System - Student Form, Secondary Level; Gresham & Elliott, 1990). All tasks were administered during morning homeroom time on two separate occasions to groups of students in the auditorium of the school with the exception of two students who

were absent or unavailable on both administration dates. Administration of the tasks for these two students took place in a classroom at a local church after school.

Measures

Mother's Depressive Status. Maternal depression was evaluated based on scores obtained on the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983). The SCL-90-R taps a wide range of psychological pathology, including depression. It is strongly correlated (r 's = .66 - .69) with the Beck Depression Inventory (Margo, DeWan, Fisher, & Greenberg, 1992). The SCL-90-R consists of ninety self-descriptive items designed to reflect psychological symptom patterns. The SCL-90-R has adequate internal consistency (r 's = .77 - .90), test-retest reliability coefficients (r 's = .68 - .90), and high convergent validity with five other scales (Derogatis, 1977). Subjects report on a five-point Likert scale the degree to which they have been distressed by symptoms in the past month.

Family Stress. The Family Environment Scale, Second Edition (FES; Moos & Moos, 1981) was completed by each mother to provide information regarding the social-environmental characteristics of each family involved in the study. The scale is based on a three-dimensional conceptualization of families - the Relationships dimension, the Personal Growth dimension, and the System Maintenance dimension. Each dimension includes related subscales. Each of the subscales is represented by brief statements concerning family climate, and subjects respond by judging whether the statement is true or false with regard to their family. Internal consistency reliability estimates range from .61 to .78. Test-retest reliabilities for two month, three month, and twelve month intervals range from .52 to .91. Face and content validity of the FES are supported by statements about family situations that relate to subscale domains. Evidence exists for construct validity through comparisons of distressed and normal family samples.

Demographics. Mothers completed a brief demographic questionnaire to provide information regarding family size, marital status, education, occupation, and history of depression.

Child Adjustment. Mothers completed a Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) to assess her child's adjustment and behavioral problems at home. The CBCL consists of 113 items related to competence, syndrome and problem behaviors, and internalizing and externalizing groupings. The items are scored on a three-point scale ranging from "not true" to "often true". There are also questions that assess the child's social competency with regard to activities, social interactions, and school performance. Intraclass correlations coefficients have been completed to assess test-retest reliability, interparent agreement, and inter-interviewer reliability of item scores; all coefficients were above .90 (Achenbach & Edelbrock, 1991). Content validity was assessed through examination of scores of referred children and nonreferred, demographically similar children and the association of items with referral status. Criterion validity evidence is offered in high correlations between the CBCL and other measures designed to tap similar constructs. The CBCL is regarded as one of the best instruments of its kind (Kelley, 1991).

Teacher Ratings. Teacher reports of each child's social skills were obtained using the Social Skills Rating System - Teacher Form (SSRS-T; Gresham & Elliott, 1990). The SSRS-T was developed to broadly assess social skills. In addition, it samples the domains of academic competence and problem behaviors which, according to Gresham and Elliott (1990) are critical domains when determining factors that contribute to social skills problems. The Teacher Form responses are collapsed into three Social Skills Subscale raw scores (i.e., Cooperation, Assertion, and Self-Control). These three raw scores compose the Social Skills Scale total raw score. The SSRS - T consists of 30 questions regarding social skills, twelve questions regarding problem behaviors, and nine questions regarding academic competence. Responses are scored on a three-point scale (Never, Sometimes, and Very Often) with regard to how often behaviors occur and how important they are judged to be. The Teacher Form was designed to be completed by the student's teacher who has had exposure to the student's classroom behavior for at least two months. Test-

retest reliabilities for teacher ratings, obtained after a four week period, were .85 for the Social Skills scale, .84 for the Problem Behavior scale, and .93 for the Academic Competence. The Teacher Form is psychometrically the soundest of the SSRS scales. Ninety-two percent of the alpha coefficients from the Teacher Forms are .80 or higher, with 45.8% .90 or higher (Gresham & Elliott, 1990). Criterion validity for the SSRS-T was examined by comparing it with several other measures having similar theoretical designs, including the CBCL. Correlations between the SSRS-T and other measures, according to Gresham & Elliott (1990) were in the moderate to high range. Several studies were conducted to evaluate the construct validity of the SSRS in general. These studies included developmental changes, sex differences, internal consistency, correlations with other tests, factor analyses, convergent and discriminant correlation analyses, and comparisons of contrasted groups. The consistent findings of these studies contribute strong evidence in support of the construct validity of the SSRS (Gresham & Elliott, 1990).

Student Ratings. Like the SSRS - T, the SSRS - Student Form (SSRS-S; Gresham & Elliott, 1990) is designed to assess social skills, but from the perspective of the child. The response form for the SSRS - S, Secondary Level, is similar to that of the SSRS - T. The student is asked to respond to questions regarding social skills and rate them as to how often they engage in the described behaviors (0 = never; 1 = sometimes; 2 = very often). There is also a measure of perceived importance for each question; these are answered only when the scale is being used to develop a behavior plan for intervention purposes. The SSRS - S includes an Empathy Subscale which is not found on the SSRS - T. The Problem Behavior Scale is absent from the Student Form. Coefficient alpha reliabilities for subscales of the SSRS - S range from .67 to .77; the total scales reliability coefficient is .83. Criterion validity was investigated with the same general trends as the relationships between the SSRS-T and other measures. The correlations are not as strong, however, for the Student version as they are for the Teacher version. According to

Gresham & Elliott (1990), there is less validity evidence using the criterion of correlation with other tests for the SSRS-S than for the Teacher form due, in part, to the lack of comparable measures for students. Construct validity is discussed under SSRS-T.

The Receptive Facial Expressions Subtest is a measure of cue perception and a part of the Diagnostic Analysis of Nonverbal Accuracy Test (DANVA; Nowicki & Duke, 1994). This subtest evaluates the subject's ability to receive and send affective information via nonverbal cues. The measure consists of 24 slides of children's facial expressions. It includes six slides (three males and three females) for each of four emotions - sadness, happiness, anger, and fear. Cronbach's coefficient alphas ranged from .77 to .88, and test-retest reliabilities, determined after four weeks, were .86 (Nowicki & Duke, 1994). Construct validity has been seen in differences in DANVA accuracy scores and indices of interpersonal and teacher ratings of peer functioning in directions consistent with theoretical hypotheses. DANVA subtest accuracy scores improved with age and showed significant relationships with indices of personal and social adjustment and academic achievement (Nowicki & Duke, 1994). Discriminant validity was evident in that IQ scores were not found to be related to individual differences in DANVA skills, suggesting that the DANVA is not measuring impoverished functioning in general but a set of more circumscribed nonverbal social processing abilities (Nowicki & Duke, 1994).

The Interpersonal Perception Task - 15 (IPT-15; Costanzo & Archer, 1993) is a video consisting of 15 scenes which depict naturalistic sequences of behavior. Viewers are asked to reach conclusions about five categories of social interaction: status, kinship, intimacy, competition, and deception. It is a measure of subject's ability to accurately interpret relationships and information via nonverbal cues. Test-retest reliability, after a five week interval, was .73, however, relatively low levels of internal consistency were reported ($KR-20 = .38$; Costanzo & Archer, 1993). Content validity was investigated using a series of codes on the five scene types. Inter-judge reliability was .81 and median agreement between behaviors predicted and actually coded was 83.3% which, according

to Costanzo & Archer (1993) provides valid samples of the behaviors that typically characterize the types of interactions depicted in the IPT-15. Evidence of construct validity was offered by the finding that interpersonal sensitivity, an important social skill in everyday life (Costanzo & Archer, 1993) is related to performance on the IPT-15. However, the IPT-15 has not been normed on children or adolescents.

Statistical Analysis

The dependent variable in the present study was the measure of the child's adjustment (CBCL) as rated by the child's mother. Predictor variables were maternal depression (SCL-90-R, Depression subscale) and family stress (FES). It was hypothesized that scores on the predictor variables would predict scores on the dependent variable. In addition, the child's nonverbal cue perception skills (IPT and DANVA), social skills reported by the child (SSRS-S), and social skills of the child as reported by the teacher (SSRS-T) were hypothesized to have an effect on the dependent variable.

A regression analysis was performed entering the predictor variables (SCL-90-R, Depression Subscale and FES) and the dependent variable (CBCL). From this regression analysis the strength of the relationship between the predictor variables and the dependent variable was obtained. Next, the social competency variables (IPT, DANVA, SSRS-S, SSRS-T) were added into the equation using a stepwise procedure. Each of these variables were evaluated independently as a predictor variable to establish whether there was a significant change in the amount of variance accounted for in the equation. Statistical significance was an indication that the variable had an influence on the predictability of child adjustment.

Results

Normative Data

A comparison of normative data means and standard deviations with means for the current sample are provided in Table 1. In addition to standardized measures, mothers completed a brief demographic questionnaire from which information regarding their history of depression was obtained (see Appendix D).

Over half, 54%, of mothers in this sample answered "yes" to the question, "Have you ever had periods during which you felt significantly depressed?". This is more than twice the estimate that 20% of the general population will experience at least one significant episode of depression during the course of a lifetime (Weissman & Myers, 1978). However, when asked whether they had ever been treated by a doctor for depression, only 14% answered affirmatively. According to mother's responses, ten percent of fathers had been treated for depression at some time. Six percent of mothers indicated they were currently being treated for depression. With regard to medication, 16% of mothers indicated they had, at some point in time, taken medication for depression or depressive symptoms, with eight percent currently taking medication.

Reliability Check

Gotlib (1983) has found a potential source of bias in the reporting of child behavior by depressed parents. Depressed parents' reports may be biased by a tendency to see both their parenting and their children's behavior in a negative light. In an effort to address the possibility of maternal bias on self-reports, a reliability check was done using ten questions from the CBCL. These questions were selected based on their high intraclass correlation coefficients. Mothers' responses to these ten items were compared with teacher responses to the same ten items. A t-test for paired samples was performed to compare mother and teacher responses. The t-test indicated no significant difference in responses of

Table 1

Comparison of Normative Means and Sample Means

Measure	Normative Sample Mean	SD	Current Sample Mean	SD	z score
Child Adjustment (CBCL)					
Boys	22.50	17.00	27.33	27.50	.28
Girls	22.00	17.70	17.87	23.56	-.23
Maternal Depression (SCL-90)	0.46	0.52	.84	.87	.73
Family Stress (FES)					
Cohesion	6.73	1.47	5.47	1.96	-.86
Conflict	3.18	1.91	5.80	1.35	1.37
Teacher Measures (SSRS-T)					
Academic Competence	100.00	15.00	103.24	12.56	.22
Problem Behavior	100.00	15.00	97.62	20.35	-.16
Social Skills	100.00	15.00	99.52	17.32	-.03
Student Measures					
Social Skills (SSRS-S)	100.00	15.00	106.84	17.07	.46
Cue Perception					
DANVA	14.98	5.74	20.02	4.03	.88
IPT-15	9.86	2.13	8.08	2.51	-.88

Note. CBCL (Child Behavior Checklist), SCL-90 (Symptom Checklist 90), FES (Family Environment Survey), SSP.S-T (Social Skills Rating System - Teacher Form), SSRS-S (Social Skills Rating System - Student Form), DANVA (Diagnostic Analysis of Nonverbal Accuracy Scale), IPT-15 (Interpersonal Perception Task - 15).

mothers and teachers $t(1,49)=.58, p>.05$. The mean scores of the mother's reports was 5.40 ($SD=4.00$). Teacher means were 5.02 ($SD=4.63$) on the same items. A Pearson correlation showed the mother's responses were significantly correlated with the teacher's responses ($r=.43, p<.01$).

Maternal Reports and Adjustment

The main variable of interest was the child's adjustment, which was measured using the CBCL (Achenbach & Edelbrock, 1983). Based on Goodman et al.'s (1993) multiple risk model which explains the relationship between maternal depression and children's social and emotional adjustment, it was expected that scores on the predictor variables, mother's depressive status (SCL-90) and family stress (FES), would predict scores on the dependent variable, child adjustment (CBCL). Specifically, Goodman et al.'s 1993 study found older children to be more vulnerable to these multiple risk factors than younger children using a sample that ranged in age from five to ten years. The current study examined the relationship in children between the ages of eleven and fourteen.

A stepwise regression analysis was conducted to estimate the extent to which maternal depression (SCL-90) and family stress measured by conflict and cohesion incrementally contribute to the prediction of child adjustment as measured by the CBCL. Maternal depression was the strongest predictor variable and accounted for 51.8% of the shared variance between the variables, $F(1,48)=51.6, p<.01$. The regression analysis revealed that family stress did not add to the prediction of child adjustment beyond that accounted for by maternal depression.

Although the measures of family stress did not add to the prediction of child adjustment beyond that accounted for by maternal depression, they did result in significant univariate relationships with child adjustment. The FES Cohesion scale correlated negatively with adjustment ($r = -.61, p<.01$) and the FES Conflict scale correlated positively with adjustment ($r = .49, p<.01$). As adjustment scores increased, indicating

Table 2

Model Regression Analysis with Maternal Depression, Family Stress (Cohesion) and Family Stress (Conflict) as Predictor Variables and Child Adjustment as the Dependent Variable

<u>Predictor Variable</u>	<u>Beta</u>	<u>Multiple R</u>	<u>R²</u>	<u>p</u>
Maternal Depression (SCL-90)	.72	.72	.52	<.0001
Family Stress - Cohesion (FES)	.03	--	--	ns
Family Stress - Conflict (FES)	.03	--	--	ns

Note. SCL-90 (Symptom Checklist - 90), FES (Family Environment Survey).

more problem behaviors, family cohesion decreased. As adjustment scores increased, family conflict scores increased also. Further, the two family stress measures were significantly correlated with maternal depression. The FES Cohesion scale correlated negatively with maternal depression ($r = -.75, p < .01$). The FES Conflict scale correlated positively with maternal depression ($r = .60, p < .01$). It is likely that measures of family stress did not add anything unique to the prediction of child adjustment above and beyond that predicted by maternal depression due to strong univariate correlations between family stress, child adjustment, and maternal depression.

Social Competency and Adjustment

The current study further hypothesized that adding social competency variables to Goodman et al.'s (1993) multiple risk model would improve the predictability of child adjustment. Predictor variables used in this analysis included the Social Skills Rating System - Teacher Form (SSRS-T; Gresham & Elliott, 1990) which has three domains evaluated by the teacher: Social Skills, Academic Competence, and Problem Behaviors. The Social Skills Rating System - Student Form (SSRS-S; Gresham & Elliott, 1990) uses the child's rating of his/her own social skills. The Facial Expressions Subtest (DANVA; Nowicki & Duke, 1994) evaluates the child's ability to receive affective information via nonverbal cues. Finally, the Interpersonal Perception Task - 15 (IPT-15; Costanzo & Archer, 1993) measures the subject's ability to accurately interpret relationships and information through nonverbal cues.

A stepwise regression analysis was performed using maternal depression, the three teacher ratings, the SSRS-S, the IPT, and the DANVA as predictors of child adjustment. The FES was dropped from the analysis after determining that it did not add to the predictability of child adjustment in the previous analysis. The analysis revealed that three social competency variables added to the prediction of child adjustment beyond that accounted for by maternal depression (see Table 3).

As noted in the previous analysis, maternal depression was the first variable to enter the stepwise regression analysis accounting for the largest proportion of variance in child adjustment, R at step 1 = .72, $F(1,48) = 51.63$, $p < .0001$. Academic competence as rated by the teacher entered the model next, accounting for an additional 13% of variance, $F(2,47) = 42.90$, $p < .0001$. Performance on the DANVA then entered the model accounting for an additional 4% of the variance in child adjustment, $F(3,46) = 34.52$, $p < .0001$. Finally, the SSRS-S, student assessment of their own social skills, entered the model and accounted for an additional 5% of the variance in child adjustment, $F(4,45) = 32.26$, $p < .0001$. As expected, these results are consistent with the multiple risk model: social competency variables incrementally add to the prediction of child adjustment beyond that accounted for by having a depressed mother. The three remaining variables of interest, teacher ratings of child social skills and problem behaviors and child performance on the IPT-15 failed to enter the model and add to the prediction of child adjustment beyond that accounted for by academic competency, child ratings of social skills, and the DANVA ($p > .05$). Maternal depression and social competency variables combined to account for 74% of the total variance in adjustment.

Correlational Analyses

Univariate relationships between the dependent variable and all predictor variables are presented in Table 4.

All univariate correlations are in the directions expected. A lower score on the CBCL indicates better child adjustment; increasing scores indicate poorer child adjustment. As scores on the CBCL increase, scores on measures of maternal depression, conflict, and problem behaviors increase, indicating higher levels of each of these variables. Poor child adjustment is correlated with higher levels of maternal depression, family conflict, and problem behaviors. However, an inverse relationship exists between child adjustment scores and the remaining variables. As scores on the CBCL increase, scores on cohesion, academic competence, social skills rated by the teacher and by the

student, the DANVA, and on the IPT-15 decrease, indicating that poorer child adjustment is correlated with poor scores on these variables.

Table 3

Stepwise Regression Analysis Using Maternal Depression and Social Competency Variables as Predictors and Child Adjustment as the Dependent Variable

<u>Predictor Variable</u>	<u>Beta</u>	<u>Multiple R</u>	<u>R²</u>	<u>p</u>
Maternal Depression (SCL-90)	.47	.72	.52	<.0001
Teacher Rating of Academic Competence (SSRS-T)	-.50	.80	.65	<.0001
Cue Perception (DANVA)	.34	.83	.69	<.0001
Student Rating of Social Skills (SSRS-S)	-.30	.86	.74	<.0001
Teacher Rating of Social Skills (SSRS-T)	-.08	--	--	ns
Teacher Rating of Problem Behaviors (SSRS-T)	-.02	--	--	ns
Cue Perception (IPT-15)	-.14	--	--	ns

Note. SCL-90 (Symptom Checklist - 90), SSRS-T (Social Skills Rating System - Teacher Form), DANVA (Diagnostic Analysis of Nonverbal Accuracy Scale), SSRS-S (Social Skills Rating System - Student Form), IPT-15 (Interpersonal Perception Task - 15).

Table 4

Univariate Correlation Analyses between Child Adjustment and Predictor Variables

Predictor Variable	Pearson r	p
Maternal Depression (SCL-90)	.72	<.01
Family Stress-Cohesion (FES)	-.61	<.01
Family Stress-Conflict (FES)	.49	<.01
Academic Competence (SSRS-T)	-.67	<.01
Social Skills (SSRS-T)	-.62	<.01
Problem Behaviors (SSRS-T)	.41	<.01
Social Skills (SSRS-S)	-.65	<.01
Cue Perception (DANVA)	-.39	<.01
Cue Perception (IPT-15)	-.36	<.05

Note. SCL-90 (Symptom Checklist - 90), FES (Family Environment Scale), SSRS-T (Social Skills Rating System - Teacher Form), SSRS-S (Social Skills Rating System - Student Form), DANVA (Diagnostic Analysis of Nonverbal Accuracy Scale), IPT-15 (Interpersonal Perception Task - 15).

Discussion

Maternal depression, family stress, and child adjustment are closely related. Social skills and social competencies of the child have also been found to be related to adjustment. The current study examined the relationship between maternal depression, family stress, and adjustment in adolescents focusing on the influence of social competencies on child adjustment. Although the relationship between child adjustment and maternal depression has been investigated (e.g., Downey & Coyne, 1990; Field, 1992), the present study evaluated the influence of child social skills and social competencies on child adjustment.

Maternal depression and family stress were expected to predict child adjustment. Scores on the SCL-90 accounted for half of the variance (52%) in child adjustment but family stress failed to add to the regression equation. However, family stress variables were significantly correlated with adjustment as well as with maternal depression. Due to the strength of these correlations, it may be that family stress did not add anything new or unique to the prediction beyond that accounted for by maternal depression.

A main hypothesis was that social competency variables (nonverbal cue perception skills, social skills reported by the child and by the teacher) would account for additional variance in child adjustment. This hypothesis was indeed supported. Three of the six measures of social competency accounted for additional variance in child adjustment. Teacher ratings of academic competence, performance on the DANVA, and the child's own assessment of their social skills combined with maternal depression to account for 74% of the variance in child adjustment.

In a study of children ranging in age from two to twelve, Tarullo et al. (1995) found that maternal depression, measured by the Schedule for Affective Disorders and Schizophrenia Interview (SADS-L; Spitzer & Endicott, 1977), accounted for 22% of the

variance in child adjustment. Adjustment was based on observed interactions of the children with their parents over a three year time period. The study examined the relative contribution of maternal depression to each child's psychiatric status by maternal report, finding that the older children's symptoms were better predicted by maternal depression. Anderson & Hammen (1993) compared adjustment of the children of unipolar, bipolar, medically ill, and normal women. Maternal mental health status was measured using the SADS-L (Spitzer & Endicott, 1977); child behavior and social competence was measured using the CBCL (Achenbach & Edelbrock, 1983). They found that children of depressed mothers showed significantly poorer functioning on all measures. Anderson & Hammen (1993) found that a greater proportion of children in the depressed group had relatively chronic, clinically significant problems in psychosocial functioning. Billings and Moos (1983) compared depressed and nondepressed families and found that parental depression accounted for 25% of the variance in child adjustment. Parental functioning was assessed using scores derived from the Research Diagnostic Criteria for depression (Spitzer, Endicott, & Robins, 1978). Child health and functioning, reported by a parent, was derived on the basis of observed symptoms during the previous month on five indices, which included physical health problems, psychological distress, and behavioral problems (Billings & Moos, 1983). Children of depressed parents had significantly more symptoms of emotional, somatic, and behavioral problems such as difficulties in interaction with peers and in academic adjustment than did children of nondepressed parents.

Based on previous literature, the relationship between maternal depression and child adjustment was expected. The proportion of variance found in child adjustment and maternal depression in the present study is greater than previously found in similar studies. These previous studies typically examined a clinical sample and compared it with a well sample. Because the sample used in this study is a nonclinical one and has not been classified according to levels of depression, there may be more variability in symptom expression as well as a greater range of symptoms reported by these mothers.

Additionally, the studies referenced above used various instruments to measure depression which may account for some of the differences in proportion of variance.

The finding that family stress did not add to the predictability of child adjustment is contrary to findings in other studies. Hammen et al. (1987) found that child adjustment and risk for depression appeared to be attributable not just to maternal psychopathology but also to the concurrent chronic stress in the family. Billings & Moos (1987) used the FES to compare the family environments of depressed and control families and found that depressed families endorsed less cohesion and more conflict. This is similar to the findings of the present study based on comparisons of means for depressed families and nondepressed controls. Comparisons of means for cohesion and conflict in the Billings & Moos (1987) study were 5.4 ($SD = 2.6$) and 4.2 ($SD = 2.4$) respectively for families of depressed parents and 7.4 ($SD = 1.8$) and 2.9 ($SD = 2.2$) respectively for families of nondepressed parents. The present study's means for cohesion and conflict were more similar to those of the depressed families. Lower cohesion and higher conflict scores for the present sample may be related to the age of the children. According to Nielsen (1996), disagreements between adolescents and their parents tend to be most intense in the first two years of adolescence. The mean age for children in this sample is 12.16. Thus, FES scores may be in part an artifact of the age of the sample. In a stepwise regression analysis Billings & Moos (1987) found that family stress accounted for a significant increase in R value beyond that accounted for by maternal depression (from .31 to .36). However, family stress did not account for additional variance in the current study. As previously discussed, maternal depression accounted for a large proportion of the variance in child adjustment in the present study. In turn, this may have limited the unique relationship previously found between family stress and child adjustment. As mentioned above, univariate correlational analyses of maternal depression, cohesion, and conflict indicate strong interrelationships between these variables.

The six measures of social functioning were teacher ratings of social skills, problem behaviors, and academic competence, the child's rating of their own social skills, performance on the DANVA, and performance on the IPT-15. Academic competence was found to add to the predictability of child adjustment. Better child adjustment has been found to be related to higher academic competence. A relationship between parental depressive status and children's school performance has been found in previous research. Billings & Moos (1983) found evidence that children of depressed parents had significantly more academic problems when compared with children of nondepressed parents. Anderson & Hammen (1993) observed poorer academic performance in children of depressed mothers than in children of bipolar, medically ill, and normal mothers. The present study supports these findings.

Children's assessments of their own social skills and competencies also added to the predictability of child adjustment. Better child adjustment was related to reports of better social skills. A child's own report of their social skills has not been commonly used, yet Kashani, Niels, Holper, Fallahi, Corcoran, McAllister, Rosenberg, & Reid (1987) found that adolescent reports were more accurate than their parents reports. A study by Goodman et al. (1993) which used child report looked specifically at self-concept, defined as self-perceived competence and acceptance, and found non-significant results on these measures. The current study's measures of self-reported social competence, while tapping specific competencies such as social skills and nonverbal cue perception, may also be a broader measure of the child's self-efficacy and reflect their belief in their own social abilities.

Performance on the DANVA was shown to add significantly to the predictability of child adjustment. The DANVA required interpretation of children's facial expressions, supporting the notion that the ability to "read" a peer's mood or nonverbal cue is an important social skill enabling a person to behave in a socially appropriate manner (McFall, 1982). These findings support previous research which has stressed the

importance of social skills and social relationships as protective factors against the more negative aspects of maternal depression on child adjustment. Downey & Walker's (1989) compensation model proposed that social cognition mediates the link between child adjustment and two family risk factors, maltreatment and parental psychopathology. They found that children with high social cognitive skills were better adjusted regardless of risk status. Cummings & Davies (1994) speculate that social cognitions moderate relations between maternal depression and child adjustment, and that individual differences in social cognitive skills may predict child outcomes. These findings lend support to McFall's (1982) theory which describes social skills as a sequential three-step process. The first of the three sets of skills, decoding, involves accurate reception, perception, and interpretation of other people's cues, which performance on the DANVA taps.

Three of the social competency variables, teacher ratings of the child's social skills, teacher ratings of problem behaviors, and child performance on the IPT-15, did not make a unique contribution to the prediction of child adjustment. Although Goodman et al.'s 1993 study found that maternal depression was significantly related to children having been rated by their teachers as less popular, this was using a younger sample, ages five to ten. With regard to teacher ratings of social skills and problem behaviors, it may be that by the time children reach adolescence, they are the most accurate observers of their own social skills. Also, ratings of problem behaviors and social skills, unlike academic competence, are less concrete and more subjective. Ratings of academic competence require less subjective information from the teacher, and may be the aspect of the child's behavior that is most salient to teachers.

The second measure of nonverbal cue perception, performance on the IPT-15, also did not add to the predictability to child adjustment. The IPT-15 required interpretation of various social scenarios using very subtle cues. It may be that the scenarios were unfamiliar to these children as they involved adults and adult situations, bringing into question the appropriateness, at least for this sample, of the IPT-15. The development of a

similar instrument using adolescents and common adolescent situations might be useful for future research.

In the present study a substantial amount of the variance in child adjustment has been accounted for by four variables: maternal depression, academic competence as rated by the child's teacher, the child's performance on the DANVA, and the child's report of their own social skills. These four variables combine information from three sources: the child, the mother, and the teacher. The reliability check has limited possible sources of bias in that two separate rater's responses were shown to be similar in their assessments of the dependent variable, the child's adjustment.

Taken as a whole, the data did support current theories regarding the relationship between maternal depression and child adjustment. Findings in this study offer even stronger evidence of the relationship between these two variables than found in previous studies. Goodman et al.'s 1993 multiple risk model was partly supported. While maternal depression was a strong predictor of child adjustment, social competency was also identified as important and made an independent, unique contribution to the child's adjustment. The child's assessment of their own social skills and nonverbal cue perception skills, in particular, have added to the predictability of child adjustment.

Having a depressed mother places a child at heightened risk for maladjustment, yet not all children of depressed mothers are maladjusted, provoking interest in the characteristics resilient children possess that vulnerable children may lack. Researchers have identified social competencies as compensatory factors for children whose mothers are depressed and may be keys to resilience. Downey & Walker (1989) proposed that social cognition may compensate for risk factors such as maternal depression, and has the potential to modify risk for maladjustment in high-risk children. Beardslee et al. (1987) found that some adolescents with a depressed mother possess a social-cognitive capacity for interpersonal negotiation which appeared to protect them from developing psychological problems by mediating between parental depressive disorder and adaptive

child behavior. Williams & Corrigan (1992) found that a large and/or satisfactory social support network had an insulating quality that diminished the impact of parental pathology. Children with well developed social competencies likely create or maintain higher quality social support networks. Based on the current findings that social skills and nonverbal cue perception skills influence child adjustment, these social competency abilities may be suitable targets for interventions designed to reduce the risk of maladjustment.

The sample from which these data were obtained was predominately white, well-educated, and married, thus limiting the study's generalizability. A factor which may have effected the response rate and ultimately the demographics of the sample obtained was the timing of this study. Initial contact letters and consent forms were sent home with children's report cards at the end of the second six week grading period of the year. This was the week prior to Thanksgiving break, which typically marks the beginning of the traditional holiday season. This time of year is associated with increased demands, pressures and stress. This may have decreased the likelihood of some potential respondents choosing to participate because of limited time and increased demands. This may have selectively limited participation to those mothers with greater time and resources. This would have the effect of limiting respondents to the sample obtained, eliminating mothers with greater demands, such as single mothers or lower socioeconomic status mothers. Further, using middle school students as couriers for consent forms may have resulted in some lost or neglected forms. Two consent forms did not arrive in the school office until late January yet they were dated late November.

In conclusion, maternal depression and social competency variables combined to account for 74% of the variance in child adjustment in the present sample. The children's assessment of their own social skills and nonverbal cue perception skills, variables which have not previously received wide attention, have been identified as adding to the predictability of child adjustment. These variables appear to influence social competency,

which may be a factor distinguishing vulnerable children from resilient children and may be suitable targets for intervention. These results may have limited generalizability due to the nature and demographics of the sample of mothers and children who participated in the present study.

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APPENDIX A
Cover Letter to Mothers

November 22, 1996

Dear Mother,

I am a graduate student in Clinical Psychology at Appalachian State University, and am conducting research for my master's thesis on the relationship between maternal adjustment, family stress, and adolescent social skills. I am contacting mothers of children in middle school to request their assistance in studying this relationship, and would like you and your child to be part of my study.

You can participate by filling out and signing the attached consent form. Please return the consent form in the envelope provided to your child's homeroom teacher by Monday, December 2, 1996. Upon receipt of the consent form, four questionnaires will be sent to you for completion. They should take approximately 30-45 minutes to complete. All information obtained will be kept completely confidential and names of participants will not be used at any time during the study. Further, once the consent form is returned, all questionnaires will be coded so that your responses will be anonymous.

Once consent is obtained, your child will complete a questionnaire about their social relationships and answer a few questions after viewing a video showing people in common social situations. They will also view a series of slides and rate the mood of facial expressions. This will be done during homeroom time at school so that he/she doesn't miss any classes. Your child's teacher will also complete a brief survey on social behavior at school. Again, this information will be kept strictly confidential and will be anonymous. Your child's participation in this study is not connected in any way with their school or school performance, and will not have an impact on any grades.

I appreciate your consideration and assistance in this research. If you have any questions, please contact me at (704) 669-2193, or my thesis chairperson, Dr. H.G. Schneider, at (704) 262-2713.

Thank you,

Holly F. Childs

H.G. Schneider, Ph.D.

APPENDIX B
Consent Form

CONSENT FORM

The study in which you are about to participate is regarding research primarily concerned with maternal adjustment, family stress, and adolescent social skills. This research is being done as part of a master's thesis. The questionnaires will take approximately 30-45 minutes to complete.

The data collected in this study will be reported in group form. Any information that is collected from you, your child, or your child's teacher will be held in strict confidence. Please understand that your participation in this study is voluntary. You are free to withdraw yourself or your child from the study at any time. After we have completed the study and analyzed the data, we will be happy to send you a report of the findings. Simply indicate you would like a copy of the report at the bottom of this form.

You may contact the Appalachian State University Institutional Review Board at the following address and phone number at any time during this study if you feel your rights have been violated:

Chairperson, Institutional Review Board
c/o Graduate Studies and Research
Walker Hall, Appalachian State University
Boone, NC 28608
(704) 262-2130

Do you have any questions? If not, please read and then sign the consent statement below. Thank you for your help.

I acknowledge that I have been informed of, and understand, the nature of this study. I freely consent to participate. I give permission for my child to participate. I give permission for my child's teacher to complete a questionnaire regarding my child. I testify that I am 18 years of age or older. I testify that I have legal custody of the child who will be participating in this study.

Signature: _____ Date: _____

Address: _____ Telephone: _____

Name of my child: _____

Name of Teacher who has frequent contact with my child: _____

Do you wish to receive a report of this study's findings? _____

**PLEASE RETURN THIS FORM TO YOUR CHILD'S HOMEROOM TEACHER
BY MONDAY, DECEMBER 2, 1996. A RETURN ENVELOPE IS ATTACHED.**

APPENDIX C

Letter to Participating Mothers

December 12, 1996

Dear Mother,

Thank you for agreeing to participate in the research project studying the relationship between maternal adjustment, family stress, and adolescent social skills. Attached to this letter you will find four questionnaires: the Family Environment Scale, the Symptom Checklist 90 - Revised, the Child Behavior Checklist, and a demographics questionnaire. Please answer each question as honestly and as completely as possible. Remember, these questionnaires are anonymous. Do not write your name, your child's name, or the names of other family members on the questionnaires.

After you have completed the questionnaires, please return them in the self-addressed, stamped manila envelope provided. I would appreciate having these returned no later than January 1, 1997.

Many of you indicated that you would like to receive a copy of the findings of this study. Data analysis should be completed by Spring, 1997, and copies mailed by the end of April.

Again, thank you very much for your interest and participation. If you have any questions regarding these questionnaires or the study in general, please contact me at (704) 669-2193, or my thesis chairperson, Dr. H.G. Schneider, at (704) 262-2713.

Sincerely,

Holly F. Childs

H.G. Schneider, Ph.D.

APPENDIX D
Demographic Questionnaire

**PLEASE COMPLETE THE FOLLOWING QUESTIONNAIRE WITH REGARD
TO YOUR IMMEDIATE FAMILY AND YOURSELF**

Marital Status (circle one): married separated divorced widowed never married

If married, how long? _____

Number of children: _____

What are their ages? _____

What is your occupation? _____

What grade did you complete in school? _____

If married, what is your husband's occupation? _____

What grade did your husband complete in school? _____

Have you ever had periods during which you felt you were significantly depressed? ____

Have you ever been treated by a doctor for depression? _____

If yes, estimate how long this period lasted and the dates it occurred: _____

Has your child's father ever been treated for depression? _____

If yes, estimate how long this period lasted and the dates it occurred:

Are you currently being treated for depression? _____

Have you ever taken medication for depression or depressive symptoms? _____

Are you currently taking medication for depression or depressive symptoms? _____

Please make any comments you feel relevant at the bottom or on the back of this sheet.
Thank you for your time and participation.

APPENDIX E
Letter to Teachers

December 12, 1996

Dear Teacher,

I am a graduate student in Clinical Psychology and am conducting research for my master's thesis on the relationship between maternal adjustment, family stress, and adolescent social skills. Owen Middle School has given me permission to collect data on some of the students and their mothers. An integral part of this study is teacher ratings of children regarding their social competencies as demonstrated in the school setting. We can all agree that social skills vary depending on location and people involved, so obtaining a measure of children's social skills at school where they interact with both peers and adults who are not their parents is of particular interest.

Attached please find a questionnaire to be filled out by you regarding your evaluation of the social skills demonstrated at school by:

(name of child to be evaluated)

In addition to permission from your school, permission has been given by the above-named child's mother for you to provide this information. A copy of the signed consent form giving this permission is attached. Also attached is an envelope in which the questionnaire may be returned to the office. A box has been placed there into which these envelopes can be deposited after completion.

These questionnaires are to be filled out anonymously - please do not write your name or the child's name anywhere on the form, or complete any information on the first page. Further, it is not necessary to complete the column titled "How Important?". All information collected will be kept in strict confidence. Neither the parent nor the child will be made aware of your responses. All data will be reported in group form and there will be no way to identify you with any particular set of responses.

Your participation and response is greatly appreciated. Should you have any questions regarding the study, the questionnaire, or your role in the study, feel free to contact me at (704) 669-2193, or my thesis chairperson, Dr. H.G. Schneider, at (704) 262-2713. If you would like a report of the findings of this study, please drop a note in the box along with, but separate from, your return envelope indicating your interest. The data analysis should be completed by the Spring of 1997, and results available soon afterwards. Thank you for your time.

Sincerely,

Holly F. Childs

H.G. Schneider, Ph.D.

APPENDIX F

Teacher/Mother Reliability Check

Below is a brief list of items that can describe children and youth. For each item that describes your student, please circle the **2** if the item is **very true or often true**. Circle the **1** if the item is **somewhat or sometimes true**. If the item is **not true**, circle the **0**.

- 0 1 2 Argues a lot
- 0 1 2 Brags, boasts
- 0 1 2 Daydreams or gets lost in his/her thoughts
- 0 1 2 Feels he/she has to be perfect
- 0 1 2 Impulsive or acts without thinking
- 0 1 2 Would rather be alone than with others
- 0 1 2 Secretive, keeps things to self
- 0 1 2 Self-conscious or easily embarrassed
- 0 1 2 Stubborn, sullen, or irritable
- 0 1 2 Worries

VITA

Holly Forrester Childs was born in Kissimmee, Florida and graduated from Osceola High School in June 1972. She attended the University of North Carolina at Asheville where she received a Bachelor of Arts degree in Psychology. In the fall of 1995 she began study toward a Master of Arts degree in Clinical Psychology. This degree was awarded in December 1997.

Holly's address is 204 Pine Street, Black Mountain, North Carolina. She is married to Travis Childs and has two children, Jordan and Lauren.