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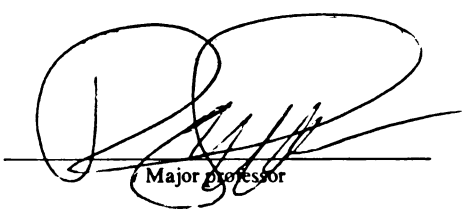

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Children's Aggressive Behavior in a Head Start Sample: Its Relation to Caregiver Psychological and Environmental Factors and Children's Attachment Representations

By

Ann Michele Stacks

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ABSTRACT

CHILDREN'S AGGRESSIVE BEHAVIOR IN A HEAD START SAMPLE: ITS RELATION TO CAREGIVER PSYCHOLOGICAL AND ENVIRONMENTAL FACTORS AND CHILDREN'S ATTACHMENT REPRESENTATIONS

By

Ann Michele Stacks

The purpose of this study was to investigate caregiver psychological and environmental factors that contribute to parenting attitudes, attachment representations in their children, and subsequent child behavior. Fifty-two caregiver-child dyads participated in the study. Caregiver environmental factors included the perceived availability of social support and satisfaction with social support, measured by the Social Support Questionnaire (SSQ, Sarason, Levine, Basham, & Sarason, 1983). Additionally, life stress was measured using the Schedule of Recent Events (SRE, Daly, 1984). Caregiver psychological well being was assessed using the Brief Symptom Inventory (BSI, Derogatis, 1992). The Six-Year Attachment Doll Play Attachment Classification System (George & Solomon, 1990, 1996, 2000) was used to assess children's attachment representations. Children's aggressive behavior was reported by teachers using the Teacher Rating Scales (TRS, REynolds & Kamphaus, 1992) and by caregivers using the Child Behavior Checklist (CBCL, Achenbach, 1991).

Children's sex did not account for differences in child behavior. The caregiver's cultural background did not account for differences in parenting attitudes. Due to the small number of children classified as secure (N=2), this

category was dropped from the analysis. Social support network size, satisfaction with social support, and life stress were not associated with children's attachment representations. Caregiver environmental factors were significant predictors of empathy and role reversal, but were not significant predictors of values related to corporal punishment, inappropriate expectations, or power-independence issues. Parenting attitudes and psychological well being were not associated with children's attachment representations. Children's aggression at home and at school did not vary as a function of attachment representations.

The small sample size and the lack of observational data regarding parent-child interaction were limitations of this study. Additionally, the small number of children (N=2) classified as secure made it impossible to understand which factors foster security and the contribution that a secure attachment makes to social adjustment. It also made the comparison between secure and insecure children impossible. Clearly more research needs to be done before any of the results can be considered conclusive.

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During my doctoral study, I have been fortunate to have the support of family members, friends, and colleagues. I am grateful to The Administration for Children and Families who funded this research through the Head Start Graduate Student Research Scholars Grant. As a part of receiving this grant, I had the opportunity to receive the support and mentoring provided by Michael Lopez and Carole Kuhns, which enhanced my education and gave me a wonderful opportunity to see a community of scholars. The experiences that were created by the granting agency were some of the most memorable and educational pieces of the process of completing my degree.

I would like to thank Dr. Robert Griffore, my major professor, for his help and availability throughout my doctoral work. Dr. Griffore provided an academic "secure base" from which I could explore. He has an amazing ability to know when to let me struggle through a problem, how much help to give, and when to intervene. He was able to see potential problems that are inherent in a study and acted as a sounding board for so many important decisions that were made this year.

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led me to make a very difficult and important decision to alter the course of my doctoral study. Without her help I do not think that I would have been prepared for the work that is still to come. Dr. Carolan also served as the advisor to the grant that I received from the Administration for Children and Families. She was always available to meet, problem solve, and listen to my thoughts.

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I would have to add another chapter to the dissertation in order to appropriately thank all of the friends who supported me through this work. Drs. Kate Rosenblum and Maria Muzik were essential in helping me formulate this research and gain the skills necessary to carryout the work. I am grateful to Mara Stein, Lara Campbell, and Nikki Brown for their friendship. They cooked me dinner when I was hungry, gave me ideas when I didn't have them, helped me find excitement when I was ready to give up, and were understanding when they gave much more than they received. Mara has read more than her fair share of grants and dissertation drafts without complaints.

Last, but certainly not least, I would like to thank my family for their support through all of my schooling. My parents and brothers have been available to help in any way that they could. They have put up with bad moods and exciting times. They have helped me to celebrate every step along this long and sometimes bumpy road.

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CHAPTER 1

Statement of the Problem

Violent adolescents have received increased attention in the past five years. As society struggles to understand the roots of this violence, research points to the importance of understanding factors that contribute to the onset and persistence of behavior problems in young children. There is increasing evidence that parenting behaviors (Egeland, Kalkoske, Gottesman, & Erickson, 1990; Campbell, 1995; Bates, Bayles, Benett, Ridge, & Brown, 1991; Campbell & Ewing, 1990; Aguilar, Sroufe, Egeland, & Carlson, 2000; George & Main, 1979; Herrenkohl & Russo, 2001), family stress (Egeland et al., 1990; Campbell, 1995; Aguilar et al., 2000), parental depression (Campbell & Ewing, 1990; Keenan & Shaw, 1994), and the quality of a child's home environment (Egeland et al., 1990), are predictive of future aggression. Research has also demonstrated that early behavior problems are stable over time (Olweus, 1979; Huessmann, Eron, Lefkowitz, & Walder, 1984; Mesman, Bongers, & Koot, 2001) and that early aggression is predictive of later and more severe forms of aggressive behavior (Loeber & Dishon, 1983; Loeber & Stouthamer-Loeber, 1987; Huesmann, et al., 1984; Magnusson, Stattin, & Duner, 1983; Magnusson, 1983). Clearly preventing aggressive behavior is important; to do this, it is imperative to understand the prevalence of early problems.

Behavior problems that are clinically significant are present in approximately 10-15% of preschool children. Behaviors that are problematic are also present in normally developing children, but they are often less severe and

present to a lesser degree (Campbell, 1995; Kuppersmidt, Bryant, & Willoughby, 2000). Most of the research on behavior problems in young children has focused on externalizing problems (Keenan & Shaw, 1997; Campbell, 1995; Mesman et al., 2001) in samples of boys (Campbell, 1995). Girls, however, are not immune to externalizing problems and it appears that in the early years, the sex differences in the prevalence of these behaviors is slight (Zahn-Waxler, Ianotti, Cummings, & Denham, 1990; Achenbach, Edelbrock, & Howell, 1987).

Furthermore, internalizing problems may cause significant distress to these youngsters and play an important role in later behavior problems (Shaw, Keenan, Vondra, Delliquadri, & Giovannelli, 1997). As a result, not only should more studies regarding behavioral problems be conducted with young children, but they should also investigate the factors in the child's natural environment that contribute to internalizing and externalizing problems. Additionally, these studies need to include girls.

The caregiving environment is central to children's development. Parent-child attachment is the result of caregiver responsiveness (Ainsworth, Blehar, Waters, & Wall, 1978; Isabella, 1993; Grossman, Grossman, Spangler, Suess, & Unzer, 1985; Egland & Farber, 1984) and has been linked to later attachment security, which has been shown to be stable from 12 months of age to 6 years, in normative samples (Main & Cassidy, 1988; Wartner, Grossman, Fremmer-Bombick, & Suess, 1994). A great deal of research has documented that maternal representations of childhood and sensitive responsive caregiving are linked to attachment security in infancy. However, other research has shown that

while maternal sensitivity is an important factor in the development of a secure attachment relationship, it is not the only factor (De Wolff & van IJzendoorn, 1997). Researchers have noted that to better understand attachment, studies must be conducted that investigate factors in the caregiver's environment that promote his/her ability to provide sensitive and responsive care (Vondra, Dowdell-Hommerding, & Shaw, 1999; Belsky, 1999).

Attachment theory is relevant to lifespan development however, attachment research has focused on the period of infancy, adult representations of attachment, and adult romantic attachment. Research has shown that not all problems in attachment are rooted in infancy (Cummings & Cicchetti, 1990). Insecurity may develop after infancy as a response to a change in the caregiving environment (Cicchetti, Cummings, Greenberg, & Marvin, 1990). Research on attachment in the preschool years has been limited due to a lack of readily available, reliable, and valid instruments to measure a preschool child's attachment representation (see Solomon & George, 1999 for an overview of these instruments). One measure that has been shown to be useful for children between the ages of 4 and 7 has recently been validated (George & Solomon, 1990, 1996, 2000). Research using this instrument with 6 year-old children has demonstrated that attachment disorganization is related to aggressive behavior at home and at school (Solomon, George, & De Jong, 1995).

The lack of attachment research with preschool children is problematic because it perpetuates the notion that attachment is only relevant to infancy, whereas John Bowlby's original conception of attachment was that it was a

lifespan concept. While it is true that the period from 6 to 12 months is important to the development of a secure attachment, attachment continues to play a role in children's lives. Furthermore, there is less stability in attachment in high-risk samples. Research on attachment in the preschool years could identify factors during this time that promote a secure attachment, thereby decreasing risk factors for children before they enter school.

One study (Call, 1999) addressed the relationship between adult romantic attachment and behavior problems in a Head Start sample. While she found that adult romantic attachment was related to behavior problems in Head Start children, her sample size was small and her measure of attachment was problematic. Attachment representations in children are the basis of affect regulation, relational competence, and prosocial behavior, which all impact children's ability to learn and relate to other. By understanding the proportion of different attachment representations of Head Start children, the classroom needs of these children can be addressed through possibly reduced class size, teacher training, and increased mental health services.

Given the high incidence of disorganized attachment in high-risk samples (van IJzendoorn, 1999) and the correlation between disorganized attachment and aggressive behavior (Solomon, et al., 1995; Lyons-Ruth, Alpern, & Repacholi, 1993; Lyons-Ruth & Jacobvitz, 1999; Hubbs-Tait, Osofsky, Hann, & Culp, 1994; Lyons-Ruth, Easterbrooks, & Cibelli, 1997), it is imperative that studies involving attachment and aggressive behavior are conducted with these samples. In addition, the stability of aggression over time and the negative

impact that this behavior has on the future of the children and the community, aggressive behavior must be prevented early. Research conducted with Head Start children in the area of attachment and children's behavior has not been conducted, with exception to the study cited earlier, which used a measure of adult romantic attachment that has not been correlated with attachment in children (Call, 1999). The overarching goal of Head Start is to promote social competence and school readiness in children. One way that Head Start accomplishes this is by strengthening families as the primary nurtures of their children. Utilizing a Head Start sample provides an excellent opportunity to assess attachment representations in high-risk preschool children.

This research will make a significant contribution to the existing literature on the development of aggression by studying how attachment in preschool is involved in the process of the development of aggression as a result of factors in the caregiver's environment. Furthermore, this study will contribute to knowledge regarding the correlation between caregiver ecological factors, parenting attitudes, and attachment representations in preschool children.

Purpose of the Study

The proposed study will investigate caregiver psychological and environmental factors that contribute to parenting attitudes, attachment representations in their children, and subsequent child behavior.

Research Questions

The following research questions were developed to accomplish the identified objectives and achieve the project purpose. This study will address the

following questions for a sample of children enrolled in full day, full year Head Start and children enrolled in center based, part day Head Start:

- Are factors in the caregiver's environment associated with children's attachment representations?
- Are factors in the caregiver's environment predictive of their attitude about nurturing parenting?
- Are caregiver's nurturing parenting attitudes associated with children's attachment representations?
- Is caregiver psychological well being associated with children's attachment representations?
- Do children's mean aggression scores at home and at school vary as a function of attachment representations?
- Is aggression at home correlated with aggression at school?

Methodology

In order to achieve the objectives of this study, a correlational design was used. Caregivers whose children attend Head Start in Ingham County, Michigan, were informed about the study through flyers that were sent home by the teachers. In addition the doctoral student was available to meet with parents and sign them up for the study during their child's regular school day. Thirty caregivers from full day, full year Head Start and 32 caregivers from center based, part day Head Start agreed to participate in the study. Caregivers who participated filled out self-report measures regarding their life stress, social support, psychological well being, parenting attitudes, and their

child's behavior. These measures were completed at their child's school, during regular school hours. Later that week, their child was interviewed using the Six-Year Attachment Doll Play Classification System (George & Solomon, 1990; 1996; 2000), which is a semi-structured attachment doll play interview. Teachers were sent self-report measures regarding the child's behavior in school. Once collected, the data were analyzed. Questions 1, 3, and 4 were analyzed using crosstabulation; question 2 was analyzed using regression analysis; question 5 was analyzed using ANOVA; and question 6 was analyzed using Pearson correlation. A complete description of the methodology that was used to carry out this research is provided in chapter 3.

Overview of Subsequent Chapters

Chapter 1 has described the need, purpose, relevant research questions for this study, and a brief overview of the methodology that will be used to carry out the study. Chapter 2 provides a review of the theories guiding the research and the relevant literature regarding attachment in infancy and preschool and child behavior that is correlated with different attachment classifications. In addition, the literature review discusses aggressive behavior and the link between parenting, aggressive behavior, and attachment in children. Chapter 3 delineates the specific methodology that was used to achieve the objectives identified in this chapter. Chapter 4 describes the frequencies for relevant variables and the major findings for each research question. A discussion of the findings, limitations of the research, and implications for research and practice is presented in chapter 5.

CHAPTER 2

Literature Review

Introduction

The previous chapter presented a brief review of the literature, which focused on the importance of preventing behavior problems in young children. It was suggested that to prevent these problems before children enter school, it is important to understand the relationship between behavioral problems and environmental influences is important. Chapter 1 also pointed to gaps in the existing literature, specifically in the areas of attachment in the preschool years and maternal ecological factors that contribute to parenting and attachment. The previous chapter also indicated that the research on internalizing behavior problems as well as behavior problems in female children is lacking. This chapter will present the theories that guide the present research before discussing literature relevant to the study.

Theories Guiding the Research

Attachment theory

Attachment theory posits that the behavior of the infant is organized around the biological desire to maintain proximity to a parent as a function of protection (Kobak, 1999; Cassidy, 1999; Bowlby, 1988). Parental responsiveness in early infancy is related to individual differences in later attachment security. Through repeated interactions with a parent or parent figure, children learn to anticipate how their caregiver will respond. They adapt their attachment behaviors to ensure that they will receive protection from their caregiver (Kobak,

1999). Attachment tends to be enduring and accompanied by intense emotions (Darling, 1993) which are dependent on the relationship between the individual and the attachment figure (Bowlby, 1988). As the child grows older, he or she will carry forward the mental representations of his or her caregiver and impose it upon new relationships. Attachment theory was first formulated by John Bowlby and later validated and refined by Mary Ainsworth (Davies, 1999).

Bowlby's Theory of Attachment

John Bowlby began to conceptualize his theory of attachment in the early 1940's, shortly after his graduation from Cambridge University. During this time, Bowlby worked as a psychoanalyst in a home for maladjusted boys. His observations of the boys' family relationships led to his belief that a child's early relationship with his or her mother is important for early development and has an impact on later functioning (Cassidy, 1999).

Bowlby worked closely with colleagues from other disciplines including evolutionary biology, ethology, developmental psychology, cognitive science, and control systems theory to further develop his ideas (Bowlby, 1988). Two researchers who influenced Bowlby's thinking were Lorenz (1935) and Harlow (1958). Lorenz found that goslings became attached to parents who did not feed them. Harlow observed that infant monkeys exposed to stress preferred a cloth "mother" monkey over a wire monkey that provided food (Bowlby, 1988). His belief that attachment behaviors were biologically based and functioned to protect the child from danger (Kobak, 1999; Cassidy, 1999) came out of his collaborative effort.

Bowlby's background in systems theory is apparent in his early writing about the attachment theory. He used the concept of homeostasis to explain how attachment functions to promote proximity and thus safety for the child. Children, he believed, desired proximity to their mothers. When the distance separating parent and child becomes too great, the attachment system in the child becomes activated (Cassidy, 1999). Children signal their caregivers in a variety of ways when their attachment system is activated, including crying, reaching, and crawling toward him or her. When a caregiver responds and the child and caregiver are in sufficient proximity, the child's attachment system is terminated. It is important to note that the child's goal is not simply his caregiver, but instead the maintenance of an appropriate distance at which the child feels secure (Bowlby, 1982). Bowlby also recognized that the child's environment played a role in his theory of attachment. While he considered that factors within the child contributed to the feeling of stress and danger (injury, illness, or pain), he also saw that factors within the environment can cause stress and danger, and thus activate the attachment system (Casady, 1999).

Bowlby believed that attachment was a lifespan phenomenon (Cassidy, 1999; Greenberg, Cicchetti, & Cummings, 1990), but that the attachment system itself became less sensitive to change over time (Solomon & George, 1999). This is evident in his definition of attachment behavior, which he describes as:

> "Any form of behaviour that results in a person attaining or maintaining proximity to some other clearly identified individual who is conceived as better able to cope with the world...Whilst attachment behaviour is at its most obvious in early childhood, it can be observed throughout the life cycle, especially in emergencies... The biological function attributed to it is that of protection." (Bowlby, 1988, p. 27).

Mary Ainsworth's Contribution to Attachment Theory.

Mary Ainsworth, a student of John Bowlby, contributed significantly to attachment theory. She conducted experimental observations of mother-infant separations in a laboratory setting. As a way to measure the dyad's behavior, Ainsworth created a technique called the strange situation. Prior to conducting the strange situation, each mother-infant pair was observed for seventy-two hours in their home, over the course of one year. As a result the research team was able to make associations between the babies attachment styles and the mothers styles of parenting (Karen, 1990).

Infants classified as secure, in the strange situation (group B), greeted their mothers with pleasure after separation and were easily soothed. Securely attached infants are thought to be confident in their parent's ability to be available in a sensitive and responsive manner (Ainsworth, et al., 1978). As a result, these infants are confident about their own interactions with others (Weinfield, Sroufe, Egeland , & Carleson, 1999; George & Solomon, 2000). Infants classified as insecure have had the experience that their caregivers are inconsistently available when the environment is threatening. There are two types of insecure attachments, insecure-avoidant and insecure-ambivalent. Insecure-avoidant infants (group A) ignored their mothers upon reunion. Insecure-ambivalent infants (group C) tended to seek contact with their mother when she returned to the room, but at the same time would arch away from her and resist her attempts to soothe him or her.

As researchers began to use the strange situation to classify children from high-risk samples, they found that some of the children were not classifiable. Mary Main, a student of Mary Ainsworth, and Judith Solomon studied the children who had previously been unclassifiable and found a fourth categorization, which they called disorganized/disoriented (group D) (Main & Solomon, 1990). Infants classified as disorganized/disoriented (referred to as disorganized) have had the experience that their caregivers are also the source of fear (Weinfeld et al., 1999; George & Solomon, 2000). These infants approached their mothers in a disorganized way such as crawling backward toward her or freezing while approaching her. Many of the infants that fell into this categorization had been abused (Main & Solomon, 1990) or had an attachment figure who had experienced trauma or a loss that was unresolved (Main & Hesse, 1990).

Stability of Attachment

Attachment influences a child's later adaptation through beliefs about self and the relationship (Weinfield et al., 1999). Research has shown that attachment representations are stable over time in normative samples. Without intervention, approximately 80% of children assessed at 12 months and again at age 6 maintained the same attachment classification (Main & Cassidy, 1988; Wartner, et al., 1994). In a sample of maltreated infants, Barnett, Ganiban, & Cicchetti, (1999) found that 67% of infants classified as disorganized at 12 months were also classified as disorganized at 18 months. Of those classified as disorganized at 18 months, 81% maintained that classification at 24 months. Seventy-five percent of infants classified as secure at 12 months maintained a

secure attachment at 18 months, 69% were securely attached at 24 months. It is thought that any instability is reflective of the ecological risk factors that can cause changes in the caregiving environment (Vondra et al., 1999; Easterbrooks, & Goldberg, 1990; Solomon & George, 1999). These factors include parental psychopathology (DeMulder & Radke-Yarrow, 1991), child maltreatment (Carlson et al., 1989), and family stress (Egeland & Sroufe, 1981; Shaw & Vondra, 1993). Research investigating the relationship between factors in the mothers environment and her ability to provide sensitive and responsive care, which promotes a secure attachment, has not been adequately explored by attachment researchers.

Human Ecological Theory

Most of the current research on the development of attachment is not broad enough because it has focused solely on the caregiving environment in which the infant is raised. To gain a better understanding of how attachment is formed, remains stable, or changes over time, it is important to look at the factors within the caregiving environment that facilitate or inhibit a caregiver's ability to provide nurturing care. Human ecological theory provides a framework for the understanding of how factors in the caregiving environment impact a caregiver's relationship with his or her child and thus parent-child attachment in the dyad.

Ecology is the study of the relationship between living organisms and their natural, human constructed, and social environments (Bubolz & Sontag, 1993; Griffore & Phenice, 2001). Human ecologists believe that complexity within a system cannot be understood by analyzing lower levels of organization (Bubolz &

Sontag, 1993). An ecological perspective when applied to research allows the researcher to examine multi-level interactions within and between systems. There are several perspectives within the framework of human ecological theory including general systems theory, of which attachment theory is partly based, and psychological ecology (Griffore & Phenice, 2001).

This research will use Bronfenbrenner's psychological approach to human ecology, which provides a framework for understanding maternal factors associated with parenting, attachment representations, and child behavior at home and school. Bronfenbrenner's model states that development is always embedded and expressed through behavior in one's environment (Bronfenbrenner, 1979). Bronfenbrenner conceptualizes the environment in four levels that make up a model of "nested interdependent, dynamic structures" (Muss, 1996, p. 322) that he called the microsystem, the mesosystem, the exosystem, and the macrosystem.

The microsystem is the "pattern of activities, roles, and interpersonal relations experienced by the developing person...with a particular physical, social, and symbolic features that invite, permit, or inhibit, engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment" (Bronfenbrenner, 1993, p. 15). The mesosystem is comprised of the relationships that exist between two or more settings. "The exosystem comprises the linkages and processes taking place between two or more settings, at least one of which does not contain the developing person, but in which events occur that indirectly influence processes within the immediate

setting in which the developing person lives" (Bronfenbrenner, 1993, p. 645). Bronfenbrenner's macrosystem is made up of belief systems, resources, and patterns of social interchange that are imbedded within the culture of systems (Bronfenbrenner, 1993).

Conceptual Model

Research grounded in attachment theory has mostly focused on parenting behavior, the parent-child dyad, and child outcome. To further the study of attachment, it is important to understand the context in which the family develops and its direct and indirect impact on the parent-child dyad, attachment, and child behavior. Human ecological theory provides a framework for this. To better understand the development of problematic behavior, one must consider how factors within the caregiver, such as psychological adjustment, are influenced and influence, the caregiving environment. Factors influencing and influenced by caregiver psychological well being include stressful life events, size of one's social support network, and one's satisfaction with this network. These components of the caregiver's environment may influence his or her attitudes about parenting, such as empathy and physical discipline. It is expected that a caregiver's attitudes about nurturing parenting are reflective of his or her behaviors when parenting. As a result, attachment and child behavior may be indirectly affected by family stress, social support, and caregiver psychological adjustment through parenting attitudes. These factors also may be additive

Contributions of the Caregiving Environment to Attachment Representations and Child Behavior

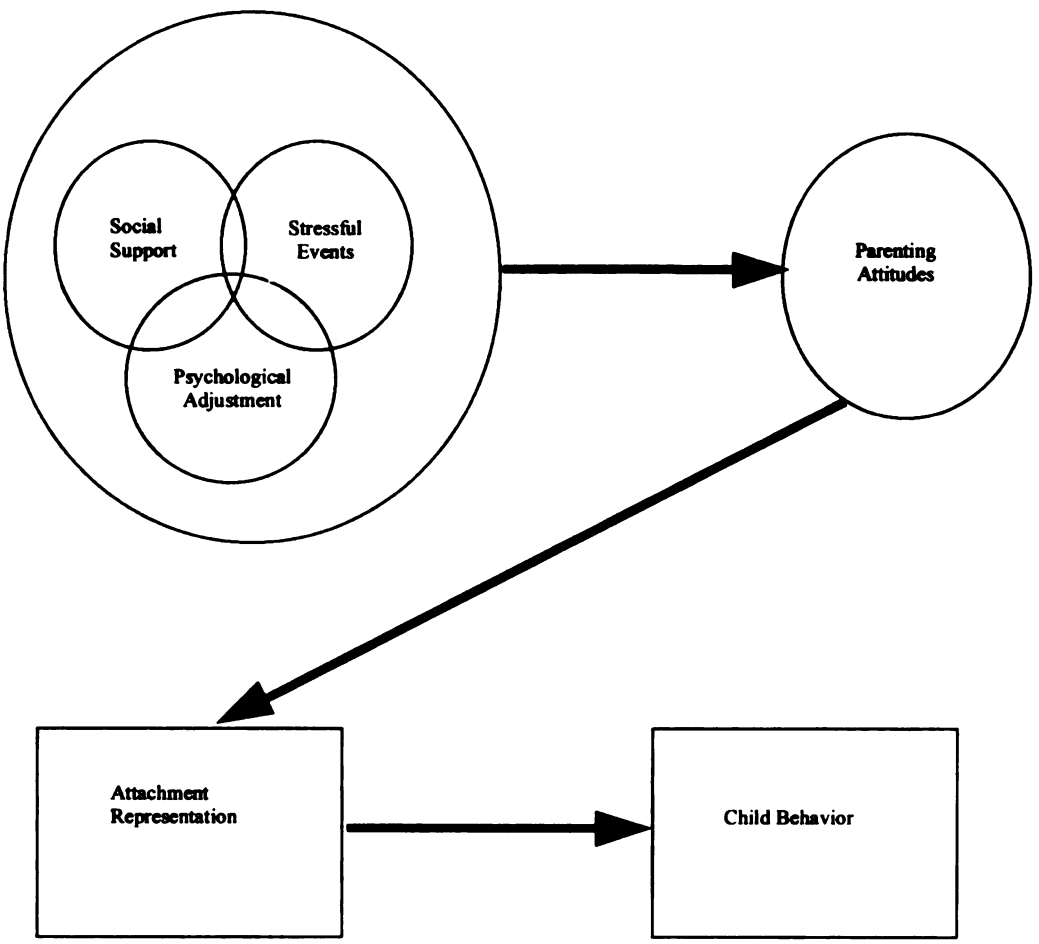

Figure 1

when predicting the variance in child behavior, which is effected through its relationship with attachment (See figure 1).

Behavior Problems

There has been a great deal of research in developmental psychology focused on predicting antisocial behavior (Loeber & Dishon, 1983; Loeber & Stouthamer-Loeber, 1986; Patterson, Capaldi, & Bank, 1992) and attempting to understand the stability of antisocial behavior (Huessman, Eron, Lefkowitz, & Walder, 1984), externalizing problems (Keenan & Shaw, 1994; Campbell, 1994, 1995), and internalizing problems (Shaw, Keenan, Vondra, Delliquadri, & Giovannelli, 1997). Much of the research that has been conducted has focused on attempting to understand the pathways to behavioral difficulties; that is how early behaviors lead to later behavior problems (Egeland, Kalkoske, Gottesman, & Erickson, 1990). In the past ten years, an increasing amount of research has pointed to the clinical significance of behavior problems in children under the age of six and the negative implications that early behavior problems have for school adjustment (Campbell, 1995).

Many behavior problems receive close attention in the preschool and early school years possibly because this is the first time that a child is expected to relate to peers, behave in socially appropriate ways, and conform to new adults and their rules (Egeland et al., 1990). Studying behavior problems in preschool can be a challenge (Egeland et al., 1990) because behaviors that are considered problematic and clinically elevated in preschool are also seen to some extent in normal populations of preschool children (Campbell, 1995). Another reason that

studying behavior problems during the preschool years can be difficult is due to the rapid developmental change that accompany this developmental stage (Campbell, Breaux, Ewing, & Szumowski, 1984). Campbell (1995), suggested that determining when a developmentally appropriate behavior becomes a behavior problem is important. This author suggests that children whose behavior has become problematic will present with a constellation of symptoms and will have symptoms that remain stable and last longer than what is considered normal adjustment to change. They will also have symptoms that are more severe, that are present in a variety of settings, and they will exhibit behavior that interferes with their ability to deal with normal developmental challenges.

Prevalence of Behavior Problems in Preschool Children

Behavior problems in preschool children are often present in normally developing children, but they are often less severe and present to a lesser degree, than in samples of children with behavior problems. Across studies, it appears that approximately 10 to 15% of preschool children have mild to moderate behavior problems as defined by cut-off scores on measures of children's behavior (Campbell, 1995).

Researchers have suggested that children in preschool programs designed for high-risk children, such as Head Start, might be expected to exhibit more aggressive behaviors due to their level of poverty (Kupersmidt, Bryant, & Willoughby, 2000). However, these authors found that the prevalence of aggressive behaviors in the Head Start classroom was not significantly different from a sample of children from a community child care program. Approximately

10% of Head Start children in their sample showed daily or higher rates of aggressive behavior. The authors of this study used frequency of behavior, rather than a clinical cut-off from a behavior checklist, which could account for their finding. While this study reported that the prevalence of aggression was the same in both classrooms, they found that the overall levels of aggression were higher in the Head Start classrooms compared to the community classrooms.

Sex Differences in Behavior Problems

Studies have shown that a relatively small number of preschool children are exhibiting significant behavior problems. Boys tend to have more difficulty than girls regulating their externalizing behavior. (Mesman, Bongers, & Koot, 2001; Zahn-Waxler, Ianotti, Cummings, & Denham, 1990; Achenbach, Edelbrock, & Howell, 1987; Prior, Smart, Sanson, & Obkerlaid, 1993). Prior to the preschool period, it appears that there are no sex differences in the frequency of behavior problems. For example, Kennan and Shaw (1994) found that there were no sex differences in the frequency or stability of interpersonal or object related aggression between 18 and 24 months of age. Mesman and her colleagues (2001) also found that between the ages of 2 and 3, internalizing and externalizing problems were as prevalent for girls as they were for boys.

Studies of problem behaviors in children have consistently found that between the ages of 4 and 5, sex differences in the prevalence and stability of behavioral problems emerge (Zahn-Waxler et al., 1990; Achenbach et al., 1987). It appears that beginning at age 4 boys have significantly more externalizing problems that girls, but that there still is no difference in rates of internalizing problems; this trend continues throughout school age (Mesman et al., 2001).

For example, at school age, boys are ten times more likely than girls to exhibit externalizing disorders (Keenan & Shaw, 1997). One study, however found that preschool girls show significantly higher levels of teacher rated relational aggression than boys (Crick, Casas, & Mosher, 1997).

Accounting for Sex Difference in Behavioral Problems

There are a variety of empirically based explanations for the increase in the level of aggressive behavior in boys. For example, Cummings, Iannotti, & Zahn-Waxler (1989) found that after age 4, girls levels of behavior problems decline; this finding was supported by Prior et al., (1993). Other studies have found that boys tend to show little or no change in behavior problems (Prior et al, 1993), or an increase in behavior problems (Rose, Rose, & Feldman, 1989). This trend has also been shown for children in Head Start (Kupersmidt et al., 2000). It is not until adolescence when the prevalence of internalizing symptoms of girls exceeds that of boys (Keenan & Shaw, 1997).

It has been suggested (Keenan & Shaw, 1997) and supported by Mesman et al. (1997), that the path to psychopathology is more discontinuous for girls than for boys. Research shows that girls who develop externalizing disorders are more likely to be slower than average in developing language and social skills (Keenan & Shaw, 1997). These same authors suggest that girls may show lower levels of externalizing behaviors because they may "grow out" of problem behavior. At preschool age, girls' social development is more advanced than that of boys. Through this advanced development, it is thought, that girls learn to regulate their behavior and emotions. Also, girls' language skills and empathetic

responses in preschool are typically more advanced than boys' language skills and ability to respond empathetically. It is possible that these abilities have a positive impact on the parent-child relationship, which then impacts externalizing behavior problems that girls may be exhibiting (Keenan & Shaw, 1997).

The Development of Internalizing Problems in Girls

Keenan and Shaw (1997) also suggest several reasons why girls may be more likely than boys to develop internalizing behavior problems. First, it is possible that girls may have a biological predisposition to internalizing problems. Second, girls exposed to caregiving environments characterized by abuse and/or neglect may develop internalizing problems. Second, girls are socialized differently than boys. The authors report that protective factors, such as advanced verbal skills and empathy, for some girls may actually be risk factors for others. Keenan and Shaw (1997) explain that girls advanced development in verbal ability and empathy allow them to take another person's perspective, which in turn influences their interpersonal relationships. Girls who develop in a context where they are exposed to a caregivers chronic distress may develop feelings of responsibility and guilt, which lead to later internalizing disorders.

Internalizing Behavior Problems

The above section began to offer some possible explanations why, beginning in preschool, girls and boys may begin to develop different rates of externalizing problems and why in adolescence girls begin to show higher rates of internalizing problems. However, most research that has been conducted with preschool children has focused on externalizing problems. Despite this, there

are children who have internalizing symptoms such as fearfulness, sadness, withdrawal, and somatic complaints in preschool (Campbell, 1995).

The lack of research focusing on internalizing problems in preschoolers could be related to theoretical issues, methodological issues, and to the discontinuity of behavior problems (Shaw et al., 1997). Shaw and his colleagues (1997) report that it is unclear how to measure internalizing behaviors in children under 6, because internalizing problems focus on internal states. Another problem that contributes to the lack of research on internalizing disorders is the lack of continuity in children's expression of internalizing behavior. Also, a theoretical framework to guide the understanding of how different moods are related to different developmental periods is lacking.

Factors Related to the Development of Internalizing Behaviors

Research has found several factors that are related to the development of internalizing behaviors at 24 and 42 months of age. Two child characteristics were found to be related to internalizing problems, those were maternal report of a difficult temperament at 12 and 24 months and the presence of a disorganized attachment (Shaw et al., 1997). Several caregiver factors appear to be related to the development of internalizing problems, for example maternal reported symptoms of depression, maternal aggressive personality, and maternal satisfaction with social support (Shaw et al., 1998). Family factors such as a high level of stressful life events (Shaw et al., 1997), family conflict (Shaw et al., 1997), and parental disagreements about child rearing (Shaw et al., 1998) were also found to be related to the development of internalizing behavior problems.

Preschool children who exhibit internalizing symptoms of withdrawal and depression are more likely to exhibit significantly higher levels of internalizing behavior at school entry than children who did not have symptoms of withdrawal and depression (Mesman et al., 2001). Clearly, more research needs to be conducted with samples of preschool boys and girls if we are to be able to say with any certainty which child, parent, family, and environmental factors are related to the onset, persistence, and outcome of internalizing behavior problems.

The Relationship Between Internalizing and Externalizing Problems

Studies that have examined internalizing problems have mixed findings (Mesman et al., 2001). Some studies have found that early internalizing problems predict later externalizing problems (Egeland, Pianta, & Ogawa, 1996), while others found no relationship between early internalizing behaviors and later externalizing behaviors (Rose et al., 1989). Still other studies have found that internalizing problems may act as protective factors in the development of externalizing problems (Kerr, Tremblay, Pagoni, & Vitaro, 1997).

Externalizing Behavior Problems

The amount of research on externalizing behaviors far outweighs the amount of research on internalizing behaviors (Mesman et al., 2001). Externalizing behaviors include aggression, opposition, hyperactivity, and delinquency. Children exhibiting these behaviors tend to be much more disruptive to a parent or a teacher and are much more likely to cause harm to another person than children exhibiting signs of an internalizing disorder. This

could explain why so much of the research has focused on externalizing behavior, particularly aggression.

Prospective and retrospective research has documented the stability of externalizing behavior problems from preschool to adolescence (Campbell, 1995; Mesman et al., 2001). It appears that disruptive and aggressive behaviors are already in place and relatively stable by school age (Keenan & Shaw, 1994) and that over time aggressive behavior is approximately as stable as intelligence for males (Olweus, 1979). Researchers from several disciplines have been interested in the age of onset, as well as predictors and consequences of externalizing behavior.

Externalizing Behavior in Early Childhood

Research that has focused on the stability of behavior problems in early childhood supports the notion that behavior problems can emerge prior to 24 months of age (Keenan & Shaw, 1994). Keenan and Shaw (1994) studied children 18 to 24 months of age and found that object related aggression is much more prevalent than interpersonal aggression in the toddler period. Their research also provided evidence that externalizing behavior may have roots in toddler behavior. Some researchers began their investigations prior to toddlerhood and found that mothers who described their infants as more difficult had preschoolers with behavior problems (Campbell, 1995). Other studies, however have not found a relationship between early temperament and later behavior problems (Aguilar, Sroufe, Egeland, & Carlson, 2000). One reason for these different findings could be that the level of infant difficulty interacts with the

quality of parenting, developmental problems, and sex of the child to determine a positive or negative outcome (Campbell, 1995).

In a longitudinal study, Egeland and his colleagues (1990) found evidence supporting Keenan and Shaw's earlier findings. Egeland and his colleagues (1990) set out to determine the persistence of behavior problems and competence from preschool to first, second, and third grades. They were also interested in understanding which factors accounted for exceptions to predicted outcomes. These researchers found that of the children who were identified as having behavior problems in preschool, 47% had clinically significant (T score > 60) behavior problems in second grade. Additionally, 80% exhibited problem behavior in at least two of the first three years in school.

The findings by Egeland et al. (1990) supported research previously done by others. For example, Campbell and her colleagues (1984) found that 50% of preschool children exhibiting behavior problems also have behavior problems at age six. In another study, Campbell and Ewing (1990) found that 67% of three year-olds identified as hyperactive and aggressive also had severe behavior problems at age nine. Together, these findings support the ideas that behavior problems may begin early (Keenan & Shaw, 1994) and that behavior is stable from at least preschool to the early school period.

Outcomes for Children with Externalizing Behavior Problems

Studies Conducted with Preschool Children. Children who are exhibiting externalizing problems are at risk for a number of later social and academic problems. For example, Head Start children rated as non-compliant and

overactive by teachers engaged in more negative interactions with peers and were described negatively by peers (Campbell, 1995). Additionally, boys who exhibited externalizing problems in preschool and first grade were rated as less socially competent by mothers, fathers, and teachers, than a comparison group of boys (Campbell, 1994). Physical aggression and opposition, but not hyperactivity in kindergarten placed boys at high risk for juvenile delinquency (Nagin & Tremblay, 1999).

Studies Conducted with School Age Children. At school age children with externalizing problems continue to show poor adjustment. Tremblay, Pihl, Vitaro, & Dobkin (1994) found evidence that school age boys who showed the highest risk for later delinquency have been shown to be highly impulsive and show low levels of anxiety. In support of this, 10 to 12-year-old boys who were rated as non-inhibited and disruptive by peers were more likely than chance to rate themselves as delinquent at 13 to 15 years. By comparison, boys rated as inhibited and disruptive were not as likely to become delinquent (Kerr et al. 1997).

Externalizing Behavior and School Adjustment. Research has documented the relationship between externalizing behaviors at school age and academic difficulties (Patterson, Capaldi, & Bank, 1991). For example, Huesmann, Eron, & Yarmel (1987) found that peer-rated aggression at age 8 is a significant predictor of low attainment in reading, spelling, and arithmetic at age 30. In another study, 7 and 10-year-old boys whose peers perceived them as aggressive, were more likely than other boys to become aggressive adolescents

who also exhibited poor school performance. The girls in this study who were rated as aggressive also showed poor school performance and were more likely to receive psychiatric services as adolescents (Serbin, Moskowithz, Schwartzman, & Ledinghan, 1991). Antisocial children have been shown to be on task in the classroom about 20% less than normally developing children (Walker, Shinn, O'Neill, & Ramsey, 1987). Tremblay (1988) found that 38% of high-risk children rated as aggressive by kindergarten teachers were failing in school three years later.

Children who change Paths

Studies have consistently shown that behavior problems remain stable over time. We can learn a great deal however, from aggressive children whose behavior did not follow the expected outcome. There is evidence that children who showed significant behavior problems in preschool, but did not show significant problems in elementary school have psychosocial factors in common. Children whose early behavior was problematic, but who changed paths by school entry had significantly fewer stressful events and came from homes that were organized, predictable, and more stimulating and responsive to the child's needs. These children also had mother's who became less depressed over time (Egeland et al., 1990).

Factors related to the Onset and Persistence of Externalizing Problems

The above research demonstrates that children who show early externalizing behavior problems are at risk for a variety of continued social and academic problems. This research underscores the need to prevent this type of behavior before children begin school. Preventing behavior problems requires

that one understands factors related to the onset an persistence of such problems. Research has shown that child factors, caregiver factors, and environmental factors, in which the child is raised contribute to the development and continuation of behavior problems. Overall, researchers agree that psychosocial factors, early, chronic behavior problems, and cumulative risk (Aguilar et al., 2000) play an important role in the development and maintenance of behavior problems in children.

The research points to a number of factors that are related to the onset and persistence of externalizing behaviors. In keeping with Bronfenbrenner's Theory of Human Ecology (Bronfenbrenner, 1979), which provides a framework for the research that is to be presented in chapters four and five, factors associated with externalizing behaviors will be presented in sections according to the levels used by Bronfenbrenner (1979). None of the literature to date has examined mesosystemic factors that contribute to the development or persistence of externalizing behaviors. Research of this type is desperately needed if we are to better understand how to prevent behavior problems in children.

Microsystemic Factors

Research has consistently examined and found support for a number of factors in the child's environment that contribute to the development of externalizing behavior problems. These factors include initial problem severity, quality of the home environment, temperament, parenting behavior, and maternal psychopathology.

Problem Severity, Temperament, and Home Environment. The severity of the behavioral problem at an early age has been shown to contribute to the maintenance and later severity of behavior problems in elementary school children. (Campbell & Ewing, 1990; Campbell, 1995; Campbell, March, Pierce, Ewing, & Szumowski, 1991). Some studies have supported the idea that early reports of infant difficulty predict later problem behavior (Campbell & Ewing, 1990). Others however, believe that the level of infant difficulty interacts with the quality of parenting, developmental problems and sex of the child to determine whether or not a child will exhibit behavior problems (Campbell, 1995).

In a prospective study Aguilar and his colleagues (2000) found that temperament did not distinguish between groups of children who had persistent behavior problems beginning in preschool, whose problems began in adolescence, or children who never exhibited clinical levels of behavior problems (Aguilar et al., 2000). One factor that may account for the difference in the findings is that Campbell and Ewing (1990) used mother's retrospective accounts of their infant's temperament, while Aguilar and colleagues (2000) began measuring temperament at birth and used multiple measures and informants until 12 months of age.

The home environment has also been related to the development of externalizing behavior problems (Egeland et al., 1990). In general, preschoolers who had clinically significant behavior problems that persisted into adolescence tended to live in disorganized homes that were not responsive to the children's needs. Adolescents who exhibited behavior problems as preschoolers, but were

found to be competent as adolescents came from homes that were more developmentally stimulating. Furthermore, their homes were predictable and organized (Egeland et al., 1990).

Parenting Behavior. Campbell (1995) found that researchers representing a variety of theoretical perspectives agreed that parenting plays a role in the development of disruptive behavior (Bates, et al.,1991; Farrington, 1978; Patterson, et al., 1991). The level of parental warmth, degree of responsiveness, and effective and consistent limit setting impact the parent-child relationship, thereby impacting child behavior. Campbell (1994), Campbell et al., (1991), and Campbell and Ewing (1990) compared three groups of boys, those who exhibited significant problems in preschool and first grade, those who had significant problems in preschool, but were competent in first grade, and children who were competent in preschool and first grade. These researchers found that boys who continued to have problems had mothers who used more negative control to gain compliance from their children.

Another study (Aguilar et al., 2000) compared four groups of children: those whose negative behavior began in preschool and continued through adolescence, those whose behavior was negative in preschool but appropriate in adolescence, those whose negative behavior began in adolescence, and those who never exhibited clinical levels of negative behavior. Their findings suggest that children whose behavior problems started early and persisted through adolescence were the most likely to have parents who were unavailable, physically abusive, and neglectful in the first three years of life.

Several studies have found a relationship between abusive and neglectful parenting and childhood aggression (Alesandri, 1991; George & Main, 1979; Herrenkohl & Herrenkohl; 1981; Herrenkohl & Russo, 2001). Patterson et al. (1991) believe that family interaction patterns provide reinforcement for aggression and that aggression is generalized from home to other settings. These researchers have found that there are two paths to delinquent behavior: The early-starter model and the late-starter model. Boys on the early start path begin their antisocial training at home. Patterson et al. (1991) believe that:

> "...certain specifiable reactions from the parent will produce a toddler who displays stable patterns of coercive behavior and noncompliance. Similar contingencies maintain the performance of these behaviors in older children as well...It is assumed that coercive exchanges are the key ingredient in setting the early starter process in motion. Once it begins, it seems to move through a sequence of three stages: (a) The child shows clearly identifiable antisocial behavior;...(b) the Child is rejected by the normal peer group; and (c) the child fails in school" (pp. 145-146)

Researchers using attachment theory as a framework to guide their study have consistently found that behavior problems in preschool and the early school years are related to infant attachment classification. While many of the above studies report that parent-child interaction, maternal warmth and involvement, and parenting style are important factors related to the onset and persistence of behavior problems, attachment is consistently not being measured by researchers interested in children's behavior. Due to the important role that the early parent-child attachment may play in the development and continuation of behavior problems it will be discussed in later sections of this review.

Maternal Psychopathology. Research has consistently found that high levels of maternal depression are related to the onset and persistence of behavior problems in children (Campbell & Ewing, 1990; Egeland et al., 1990; Campbell et al., 1991; Campbell, 1994, 1995; Keenan & Shaw, 1994). Research that has compared preschool children whose problems persisted over a three year period, whose problems decreased over a three year period, and whose behavior was never problematic at a clinically significant level found that maternal depression was related to the onset and persistence of behavior problems. Children who had behavior problems in preschool, but were found to be competent in first grade had mothers whose reported depression levels decreased over time. Children whose behavior remained problematic had mothers whose reported level of depression increased over time (Egeland et al., 1990).

The relationship between maternal depression and child behavior problems is somewhat unclear. The decreased levels of maternal tolerance for developmentally appropriate, but difficult behavior may explain the relationship between depression and behavior problems(Campbell et al., 1991). For example depressed mothers caring for young children tend to be emotionally unavailable, provide inconsistent discipline, are likely to be hostile toward their child, and communicate less with their child (Egeland et al., 1990). Other explanations for the relationship between maternal depression and child behavior problems include the idea that behavior problems in children contribute to feelings of

depression in caregivers and that children's problems co-occur with family problems (Campbell et al., 1991).

Overall, research has consistently shown that microsystemic factors play a role in the development of children's behavior problems. These factors include child characteristics, such as the age of onset and severity of the problem and temperament, as well as parenting factors, including warmth, limit setting, physical punishment, and attachment. Home environment and maternal psychopathology also have been shown to impact child behavior.

Exosystemic Factors

Research has not focused specifically on how factors in a caregiver's environment may impact child behavior. Factors such as low levels of marital satisfaction (Campbell, 1994) and low levels of satisfaction with one's support network (Campbell, 1995) have been related to externalizing problems in preschool boys. Campbell's(1994) comparison of boys who had behavior problems in preschool and first grade, those whose problems decreased over time, and those whose behavior was not seen as problematic at either time period points to a relationship between marital satisfaction and behavior problems. She found that parents who reported a decrease in marital satisfaction, along with other factors presented earlier, had children whose behavior problems persisted over time. Renken, Egeland, Marvinney, Mangelsdorf, and Sroufe (1989) found that children whose mothers reported less social support and more stress received higher teacher ratings of aggressive behavior.

Macrosystemic Factors

Belief systems and patterns of social interchange that are imbedded within the culture of the family system correlate with child behavior problems. Macrosystemic factors, which may contribute to the development and maintenance of problem behavior, include poverty and a family history of stressful life events. It is likely that families living in poverty are also more likely than families who are not living in poverty to experience a greater number of stressful life events.

Stressful life events appear to be associated with the onset and persistence of behavior problems in children (Campbell & Ewing, 1990; Egeland et al., 1990; Campbell et al, 1991; Campbell, 1995; Aguilar et al., 2000). Children who have severe behavior problems in preschool and continue to have problems into school age (Campbell & Ewing, 1990; Egeland et al., 1990) and adolescence (Aguilar et al., 2000) live in families whose levels of stress stayed consistent or increased over time. Children who began preschool with negative behaviors, but were found to be competent in elementary school had families whose reported levels of stress had decreased (Egeland et al, 1990). Lower levels of family stress also distinguished between groups of children who never exhibited significant levels of behavior problems, and those whose behavior problems began in preschool (Aguilar et al., 2000). Some models of child and family adversity suggest that stressful life events, such as maternal depression, marital discord, single parenting, multiple changes in location, money, or employment, or other stresses indirectly affect children through their impact on

parenting (Belsky, 1984; Patterson, DeBaryshe, & Ramsey, 1989; Webster-Stratton, 1990), specifically on the use of physical discipline (Herrenkohl & Russo, 2001).

Clearly a number of factors at a variety of levels make additive and unique contributions to variance in child behavior. One factor that consistently receives attention is the impact that parents have on their children's behavior. Research has also suggested that factors outside of the parent child relationship exert their influence directly and/or through the parent-child relationship. One important factor that is related to children's behavior and the quality of caregiving is parent-child attachment.

Attachment

Many studies have linked attachment and behavior problems, including aggressive behavior (Sroufe, 1983; Sroufe et al., 1984; Renken et al., 1989; Troy & Sroufe, 1987; Hubbs-Tait, Osofsky, Hann, & Culp, 1994; Solomon, George, & De Jong, 1995; DeMulder, Denham, Schmidt, & Mitchell, 2000; Lyons-Ruth & Jacobvitz, 1999). Understanding this link is important if behavior problems are to be prevented. Preventing behavior problems is important because early behavioral problems remain stable and predict later delinquency and crime (Loeber & Dishon, 1983; Loeber & Stouthamer-Loeber, 1987; Huesmann, et al., 1984; Magnusson, et al., 1983; Magnusson, 1988). The research above is an indication of the factors associated with behavior problems and the negative outcomes for children who exhibit such behavior.

Based on the research presented earlier, it appears that one way to prevent disruptive behavior in children is through the parent-child relationship. The internalization of parental standards of behavior, the development of self regulation, and the development of prosocial behavior has been associated with the quality of the parent-child attachment (Sroufe & Fleeson, 1986) and serves to protect children from later behavior problems. Campbell (1995) notes that:

> "A more detailed assessment of concurrent childrearing practices, maternal sensitivity and responsiveness, and attachment security in toddler age and preschool children with and without externalizing problems may help to clarify the role of attachment in the development of problems." (p. 137)

The sections below review the attachment research in infancy and preschool. It also provides an overview of the relationship between attachment and behavioral problems in children, attachment and parenting, and attachment research that has been done with Head Start children.

Attachment in Infancy

Most of the research on attachment to date has been conducted in infancy or adulthood. Attachment in infancy functions to protect the infant. When the attachment system is activated, the infant signals the parent (Kobak, 1999; Cassidy, 1999; Bowlby, 1988). Parent responsiveness in early infancy is related to individual differences in later attachment security. Through repeated interactions with a parent or parent figure, children learn to anticipate how their caregiver will respond. Infants adapt their attachment behaviors so that they will receive protection from their caregiver (Kobak, 1999). There are four functions of attachment: providing a sense of security; regulation of affect and arousal;

promoting the expression of feelings and communication; and serving as a base for exploration (Davies, 1999). Research on attachment in infancy has focused on the predictive power of attachment classifications and the relationship between parental sensitivity and attachment classification.

Attachment and Child Behavior

There has been a great deal of research documenting the relationship between attachment security in infancy and subsequent child behavior. Secure attachment is linked to mastery, emotional regulation, and interpersonal closeness. Attachment and later development are connected through transactional experiences that influence brain development (Weinfeld, et al., 1999) and serve as a foundation for learning affect regulation (Isabella, 1993; Cassidy, 1994; Sroufe, 1996). Much of the research to date has focused on early parent-child attachment and various child outcomes. The literature cited below is reflective of this research.

Secure Attachment. Much of what is known about the consequence of attachment security is the result of a longitudinal study by Sroufe (1983, 1996) and his colleagues. In this research, he found that sensitive, responsive caregiving teaches infants that they can readily get their needs met and that they can have an effect on the world (Sroufe,1983, 1996). These infants are effectively dependent on their caregivers and grow up to be effectively independent (Sroufe, Fox, & Pancake, 1983).

Children's history of attachment has been shown to play a role in their early and later academic and social success. Preschool teachers described children with a history of secure attachment as empathetic (Waters, Wippman, &

Sroufe, 1979). School age children classified as secure in infancy were rated as more socially active, positive, and popular. These children also described themselves as less socially anxious than children classified as insecure in infancy (Bohlin, Hagekull, & Rydell, 2000). In addition, preschool children with secure histories were found to seek out teacher attention in a positive manner (Weinfeld, et al., 1999) and are rated as more socially competent by teachers than their insecure counterparts (Cohen, 1990). At age 10, children classified as secure in infancy were less dependent on adults at summer camp (Weinfeld, et al., 1999).

In peer relations, children classified as secure in infancy have not been found to be bullies or victims in elementary school (Troy & Sroufe, 1987) and they also show less hostility and scapegoating of other children than insecure children (Suess, Grossman, & Sroufe, 1992). Children classified as secure at 15 months of age were found to score significantly higher on measures of social inititative, prosocial orientation, and popularity than those classified as ambivalent or avoidant. Securely attached 6-year-olds have been found to be more competent in their play and conflict resolution in preschool than were insecurely attached children (Main & Cassidy, 1988; Bohlin et al., 2000). Cohen (1990) also found that securely attached 6 year-old boys were more likely to be accepted by peers. Furthermore, Sroufe (1983) found that preschool children with a secure histories were better able to respond flexibly to changing requirements of situations, especially when frustrated.

Insecure Attachment: Ambivalent and Avoidant. Caregivers who are unresponsive or erratically responsive teach their infants that they cannot influence their surroundings to meet their needs. As a result, these infants do not learn to be confident about their autonomy (Sroufe, Fox & Pancake, 1983). Children with insecure-avoidant and insecure-ambivalent histories have been shown to be more dependent on preschool teachers. Insecure-avoidant children were found to have more interactions with the teachers and sat next to them more often during circle time (Weinfeld, et al., 1999). Furthermore, in this longitudinal study, insecure-avoidant children were described as "mean" by their preschool teachers (Waters, et al., 1979). Egeland and his colleagues (1990) found that of the 16 insecurely attached infants in their sample, 14 exhibited behavior problems in preschool, whereas 15 of the 22 infants classified as secure were not exhibiting behavior problems in preschool.

Aggression is related to a history of insecure attachment. In a longitudinal study of attachment, Shaw, Owens, Vondra, Keenan, and Winslow (1996) found that insecure attachment at 12-months of age was a significant predictor of aggressive behavior, above the clinical cut-off, at 3 to 5 years of age. During preschool and elementary school, children with insecure attachment classifications in infancy were found to display more negative affect, anger, and aggression than were securely attached children (Sroufe, 1983; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984).

Boys classified as avoidant in infancy were rated by their teachers in first through third grades as being more aggressive than boys with secure histories

(Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989). Also, children with insecure-avoidant histories have been shown to be significantly more likely than other children to victimize play partners. These children were likely to be victims if they were paired with other avoidant children (Troy & Sroufe, 1987). Research by Cohen (1990) demonstrated that insecurely attached 6 year-old boys were rated by teachers as less competent and having more behavior problems than securely attached boys. Furthermore, the boys were less well liked and perceived as more aggressive by other students in their class.

Disorganized/Disoriented Attachment. Infants classified as disorganized are at the most risk for later behavior problems (Solomon, et al., 1995). A recent meta-analysis conducted by van IJzendoorn (1999) found that the prevalence of disorganized attachment is relatively low in middle class, non-clinical samples. She found that only 14% of infants from middle class samples were classified as disorganized, compared to 24% from low SES groups. Infants from low SES groups who have also been maltreated are even more likely to be classified as disorganized. For example, 82% of infants who were from families with low incomes and maltreated were classified as disorganized (Carlson, Cicchetti, Barnett, & Braunwald, 1989). Other studies have demonstrated that 62% of infants growing up in low-income families with depressed mothers were classified as disorganized (Lyons-Ruth, Connell, Grunebaum, & Botein, 1990). Clearly, as risk factors increase so does the likelihood that an infant or child will develop a disorganized attachment.

A number of family factors have been associated with the development of disorganized attachment. Factors such as parental depression (Lyons-Ruth & Jacobvitz, 1999), insensitive and intrusive caregiving (Carlson, 1998), substance use in the home (Lyons-Ruth & Jacobvitz, 1999), and maltreatment (Carlson, 1998; Lyons-Ruth & Jacobvitz, 1999) have been correlated with disorganized attachment. Children classified as disorganized often have caregivers who have a history of unresolved loss or who are the source of fear for their children (Main & Hesse, 1990).

Infants classified as disorganized are at the greatest risk for later behavior problems. Shaw and his colleagues (1996) examined the relationship between infant attachment, measured at 12 months, and clinical levels of aggression at ages 3 and 5. Disorganized attachment at 12 months was a significant predictor of 5-year-old aggressive behavior above the clinical cut-off. Furthermore, only 17% of secure infants, 31% of aviodant infants, and 38% of ambivalent infants had aggressive behavior above the clinical cut off at age 5. Clearly, insecure infants are at much greater risk for aggressive behavior than children who are classified as secure in infancy. However, infants classified as disorganized were almost twice as likely as those classified as insecure, to show clinical levels of aggression at age 5. In Shaw et al's (1996) sample, 60% of disorganized infants had clinically elevated aggression scores at age 5. Other studies support the findings by Shaw and his colleagues (1996). For example, infants classified as disorganized at 13 months showed externalizing behaviors in preschool (Hubbs-

Tait, et al., 1994; Lyons-Ruth et al., 1993) and at age 7 (Lyons-Ruth, et al., 1997).

The relationship between aggression and disorganized attachment has received more attention by attachment researchers than other forms of behavior disorders. However, while the relationship is significant, only a minority of disorganized infants become aggressive (Lyons-Ruth & Jacobvitz, 1999). Some research has demonstrated that disorganized attachment status is also related to other behavior problems. For example, 71% of preschool children and 83% of school age children from a high risk population, who had been classified as disorganized at 18 months, showed above normal levels of hostility in the classroom (Lyons-Ruth, et al., 1993). Disorganized attachment has also been shown to be significantly related to dissociative symptoms at age 16 and 19 (Ogawa, Egeland, & Carleson, 1998, as cited in Weinfield et al., 1999). In a prospective longitudinal study, infants classified as disorganized at 12 and 18 months scored higher on teacher ratings of dissociative behavior and externalizing behavior in first, second, third, and sixth grades. In adolescence, they scored higher on internalizing behavior and overall psychopathology (Carlson, 1998).

Attachment in the Preschool Years

Although Bowlby considered attachment to be important across the life span, most of the research conducted thus far has focused on the period of infancy. Greenberg, et al. (1990) attributed this to several factors. The first is that most of the attachment researchers were specialists in infancy; second,

social development during the preschool years was relatively neglected between the mid-1960's and mid-1980's. Finally, many researchers thought that attachment was only relevant in infancy, despite what the theory proposes.

Research has shown that not all problems in attachment are rooted in infancy (Cummings & Cicchetti, 1990). Since preschoolers are not yet able to protect themselves from many sources of danger, attachment continues to play a large role in their development (Cicchetti, et al., 1990). Insecurity may develop after infancy as a response to a change in the caregiving environment such as the birth of a new sibling, traumatic event, or divorce. Also, during this time children may spend more time away from their parents and as a result, may form insecure attachments between other adult caregivers or siblings (Ciccheti, et al., 1990).

In the late 1980's, as a response to the lack of attachment research in the preschool period, attachment scholars formed a group to discuss how to go about expanding research in the area of preschool children's attachment. They concluded that a theoretical framework for studying attachment in the preschool years should include the fundamental features of the attachment system. For example, its function to protect, proximity to a caregiver as a predictable behavioral outcome, and an internalized felt security (Cicchetti et al., 1990; Schneider-Rosen, 1990). They believed that, following the theory, attachment behaviors during the second and third years of life occur with the same frequency and intensity as they did in infancy (Bowlby, 1982). The circumstances that elicit attachment behaviors change, however (Schneider-Rosen, 1990).

Expanding attachment research to include the preschool years of a child's life is important if one is to develop a greater understanding of the behaviors associated with different attachment styles. Preschool children carry protective factors, such as a secure attachment, and risk factors, such as stressful events and family discord forward from infancy (De Mulder et al., 2000). These factors may also play an important role in the stability or instability of preschool children's attachment representations. Once a representational model is in place it guides the processing of incoming information, making internal working models unlikely to change. However, when the models become inadequate due to external factors affecting the relationship, internal working models are restructured (Bretherton, Ridgeway, & Cassidy, 1990). Cicchetti et al. (1990) support this view, they argue that:

> "Once attachment develops, it continues to undergo transformations and reintegrations with subsequent accomplishments such as emerging autonomy and entrance into the peer world. Thus, children are continually renegotiating the balance between being connected to others and being independent and autonomous as they encounter each new developmental phase" (Cicchetti et al., 1990, p. 3).

Attachment and Children's Behavior

As children enter preschool their attachment relationships become internalized into a more general representation. Until recently measures of attachment representations in preschool were not available, and as a result this is an area that needs to be studied. Research that has been conducted has generally used an extended version of a laboratory separation reunion developed by Main and Cassidy (1988). The limited number of studies that have been conducted using this measure have consistently found that attachment

representations in preschool are related to concurrent and later behavioral functioning. Children classified as disorganized between the ages of 3 and 5 scored lower on maternal ratings of social competence and higher on ratings of behavioral problems in preschool (Moss, Parent, Gosselin, Rousseau, & St-Laurent, 1996). Two years later, the children from this sample who were classified as disorganized scored higher on teacher reported behavior problems and had lower math scores than children classified as secure or resistant. They also scored lower on teacher reported measures of academic self-esteem (Moss, Rousseau, Parent, St-Laurent, & Saintong, 1998). Preschool children classified as disorganized have also been shown to exhibit aggression and externalizing behaviors toward peers (Speltz, Greenberg, & DeKlyen, 1990).

Solomon and her colleagues (1995) also used the Main and Cassidy (1988b) system to classify 6 year-old children along with a new measure of attachment designed by the first two authors of the study (George & Solomon, 1990, 1996, 2000). They found that children's use of defensive exclusion could accurately differentiate between the four attachment categories and was correlated with Main and Cassidy's (1988b) laboratory reunion. This study supported the findings of previous research; disorganized children were rated higher by parents and teachers on both internalizing and externalizing behaviors (Solomon, et al., 1995).

Attachment and Head Start

The developmental tasks of preschool, to manage affect within social interaction and to begin to form peer relationships (DeMulder et al., 2000) are

closely tied to the development of a secure attachment. A recent report released by the Child Mental Health Foundations and Agencies Network (2000) indicated that social and emotional school readiness is an important factor in early school success and later accomplishments in the workplace. Furthermore, this report indicated that social and emotional competence is rooted in the attachment relationships that are developed during the first year of life. The overarching goal of Head Start is to promote social competence and school readiness in children. One way that Head Start accomplishes this is by strengthening families as the primary nurturers of their children.

Clearly, it is important to study attachment representations in children attending Head Start. There are, however, only a few studies that have investigated attachment using Head Start samples (Call, 1999; Ventura-Cook, 1997; Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998). Only one of these studies (Call, 1999) looked at the relationship between insecure attachment and behavioral problems. While a significant relationship was found between insecure adult romantic attachment and behavior problems, the sample size was very small indicating that more research with this population is warranted. In addition, the above study used a measure of attachment that has limited usefulness. Self-report measures of current romantic attachment style are not correlated with adult measures of attachment that examine the extent to which one's parents displayed care and protection (Steele, Steele, & Fonagy, 1996), which has been shown to be related to attachment representations in children (Fogany, Steele, & Steele, 1991). More attachment research needs to

be conducted with preschool children. Future studies need to improve on previous research that has attempted to measure attachment using recently developed assessments. These assessments are often limited in their usefulness because they fail to differentiate validly among all four main attachment groups; lack concurrent construct validity with other child attachment measures; and fail to replicate findings among studies using the same attachment measure (George & Solomon, 1990, 1996, 2000).

Parental Factors Related to Attachment Representations in Children

The above research demonstrates that attachment representations are stable over time, and that insecure and disorganized attachment have been correlated with behavior problems in preschool and elementary school children and adolescents. Because aggression is stable over time and has been associated with low academic achievement it is important to understand what factors influence a parent's ability to form a secure attachment. Research in this area has been relatively neglected (Belsky, 1999; Vondra et al., 1999).

Social Support

There is evidence that the amount and nature of contact with and support from significant others affects the way that parents interact with their infants (Andersen & Telleen, 1992). For example, low-income African American mothers with larger social networks tend to be more responsive in interaction with their infants (Burchinal, Follmer, & Bryand, 1996). Crockenberg (1981) found that mothers whose infants were assessed as being irritable shortly after birth and who had low levels of social support were more likely to have insecurely

attached infants. When mothers had high levels of social support, infant irritability did not have an impact on attachment quality. Crittenden (1985) found that in a group of infants with abusive or neglectful mothers, low social support predicted insecurity. This may indicate that social support is a mediator of security for low levels of nurturing parenting during infancy. These studies have all addressed social support and attachment in infancy, but they do not address the relationship between parental social support during their child's preschool years, parenting attitudes or their child's attachment representation.

Psychological Well-Being

Parents' psychological health and well being effect the quality of care that they provide their child (Belsky, 1984). Furthermore, psychologically healthier parents are more likely than less psychologically healthy parents to have infants who are securely attached to them (Belsky, 1999). Research has shown that mothers who describe themselves as self-confident, independent, cheerful, adaptable, and affectionate were more likely to have secure infants (O'Connor, 1997, as cited in Belsky, 1999). These findings are also true for high-risk and low SES households (Jacobson & Frye, 1991). Depression has been associated with attachment insecurity (Lyons-Ruth et al.,1990). Cummings & Cicchetti, (1990) note that:

> "[Previous] research documents the effects of the physical unavailability of attachment figures on the development of children. From the perspective of attachment theory, however, the fact of physical absence may be less important than the psychological unavailability of the attachment figure to the child during periods of separation or loss. Thus, conditions that result in high levels of psychological unavailability, even when physical absence is not a factor, may produce similar outcomes in terms of increasing

children's felt insecurity. One instance where this might occur is when parents have major and extended episodes of unipolar or bipolar depression" (p.347).

Research by Gelfand & Teti (1990) found that children of depressed mothers were at heightened risk of insecure attachment. Children whose parents have major depressive disorder were more likely to be classified as insecure than children whose parents have minor depression or no affect disorder (Radke-Yarrow, Cummings, Kuczynski, & Chapman, 1985). This research, however was conducted prior to the discovery of the disorganized attachment classification and as a result can not report the correlation between maternal depression and disorganized attachment. This research did find, though, that infants whose parents had the most severe depression also had characteristics of both avoidant and ambivalent attachment, they labeled these children very insecure.

In a sample of middle income families, DeMulder and Radke-Yarrow (1991) found that 50 percent of infants and preschoolers whose mothers had bipolar depression were disorganized. Twenty-five percent of children whose mothers had unipolar depression were classified as disorganized compared to 18 percent of the children in the control group. Teti, Gelfand, Messinger, and Isabella (1995) also found that maternal depression was a significant predictor of disorganization in infancy. In their middle class sample, 40 percent of infants between 16and 21 months of age, whose mothers were in treatment for depression, compared to 10 percent of infants in the control group were classified as disorganized.

Some research has not found the expected relation between depression, disorganized, and insecure attachment (Lyons-Ruth & Jacobvitz, 1999). The age at which attachment security is measured may account for this. In studies where maternal depression has been found to be related to insecure attachment, attachment was measured after 15 months of age (Belsky, 1999). Another possible explanation, is that only depression that results in serious clinical impairment is necessary before it has a significant impact on infant disorganization (Lyons-Ruth & Jacobvitz, 1999).

Parenting and Attachment

Sensitive and responsive parenting is of central importance in the development of a secure attachment. Ratings of maternal sensitivity in the first year of life are linked to security in the first year of life. This is true for samples with various SES backgrounds and various cultural backgrounds (Ainsworth, Blehar, Waters, & Wall, 1978; Isabella, 1993; Grossman, Grossman, Spangler, Suess, & Unzer, 1985; Egleland & Farber, 1984). Prompt responsiveness to distress (Crockenberg, 1981), appropriate stimulation (Belsky, Rovine, & Taylor, 1984), and warmth, involvement, and responsiveness (Bates, Maslin & Frankel, 1985) have also been related to attachment security.

Generally, studies of attachment and parenting have used observational measures of parent-child interaction. Research examining the link between parental sensitivity and attachment has utilized many methods including single home visits, brief laboratory assessments, interviews to assess parental attitudes, and documentation of the frequency of physical contact. De Wolff &

van IJzendoorn (1991) believe that these methods may not capture the concept of sensitivity as Ainsworth and her colleagues originally operationalized it. A meta-analysis conducted by De Wolff & van IJzendoorn, (1997) found that sensitivity appears to be an important condition for the development of attachment security, but that it cannot be considered to be the exclusive and most important factor in the development of attachment. This study demonstrated that "the transactions between social context or clinical conditions, on the one hand, and attachment on the other need more careful study to determine the role of sensitivity, and other aspects of parenting and family life in the development of attachment security more precisely" (De Wolff & van IJzendoorn, 1997).

Research on the relationship between parenting and attachment in preschool is limited. Parents ability to provide a nurturing environment may be related to their own history of care and attachment. In one study, George and Solomon, (1996) found that the caregiving system is organized by a representational structure that is correlated with the child's attachment to the mother and the mother's representation of her relationships in childhood. Some of what is known about parenting and attachment in the preschool years is based on infants who were classified as insecure in infancy, but were functioning well in preschool. These children had mothers who were more supportive, gave clearer instructions, and set consistent limits in laboratory play tasks (Erickson, et al., 1985). It is unclear if the infants' attachment styles also changed from insecure to secure. DeMulder and Radke-Yarrow (1991) found that children classified as

disorganized in preschool had mothers who displayed the most negative affective tone. Another study conducted with preschoolers found that security in preschool, as measured by the attachment Q-Set, was associated with affectively appropriate, sensitive, flexible mothering (Teti, Nakagawa, Das, & Wirth, 1991). More research in the area of parenting behavior and attachment in the preschool years is necessary if one is to better understand this relationship.

Life Stress

Attachment researchers have devoted a great deal of time studying how caregiving and maternal sensitivity promote attachment security and how insecurity and disorganization are related to behavior problems. However, relatively little research has looked at the factors in the parent's environment that contribute to their ability to provide this type of care (Belsky, 1999, Vondra et al., 1999).

Some studies have indicated that attachment may be influenced by family stress (DeMulder et al., 2000). Shaw and Vondra (1993) found that cumulative family stressors, differentiated secure infants from insecure infants, especially for families with three or more stressors. They also reported that if the stressors impacted caregiving or maternal functioning, they were more likely to impact attachment. In a sample of preschool boys, security with mother and family stress were significantly related to teacher reports of aggression in preschool (DeMulder et al., 2000). This study also supported the finding that family stress may influence the quality of the ongoing attachment relationship.

Because high-risk, low-income families have a higher proportion of insecure and disorganized children than do low-risk, middle-income families, it is important to understand how a secure attachment can be facilitated in high-risk families. Research has suggested that alleviating the degree of stress impacting high risk families could help decrease later behavior problems in children and assist in the development of secure attachments (Call, 1999). This research is relevant to the current study because it was conducted with a sample of Head Start families. However, these findings need to be replicated due to the small sample size of the study and the use of a problematic measure of attachment.

Conclusion

Chapter two has reviewed relevant literature regarding the prevalence and stability of behavior problems in preschool children as well as factors contributing to the development and persistence of behavior problems, including internalizing and externalizing problems. This chapter also explored maternal factors related to parent-child attachment, the relationship between parenting and attachment and between parenting and aggressive behavior. Clearly, there has been a great deal of research regarding attachment in infancy and adult representations of attachment. Research, however documenting the influence of a parent's ecology on the caregiving environment, parental behaviors, and attachment has been lacking. In addition to this, the research on attachment during the preschool years has been lacking, despite Bowlby's lifespan perspective. This study will address deficits in the attachment research to date and contribute to research on behavior problems in preschool children by investigating the relationship between

concurrent attachment classification and behavior problems. This research will also make a significant contribution by including girls in the sample. Chapter 3 will delineate the research methodology specific to this study.

CHAPTER 3

Methodology

Introduction

The purpose of this study was to investigate caregiver psychological and environmental factors that contribute to parenting attitudes, attachment representations in their children and subsequent child behavior at home and at school. This chapter introduces the methodology used to fulfill the purpose of the study by including a reiteration of the research questions followed by a discussion of the research design. In addition, this chapter will discuss the methodology, sampling, hypotheses, data collection and data analysis procedures.

Research Questions

- Are factors in the caregiver's environment associated with children's attachment representations?
- Are factors in the caregiver's environment predictive of their attitude about nurturing parenting?
- Are caregiver's nurturing parenting attitudes associated with children's attachment representations?
- Is caregiver psychological well being associated with children's attachment representations?
- Do children's mean aggression scores at home and at school vary as a function of attachment representations
- Is aggression at home correlated with aggression at school?

Research Design

In order to carry out the objectives of this research most effectively, a correlational design in a controlled setting was used. This study examined caregiver environmental and psychological factors that contribute to parenting attitudes and preschool children's attachment representations. This study also examined the relationship between caregiver environmental factors, psychological factors, parenting attitudes, children's attachment representations and their aggressive behavior in school and at home. The unit of analysis in this study was 52 caregivers and their children who attend Head Start in Ingham County, Michigan.

Conceptual and Operational Definitions

- Caregiver

  Conceptual: The person who provides care for the child.

  Operational: For purposes of this study, the caregiver was defined as the adult who reported that he/she is the person who provided the majority of the care for the child. This person also reported that they had legal custody of the child

- Caregiver environmental factors

  Conceptual: The caregiver's report of social support and life stress.

  Operational: For the purposes of this study social support was measured by the caregiver's score on two scales of the Social Support Questionnaire (SSQ, Sarason, Levine, Basham, & Sarason, 1983). The first scale (SSQ-N) assesses the caregiver's perception of how available his/her support network is. The

second scale (SSQ-S) assesses how satisfied the caregiver is with his/her level of support. Life stress was measured by the number of items that the caregiver reported on the Schedule of Recent Events (Daly, 1984).

- Caregiver Psychological Well Being

Conceptual: The caregiver's reported level of psychological symptoms in the past week.

Operational: For the purpose of this study, caregiver psychological well being was measured by the caregiver's score on the general symptom index of the Brief Symptom Inventory (BSI, Derogatis, 1992). This score is the average of the nine subscales.

- Nurturing Parenting Attitudes

Conceptual: The caregiver's attitudes about nurturing parenting.

Operational: For the purpose of this study, nurturing parenting refers to attitudes regarding parental expectations, empathy towards children's needs, values related to corporal punishment, role reversal, and power and independence. These attitudes were measured by the caregiver's standard score on each of these subscales of the Adult-Adolescent Parenting Inventory-2 (AAPI-2, Bavolek & Keene, 1999).

- Children's Aggressive Behavior

Conceptual: The child's aggressive behavior in the home and in the school.

Operational: For the purpose of this study child aggressive behavior in the home was the caregiver's report of his/her child's aggressive behavior on the Child Behavior Checklist (CBCL, Achenbach, 1991). The raw score on the

aggression scale of this instrument was used to measure the child's aggressive behavior in the home. Aggressive behavior in school was measured using the teacher's report of the child's aggressive behavior on the Teacher Rating Scales (TRS, Reynolds & Kamphaus, 1992). Specifically, this was measured using the raw score on the aggression sub scale of the TRS.

- Children's attachment representation

  Conceptual: The child's attachment representation.

  Operational: For the purpose of this study, children's attachment representations were the child's secure, avoidant, ambivalent, or disorganized classification on the Six-Year Attachment Doll Play Attachment Classification System (George & Solomon, 1990, 1996, 2000).

Sampling Procedure

Data were collected from 62 caregivers whose children were attending Head Start. Half of the sample was drawn from full day, full year Head Start classrooms and the other half of the sample was drawn from center based, part day Head Start classrooms. The sampling procedure was conducted in two phases.

In phase one, the Associate Director of Head Start provided the doctoral student with the location of the full day, full year classrooms and the names of the head teachers for each of those classrooms. There were seven full day classrooms in Ingham County, all of which were sampled. There were approximately 17 students in each classroom. The research was explained to each lead teacher and her consent to participate was obtained. The teacher

chose a week during the scheduled data collection time in which no field trips were planned. Arrangements were made so that parent self-report data could be collected during times when caregivers drop off and pick up their children.

The week before sampling and data collection was to take place, flyers describing the research were posted in the school and sent home with children who were 4 years old. The week that sampling and data collection took place, flyers that described the research were handed to each parent. The flyers indicated that caregivers could sign up to participate in the study at the school that same afternoon. Caregivers were asked to pick a time during that week, while their child was in school, to fill out self-report measures and information about their child.

After the caregiver finished filling out self-report information the caregiver introduced his/her child to the student conducting the research. The child was told that his/her caregiver had given permission to take the child to a room in the school building to make a movie about a pretend family. The child was told the name of the research assistant who would be playing with him or her, the day that it was going to occur, and that he/she would be introduced to the research assistant. The child was also told that his/her caregiver and teacher would help them remember the day that the play time was to occur.

On Friday or Monday following caregiver completion of self-report data, the caregiver's child was taken out of class to participate in the doll play interview. The classroom teacher and the doctoral student introduced each child to the doll play administrator. Each child was reminded that he or she was going

to make a movie about a pretend family and then would return to the classroom. The interviews were held in an unoccupied room in the building where the child's classroom was located. All interviews were video taped so that they could be transcribed. Prior to the scheduled interview with the child, the doll play administrator set up the doll house, and began recording. Each video had the date and the time that the child was interviewed. The video was not turned off until after the doll play administrator had returned the child to his/her classroom. The doll house was set up the same for every interview.

If caregivers were not available during school hours to fill out self-report measures or they did not want their child taken out of class, an alternate time was arranged for them to participate. These additional times were in the evenings and on weekends at the Family and Child Clinic at Michigan State University.

Thirty-two caregivers signed up to participate in the study. Twelve of these caregivers failed to follow through with their scheduled appointment, so they were dropped from the study. Twenty caregivers and their children participated in phase one of data collection, which took place in August and September, 2001. Due to the low number of participants, buildings that housed more than one classroom were sampled again in December, 2001. An additional twelve caregivers expressed an interest in the study, but two parents failed to show up for their scheduled appointment to fill out self report measures so they were dropped from the study, leaving ten caregiver-child dyads who participated. In phase one, two children refused to leave their classrooms for the doll play

interview. During phase one of data collection three families were dropped from the sample because they did not fit selection criteria. Two caregivers did not speak English well enough to accurately fill out the measures; the caregivers reported that they were fluent in English, but had a great deal of difficulty understanding directions and words to describe problem behaviors. One child was enrolled part time in a pre-primary impaired classroom for language and social-emotional delays. Another family was dropped from the sample because the caregiver had only filled out every other question on only the front pages of the measurement instruments. When she was asked to complete the surveys she did so in 10 minutes. Most parents took 40 to 60 minutes to complete the surveys. This reduced the phase one sample to 26 parent-child dyads.

Phase two of the sampling procedure was the same as phase one, however the families that were sampled had children who attended center based, part day Head Start. The Associate Director of Head Start provided the names of teachers who worked in buildings that housed two or more part day classrooms. Thirteen classrooms located in Ingham County were sampled. Each classroom had approximately 17 students who attended the morning session and 17 students who attended the afternoon session. The research was explained to each lead teacher and her consent to participate was obtained. Arrangements were made so that data collection could take place when caregivers dropped off and picked up their children.

The week before data collection was to begin, flyers describing the study were sent home to caregivers who had 4 year old children. The week that

sampling and data collection took place, each caregiver was handed a flyer that described the research. The flyer indicated that the doctoral student would be at the school that same afternoon to sign interested caregivers up for the study. Caregivers were asked to pick a time during that week, when their child was in school, to fill out self-report measures and information about their child.

After the caregiver finished filling out the self-report information, the caregiver introduced his/her child to the student conducting the research. Each child was told that his/her caregiver had given permission to take the child to a room in the school building to make a movie about a pretend family. The child was told the name of the research assistant who would be playing with him or her and the day that the doll play was going to occur. The child was also told that he/she would be introduced to the research assistant, and that his/her caregiver and teacher would help him/her remember when the playtime would happen.

On Monday following caregiver completion of self-report data, the caregiver's child was taken out of class to participate in the doll play interview. The interviews were held in an unoccupied classroom in the building where the child's classroom was located. Data collection took place between September and December, 2001. Thirty-five caregivers expressed an interest in the study; two of these caregivers did not show up at their scheduled time to fill out measures, another parent withdrew from the study after discussing it with her husband. Data were collected from thirty-two caregiver-child dyads; doll play interviews were collected from twenty-seven children; Five children chose not to leave their classrooms for the interview. An additional six dyads were dropped

from the sample after data collection was complete because they did not meet selection criteria. One parent, who the school later reported was unable to read, filled out the measures without help, one parent was not fluent in English, and had been in the country for less than one year. Two of the children did not live with the parent who filled out the caregiver measures, the teacher reported that these children saw their parent less than daily. One parent brought her child and husband to Michigan State, she and her husband each filled out half of the measures, despite being asked to have only one parent fill out the caregiver measures. One parent filled out the measures in less than 20 minutes, the teacher and Family Support Worker reported that they did not think that the parent could read. This reduced the phase two sample to 26 caregiver-child dyads.

If caregivers were not available during school hours to fill out self-report measures or they did not want their child taken out of class, an alternate time was arranged for them to participate. These additional times included evenings and weekend times at the Family and Child Clinic at Michigan State University.

All of the information that families received and all of the instruments in this study were submitted to and approved by the University Committee for Research Involving Human Subjects.

Hypotheses

Ho 1: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are not associated with children's attachment representations.

Ha 1: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are associated with children's attachment representations.

Ho 2: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are not significant predictors of parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, or power-independence issues.

Ha 2: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are significant predictors of parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, or power-independence issues.

Ho 3: Parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, and power-independence issues are not associated with children's attachment representations.

Ha 3: Parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, and power-independence issues are associated with children's attachment representations.

Ho 4: Caregiver psychological well being is not associated with children's attachment representations.

Ha 4: Caregiver psychological well being is associated with children's attachment representations.

Ho 5: Children's mean aggression scores at home and at school do not vary as a function of attachment representations

Ha 5: Children's mean aggression scores at home and at school vary as a function of attachment representations

Ho 6: Children's aggressive behavior at home is not significantly correlated with aggressive behavior in school.

Ha 6: Children's aggressive behavior at home is significantly correlated with aggressive behavior in school.

Instrumentation

The dependent and independent variable, **nurturing parenting**, was assessed by the Adult Adolescent parenting Inventory-2 (AAPI-2, Bavolek & Keene, 1999). The AAPI-2 was designed to assess parenting attitudes and child rearing practices of adolescents and adults. The subscales include: Parental Expectations, Empathy towards Children's Needs, Values Related to Corporal Punishment, Role Reversal, and Power-Independence. The analysis for this study used the sten scores of the five sub-scales. The internal consistency for these sub-scales is very good. Alpha levels range from .80 to .92 (Bavolek & Keene, 1999).

The independent and dependent variable, **life stress** was assessed using the Schedule of Recent Events (Daly, 1984). The Schedule of Recent Events is a checklist designed to measure the amount of stress experienced from readjustment to life events. Items include questions about stressful events that have happened in the past year. Research has shown that the internal consistency for the scale is very good (alpha=.83).

The independent and dependent variable, **social support**, was assessed using the Social Support Questionnaire (SSQ, Sarason, et al., 1983). The strength of the SSQ is that it assesses perceived availability (SSQ-N) of and satisfaction (SSQ-S) with social support. The SSQ-N instrument yields data on the number of supports available; the SSQ-S yields data on satisfaction for each item (Sarason, et al., 1983). Both scales show excellent internal consistency (SSQ-N, alpha=.97; SSQ-S alpha=.94).

The independent and dependent variable, **caregiver psychological well being**, was assessed using the Brief Symptom Inventory (BSI, Derogatis, 1992). The BSI yields scores in terms of nine primary symptom dimensions divided by the total number of responses. The internal consistency is very good with alpha levels ranging from .71 to .85.

The independent and dependent variable, **children's attachment representations**, was measured using the Six-Year Attachment Doll Play Classification System (George & Solomon, 1990, 1996, 2000). The doll play interview has inter-rater reliability of 71% and shows concordance between representation classifications and attachment classifications based on reunion behavior in the Main and Cassidy (1988) laboratory reunion of 79% (Solomon & George, 1999). Furthermore, the Six-Year Attachment Doll Play Classification System differentiates among all four-attachment groups (Solomon & George, 1990, 1996, 2000). The investigator was trained by the creators of the measure and established inter-rater reliability of 80% using an alternate sample. The creators of the measure and the doctoral student coded seventeen of the stories

from this sample. Inter-rater reliability for the current sample, between all three raters was 100%.

The dependent variable, **children's aggressive behavior in the home**, was assessed using the Child Behavior Checklist (CBCL, Achenbach, 1991), which was filled out by the caregiver. The CBCL is designed to measure children's problems as reported by parents. The CBCL has been used widely in research on social-emotional development with children ages 4-18 (Drotar, Stein, & Perrin, 1995). The CBCL reports very good internal consistency with alpha levels ranging from .88 to .92. For the analysis of this study the aggressive behavior subscale was used

The dependent variable, **children's aggressive behavior at school**, was assessed using the Behavior Assessment System for Children (BASC, Reynolds & Kamphaus, 1992). The BASC is an integrated set of self-reports of personality, teacher-rating scales (TRS), parent rating scales, a developmental history, and an observation protocol. For the purposes of this study, the TRS was used. One strength of the BASC is that in addition to measuring externalizing behavior, internalizing behavior, and attention problems, it also measures the child's adaptive skills. Internal consistency for this measure is quite good with alpha levels ranging from .80 to .90. Furthermore, correlation between the TRS and Achenbach's Teacher Report Form are in the .80s and .90s.

Data Collection

All of the parent data were obtained from caregiver self-report. The self-report measures were completed in 45 to 60 minutes; caregivers filled out these measures at their child's school, during regular school hours, or at Michigan State University. Questionnaires were read to two caregivers who indicated that they could not read. Children's behavior was obtained from caregiver and teacher report. Children's attachment representations were measured using a semi-structured doll play interview. Twenty-seven interviews from the full day sample and twenty-five interviews from the part day sample took place in an unoccupied room in the building where the child's classroom was located. Three parent-child dyads from the full day sample and two parent-child dyads from the part day sample came to Michigan State University to participate in the study. For these families, the caregiver self-report data and the child interview took place simultaneously.

Prior to the doll play interview, the child was allowed to familiarize him/herself with a doll house that was constructed for the interview. The administrator then introduced a story stem about lost pets and the child was asked to finish the story. Following the introduction, the administrator introduced four story stems describing a hurt knee, a monster in the bedroom, a separation, and a reunion story. The children were asked to complete the stories and were given between three and five minutes to complete the story before the next story stem was introduced. The interview was videotaped and transcribed. The

transcripts of the children's stories were coded by the doctoral student and each child was assigned an attachment classification.

Upon completion of the doll play interview and the caregiver self-report measures, the caregivers were sent a $25 gift certificate to a local grocery superstore. After the children at each school completed their doll play interviews, the Teacher Rating Scale was mailed to the child's teacher. Completed forms were returned in a self-addressed stamped envelope. The teachers received a $10 gift certificate to a teacher supply store for every completed measure that was received.

Sample Characteristics

Sixty-two caregiver-child dyads were recruited from 7 full day and 13 part day Head Start classrooms in Ingham County, Michigan. It was discovered during data collection that 10 of the caregiver-child dyads did not meet selection criteria for the study. As a result of dropping families from the study, the sample that was analyzed comprised of 52 caregiver-child dyads. Half of the children were enrolled in full day Head Start (N=26) and half were enrolled in part day Head Start (N=26).

Child Characteristics

The children were approximately 4 years old (M= 54 months, range 40-68 months). Twenty males and 32 females participated in the study. The majority of the children were Caucasian (N=15), African American (N=12), or multi-racial (N= 18). One child was Native American and 6 children were Hispanic. An overview of child characteristics can be found in Table 3.1.

Table 3.1

Child Characteristics

Variable	N	Percentage
Sex		
Male	20	38.5
Female	32	61.5
Classroom		
Full day	26	50
Part day	26	50
Race		
Caucasian	15	28.8
African American	12	23.1
Hispanic	6	11.5
Native American	1	1.9
Multi-racial	18	34.6

Caregiver Characteristics

All of the caregivers filling out measures reported that they had legal custody of the child who participated in the study, all of the caregivers were the child's biological parent. Two fathers and 50 mothers completed self-report measures. Their ages ranged from 19 to 39 years (M=27.9). The majority of the parents were either Caucasian (N=24) or African American (N=13). Eight

caregivers were multi-racial and 7 were Hispanic. Half of the parents were single; 18 had never been married, 7 were divorced and 1 was separated. Eighteen parents were married and 8 were in a committed relationship that had lasted longer than 6 months. The caregivers worked an average of 19.4 hours per week (range 0 to 50 hours) and had an average income of $1,626 per month. The families had experienced an average of 11.7 stressful events in the past year (range 1-36). An overview of caregiver characteristics can be found in Table 3.2.

Data Analysis

Attachment is a categorical variable, while the others are continuous. Various statistical methods are appropriate for these analyses, depending on whether or not the attachment will be the dependent or independent variable and on whether there will be multiple independent variables. The following research questions were analyzed using crosstabulation.

- Are factors in the caregiver's environment associated with children's attachment representations?
- Is caregiver psychological well being associated with children's attachment representations?
- Are nurturing parenting attitudes predictive associate with children's attachment representations?

The following research question was analyzed using regression analyses:

- Are factors in the caregiver's environment predictive of their attitudes about nurturing parenting?

Table 3.2

Caregiver Characteristics

Variable	N	Percentage
Sex		
Male	2	3.8
Female	50	96.2
Race		
Caucasian	24	46.2
African American	13	25
Hispanic	7	13.5
Multi-racial	8	15.4
Marital Status		
Single	18	34.6
Divorced	7	13.5
Separated	1	1.9
Married	18	34.6
Committed Rel	8	15.4
	Mean	Range
Age	27.9	19-39
Hours worked/week	19.4	0-50
Income/month	$1,626	0-$4,800
Stressful events/yr	11.7	1-36

The following research question was be analyzed using Anova:

- Do children's mean aggression scores at home and at school vary as a function of attachment representations?

The following research question was analyzed using Pearson correlation:

- Is aggression in the home correlated with aggression in school?

Conclusion

This chapter has delineated the research methodology specific to this study. This chapter has included the purpose of the research, related research questions, and hypotheses. From these, the study was designed and the methodology was determined. The sample was described, data collection techniques and data analysis procedures necessary for completion of the study explained.

CHAPTER 4

Results

Introduction

The main objective of this study was to investigate caregiver psychological and environmental factors that contribute to parenting attitudes, attachment representations in their children and subsequent child behavior at home and at school. This chapter is divided into two sections. The first section presents frequencies for relevant variables, the second section presents the major findings for each hypothesis.

Frequencies for Relevant Variables

Relevant variables in this study include those that pertain to the caregiver and those that pertain to the child. Frequencies were run for variables that have established cutoffs to determine clinical levels of symptoms for high risk parenting practices and for those that are known to exist in a certain percent of a population. Scores on all caregiver variables were obtained by caregiver self report. These variables included nurturing parenting and levels of clinical symptoms. Scores on child variables were obtained by caregiver report, teacher report, and a semi-structured doll play attachment interview. These variables included: attachment classification, aggressive behavior at home, and aggressive behavior at school.

Caregiver Variables

Nurturing Parenting. Nurturing parenting was measured using the Adult Adolescent Parenting Inventory-2 (AAPI-2, Bavolek & Keene, 1999). The AAPI-2

is divided into 5 subscales, which measure known patterns of abusive and neglecting parenting attitudes and child rearing practices. Bavolek and Keene (1999) suggest that to interpret the results of the AAPI-2, one can compare sample caregivers to those in the population by comparing standard scores. Raw scores are converted into standard scores that range from 1 to 10. Low standard scores (1-4) are characteristic of parents who are practicing abusive parenting, these parents are labeled high risk and comprise approximately 30 % of the total population. High standard scores (8-10) are characteristic of a nurturing, non-abusive, parenting philosophy, these parents are labeled low risk and comprise approximately 16 % of the total population. Mid-range standard scores (5-7) represent parenting attitudes of the general population, approximately 54 % of parents in the general population fall into this category (Bavolek & Keene, 1999). In order to understand how this sample compares to the population on which this instrument was normed, the caregivers standard scores were grouped into categories of low risk attitudes, high risk attitudes, and attitudes of the general population, according to Bavolek and Keene's (1999) definitions. Below, each scale is described and each category within the scale is described. Next, the percentage of parents, from this sample, who fell into each category, is presented. This allows the reader to compare this sample with what would be expected in the population.

The first scale, parental expectations, measures the degree to which caregivers understand and accept their child's developmental limitations. Low risk caregivers tend to have appropriate expectations of children's capabilities

and tend to encourage self-growth and exploration. Caregivers who fall into the high risk category generally have a lack of understanding of children's developmental capabilities and may expect children to achieve at a higher level than they are capable (Bavolek & Keene, 1999). In the current sample 34.6 % of caregivers (N=18) were judged to be high risk in this area; 59.6 % (N=31) were judged to have attitudes of the general population; and 5.8 % (N=3) were considered low risk.

The second subscale, inability to be empathetically aware of children's needs, measures the caregiver's ability to be aware of his or her child's feelings and to place the needs of their child as a priority. Caregivers who fall into the low risk category are sensitive to their child's needs and see their needs as a priority. Caregivers who fall into the high-risk category are likely to see the normal developmental demands of children as bothersome and may have difficulty assisting their child meet his or her needs (Bavolek & Keene, 1999). In the current sample, 44.2 % of caregivers (N=23) were judged to be high risk; 44.2 % of caregivers (N=23) had attitudes representative of the general population; and 11.5 % of caregivers (N=6) were judged to be low risk.

The third subscale, belief in the value of corporal punishment, measures a caregiver's attitudes about the use of physical punishment to discipline his or her child. Caregivers who fall into the low risk category tend to use alternative strategies to physical punishment and value non-violent ways of providing discipline. Scores in the high-risk category indicate that physical discipline is an acceptable form of discipline that teaches children appropriate healthy behaviors

(Bavolek & Keene, 1999). In the current sample, 57.7% of caregivers (N=30) were judged to be high risk; 40.4% of caregivers (N=21) had attitudes representative of the general population; and 1.9% of caregivers (N=1) were judged to be low risk.

The fourth subscale, parent-child role reversal, measures the degree to which caregivers reverse parent-child roles and the possibility that they look to their own child for care and comfort. Caregivers who fall into the low risk category tend to understand and accept the needs of self and child, but do not approve of meeting their own needs at the cost of the child's needs. Caregivers who fall into the high-risk category tend to view children as existing to meet the needs of their caregivers (Bavolek & Keene, 1999). In this sample, 30.8% of caregivers (N=16) were judged high risk; 51.9% of caregivers (N=27) had parenting attitudes consistent with the general population; and 17.3% of caregivers (N=9) had attitudes that are considered to be low risk.

The final subscale, oppressing children's power and independence, measures the degree to which caregivers believe that children's independence and power needs to be oppressed and the belief that children should comply with parental requests without question (Bavolek & Keene, 1999). Caregivers who fall into the low risk category generally place value on children feeling empowered and are likely to give children choices and encourage them to problem solve. Caregivers who fall into the high-risk category typically place value on obedience and suppression of children's feelings (Bavolek & Keene, 1999). In this sample, 30.8% of caregivers (N=16) were categorized as high risk; 50% of caregivers

(N=26) had attitudes consistent with those of the general population; and 19.2% of caregivers (N=10) were categorized as low risk. An overview of caregiver attitudes toward nurturing parenting can be found in table 4.1.

Table 4.1

Percentage of Caregivers in High Risk, General Population, and Low Risk Groups for each Nurturing Parenting Subscale

Nurturing Parenting Subscale	High Risk	General Population	Low Risk
Parental Expectations	34.6 (18)	59.6 (31)	5.8 (3)
Empathy	44.2 (23)	44.2 (23)	11.5 (6)
Corporal Punishment	57.7 (30)	40.4 (21)	1.9 (1)
Parent-Child Role Reversal	30.8 (16)	51.9 (27)	17.3 (9)
Power and Independence	30.8 (16)	50 (26)	19.2 (10)

Note. - Cell *n*'s in parentheses.

Caregiver Psychological Well Being. Caregiver psychological well being was measured using the Global Severity Index (GSI) of the Brief Symptom Inventory (BSI, Derogatis, 1993). The Global Severity Index is an indicator of the respondent's distress level. It is calculated by combining information about numbers of symptoms and intensity of distress (Derogatis, 1993). Respondents whose T-scores are greater than or equal to 63 can be considered to have a positive diagnosis or case. Approximately 12% of the adult female, non-patient population have T-scores that are of clinical significance (Derogatis, 1993). In

the current sample 21.2% (N=11) of caregivers had scores that fell into the clinical or diagnosable range on the GSI.

Child Variables

Aggressive Behavior at Home. Children's aggressive behavior at home was measured using the aggression subscale on the Child Behavior Checklist (CBCL, Achenbach & Edelbrock, 1991). The authors provide clinical cut-off scores for each of the subscales. T scores from 60 to 63 are considered borderline clinical and discriminate between deviant and nondeviant groups (Achenbach, 1991). For the purposes of this study T scores ≥ 62 were considered of clinical concern. In this sample 80.8 % (N=42) of children were categorized as having normal levels of aggressive behavior; 17.3 % (N=9) had a positive diagnosis or case.

Aggressive behavior in School. Children's aggressive behavior at home was measured using the aggression subscale on the Teacher-Rating Scales (TRS, Reynolds & Kamphaus, 1992). The authors report that T scores above 60 are clinically significant. In this sample 23.1% (N=12) of the children had aggressive behavior that was clinically significant, 76.9% (N=40) of the children had aggressive behavior that was age appropriate.

Attachment Classification. Children's attachment representations were measured using the Six-Year Attachment Doll Play Classification System (George & Solomon, 1990, 1996, 2000). Studies have demonstrated that approximately 13% of infants from a middle class sample are classified as disorganized (Main & Solomon, 1990). Children in high-risk situations are more

likely to be classified as disorganized. For example 28% of infants from multi-problem families (Spieker & Booth, 1988) and 54% of infants from low income depressed mothers were classified as disorganized (Lyons-Ruth, Connell, Gruenbaum, &Botein, 1990). In this sample, 4.7% (N=2) of children were classified as secure; 44.2% (N= 19) were classified as avoidant, 20.9% (N=9) were classified as ambivalent, and 30.2% (N=13) were classified as disorganized. Due to the small number of children classified as secure, the expected cell size was less than 5 in all statistical analyses. As a result, secure children were not included in the analysis.

Major Findings

Group Differences

Preliminary analyses were conducted to examine the possibility of group differences and to guide future analysis. Previous studies have demonstrated that there are cultural differences in parenting attitudes, while others have demonstrated that when socioeconomic status is controlled, these differences are minimal (Julian, McKenry, & McKelvey, 1994). One way ANOVA was used to determine if caregiver race accounted for significant differences in parenting attitudes. Results indicate that caregiver race did not account for significant differences in inappropriate expectations, $F(3,48) = 1.185$; $p = .325$, empathy towards children's needs, $F(3, 48) = 1.145$; $p = .341$, values related to corporal punishment, $F(3, 48) = .477$; $p = .700$, role reversal $F(3, 48) = .336$; $p = .799$, or power-independence issues, $F(3, 48) = 2.53$; $p = .068$.

Research has indicated that sex differences in child behavior begin to emerge at preschool age (Zahn-Waxler et al., 1990; Achenbach et al., 1987).T-tests were run to determine if mean levels of behavior at home and behavior at school varied as a function of child sex. Results indicated that the mean of children's aggressive behavior (boys, M = 9.75; SD = 7.282; girls, M = 8.28; SD = 5.726) at home did not vary as a function of the child's sex, $t(50) = .810$, $p = .422$. The child's sex also did not account for mean differences (boys, M = 9.0; SD = 6.190; girls, M = 7.0; SD = 5.663) in children's aggressive behavior in the classroom, $t(48) = 1.179$, $p = .244$.

The Associate Director of Preschool programs indicated that families whose children attend full day Head Start are different than families whose children attend part day Head Start. Families whose children attend full day Head Start are required to be employed full time and qualify for assistance from the State of Michigan for childcare. T-tests with this sample demonstrated that full day (FD) and part day (PD) enrollment did not account for differences in aggressive behavior at home (FD, M = 7.23; SD = 5.332; PD, M = 10.46; SD = 6.941), $t(50) = -1.882$, $p = .066$; aggressive behavior at school (FD, M = 8.08; SD = 5.22; PD, M = 7.52; SD = 8.869), $t(48) = .332$, $p = .741$. Mean levels of family stressful life events did not vary as a function of class type (FD, M = 11.539; SD = 9.433; PD, M = 11.885; SD = 10.405), $t(50) = -.126$, $p = .900$. Mean scores of inappropriate expectations (FD, M = 5.04; SD = 1.483; PD, M = 4.73; SD = 1.512), $t(50) = .741$, $p = .462$, empathy (FD, M = 5.23; SD = 2.338; PD, M = 4.69; SD = 2.000), $t(50) = .893$, $p = .376$, corporal punishment (FD, M = 4.15; SD = 1.433; PD, M = 3.81;

SD = 1.877), $t(50) = .747$, $p = .458$, role reversal (FD, M = 5.96; SD = 2.05; PD, M = 4.96; SD = 2.200), $t(50) = 1.696$, $p = .096$, and power-independence (FD, M = 5.85; SD = 2.49; PD, M = 5.31; SD = 2.112), $t(50) = .840$, $p = .405$ did not vary by class type. Table 4.2 summarizes means as a function of classroom type.

Table 4.2

Means for Aggression, Stressful Events, and Parenting Attitudes as a Function of Classroom Type

Variable	Full Day M ± SD	Part Day M ± SD
Child Aggressive Behavior		
Home (26)	7.23 ± 5.33	10.46 ± 6.94
School (25)	8.08 ± 5.22	7.52 ± 8.87
Stressful Events (26)	11.54 ± 9.43	11.89 ± 10.41
Parenting Attitudes		
Inappropriate Expectations (26)	5.04 ± 1.48	4.73 ± 1.51
Empathy (26)	5.23 ± 2.34	4.69 ± 2.00
Corporal Punishment (26)	4.15 ± 1.43	3.81 ± 1.88
Role Reversal (26)	5.96 ± 2.05	4.96 ± 2.20
Power Independence (26)	5.85 ± 2.49	5.31 ± 2.11

Note. N in parentheses

Caregiver Ecological Factors and Children's Attachment Representations

- Ho1: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are not associated with children's attachment representations.
- Ha1: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are associated with children's attachment representations.

Caregiver ecological factors were not associated with children's attachment representations. Median scores of social support network size were calculated and a new dichotomous variable was created. Those whose networks were smaller had between 0 and 2.52 individuals whereas those with larger networks had between 2.56 and 6 individuals who offered support. The contingency coefficient (C) was used to gauge the strength of the relationship. Crosstabs indicated that social support network size was not associated with children's attachment representations and the strength of the relationship was small (C = .148), χ^2 (2, N = 40) = .915; p = .633.

Median social support satisfaction scores were calculated to create a dichotomous variable of satisfaction. Low satisfaction scores were between 0 and 5.6, high satisfaction scores were between 5.74 and 6. The contingency coefficient (C) was used to gauge the strength of the association. Crosstabs indicated that satisfaction with social support was not associated with children's attachment representations and that the strength of the association was small (C

= .229), $\chi^2(2, N = 40) = 2.22$, $p = .329$. Table 4.3 summarizes the association between caregiver social support and children's attachment representations.

Table 4.3

Association Between Caregiver Social Support and Children's Attachment Representations

Factors		Avoidant	Ambivalent	Disorganized	Total
SSQN					
High levels	Observed	12	3	6	21
	Expected	10.0	4.7	6.3	21.0
Low levels	Observed	7	6	6	19
	Expected	9.0	4.3	5.7	19.0
Total	Observed	19	9	12	40
	Expected	19.0	9.0	12.0	40.0
SSQS					
High levels	Observed	11	2	6	19
	Expected	9.0	3.8	6.2	19.0
Low levels	Observed	8	6	7	21
	Expected	10.0	4.2	6.8	21.0
Total	Observed	19	8	13	40
	Expected	19.0	8.0	13.0	40.0

Note. SSQN = social support network size; SSQS = satisfaction with social support

A dichotomous variable was created for life stress by splitting the continuous variable at the median. Low levels of life stress ranged from 0 to 7 and high levels of stress ranged from 8 to 36. The contingency coefficient (C) was used to gauge the strength of the association. Crosstabs indicated that stressful life events were not associated with children's attachment representations and that the strength of the association was small (C = .241), $\chi^2(2, N = 41) = 2.457$, $p = .293$. Table 4.4 summarizes the association between caregiver life stress and children's attachment representations.

Table 4.4

Association Between Caregiver Life Stress and Children's Attachment Representations

Factor		Avoidant	Ambivalent	Disorganized	Total
Life Stress					
High levels	Observed	10	3	6	19
	Expected	8.8	4.2	6.0	19.0
Low levels	Observed	9	6	7	22
	Expected	10.2	4.8	7.0	22.0
Total	Observed	19	9	13	41
	Expected	19.0	9.0	13.0	41.0

Caregiver Ecological Factors and Parenting Attitudes

- Ho 2: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are not significant predictors of parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, or power-independence issues.
- Ha 2: Caregiver's perceived social support network size, perceived satisfaction of social support, and life stress are not significant predictors of parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, or power-independence issues.

Table 4.5 reports the relationship between caregiver environmental factors (social support network size, satisfaction with social support, and stressful life events) and parenting attitudes. Separate regression analyses were run to determine if caregiver ecological factors were significant predictors of each subscale of parenting attitudes. Caregiver ecological factors were not significant predictors of inappropriate expectations, $F(3, 45) = .597$, $p = .620$, values related towards corporal punishment, $F(3, 45) = .979$, $p = .411$, or power-independence issues, $F(3, 45) = 2.391$, $p = .081$. Caregiver ecological factors were significant predictors of empathy, $F(3, 48) = 6.447$; $p = .001$, and role-reversal, $F(3, 48) = 3.009$, $p = .04$.

Parenting Attitudes and Children's Attachment Representations

- Ho 3: Parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, and power-independence issues are not associated with children' s attachment representations.

Table 4.5

Summary of Linear Regression Analyses for Ecological Factors Predicting Parenting Attitudes

Parenting Attitudes	SSQN	SSQS	Life Stress	Sig.	R^2
Inappropriate Expectations	.030	.176	.079	.620	.038
Empathy	-.067	.574***	.164	.001***	.301
Corporal Punishment	-.040	.012	-.238	.411	.061
Role Reversal	-.173	.437**	-.005	.040*	.167
Power-Independence	.053	.350*	.080	.081	.137

Note. Standardized betas. Sig = significance of model

*$p < .05$; **$p < .01$; *** $p < .001$

- Ha 3: Parental expectations, empathy towards children's needs, values related to corporal punishment, family roles, and power-independence issues are not associated with children' s attachment representations.

Due to the small sample size, it was necessary to make continuous standard scores on each parenting subscale into ordinal scales. Reducing the number of categories from 10 to 3 allows for expected counts in each cell to be above 5 or approach 5 so that cell size was adequate for testing. The categories were made according to Bavolek and Keene's (1999) suggestions for interpreting the parenting profile. The categories that were created were described in an earlier section of this chapter; the categories are high-risk parenting (standard scores ranging from 1-4), attitudes consistent with those of the general population (standard scores ranging from 5-7), and low-risk parenting (standard scores

ranging from 8-10). Due to the small number of children classified as secure (N = 2) this category was dropped from the analysis. Crosstabs were run separately for each parenting attitude subscale, the contingency coefficient (C) was used to measure the strength of the relationship. Inappropriate expectations were not associated with children's attachment representations, $\chi^2(4, N = 41) = 4.881$, $p = .300$, and the strength of the association was moderate (C =.326). Empathy was not associated with children's attachment representations, $\chi^2(4, N = 41) = 6.976$, $p = .137$ and the strength of the association was moderate (C = .381). Corporal punishment was not associated with children's attachment representations, $\chi^2(4, N = 41) = 2.226$, $p = .694$, and the strength of the association was small (C = .227). Role reversal was not associated with children's attachment representations, $\chi^2 (4, N= 41) = 2.807$, $p = .591$, and the strength of the association was small (C = .253). Power-independence issues were not associated with children's attachment representations, $\chi^2 (4, N = 41)= 6.860$, $p = .143$, and the strength of the association was moderate (C = .379).

Caregiver Clinical Symptoms and Attachment Representations

- Ho 4: Caregiver psychological well being is not associated with children's attachment representations.
- Ha 4: Caregiver psychological well being is associated with children's attachment representations.

Psychological well being is defined as the absence of clinical symptoms as measured by the GSI subscale on the BSI. A dichotomous variable was created and a crosstab was used to test the association between clinical symptoms (T

scores ≥ 62) and children's attachment representations. Due to the small number of children classified as secure (N = 2), this category was dropped from the analysis. The contingency coefficient (C) was used to test the strength of the association. There was no association between caregiver psychological well being and children's attachment representations, χ^2 (2, N = 41) = 4.955, p = .084, and the strength of the association was moderate (C = .328).

Attachment and Child Behavior

- Ho 5: Children's mean aggression scores at home and school do not vary as a function of attachment representations.
- Ha 5: Children's mean aggression scores at home and at school vary as a function of attachment representations.

Two separate ANOVA's were run to determine if aggression at home or at school varied as a function of children's attachment representations. Due to the small number of children classified as secure (N = 2), this category was dropped from the analysis. Aggression at home, as measured by the raw score on the aggression subscale of the CBCL, did not vary as a function of children's attachment representations, F (2, 38) = 2.63, p = .085. Aggression at school, as measured by the raw score on the aggression subscale of the TRS, did not vary as a function of children's attachment representations, F (2, 38) = 2.43, p = .102.

Aggression at Home and at School

- Ho 6: Children's aggressive behavior at home is not significantly correlated with aggressive behavior at school

- Ha 6: Children's aggressive behavior at home is significantly correlated with aggressive behavior at school.

Pearson Correlation revealed that children's aggressive behavior at home, as measured by the raw score on the aggression subscale of the CBCL, was significantly correlated with aggressive behavior at school, as measured by the aggression subscale of the TRS (r = .311; p = .05).

Conclusion

This chapter reviewed frequencies for relevant variables, and presented the findings for the research hypotheses introduced in chapter 3. The next chapter will present a discussion of these findings

CHAPTER 5

Discussion

Introduction

The previous chapter provided the results for this study, which investigated caregiver psychological and environmental factors that contribute to parenting attitudes, attachment representations in their children and subsequent child behavior at home and at school. Included in the previous chapter were frequencies for relevant variables and the findings for each hypothesis. This chapter will discuss the findings presented in the previous chapter. First, frequencies will be discussed, followed by a discussion of each research question. Finally, limitations, implications and suggestions for future research, and conclusions will be presented.

Frequencies

Caregiver Variables

There were more caregivers, in this sample, who reported parenting attitudes that are characteristic of parents who are known to practice abusive parenting attitudes than in the population on which Bavolek and Keene (1999) normed the AAPI-2. In general, caregivers from this sample tended to be less empathetic toward their child's needs (44.2% compared to 30%), and were more likely to endorse physical punishment as a form of discipline (57.7% compared to 30%) than would be expected . Only a small number of parents had low risk attitudes, which are characteristic of a nurturing, non-abusive, parenting philosophy, as defined by Bavolek and Keene (1999). According to Bavolek and

Keene (1999), Approximately 16% of the population have low risk attitudes. In this sample parents were less likely to have appropriate expectations (5.8%), be empathetic toward their child's needs (11.5%), and less likely to use alternatives to physical punishment for discipline (1.9%). Caregivers in this sample were also more likely than the general population to have psychological symptoms that fell into the clinical or diagnosable range (21.2% compared to 12%, respectively).

Child Variables

Children in this sample had higher levels of aggressive behavior than is typical. Frequencies from this study indicate that approximately 17.3% had moderate to severe levels of aggressive behavior at home as designated by cut-off scores on the CBCL. Furthermore, 23.1% of children were exhibiting aggressive behavior that was clinically significant, as evidenced by cut-off scores on the TRS. Other studies have found that 10 to 15 % of preschool children have moderate ($60 < T < 70$) to severe ($T \geq 70$) levels of behavior problems. Children in this sample also were exhibiting higher levels of aggressive behavior than have previously been found in other samples of Head Start children (Kupersmidt et al., 2000). Given the low number of children classified as secure ($N = 2$) and the relationship between secure attachment and social competence (Cohen, 1990) and empathy (Waters et al., 1979), the higher than expected frequency of aggressive behavior is not surprising.

In this sample, girls and boys did not differ significantly in mean levels of aggressive behavior at home or at school this is contrary to other studies that found sex differences in externalizing problems to emerge between the ages of 4

and 5 (Zahn-Waxler et al., 1990; Achenbach et al, 1987). This finding is consistent with other research that has been conducted with Head Start children (Kuppersmidt, et al., 2000).

The percentage of children classified as disorganized is consistent with other studies of children from multi-problem families (30% and 28%, respectively) (Spieker & Booth, 1988), but less than would be expected in low income samples of infants who have depressed mothers (30% and 54 %, respectively). This relatively low number of children classified as disorganized is interesting given the relatively large number of caregivers in this sample who reported clinical levels of psychological symptoms. Furthermore, it is interesting and concerning that only 4.7% (N = 2) children in this study were classified as secure. The low number of securely attached children could be related to the early child care histories, not examined by this study, of the children participants, especially when one considers that 90% of center-based child care is considered to be low quality (Helburn et al., 1995, as cited in Brazelton & Greenspan, 2000). The low number of securely attached children could also be related to a "crisis of transition" (Ainsworth, 1990 p. 485). When the study was conducted, some of the child participants had recently begun preschool (within 3 to 6 months of being interviewed). However, some of the children in the study had been with the same teacher for a year before the study began. If the transition to school was responsible for the small number of children classified as secure, then one would expect that more children would be classified as secure as the study progressed. The rate of secure children, however did not increase as the study progressed,

actually the children who were classified as secure were interviewed within the first month of the beginning of the school year.

Caregiver Environmental Factors and Children's Attachment Representations

The size of one's social support network, one's satisfaction with the support received, and stressful events in one's life were not associated with children's attachment representations. This study examined the association that social support has on attachment representations, while other studies that found a relationship between social support and attachment reported that social support acts as a mediator of security for low levels of nurturing parenting during infancy (Crittenden, 1985). More research needs to be conducted to support this earlier finding and to understand if social support network size or quality has a direct impact on attachment representations.

Unlike other studies which found that family stress influences the quality of the attachment relationship (DeMulder et al., 2000; Shaw & Vondra, 1993), results from this study did not support the idea that family stress is associated with different types of insecure attachment. One reason for the lack of association could be due to the removal of the secure classification from the analyses. Shaw & Vondra (1993) found that cumulative family stressors differentiated secure infants from insecure infants, especially for families with 3 or more stressors. The high number of stressors could have contributed to the lack of secure children in the study.

Caregiver Environmental Factors and Parenting Attitudes

The results of five separate regression analyses indicated that the independent environmental factor variables (size of social support network, satisfaction with received support, and life stress) were not significant predictors of the expectations that caregivers have of their child, their belief in physical punishment as a form of discipline, or the degree to which parents believe that children need to be empowered. While the model was not significant, caregivers who were more satisfied with their support network were more likely to value empowering children.

Smaller support networks, higher levels of satisfaction with support, and lower levels of stress were significant predictors of empathetic caregiving. The environmental factors in this model accounted for 30% of the variance in empathic parenting; satisfaction with social support contributed unique variance to the model. Additionally, smaller support networks, higher levels of satisfaction with support, and lower levels of stress were significant predictors of caregiving that separates the needs of children from the needs of adults (role reversal). The environmental factors in this model only account for 16.7% of the variance in role reversal, suggesting that other environmental factors may be more important than social support and life stress in predicting parenting attitudes. These findings may be confounded by the relatively few number of parents who reported low risk parenting attitudes.

While low scores on the AAPI-2 indicate that a parent can be considered high risk for abusing his or her child and less likely to be considered a nurturing

parent, it is difficult to say if parent's attitudes actually predict if the discipline they are using can be considered abusive. Furthermore, it is unlikely that the size of one's support network, their satisfaction with support, or stressful events would impact their attitudes about parenting, but it may predict if behavior follows attitudes. Attitudes may be more of a reflection of a caregivers own history of being parented. Environmental factors may be more significant in predicting how parents actually interact with or discipline their children. Future studies examining environmental factors and parenting should include attitudes about parenting and observations of parenting practices.

Parenting Attitudes and Children's Attachment Representations

Crosstabulation indicated that parenting attitudes, thought to be associated with abusive parenting, were not associated with children's attachment representations. Despite the previous finding that disorganization is more prevalent in samples of children who have been maltreated (Carlson et al., 1989), measures of parenting attitudes toward discipline may not actually reflect abusive parenting or account for parent-child interaction that is thought to impact attachment. The lack of association may also be due the small number of children classified as secure and the low number of parents reporting an attitude characteristic of low-risk parenting. However, it is unlikely that these explanations alone account for the lack of association between parenting attitudes and children's attachment representations.

The lack of association makes theoretical sense. Attachment theory posits that sensitive and responsive caregiving in infancy is related to a secure

attachment (Ainsworth et al., 1978; Isabella, 1993; Grossman et al, 1985; Egland & Farber, 1984). Sensitivity in these studies has been defined as the caregiver's ability to respond in an appropriate and prompt way to the infant (De Wolff & van IJzendoorn, 1997). The measure of parenting attitudes used in the current study did not measure the degree to which a caregiver responds in an appropriate or prompt way, observation in the child's natural environment is a more useful measure of sensitivity.

Since the function of attachment is protection through the maintenance of proximity to a caregiver, it makes sense that in infancy, a caregiver's appropriate and prompt response is so closely associated with a secure attachment. As researchers begin to examine the correlates of attachment in preschool, especially in high-risk samples, where attachment is thought to be less stable, close observation of children in his or her natural environments is crucial. These observations will allow researchers to understand how the caregiving environment in the preschool years, when a child still needs to be protected, but has gone through significant developmental advancements since infancy, contributes to attachment security. When combined with measures of environmental factors, that are thought to impact a caregivers ability to provide sensitive and responsive care, a clearer picture of the contribution of attachment theory to development will result.

While measures of parenting attitudes provide interesting and important information for intervention, they do not measure sensitivity or responsivity, and

thus do not provide useful information about the association between parenting and attachment representations.

Caregiver Clinical Symptoms and Attachment Representations

Crosstabulation indicated that caregiver psychological well-being is not associated with children's attachment representations. This finding is contrary to findings of much of the research that has been conducted (Lyons-Ruth et al., 1990; Gelfand & Teti, 1990). The lack of association in this study could be due to a variety of factors including the small number of children classified as secure. Without a larger number of secure children it is impossible to determine if clinical levels of psychological symptoms differentiate secure from insecure children as it has in other samples. Furthermore, previous research that has found insecurity to be related to depression, has found that major depressive disorder, not minor depression was more likely to differentiate secure from insecure children (Gelfand & Teti, 1990).

It is also plausible that, despite the relatively high number of caregivers who were exhibiting clinical levels of psychological symptoms, these caregivers were able to provide sensitive and responsive care to their children. During data collection a number of parents reported that they knew their scores on the measure of psychological well-being were high, but they were in therapy to deal with the issues. These parents, while showing high levels of clinical symptoms, may be providing sensitive and responsive care because of the services that they are receiving. Furthermore, other factors may influence this relationship, for example, social support, life stress, and marital discord. More analyses may

provide information about the role that social support plays in moderating the effects of psychological symptoms.

It is interesting that of the children classified as disorganized in the current study, none of their parents reported clinical levels of psychological symptoms. It is possible that this finding is the result of caregivers underreporting symptoms or that the impact of psychological well-being is greater during the period of infancy than it is in preschool, possibly because children are exposed to a greater number of caregivers. It is also possible that environmental factors, not measured in this study, account for differences in attachment security in the preschool period.

Attachment and Child Behavior

Two separate ANOVAs indicated that children's mean aggression scores at home and at school did not vary as a function of attachment classification. The findings in this study are contrary to infant attachment research that has found that disorganized children are more likely than insecure or secure children to display hostile behavior in the classroom (Lyons-Ruth et al., 1993). Although research examining the relationship between attachment in preschool and concurrent behavior problems is limited, preliminary research has demonstrated that disorganized children have significantly more behavior problems at home and at school that insecure or secure children (Solomon et al., 1995).

The lack of association between behavior problems and insecure attachment has been found in studies that were conducted with infants from low risk samples, prior to the introduction of the disorganized category (Bates et al.,

1985; Goldberg, Corter, Lojkasek, & Minde, 1990). The lack of association in this study may be related to the small number of secure children or an increasingly complex relationship between attachment in preschool and concurrent behavior problems. It may be necessary to examine the presence of disorganization in all stories and begin to look at disorganization as a continuous variable in the preschool years. An important finding in this study is that there are disorganized children who are not exhibiting aggression or other behavior problems at home or at school. This presents an exciting and needed opportunity to understand what factors mediate behavior problems when children are classified as disorganized.

Aggression at Home and at School

Pearson correlation indicated that children's aggressive behavior at home was significantly correlated with behavior at school. This supports another study, which measured problem behaviors at home and school (Solomon et al., 1995). These finding make intuitive sense; if children learn at home that aggression gets results, they are likely to use this behavior at school. It is unclear if this association is due to communication between teachers and parents, similar home and school environments, or the persistence of behavior problems once children enter preschool. These data suggest that for aggressive behavior to decrease, interventions need to be directed at both environments.

Implications for Future Research

In the past 25 years, researchers have learned a great deal about attachment in the period of infancy, especially the relationship between sensitive, responsive caregiving and attachment. Research on attachment in the period of

infancy has also made strides in understanding the relationship between attachment classification and later psychosocial adjustment. Although Bowlby considered attachment to be relevant throughout the lifespan, there has been little research on attachment during the preschool years, especially in high-risk populations. Research with high-risk samples allows scholars to better understand atypical attachments in the preschool years. Understanding more about this type of attachment is important because coding of atypical attachments in the preschool years varies across attachment measures (Barnett & Vondra, 1999). By focusing attachment research on high-risk preschool samples, the precision in which one can code atypical attachments will improve.

One of the inconsistencies in this research was that not all children who were classified as disorganized had clinical levels of aggressive behavior and they were not more likely than insecurely attached children to have clinical levels of aggressive behavior. Barnett and Vondra (1999) suggest that attachment research has benefited from looking at attachment patterns that were inconsistent with Ainsworth's original categorization. In this sample, there was a great deal of disorganization present in stories of children classified into organized categories, but because of the way in which the overall attachment classification is assigned, these children were not classified as disorganized. Perhaps one of the implications of this is to re-examine disorganization during the preschool years. It may be that the amount of disorganization present is more relevant during this time than a child's status as disorganized. Because high-risk samples are more likely to include infants and preschoolers with

atypical attachments, research with these samples will assist developmentalists in understanding more about the consequences of atypical attachments. For example, one can understand if atypical attachment is a risk factor for later social-emotional problems or if atypical attachments can be used to explain the processes that are involved in the transformation from risk to psychopathology (Barnett & Vondra, 1999)

In this study, caregiver's attitudes about discipline were not associated with children's attachment representations. This could be the result of using a measure of self reported attitudes as opposed to direct observation of the parent-child dyad. It could also be related to the fact that the children in this sample have been influenced by other relationships with important adults. Future research in the area of attachment and children's behavior during the preschool period should take into account children's relationships with multiple caregivers. Many of the children in this study spent at least 20 hours a week with adults in their classrooms. Some of these children were also in child care before school, after school, or on weekends. Furthermore, most of the social supports listed by caregivers were family members, who could have great influence on the child's representational model of care, either directly or through contact with the parent.

This study only provided a beginning look at the role of environmental factors in attachment representations and parenting. Studies in the future need to be expanded to include observation in the child's natural environments (home and school) as well as interview techniques with parents, which will provide greater depth as to transitions that children are facing. Studies with larger

samples, that include multiple measures, by multiple informants of child behavior, caregiver behavior, and additional environmental factors will be necessary to inform research about the complex nature of attachment during the preschool years.

Since comparisons between secure and insecure children were not possible with this sample, it will be important for future studies to have large enough samples so that this comparison can be made. Future analyses with this sample, however will facilitate understanding of the factors that protect insecure children from behavior problems.

Research on behavior problems in the preschool years should continue to include assessments of the parent-child relationship, including attachment and interaction. This research should also focus not just on the correlates of behavior problems and their stability over time, but instead on factors that reduce the likelihood of behavior problems at home and at school.

Implications for Practice

This study has many implications for practice. One of the implications is the support for more funding for Early Head Start. None of the children in this study was enrolled in Early Head Start, which provides high quality care to high-risk children under the age of 3. Because this study was conducted at the beginning of the school year, it allows one to see the many obstacles that children have faced prior to their entry into Head Start. The frequency data in this study clearly showed that children and their families have faced many positive and negative transitions in the past year. They live in families where

caregivers are likely to be suffering from psychological symptoms. The children come to school with more behavior problems than would be expected in a typical population. The additive impact of multiple risk factors negatively impacts mental health (Chazan-Cohen, Jerald, & Stark, 2001). In addition to the above risk factors, Head Start children in this sample were less likely to be securely attached than children in middle class samples, which may impact their ability to deal with transitions, to behave in socially appropriate ways, and to relate to peers. When combined, these factors, make it clear that some children are entering Head Start at a disadvantage, which may contribute to an already difficult-to-manage classroom.

Attachment security and disorganization tend to be relatively stable even in high-risk samples (Barnett, et al., 1999). As a result, it is possible that the children in this sample had experiences in infancy that led to insecure or disorganized attachment. These relationships impact brain development that is important in the regulation of emotions and the ability to deal with stress. Recent research on brain development in infancy has shown that brain maturation in infants is experience-dependent. The experiences that are critical for brain development in the first year of life rooted in the transactions between the infant and his or her primary caregiver (Schore, 2001). The right hemisphere of the brain is dominant during the first three years of life; this is the same time that children form attachment relationships. The right hemisphere of the brain is important throughout the lifespan for processing the physiological and cognitive components of social-emotional information (Schore, 1994). Developmental

psychology and neuroscience are showing that the ability to create and maintain an internal sense of emotional security during times of stress is established in the first three years of life through attachment relationships (Schore, 2001).

When one looks at the small number of children in this study who have secure attachments through a neuroscience lens, the findings are very troublesome. This perspective suggests that the children in this study may not have developed the capacity to regulate emotion and cope with stress. Because a secure attachment relationship is the foundation of mental health and the context in which healthy social and emotional development continues to grow, more focus needs to be placed on the opportunities to promote infant mental health (Chazan-Cohen, et al., 2001). Early Head Start provides an excellent opportunity to promote healthy child and family development, including secure attachment relationships. Early Head Start recognizes the importance of social and emotional needs of infants and the relationship between these needs and the multiple domains of development (Chazan-Cohen et al., 2001).

Because children in this sample were less likely than children in lower risk samples to have secure attachment and more likely to exhibit clinically elevated levels of behavior problems, classroom management and education of the children may be difficult. One clear implication of this research is that lead teachers and teacher assistants may need more training to develop skills to help children in the classroom. Members of the Head Start community, including teachers and parents have indicated that they would like to understand how to address the mental health needs of young children and their families (Chazan-

Cohen, et al., 2001). Training in social and emotional development, including attachment, and responding in a sensitive and consistent way may also challenge children's current representational models, and foster secure attachments, which may moderate future behavior problems and enhance learning capacity.

One of the goals of Head Start is to support parents as the primary nurturers of their children. In Ingham County, each classroom is assigned a family support worker, who assists families with basic needs and connects them to community resources. This research points to the importance of these positions to the overall goal of Head Start, which is to promote school readiness. Family support workers are the important link between home and school. They have contact primarily with parents and form helpful and supportive relationships that may influence parent's attitudes that are associated with abusive parenting.

The higher than expected levels of high-risk parenting, and clinical levels of child aggressive behavior, and the low number of securely attached children, despite the lack of association between these variables, underscores the need for mental health workers in Head Start. These professionals must be trained in early childhood, be a regular part of the classroom, and have the ability to work with children both at home and at school. The consistency of behavior problems at home and at school and previous research that has demonstrated that early behavior problems, in the context of stressful family and community environments, remain highly stable suggests that interventions focusing on home

and school are a must if children are going to be ready to learn when they leave Head Start.

One of the most important implications for this study is the need for Early Head Start in this community. It also points to the need for a curriculum that involves parents and is relational in focus. Evaluations of Early Head Start should compare children and parents who have received Early Head Start services to those who have not to determine if early environmental factors are impacting children's social readiness for Head Start.

Limitations

The relatively short time period in which this study was conducted contributed to many limitations in the research. The first limitation is the lack of observational data of child behavior at home and at school and parent-child interaction. While the information on parenting attitudes provided important information to Head Start, it did not provide the complex information that has been so valuable in attachment studies. This type of information would also have added a great deal to what is known about behavior problems. This study is also limited in that only one caregiver was included in data collection, when in reality each child has contact with many important adults who influence their representational models and behavior.

The second limitation is the small sample size. Although the sample size is similar to other studies rooted in attachment, the small number of subjects is problematic when making conclusions about the role of caregiver ecological and psychological factors in attachment representations in preschool children. The

small number of subjects also makes it difficult to determine the relationship between attachment representations and child behavior, especially because of the categorical nature of the attachment variable.

The small number of secure children was possibly the largest limitation of the study because it made it impossible to understand which factors foster security and the contribution that a secure attachment makes to social adjustment. It also makes the comparison between secure and insecure children impossible because the secure category had to be dropped from the analysis.

Conclusions

This chapter has provided a discussion of the findings from this study, which investigated caregiver psychological and environmental factors that contribute to parenting attitudes, attachment representation in their children and subsequent child behavior at home and at school. Overall, this study has significant implications for Head Start practice and demonstrates the importance for Early Head Start in high risk communities. It demonstrates that children entering Head Start have faced a variety of challenges at different levels, which may impact their ability to learn.

The limited sample size and small number of secure children made it impossible to understand the correlates of a secure attachment in preschool and resulting behavior. It did demonstrate that satisfaction with social support is associated with nurturing parenting attitudes, but that these attitudes are not associated with insecure or disorganized attachment. Furthermore, it demonstrated that parenting attitudes do not differentiate between insecure

attachment classifications. Life stress, social support, and caregiver psychological well being were also not associated with insecure or disorganized attachment classification. The variance in children's aggression at home and school could not be accounted for by attachment classification. Clearly more research needs to be done before any of these results can be considered conclusive. This study was too narrow to account for the complexities in the relationship between environmental factors that contribute to caregiving, children's attachment representations, and behavior problems at home and at school. Despite this, it is an important contribution to the small body of literature on attachment in the preschool years because it provides information on measures that are potentially not useful in the study of attachment and begins to add knowledge about contextual factors that are associated with attachment.

APPENDIX A

Family Information

Please circle the appropriate answer(s) or fill in the blank for the questions below for your child who is attending Head Start.

1) My child is
   a. Male b. Female

2) His/her date of birth is (please include month, day, year) _____

3) His/her ethnic background is (circle all that apply)
   a. White b. African American c. Hispanic d. American Indian
   e. Asian g. Arab h. other _____

4) The following people live in the home where my child spends most of his/her time (circle all that apply)
   a. biological mother
   b. biological father
   c. biological parent's significant other
   d. sibling(s)
   e. grandmother
   f. grandfather
   g. foster mother
   h. foster father
   i. parent's friend(s)
   j. other relatives
   k. other _____

5) How many hours a week, not including the time your child spends in Head Start, does he/she spend in child care? _____ (if your child does not spend time in child care outside of Head Start, please go to question 8)

6) If your child is in child care outside of Head Start, is he/she always taken care of by the same person?
   a. Yes b. No

7) If your child is in child care outside of Head Start, what type of care is he/she in (please circle all that apply)
   a. A relative cares for my child
   b. A friend cares for my child
   c. My child goes to a child care center
   d. My child goes to a child care providers home
   e. Other (please describe) _____

8) Sometimes children spend a period of time living away from their biological parent(s). Has your child spent more than 10 days in a row being cared for by someone other than a biological parent?
   a. Yes (please go to question 9) b. No (please skip to question 11)

9) How many times has your child spent more than 10 days in a row being cared for by someone other than a biological parent? _____

10) How long was each separation?

_____ _____

_____ _____

The questions below are about the child's primary caregiver. Please circle the appropriate answer(s) or fill in the blanks for the following questions.

11) I am the Head Start child's
a. biological parent b. grandparent c. foster parent
d. other _____

12) I am
a. Male b. Female

13) I am
a. Single b. Divorced c. Married
b. Separated c. In a committed relationship (more than 6 mo.)

14) Do you have legal custody of the child described in question 1-10?
a. Yes b. No

15) How old are you? _____

16) What is your ethnic background? (circle all that apply)
a. White b. African American c. Hispanic d. American Indian
e. Asian g. Arab h. other _____

17) Are you employed?
a. Yes b. No (please skip to question 20)

18) How many hours per week do you work? _____

19) Do you work the same hours every week? _____

20) Are you currently trying to find a job?
a. Yes b. No

21) What is your family's approximate monthly income? _____

APPENDIX B

Informed Consent

Why are we doing this research?

The purpose of this research is to better understand the needs and strengths of children who attend Head Start and their caregivers. Specifically we are interested in finding out more about your support network, recent life changes, and your ideas about parenting. We also are interested in how your child plays and his or her behavior both at home and in the classroom. We are interested in positive behaviors, like cooperative play, and negative behaviors, like aggression.

What we are asking you and your child to do?

We are asking you to fill out some surveys about yourself and your child who attends Head Start. You can fill these surveys out while your child is still in his or her classroom during regular school hours. If you have questions about the surveys or would prefer to have someone read them to you, someone will be available to do this. The surveys will take approximately 45 to 60 minutes to complete. The day after you complete the surveys, we will ask your child to play with us in a room in the school. The researcher who will be with your child when he or she is playing will begin a story and then ask your child to finish that story. The stories involve moderately stressful scenarios that are common struggles for many preschool children. The play is kept at the pretend level, which helps children distance themselves from any stress they may feel. Also, your child will be able to end the story in any way that he or she wishes, allowing him or her to resolve any uncomfortable feelings. Your child's play will be videotaped so that we can make notes about it later. The play session with your child will take one-half hour. We will also ask your child's teacher to tell us about his or her behavior in the classroom. We want to know what he or she does well and if the teacher has any concerns about his or her behavior.

Participation in this research project is voluntary. You can decide at any time that you do not want to participate in this research. If your child does not want to leave his or her classroom, he or she will be allowed to stay in the classroom.

It is unlikely that your child will experience any negative reaction to the play session. In the event that you have any concerns about your child's behavior on the day that they participated in the play session you may contact Dr. Marsha Carolan at (517) 432-3327 or Ann Stacks at (517) 432-2271 ext. 5

Are there any benefits for families who participate?

We know that your time is valuable and we are grateful that you might be willing to help us understand more about children who attend Head Start and their families. After your child finishes his or her playtime with us we will send you a $25 gift certificate to Meijer. We will ask you to fill your address out on an envelope so that we can send these to you as soon as possible. You should receive your gift certificate within 5 business days of your child's playtime. If your child is in school on the day that the interviews are conducted, but does not want to leave his/her classroom, you will still receive the $25 gift certificate.

How will we protect your privacy?

Your privacy will be protected to the maximum extent allowable by law. You will be instructed not to put your name or your child's name on any survey that you fill out. We will put a number on your surveys. This number will also be used on the survey that the teacher fills out, on the video of your child's play, and on any notes made from that video. If you sign the bottom of this page, indicating that you will voluntarily participate in this study, this form will be kept separate from the surveys that you fill out. All of the information we receive will be kept in a locked file cabinet at Michigan State University. We will not share information about your child's play or your answers to our surveys with your child's teacher or other Head Start staff. Only the researchers who have been hired to conduct the play session or to make notes about the video will be allowed to view your child's play session video. These people have signed a consent form promising that they will not discuss information about you or your child with anyone who is not working on the research project. The law requires that if a child tells us that he or she is being hurt by

someone, we have to report it to the proper authorities. This is the only time that we would have to break our promise to keep information about you and your child private. Any information that we share will be grouped together, no names or other identifying information will be used in these reports.

If at any point you have any questions or concerns about your participation in this program, you may call the research supervisor, Dr. Marsha Carolan (517) 432-3327. If you have any questions about your rights as a research participant, you should call Dr. Ashir Kumar, Chair, University Committee on Research Involving Human Subjects (517) 355-2180.

Statement

I voluntarily agree to participate in this study and will allow my child to participate in this study. I am legally able to give consent for this child to participate.

Caregiver: _____ Date: _____

Phone number: _____

Witness: _____ Date: _____

I give permission to my child's teacher to provide information regarding his or her behavior in the classroom.

Caregiver: _____ Date: _____

Witness: _____ Date: _____

Child's Name: _____

Teacher's Name: _____

Informed Consent
(Teachers)

Purpose of the research

The purpose of this research is to better understand the needs and strengths of children who attend Head Start and their caregivers. Specifically we are interested in finding out more about the support network of caregivers, the recent changes in their lives, and their ideas about parenting. We are also interested in how their children play and their behavior at home and at school.

What we are asking teachers to do?

Children will be interviewed during the school day, using a doll play procedure that will take place in an empty room in the school building. Research staff will make arrangements with you about how this process will work best in your classroom. After caregivers agree to participate, you will be asked to fill out a survey of child behavior. Each survey that your are asked to fill out will take between 30 and 40 minutes.

Your participation in the research is voluntary. You can decide at any time that you do not want to participate in this research.

Your time will be reimbursed

It is important that we understand children's behavior in many settings; you are the best resource for helping us understand how children behave in your classroom. We understand that your day doesn't begin when students arrive at school and end when they leave. We know that you are responsible for a great deal of paperwork and outside activities. For each survey that you return within 3-4 weeks, you will receive a $10 gift certificate to a teacher supply store. You may earn a maximum of $60 in gift certificates. This incentive is for the time that you spend filling out information about child behavior. It is important to us that teachers do not urge families to participate in the study.

Your privacy will be protected

Your privacy will be protected to the maximum extent allowable by law. You will be instructed not to put your name or the child's name on any survey that you fill out. The information that you give us will be stored in a locked file cabinet at Michigan State University. We will not share information that you give us with other Head Start staff or parents. Any information that we share will be grouped together, no names will be used.

If at any point you have any questions or concerns about your participation in this program, you may call the research supervisor, Dr. Marsha Carolan (517) 432-3327. If you have any questions about your rights as a research participant, you should call Dr. Ashir Kumar, Chair, University Committee on Research Involving Human Subjects (517) 355-2180.

Statement

I voluntarily agree to participate in this study.

Teacher: _____ Date: _____

Witness: _____ Date: _____

REFERENCES

REFERENCES

Achenbach, T. M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile.* Burlington, VT: University of Vermont Department of Psychiatry.

Achenbach, T. M., Edelbrock, C., & Howell, C. (1987). Empirically-based assessment of the behavioral/emotional problems of 2-3 year old children. *Journal of Abnormal Child Psychology,* 15, 629-650.

Adams, C., Hillman, N., & Gaydos, G. (1994). Behavioral difficulties in toddlers: Impact of sociocultural and biological risk factors. *Journal of Clinical Child Psychology,* 23, 373-381.

Aguilar, B., Sroufe, L. A., Egeland, B., & Carlson, E. (2000). Distinguishing the early-onset/persistent and adolescence-onset antisocial behavior types from birth to 16 years. *Development and Psychopathology* 12, 109-132.

Ainsworth, M. D., Blehar, M. C., Waters, E. & Wall, S. (1978). *Patterns of Attachment: A Psychological Study of the Strange Situation.* Hillsdale, NJ: Erlbaum.

Ainsworth, M. D. (1990). Epilogue: Some considerations regarding theory and assessment relevant to attachments beyond infancy. In M. T. Greenberg, D. Cicchetti, E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, Research, and Intervention.* (pp. 463-488). Chicago: University of Chicago Press.

Alesandri, S. M. (1991). Play and social behavior in maltreated preschoolers. *Development and Psychopathology,* 3, 191-205.

Andersen, P., & Telleen, S. (1992). The relationship between social support and maternal behavior and attitudes: A meta-analytic review. *American Journal of Community Psychology,* 20, 752-774.

Barnett, D., Ganiban, J., & Cicchetti, D. (1999). Maltreatment, emotional reactivity, and the development of type D attachments from 12 to 24 months of age. In J. Vondra & D. Barnett (Eds.), Atypical patterns of infant attachment: Theory, research and current directions. *Monographs of the Society for Research in Child Development,* 50(1-2, serial No. 209), 167-193.

Barnett, D., & Vondra, J. (1999). Atypical patterns of early attachment: Theory, research, and current directions. In J. Vondra & D. Barnett (Eds.), Atypical patterns of infant attachment: Theory, research and current directions. *Monographs of the Society for Research in Child Development,* 50(1-2, serial No. 209), 1-24.

Bates, J. E., Bayles, K., Bennett, D. S., Ridge, B, & Brown, M. M. (1991). Origins of externalizing behavior problems at eight years of age. In D. J. Pepler & K. H. Rubin (Eds.), *The Development and Treatment of Childhood Aggression* (pp. 93-120). Hillsdale, NJ: Erlbaum.

Bates, J. E., Maslin, C. A., & Frankel, K. A. (1985). Attachment security, mother-child interaction, and temperament as predictors of behavior-problem ratings at age three years. In I. Bretherton & E. Waters (Eds.), Growing points of attachment theory and research. *Monographs of the Society for Research in Child Development*, 50(1-2 Serial No. 209), 167-193.

Bavolek, S. & Keene, R. (1999). *The Adult Adolescent Parenting Inventory – 2 Handbook.* Park City, UT: Family Development Resources.

Belsky, J. (1984). The determinants of parenting: A process model. *Child Development,* 55, 83-96.

Belsky, J. (1999). Interactional and contextual determinants of attachment security. In J. Cassidy & P. R. Shaver (Eds.), *The Handbook of Attachment: Theory, Research, and Clinical Applications.* (pp. 249-264). New York: Guilford.

Belsky, J., Rovine, M., & Taylor, D. G. (1984). The Pennsylvania infant and family development project: III. The origins of individual differences in infant-mother attachment: Maternal and infant contributions. *Child Development*, 55, 718-728.

Bohlin, G., Hagekull, B., & Rydell, A. M. (2000). Attachment and social functioning: A longitudinal study from infancy to middle childhood. *Social Development,* 9(1), 24-39.

Bost, K. K., Vaughn, B., Washington, W. N., Cielinski, K. L., & Bradbard, M. R. (1998). Social competence, social support, and attachment: Demarcation of construct domains, measurement, and paths of influence for preschool children attending Head Start. *Child Development*, 69, 192-218.

Bowlby, J. (1982). *Attachment and Loss: Volume 1. Attachment.* New York: Basic Books.

Bowlby, J. (1988). *A Secure Base: Parent-Child Attachment and Healthy Human Development.* London: Basic Books.

Brazelton, T. B., & Greenspan, S. I. (2000). *The Irreducible Needs of Children: What Every Child Must Have to Grow, Learn, and Flourish.* Cambridge, MA: Perseus.

Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of the attachment relationship: An attachment story completion task for 3-year-olds. In M. T Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, Research, and Intervention.* (pp. 273-308). Chicago: University of Chicago Press.

Bronfenbrenner, U. (1979). *The Ecology of Human Development.* Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In R. H. Wozinak & K. Fischer (Eds.), *Scientific Environments.* Hillsdale, NJ: Erlbaum.

Bubolz, M. & Sontag, M. S. (1993). Human ecology theory. In P. Boss, W. Doherty, R. LaRossa, W. Schumm, & S. Steinmetz (Eds.), *Sourcebook of Family Theories and Methods: A Contextual Approach.* (pp. 419-448). New York: Plenum.

Burchinal, M., Follmer, A., & Bryand, D. (1996). The relations of maternal social support and family structure with maternal responsiveness and child outcomes among African American families. *Developmental Psychology*, 6, 1073-1083.

Call, M. J. (1999). Transgenerational attachment, life stress, and the development of disruptive behavior in preschool children [abstract]. (Doctoral Dissertation, Old Dominion University, 1999). *Dissertation Abstracts International,* 60(4-B) AEH9928695.

Campbell, S. B. (1994). Hard-to-manage preschool boys: Externalizing behavior, social competence, and family context at two-year followup. *Journal of Abnormal Child Psychology*, 22(2), 147-166

Campbell, S. B. (1995). Behavior problems in preschool children: A review of recent research. *Journal of Child Psychology and Psychiatry*, 36(1), 113-149.

Campbell, S. B., & Ewing, L. J. (1990). Follow-up of hard-to-manage preschoolers: Adjustment at age 9 and predictors of continuing symptoms. *Journal of Child Psychology and Psychiatry,* 31(6), 871-889.

Campbell, S. B., Breaux, A. M., Ewing, L. J., & Szumowski, E. K. (1984). A one-year follow-up study of parent-referred "hyperactive" preschoolers. *Journal of the American Academy of Child Psychiatry*, 23, 243-249.

Campbell, S. B., March, C. L., Pierce, E. W., Ewing, L. J. (1991). Hard-to-manage preschool boys: Family context and the stability of externalizing behavior. *Journal of Abnormal Child Psychology,* 19(3), 301-318.

Carlson, V., Cicchetti, D., Barnett, D., & Braunwald, K. (1989). Disorganized/disoriented attachment relationships in maltreated infants. *Developmental Psychology*, 25, 525-531.

Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. In N. Fox (Ed.), the development of emotion regulation. *Monographs of the Society for Research in Child Development,* 59(2-3, Serial No. 240).

Cassidy, J. (1999). The nature of the child's ties. In infancy and childhood. In P. Shaver & J. Cassidy (Eds.) *Handbook of Attachment* (pp. 3-20). New York: Guilford.

Chazan-Cohen, R., Jerald, J., & Stark, D. (2001). A commitment to supporting the mental health of our youngest children. *Zero to Three,* 22(1), 4-12.

Child Mental Health Foundations and Agencies Network (2000). *A Good Beginning: Sending America's Children to School with the Social and Emotional Competence they Need to Succeed.* Bethesda, MD: The National Institute of Mental Health.

Cicchetti, D., Cummings, E. M., Greenberg, M. T., & Marvin, R. S. (1990). An organizational perspective on attachment beyond infancy: Implications for theory, measurement, and research. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, Research, and Intervention* (pp. 3-49). Chicago: University of Chicago Press.

Cohen, D. A. (1990). Child-mother attachment of six-year-olds and social competence at school. *Child Development,* 61, 152-162.

Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and overt aggression in preschool. *Developmental Psychology*, 33(4), 579-588.

Crittenden, P. M. (1985). Social networks, quality of child rearing, and child development. *Child Development 56*, 1299-1313.

Crockenberg, S. B. (1981). Infant irritability, mother responsiveness, and social support influences on the security of infant-mother attachment. *Child Development*, 52, 857-869.

Cummings, E. M., Iannotti, R. J., & Zahn-Waxler, C. (1989). Aggression between peers in early childhood: Individual continuity and developmental change. *Child Development,* 69, 14-27.

Daly, E. B. (1984). Relationship of stress and ego energy to field-dependent perception in older adults. *Perceptual and Motor Skills*, 59(3) 919-926.

Darling, L. M. (1993). *Exploring Adult Attachment in Non-Clinical Samples: Validating a Four Category Model.* Unpublished doctoral dissertation, Michigan State University.

Davies, D. (1999). Attachment as a context of development. In D. Davies (Ed.), *Child Development: A Practitioner's Guide* (pp. 13-43). New York: Guilford.

DeMulder, E. K., & Rakde-Yarrow, M. (1991). Attachment with affectively ill and well mothers: Concurrent behavioral correlates. *Development and Psychopthology,* 3, 227-242.

DeMulder, E. K., Denham, S. Schmidt, M., & Mitchell, J. (2000). Q-Sort assessment of attachment security during the preschool years: Links from home to school. *Developmental Psychology*, 36(2), 274-282.

Derogatis, L. R. (1993). *Brief Symptom Inventory: Administration, Scoring, and Procedures Manual. (3rd Ed.)*. Minneapolis: National Computer Systems, Inc.

De Wolff, M. S. & van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development,* 68(4), 571-591.

Drotar, D., Stein, R., & Perrin, E. (1995). Methodological issues in using the Child Behavior Checklist and its related instruments in clinical child psychology research. *Journal of Clinical Child Psychology, 24*(2), 184-192.

Easterbrooks, M. A., & Goldberg, W. A. (1990). Security of toddler-parent attachment: Relation to children's sociopersonality functioning during kindergarten. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, Research, and Intervention.* (pp. 221-244). Chicago: University of Chicago Press.

Egleand, B., & Sroufe, L. A. (1981). Developmental sequale of maltreatment in infancy. *New Directions for Child Development*,11, 77-92.

Egeland, B., & Farber, E. A. (1984). Infant-mother attachment: Factors related to its development and changes over time. *Child Development*, 55, 753-771.

Egeland, B., Kalkoske, M., Gottesman, N., & Erickson, M. F. (1990). Preschool behavior problems: Stability and factors accounting for change. *Journal of Child Psychology and Psychiatry,* 31(6) 891-909.

Egeland, B., Pianta, R.,, & Ogawa, J. (1996). Early behavior problems: Pathways to mental disorders in adolescence. *Development and Psychopathology,* 8, 735-749.

Farrington, D. P. (1978). The family backgrounds of aggressive youths. In L. Hersov, M. Berger, & D. Shaffer (Eds.), *Aggression and Antisocial Behavior in Childhood and Adolescence* (pp. 73-93). Oxford: Pergamon.

Farrington, D. P. (1983). Offending from 10 to 25 years of age. In K. T. VanDuesen & S. A. Mednick (Eds.), *Prospective Studies of Crime and Delinquency* (pp. 17-37). Boston: Kluwer-Nijhoff.

Farrington, D. P. (1987). Early precursors of frequent offending In J. Q. Wilson, & G. C. Loury (Eds.), *From Children to Citizens, Vol 3: Families, Schools and Delinquency Prevention* (pp. 27-50). New York: Springer-Verlag.

Fogany, P., Steele, H., & Steele, M. (1991). Maternal representations of attachment during pregnancy predict the organization of infant mother attachment at one year of age. *Child Development, 62*, 891-905.

Gelfand, D., & Teti, D. (1990). The effects of maternal depression on children. *Clinical Psychology Review*, 10, 329-353.

George, C. & Main, M. (1979). Social interactions of young abused children: Approach, avoidance, and aggression. *Child Development*, 50, 306-318.

George, C., & Solomon, J. (1990, 1996, 2000). *Six-Year Attachment Doll Play Classification System.* Unpublished classification manual. Mills College, Oakland, CA.

George, C. & Solomon, J. (1996). Representational Models of Relationships: Links Between Caregiving and Attachment. *Infant Mental Health Journal,* 17(3), 198-216.

George, C. & Solomon, J. (1999). The measurement of attachment security in infancy and childhood. In P. Shaver & J. Cassid (Eds.*) Handbook of Attachment* (pp. 287-316). New York: Guilford.

Goldberg, S., Corter, C., Lojkasek, M., & Minde, K. (1990). Prediction of behavior problems in 4-year-olds born prematurely. *Development and Psychopathology,* 2, 15-30.

Greenberg, M. T., Cicchetti, D., Cummings, E. M. (Eds.). (1990). *Attachment in the Preschool Years: Theory, Research, and Intervention.* Chicago: University of Chicago Press.

Griffore, R. J. & Phenice, L. A. (2001). *The Language of Human Ecology: A General Systems Perspective.* Dubuque, IA: Kendall/Hunt.

Grossmann, K., Grossmann, K. E., Spangler, G., Suess, G. & Unzner, L. (1985). Maternal sensitivity and newborns' orientation responses as related to quality of attachment in northern Germany. In I. Bretherton & E. Waters (Eds.), Growing points of attachment theory and research. *Monographs of the Society for Research in Child Development,* 50(1-2, Serial No. 209), 233-257.

Herrenkohl, R. C., & Herrenkohl, E. C. (1981). Some antecedents and developmental concequences of child maltreatment. In R. Rizley & D. Cicchetti (Eds.), *Developmental Perspectives on Child Maltreatment* (pp. 57-76). San Francisco: Jossey-Bass.

Herrenkohl, R. C., & Russo, M. J. (2001). Abusive early child rearing and early childhood aggression. *Child Maltreatment*, 6(1), 3-16.

Hubbs-Tait, L., Osofsky, J., Hann, D., & Culp, A. (1994). Predicting behavior problems and social competence in children of adolescent mothers. *Family Relations*, 43, 439-446.

Huesmann, L. R., Eron, L. D., Lefkowitz, M. M. & Walder, L. O. (1984). Stability of aggression over time and generations. *Developmental Psychology*, 20, 1120-1134.

Huessman, L. R., Eron, L. D., & Yarmel, P. W. (1987). Intellectual functioning and aggression. *Journal of Personality and Social Psychology*, 52, 232-240.

Isabella, R. (1993). Origins of attachment: Maternal interactive behavior across the first year. *Child Development*, 64, 605-621.

Jacobson, S. W., & Frye, K. F. (1991). Effect of maternal social support on attachment: Experimental evidence. *Child Development*, 62, 572-582.

Julian, T. W., McKenry, P. C., & McKelvey, M. W. (1994). Cultural variations in parenting: Perceptions of Caucasian, African American, Hispanic, and Asian-American Parents. *Family Relations*, 43(1) 30-37.

Keenan, K., & Shaw, D. (1994). The development of aggression in toddlers: A study of low income families. *Journal of Abnormal Child Psychology,* 22(1), 53-78.

Keenan, K., & Shaw, D. (1997). Developmental and social influences on young girls' early problem behavior. *Psychological Bulletin,* 121(1), 95-113.

Kerr, M., Tremblay, R. E., Pagani, L., & Vitaro, F. (1997). Boys' behavioral inhibition and the risk of later delinquency. *Archives of General Psychiatry,* 54, 809-816.

Kobak, R. (1999). The emotional dynamics of disruptions in attachment relationships: Implications for theory, research, and clinical intervention. In J. Cassidy & P. R. Shaver (Eds.), *The Handbook of Attachment.* (pp. 21-43) New York: Guilford.

Kupersmidt, J. B., Bryant, D., & Willoughby, M. T. (2000). Prevalence of aggressive behavior among preschoolers in Head Start and community child care programs. *Behavior Disorders*, 26(1), 42-52.

Liaw, F., & Brooks-Gunn, J. (1994). Cumulative familial risks and low-birthweight children's cognitive and behavioral development. *Journal of Clinical Child Psychology,* 23,360-372.

Loeber, R. & Dishon, T. (1983). Early predictors of male delinquency: A review. *Psychological Bulletin*, 94, 68-99.

Loeber, R., & Stouthamer-Loeber, M. (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. In M. Tonry & N. Morris (Eds.), *Crime and Justice*. Chicago: University of Chicago Press.

Loeber, R., & Stouthamer-Loeber, M. (1987). Prediction. In H. C. Quay (Ed.), *Handbook of Juvenile Delinquency* (pp. 325-382). New York: Wiley.

Lyons-Ruth, K., Alpern, L., & Repacholi, B. (1993). Disorganized infant attachment classification and maternal psychosocial problems as predictors of hostile-aggressive behavior in the preschool classroom. *Child Development,* 64, 572-585.

Lyons-Ruth, K., Connell, D., Gruenbaum, H., & Botein, S. (1990). Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. *Child Development*, 61, 85-98.

Lyons-Ruth, K., Easterbrooks, A., & Cibelli, C. (1997). Infant attachment strategies, infant mental lag, and maternal depressive symptoms: Predictors of internalizing and externalizing problems at age 7. *Development and Psychopathology,* 3, 377-396.

Lyons-Ruth, K., & Jacobvitz, D. (1999). Attachment disorganization: Unresolved loss, relational violence, and lapses in behavioral and attentional strategies. In P. Shaver & J. Cassidy (Eds.), *The Handbook of Attachment.* (pp. 520-554). New York: Guilford.

Magnusson, D. (1988). *Individual Development from an Interactional Perspective.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Magnusson, D., Stattin, H., & Duner, A. (1983). Aggression and criminality in a longitudinal perspective. In K. T. Van Dusen, & S. A. Mednick (Eds.), *Prospective Studies in Crime and Delinquency.* (pp. 277-301). Boston: Kluwer-Nijhoff.

Main, M., & Cassidy, J. (1988a). Security in infancy, childhood, and adulthood: A move to the level of representation. In I. Bretherton & E. Waters (Eds.), Growing points in attachment theory and research. *Monographs of the Society for Research in Child Development,* 50(1-2, Serial No. 209), 66-104.

Main, M. & Cassidy, J. (1988b). Categories of response to reunion with the parent at age 6: Predicted from infant attachment classifications and stable over a 1-month period. *Developmental Psychology,* 24, 415-426.

Main, M. & Hesse, E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, Research, and Intervention.* (pp. 161-182). Chicago: University of Chicago Press.

Main, M. & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, Research, and Intervention.* (pp. 121-160). Chicago: University of Chicago Press.

Mesman, J., Bongers, I. L., & Koot, H. M. (2001). Preschool developmental pathways to preadolescent internalizing and externalizing problems. *Journal of Child Psychology and Psychiatry*, 42(5), 679-689.

Moss, E., Parent, S., Gosselin, C., Rousseau, D., & St-Laurent, D. (1996). Attachment and teacher-reported behavior problems during the preschool and early school-age period. *Development and Psychopathology*, 8, 511-525.

Moss, E., Rousseau, D., Parent, S., St-Laurent, D., & Saintong, J. (1998). Correlates of attachment at school age: Maternal reported stress, mother-child interaction, and behavior problems. *Child Development*, 69, 1390-1405.

Muss, R. E. (1996). Urie Bronfenbrenner's ecological perspective of human development. *Theories of Adolescence.* (pp. 312-336). New York: McGraw-Hill.

Nagin, D., & Tremblay, R. E. (1999). Trajectories of boys' physical aggression, opposition, and hyperactivity on the path to physically violent and nonviolent juvenile delinquency. *Child Development,* 70(5), 1181-1196.

Olweus, D. (1979). Stability of aggressive reaction patterns in males: A review. *Psychological Bulletin*, 86, 852-857.

Pagani, L., Boulerice, B., & Tremblay, R. (1997). The influence of poverty on children's classroom placement and behavior problems. In G. Duncan & J. Brooks-Gunn (Eds.), *Consequences of Growing up Poor* (pp. 311-339). New York: Russell Sage Foundation.

Patterson, G. R., Reid, J. B., Jones, R. R., & Conger, R. E. (1975). *A Social Learning Approach: Vol. 1. Families with Aggressive children.* Eugene, OR: Castalia.

Patterson, G. R., De Baryshe, B. D., & Ramsey, E. (1989). A developmental perspective on antisocial behavior. *American Psychologist,* 44, 329-335.

Patterson, G. R., Capaldi, D., & Bank, L. (1992). An early starter model for predicting delinquency. In D. J. Pepler & K. H. Rubin (Eds.), *The Development and Treatment of Childhood Aggression* (pp. 139-188). Hillsdale, NJ: Erlbaum.

Prior, M., Smart, M. A., Sanson, A., & Oberklaid, F. (1993). Sex differences in psychological adjustment from infancy to 8 years. *Journal of the American Academy of Child and Adolescent Psychiatry,* 32(2), 291-304.

Radke-Yarrow, M., Cummings, M., Kuczynski, L., & Chapman, M. (1985). Patterns of attachment in two and three year olds in normal families and families with parental depression. *Child Development,* 56, 884-893.

Renken, B., Egeland, B., Marvinney, D., Mangelsdorf, S., & Sroufe, L. A. (1989). Early childhood antecedents of aggression and passive withdrawal in early elementary school. *Journal of Personality,* 57, 257-281.

Reynolds, C. R., & Kamphaus, R. W. (1998). *Behavioral Assessment System for Children Manual.* Circle Pines, MN: American Guidance Service.

Rose, S. L., Rose, S. A., & Feldman, J. F. (1989). Stability of behavior problems in very young children. *Development and Psychopathology,* 1, 5-19.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology,* 44(1) 127-139.

Schneider-Rosen, K. (1990). The developmental reorganization of attachment relationships: Guidelines for classification beyond infancy. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Preschool Years: Theory, Research, and Intervention.* (pp. 185-220). Chicago: University of Chicago Press.

Schore, A. N. (1994). *Affect Regulation and the Origin of the Self: The Neurobiology of Emotional Development.* Mahwah, NJ: Erlbaum.

Schore, A. N. (2001). Contributions from the decade of the brain to infant mental health: An overview. *Infant Mental Health Journal*, 22(1-2), 1-6.

Serbin, L. A., Moskowitz, D. S., Schwartzman, A. E. & Ledingham, J. E. (1991). Aggressive, withdrawn, and aggressive/withdrawn children in adolescence: into the next generation. In D. J. Pepler & K. H. Rubin (Eds.), *The Development and Treatment of Childhood Aggression* (pp. 55-70). Hillsdale, NJ: Erlbaum.

Shaw, D. S., & Vondra, J. I. (1993). Chronic family adversity and infant attachment security. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 34, 1205-1215.

Shaw, D. S., Owens, E. B., Vondra, J. I., Keenan, K., & Winslow, E. (1996). Early risk factors and pathways in the development of early disruptive behavior problems. *Development and Psychopathology, 8*, 679-699.

Shaw, D. S., Keenan, K., Vondra, J. I., Delliquadri, E., & Giovannelli, J. (1997). Antecedents of preschool children's internalizing problems: A longitudinal study of low-income families. *Journal of the American Academy of Child and Adolescent Psychiatry,* 36(12), 1760-1767.

Shaw, D. S., Winslow, E. B., Owens, E. B., & Hood, N. (1998). Young children's adjustment to chronic family adversity: A longitudinal study of low-income families. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37(5), 545-553.

Smith, J., Brooks-Gunn, J., & Klebanov, P. (1997). Consequences of living in poverty for young children's cognitive and verbgal ability and early school achievement. In G. Duncan & J. Brooks-Gunn (Eds.), *Consequences of Growing up Poor* (pp. 132-189). New York: Russell Sage Foundation.

Solomon, J., George, C. & De Jong, A. (1995). Children classified as controlling at age six: Evidence of disorganized representational strategies and aggression at home and at school. *Development and Psychology, 7*, 447-463.

Speltz, M. L., Greenberg, M. T., & DeKlyen, M. (1990). Attachment in preschoolers with disruptive behavior: A comparison of clinic-referred and nonproblem children. *Development and Psychopathology, 2*, 31-46.

Spieker, S. J., & Booth, C. (1988). Maternal antecedents of attachment quality. In J. Belsky & T. Newworski (Eds.), *Clinical Implications of Attachment* (pp. 300-323). Hillsdale, NJ: Erlbaum.

Sroufe, L. A. (1983). Infant-caregiver attachment and patterns of adaptation in preschool: The roots of maladaptation and competence. In M. Perlmutter (Ed.), *The Minnesota Symposia on Child Psychology: Vol 16. Development and Policy Concerning Children with Special Needs* (pp. 41-83). Hillsdale, NJ: Erlbaum.

Sroufe, L. A. (1996). Emotional development. *Attachment: the Dyadic Regulation of Emotion* (pp. 172-191). New York: Cambridge University Press.

Sroufe, L. A. (1996). *Emotional Development: The Organization of Emotional Life in the Early Years.* New York: Cambridge University Press.

Sroufe, L. A., Fox, N., & Pancake, V. (1983). Attachment and dependency in developmental perspective. *Child Development*, 54, 1615-1627.

Sroufe, L. A., Schork, E., Motti, E., Lawroski, N., & LaFreniere, P. (1984). The role of affect in social competence. In C. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotions, Cognition and Behavior* (pp. 289-319). New York: Cambridge University Press.

Steele, H., Steele, M., & Fogany, P. (1996). Associations among attachment classifications of mothers, fathers, and their infants. *Child Development*, 67, 541-555.

Stevenson, J., Richman, N., & Graham, P. (1985). Behaviour problems and language abilities at three years and behavioral deviance at eight years. *Journal of Child Psychology and Psychiatry*, 26 215-230.

Suess, G. J., Grossmann, K. E., & Sroufe, L. A. (1992). Effects of infant attachment to mother and father on quality of adaptation in preschool: From dyadic to individual organisation of self. *International Journal of Behavioral Development,* 15, 43-65.

Teti, D. M. Bakagawa, M., Das, R., & Wirth, O. (1991). Security of attachment between preschoolers and their mothers: Relations among social interaction, parenting stress, and mothers' sorts of the attachment Q-Set. *Developmental Psychology*, 27(3), 440-447.

Teti, D. M., Gelfand, D. M., Messinger, D. S., & Isabella, R. (1995). Maternal depression and the quality of early attachment: An examination of infants, preschoolers, and their mothers. *Developmental Psychology*, 34, 361-376.

Troy, M., & Sroufe, L. A. (1987). Victimization among preschoolers: The role of attachment relationship theory. *Journal of the American Academy of Child and Adolescent Psychiatry*, 26, 166-172.

Tremblay, R. E., Pihl, R. O., Vitaro, F., & Dobkin, P. L. (1994). Predicting early onset of male antisocial behavior from preschool behavior. *Archives of General Psychiatry*, 15, 732-739.

Walker, H. M., Shinn, M. R., O'Neill, R. E., & Ramsey, E. (1987). A longitudinal assessment of the development of antisocial behavior in boys: Rationale, methodology, and frist-year results. *Remedial and Special Education*, 8(4), 7-16.

van IJzendoorn, M. H., Schuengel, C., & Bakermans-Kraneburg, M. J. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and Sequale. *Developmental Psychopathology*, 11(2), 225-249.

Ventura-Cook, E. E. (1997). Attachment representations and socioemotional characteristics of lower-income solitary-passive, solitary-nonpassive, and nonwithdrawn preschool children [abstract]. (Doctoral Dissertation, University of New Orleans, 1997). *Dissertation Abstracts International*, 57(8-B) AAM9701562.

Vondra, J. I., Dowdell-Hommerding, K. & Shaw, D. S. (1999). Stability and change in infant attachment in a low income sample. In J. I. Vondra & D. Barnett (Eds.), Atypical Attachment in Infancy and Early Childhood Among Children at Developmental Risk. *Monographs of the Society for Research in Child Development,* 64(3, Serial No. 258), 119-144.

Wartner, U., Grossmann, K., Fremmer-Bombik, E., & Suess, G. (1994). Attachment patterns at age six in south Germany: Predictability from infancy and implications for preschool behavior. *Child Development*, 65, 1014-1027.

Waters, E. Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. *Child Development,* 50, 821-829.

Webster-Stratton, C. (1990). Stress: A potential disruptor of parent perceptions and family interactions. *Journal of Clinical Child Psychology,* 4, 302-312.

Weinfield, N. S., Sroufe, L. A., Egeland, B., & Carleson, E. A. (1999). The nature of individual differences in infant-caregiver attachment. In J. Cassidy & P. R. Shaver (Eds.), *The Handbook of Attachment.* (pp. 68-88). New York: Guilford.

Zahn-Waxler, C., Ianotti, R. J., Cummings, E. M., & Denham, S. (1990). Antecedents of problem behaviors in chidlren of depressed mothers. *Development and Psychopathology*, 2, 271-291.