Origins of externalization: the relationship between maternal depression and knowledge of child development, and problem behaviors in children

Wendy Patricia Kovacs
Iowa State University

Follow this and additional works at: https://lib.dr.iastate.edu/rtd

Recommended Citation
https://lib.dr.iastate.edu/rtd/20130

This Thesis is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Retrospective Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

by

Wendy Patricia Kovacs

A thesis submitted to the graduate faculty
in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE

Major: Human Development and Family Studies
(Marriage and Family Therapy)

Program of Study Committee:
Carla A. Peterson, Co-Major Professor
Ron Werner-Wilson, Co-Major Professor
Mack Shelley

Iowa State University
Ames, Iowa
2002

Copyright © Wendy Patricia Kovacs, 2002. All rights reserved.
This is to certify that the master’s thesis of

Wendy Patricia Kovacs

has met the thesis requirements of Iowa State University.
Dedication

This master’s thesis is dedicated to my family and friends who supported me, laughed with me, and helped me through the tough times. Their support and encouragement made this possible.

It is also dedicated to my Grandmother and Grandfather Kovacs, who instilled the importance of education in me, but were not able to see me graduate.
Table of Contents

List of Figures vi
List of Tables vii
Abstract viii

Chapter 1: Introduction 1

Chapter 2: Literature Review 6
   “Typical” Development 9
   Key Constructs 11
   Maternal Depression 11
   Knowledge of Development 13
   Children’s Externalizing Problem Behaviors 15

Negative Effects of Depression 17
   Parent Variables 18
   Environmental and Family Variables 20
   Child Variables 21

Continuity of Behavior Patterns 23

Rationale for this Review 24

Chapter 3: Methodology 26
   Purpose 26
   Research Questions 27
   Procedure 28
   Sample 32
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruments</td>
<td>32</td>
</tr>
<tr>
<td>Maternal Depression</td>
<td>32</td>
</tr>
<tr>
<td>Knowledge of Child Development</td>
<td>35</td>
</tr>
<tr>
<td>Problem Behaviors</td>
<td>37</td>
</tr>
<tr>
<td>Chapter 4: Data Results</td>
<td>39</td>
</tr>
<tr>
<td>Research Questions</td>
<td>40</td>
</tr>
<tr>
<td>Question One</td>
<td>40</td>
</tr>
<tr>
<td>Question Two</td>
<td>40</td>
</tr>
<tr>
<td>Question Three</td>
<td>41</td>
</tr>
<tr>
<td>Chapter 5: Discussion</td>
<td>46</td>
</tr>
<tr>
<td>Models</td>
<td>46</td>
</tr>
<tr>
<td>Confounds</td>
<td>49</td>
</tr>
<tr>
<td>Summary</td>
<td>53</td>
</tr>
<tr>
<td>Future Research</td>
<td>54</td>
</tr>
<tr>
<td>Appendix A: Center for Epidemiological Studies-Depression (CESD) Scale (14 months)</td>
<td>56</td>
</tr>
<tr>
<td>Appendix B: Center for Epidemiological Studies-Depression Short (CESD-S) Scale (36 months)</td>
<td>57</td>
</tr>
<tr>
<td>Appendix C: Knowledge of Infant Development Inventory (KIDI) (14 months)</td>
<td>58</td>
</tr>
<tr>
<td>Appendix D: Adult-Adolescent Parenting Inventory (AAPI) (36 months)</td>
<td>59</td>
</tr>
<tr>
<td>Appendix E: Child Behavior Checklist (CBCL) (36 months)</td>
<td>60</td>
</tr>
<tr>
<td>References</td>
<td>62</td>
</tr>
</tbody>
</table>
List of Figures

Figure 1: Path Analysis 44
List of Tables

Table 1: Research Questions, Variables, Data Type, Hypotheses 28
Table 2: Assessment Schedule 31
Table 3: Local Sample Demographic Information for All Participants at Application for Services 33
Table 4: Instruments 34
Table 5: Frequencies of Predictor and Outcome Variables 39
Table 6: Question One Analysis of Variance 40
Table 7: Question Two Analysis of Variance 41
Table 8: Question Three Analysis of Variance 42
Table 9: Question Three Expanded Analysis of Variance 43
Table 10: Regressions of Predictor and Outcome Variables 45
Abstract

All children enter the world ready to learn and develop; genetics, experiences, cultures, and environments influence these developmental trajectories. Time spent by primary caregivers with children early in life is vital to positive outcomes. Recovery from disruptions in these foundation periods are difficult and time consuming, so it is beneficial to families and communities to consider the variables that cause early disruptions and how they can be reduced.

Maternal depression appears to run in families, apparently transmitted through genetic and social factors. The consequences of maternal depression for children may be interference in their typical developmental patterns and increased likelihood of their problem behaviors. Children with problem behaviors interact with children who have typical developmental histories, creating a community concern. Moderators of the link between maternal depression and children's problem behaviors have not been found consistently; one potential moderator is maternal knowledge of child development. Knowledge of child development increases a mother's understanding of developmentally appropriate practices to use with her children.

If a depressed mother were knowledgeable about child development, it is possible that the negative influences of her illness on her child would be reduced. The acquisition of greater knowledge may be associated with the mental health of the mother. The goal of this study was to investigate the link between maternal depression and child problem behaviors as moderated by maternal knowledge of child development. The importance of reducing problem behaviors in children with depressed mothers remains central to helping families.

The two predictor variables used in this study were maternal depression and maternal knowledge of child development, measured when the child was 14 months and 36 months old. The outcome variable used was child problem behaviors at 36 months. Analyses of variance and LISREL path analyses revealed significant relationships between maternal depression at 14 month and 36 months, between maternal depression at 36 months and children's problem behaviors at 36 months,
and between maternal depression at 14 months and knowledge at 36 months. Single mother households were also significantly related to children's problem behaviors. These findings indicate that maternal education programming may not be sufficient to shield children from the deleterious effects of maternal depression. It is also necessary to focus on the mental health of the mother. If decreasing maternal depression when a child is young allows a mother to increase her knowledge of child development, the results for the child could be an increase in appropriate parenting.
Chapter 1: Introduction

All children enter the world ready to learn and develop; genetics, experiences, cultures, and early environments influence each child's developmental trajectories (Shonkoff & Philips, 2000). Children have the ability to absorb information from multiple facets of their environments and make sense of the world they have entered. Although the developmental milestones for children are understood, it is not possible to separate individual development from the environment in which behaviors are learned. Because of this overlap, the time spent by primary caregivers with children early in life are known to be some of the most influential time periods of development (i.e., Shonkoff & Philips, 2000). These early experiences have immediate and long-term impacts on the development and behaviors of children. When disruptions in the relationship between mother and child occur during these essential early foundation periods, recovery from the negative consequences is difficult and time-consuming. It is, therefore, beneficial to families and communities to understand the parental, environmental and family, and child variables that can disrupt the early positive development of children.

The diagnosable disorder known as depression has become an everyday household term. It is commonly used to describe negative emotional states experienced by individuals, regardless of the cause, duration, or knowledge of the diagnostic criteria for depression. The inaccurate use and overuse of the term depression has resulted in decreased proper conceptualization of the disorder and has caused laypeople and clinicians alike to overlook the serious and potentially lifelong consequences depression may have for an individual. Neither genetic nor social factors alone can account for a majority of the cases of depression. Overall, the research evidence points to a genetic predisposition for depression based on neurotransmitter regulation and other genetically determined factors. This genetic inclination then can be triggered by social factors, including environmental events and stressors. Therefore, children who are raised in families with depressed parents have both the potential genetic risk factors and an increased number of social risk factors associated with the
development of depression, which helps explain the tendency for depression to run in families (Kendall & Hammen, 1998). The impact of depression on the individual, as well as the influence on other family members and family systems, needs to be investigated to understand fully the negative effects of depression.

Depression affects an individual’s functioning in all areas of life, including thoughts, behaviors, and physical states. It can leave a person unable to carry out daily activities effectively or interact with others. According to Arean, McQuaid, and Munoz (1997), 6% to 17% of the population will experience a major depressive episode in their lives; the rates for women who experience depression range from 4% to 8% higher than for men. Arean et al. (1997) hypothesized that this may be due to, “...hormonal dysregulation, differential responses to personal stress, more negative mood states and rumination in women” (p. 248). Although the specifics of depression can vary greatly for individuals, there are patterns that create universally decreased functioning and family problems.

The symptoms and consequences of depression extend from the depressed person and intrude into the lives of others who are close; children are routinely “close by” parents throughout their early development. While adults can leave the company of the depressed person, children cannot, and so experience a bind. Living with depressed parents is often related to disruptions in their children’s development, “because all the attributes of good parenting are inconsistent with the feelings and behavior associated with depression” (Sheffield, 1998, p. 248). If essential supports for reaching developmental milestones, such as being responded to, held, and taught how to deal with frustrations, that should be provided by the parent are disrupted by depression, the consequences for the child are interferences in their typical developmental patterns. These deviations from optimal patterns of typical development can increase a child’s problem behaviors.

Sheffield (1998) outlined the interactions of depressed mothers and their children, and asserts that depressed mothers respond more slowly to their children beginning in infancy and speak with less animation. Infants then learn to look away from their mothers and smile infrequently; they are
also less responsive, and generally fussier. In toddlerhood, children of depressed mothers tend to be argumentative, uncooperative, resilient to punishment, and prone to temper tantrums. Older children continue these patterns by being angry and antagonistic to others, dependent, and either aggressive and hostile or avoidant and withdrawn. By middle childhood, children exposed to depressed parents have reduced problem solving and social skills, and many have poor academic skills, in addition to generally poor self-concepts and self-images. Finally, Sheffield (1998) takes note of the finding that children exposed to depression early in life, “continue to behave as though the mother were depressed for as long as a year after the depression spontaneously remits or is successfully treated” (p. 253).

Problem behaviors resulting from exposure to maternal depression and related environmental and family variables have been documented repeatedly. For example, Civic and Holt (2000) indicate that children exposed to depression in their primary caregivers are more prone to tears, academically behind, throw severe temper tantrums, have eating problems, have difficulty relating to others, experience increased occurrences of mental health problems, and are generally antisocial. Sheffield (2000) expanded this finding and stated that children exposed to depression have diminished feelings of mastery of their worlds, sense of selves, and value for relationships. These children view the world as untrustworthy and unresponsive, and so display frequent aggressive responses like kicking, scratching, slapping, and biting, in addition to, “breath-holding spells, out-of-control oppositional behavior, hyperactivity, distractibility, aggression, low self-esteem, lack of friends” (Sheffield, 2000, p. 84) and less cooperation. Finally, Sheffield found a lack of motivation in children exposed to depression along with shorter attention spans and memories, and decreased problem solving ability.

Problem behaviors in childhood are not contained within depressed households. Children who are easily frustrated, quick to give up, hard on themselves, and defiant cause problems for more than their mothers and families. These children interact with community members in schools, childcare centers, shopping centers, youth activities, and community functions, such as visiting Santa, the mall, or the county fair. Children with depressed parents and problem behaviors are social
problems by themselves. But the problems do not stop there. Children with problem behaviors interact with children who have typical developmental histories and disrupt their classrooms, learning, activities, and safety.

Although the relationship between maternal depression and children’s problem behaviors has been well documented, moderators of this direct link have not been found consistently. Effective ways to reduce the effects of depression on children, increase their abilities to cope without negative externalization, and have secure relationships are desired. Maternal knowledge of child development, that is, how much knowledge of developmentally appropriate practices, activities, and interactions a mother possesses, is a potential moderator between depression and children’s problem behaviors that generally has been overlooked. Benasich and Brooks-Gunn (1996) examined the relationship between maternal knowledge of development and children’s behavioral outcomes, and found that increased maternal knowledge of development was associated with fewer child behavior problems. From scores of maternal knowledge of child development, Benasich and Brooks-Gunn were able to predict the home environment and the number of behavior problems expressed by children.

Despite the connections between maternal mental illness and children’s problem behaviors, current interventions tend to focus on maternal education. If increased knowledge of child development decreases problematic behaviors regardless of maternal mental health, children in this at-risk population might benefit from interventions focused on increasing maternal knowledge of child development. If a depressed mother is knowledgeable about child development, then she may be able to interact with her child more like a non-depressed mother. This change in interaction could reduce the effects of depression on her child’s formation of problem behaviors, and decrease the negative influences on the community from the child.

The ultimate goal of this study is to investigate the link between maternal depression and child problem behaviors as moderated by maternal knowledge of child development. This
relationship would serve as a basis to advocate that interventions for problem behaviors in children with depressed mothers include facilitating maternal knowledge of appropriate child development.
Chapter 2: Literature Review

Shonkoff and Philips (2000) explain that, “What happens during the first months and years of life matters a lot, not because this period of development provides an indelible blueprint for adult well-being, but because it sets either a sturdy or fragile stage for what follows” (p. 5). These stages are set based on the child’s genetic potential, early environment, and availability of nurturing relationships. From the beginning of life, experiences and environments are added cumulatively to influence human development. Experiences that allow the child to grow, explore, and learn about him/herself in healthy ways serve as the contexts for sturdy stages. For example, children who experience an ability to control their environment will learn they have influence, power, and worth. Shonkoff and Philips (2000) summarize this notion by stating, “Children grow and thrive in the context of close and dependable relationships that provide love and nurturance, security, responsive interaction, and encouragement for exploration” (p. 7). When early relationships are not positive and typical, the consequences are distress and disruptions in development for the child. These disadvantages set the child apart and introduce atypical developmental patterns.

People who are depressed do not feel compelled to interact with or respond to others (American Psychological Association, 2000), including their children. The apathy of depression decreases a parent’s desire and capability to engage in developmentally appropriate interactions with his/her children. Maternal depression has been correlated consistently with children’s externalizing problem behaviors (i.e., Beardslee, Bemporad, Keller, & Klerman, 1983; Billings & Moos, 1985; Cummings, 1995; Ferro, Verdeli, Weissman, & Myrna, 2000; Radke-Yarrow & Klimes-Dougan, 1997; Sheffield, 1998). It is unknown why some children act out in response to maternal depression, instead of internalizing or becoming depressed. It may be to compensate for the lack of attention or discipline at home, to rebel against the avoidance that accompanies depression, or simply to elicit a reaction from their depressed mothers. Various hypotheses have been proposed to explain how maternal depression affects children’s problem behaviors. Some of these hypotheses include the
7

depressive environment within the home, the genetic predisposition to depression, or a combination of both. A search for consistently beneficial interventions to break this intergenerational cycle of negative effects is an area of research that still needs attention. If interventions that successfully decrease the transmission of depression from mothers to children are discovered and properly applied, children may not be influenced as negatively by the depression experienced by their mothers, and they may display fewer externalizing problem behaviors. When children display fewer problem behaviors during childhood, it can be assumed that they have an increased ability to cope with life’s challenges.

Radke-Yarrow and Klimes-Dougan (1997) outlined three generalized areas to consider when discussing the effects of depression and display of problem behaviors. The first is the child’s developmental stage when the maternal depression was apparent. When children are in certain stages, interactions with and dependence on the mother are stronger, so maternal depression in these stages would increase the probability of negative effects. The second includes the specifics of the mother’s illness, the depression characteristics she displayed, and how the child was involved with the mother. Depressed people display different characteristics of the illness, creating individual depressive experiences for the mother and the child. The third area is the mixture of underlying factors that influence the development and maintenance of depression, combined with the first two areas. Although this is a broad category, it encompasses the genetic, family, and environmental variables that contribute to the depression and are experienced by the child. The combination of these three factors leads to individualized influences of depression on children, and helps us understand the different outcomes for children who grew up with maternal depression (Radke-Yarrow & Klimes-Dougan, 1997).

Depressed people do not function alone or in isolation, leading to further implications of the disorder. People who live, work, and have contact with depressed people are influenced, generally negatively, by the symptomatology of depression. These consequences range from irritation due to
being uninformed about depression, to confusion as to the best ways to help, to lifelong negative behavior patterns. The interactions between children and their depressed caregivers, generally the mother, are different than the interactions between children and their non-depressed caregivers. Households with depression are different than households without depressed mothers. These differences lead to distinct growth and development patterns between exposed and typically developing children. Partners are also influenced by depression. As stress and frustration in the relationship increases, the partner’s ability to counter the negative effects of a mother’s depression on the children decreases. This diminishes a vital social support for the child.

Knowledge of child development is a factor within our population that varies among people. If a mother knows more about the appropriate developmental course of her child, it would be logical to believe that she would be better prepared to raise her child. Because depression decreases the drive to interact, depressed mothers do not engage in as many developmentally appropriate tasks with their children. Increasing a depressed mother’s knowledge of child development may make her more aware, and therefore more able, to interact with her child like a non-depressed mother. These interactions would be based on her knowledge, even though she may not feel compelled to interact appropriately independent of the knowledge. In other words, knowledge may moderate the negative effects of depression on her child and resulting problem behaviors. This assumes she would know more about what is developmentally appropriate for her child, despite her desire to withdraw into her depression.

The development of children raised by depressed mothers, as distinct from typical development of children, is outlined first in this literature review. Next, key constructs are outlined. The interrelatedness of parent variables, environmental variables, and child variables that lead to unique experiences between mothers, children, and other family members is detailed. Finally, the continuity of the behavior patterns established between depressed mothers and children is discussed.
Children first learn about the world from their parents and home environments. Mothers generally spend a greater amount of time in child rearing activities than other family members, and therefore most research focuses on their roles as parents. Kendall and Hammen (1998) point out that, “What children learn to believe about themselves and others in their own families gives rise to schemas and other cognitive patterns that determine how they interpret themselves in their worlds” (p. 233). As children learn how to interact with the world and people they encounter, they learn how the world and people will interact with them. As these interactions are internalized, life long patterns of attachment are formed. Using Bowlby's language, “Early experiences of sensitive or insensitive care contribute to the growth of broader representations concerning a caregiver’s accessibility and responsiveness, as well as to beliefs about one’s deservingness of such care” (Thompson, 1999, p. 267). Children develop ‘internal working models’ of how deserving they feel they are of care and attention from early experiences with caregivers. When children feel that they are deserving of attention, they interact with others in ways that elicit this response. If children do not feel they deserve positive attention, they will struggle with their self-worth and have fewer positive interactions with others (Thompson, 1999). These children are more likely to interact in socially inappropriate ways as they strive for social acceptance, since they have found traditional ways of interacting to be unsuccessful.

Patterns of positive and negative interactions are passed down from parent to child, and are, “embedded in a history of relationships and in multiple contexts that cannot be ignored” (Radke-Yarrow & Klimes-Dougan, 1997). These patterns are well established in families, so the complexities and historical patterns cannot be overlooked. Although individual differences exist within all families, general patterns can be found. Kochanska (1997) outlined family relationships as a system of reciprocity, explained as, “the formation of a mutually binding, reciprocal, and mutually responsive relationship” (p. 94). In other words, family members are expected to respond to the
needs of other members and to care about their welfare, and should be able to expect these things in return. When reciprocity is established in families, members realize the benefits of each member for themselves and the family unit. Families that do not engage in reciprocal interactions create unequal relationships where certain members have more influence over decisions and the actions of other members. This one-up/one-down pattern becomes ingrained within the family and influences interactions outside the family also.

Attachment classifications reflect both the interactions and histories of infants and their caregivers (Sroufe, 1985) and infant temperament. Ainsworth introduced the idea of an attachment figure that serves as, “a secure base from which an infant can explore the world” (Bretherton, 1992, p. 759). Although all children have the innate ability to explore, they do not all have access to sensitive parents who understand the importance and long-term effects of exploration. Bowlby concluded that, “To grow up mentally healthy the infant and young child should experience a warm, intimate, and continuous relationship with his mother (or permanent mother substitute) in which both find satisfaction and enjoyment” (Bretherton, 1992, p. 761). Effective caregivers need to allow children to be independent and explore while continuing to provide comfort and security. These dynamic relationships allow children to develop a sense of self-reliance and interdependence in an environment where they are valued members. Bowlby also advocated for the idea that, “major disruptions in the mother-child relationship are precursors of later psychopathology” (Cassidy, 1999, p. 3) in addition to current disruptions in functioning.

Children who have caregivers that are responsive, attentive, and dedicated to parenthood tend to develop secure attachments. These children and their caregivers are warm, sensitive, age-appropriate, flexible, and fun. Children who are securely attached tend to have more, “peer competence, self-esteem, curiosity, [ability for] coping with novelty, [ability for] coping with failure, enthusiasm and persistence in problem solving, independence and an infrequency of behavior problems” (Sroufe, 1985, p. 1). On the other hand, children who have parents who are slow to
respond to their cries, inattentive, distant, and avoidant, tend to display resistant or disorganized attachment. These children are generally anxious, rejecting, angry or passive, and emotionally unavailable. Although children can respond flexibly to attachment scenarios based on the specifics of the situation, their main attachment style tends to be pervasive throughout life. Research indicates that a child's attachment style is usually the same as his/her adult attachment style (i.e., Belsky, Rosenberger, & Crnic, 1995; Feeney, 1999; Levitt, 1991; Simpson & Rholes, 1998). Since attachment is interactive, that is both mother and child influence the system, it should be noted that individual differences dramatically influence attachment outcomes. In addition, a child can form multiple attachments to various caregivers or important figures in their lives. This means that the child may have a more secure attachment to a family member other than to his/her mother. The stable pattern of attachment stemming from early interactions indicates possible benefits for early proactive interventions in families, in preference to reactive treatment with just mothers or children who experience problems.

**Key Constructs**

**Maternal Depression**

Mood disorders, such as depression, are characterized by "sadness, difficulty performing daily activities, feelings of hopelessness and helplessness, and diminished interest in life" (Arean et al., 1997, p. 230). The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-Text Revision (DSM-IV-TR) (American Psychological Association, 2000) defines depression as characterized by episodes of various intensity of depression (downward mood) or mania (upward mood), and loss of interest or pleasure in normal activities. According to the DSM-IV-TR, five or more depressive symptoms need to be present during a two-week period for a depressive diagnosis, and these symptoms need to be a change from how the person was functioning before the episode. These episodes lead to clinically significant impairment of functioning in social, occupational, or other important areas of life and disrupt the individual's daily activities. Depression is diagnosed at a
greater rate in women then men beginning at puberty, and women report depressive episodes twice as often as men (American Psychological Association, 2000). Regardless of type, depression is not just a lingering sadness that brings a person down. It is a diagnosable disorder that creates clinical symptoms and needs to be treated. Both genetic and social factors influence the development and maintenance of depression. In addition, it is a disorder that can decrease one's ability to parent efficiently and positively. As a result, parental depression is related to problem behaviors in children.

Research on genetic factors indicates that depressed people have different genetically determined neurotransmitter regulation than non-depressed people (i.e., Arean et al., 1997; Kendall & Hammen, 1998). The theory is that the neurotransmitters norepinephrine and serotonin are dysregulated in depressed individuals and cause decreased sensitivity in the receptor sites of neurons (Kendall & Hammen, 1998). This leads to a decreased ability to attract the appropriate amount of neurotransmitter onto the receptor sites resulting in depressed mood. Another theory is that depressed people have an abundance of the neuroendocrine cortisol, which is a steroid, in their system (Arean et al., 1997). Cortisol is related to thyroid functioning and mood. Genetic dysregulations such as these can predispose a person to depression.

Research on social factors concentrates on the environmental cues that encourage the family transmission of depression. This focus is generally related to mother-child interactions and the home environments created by depression. For example, a child may experience and be affected by the stress of dealing with or experiencing the depressive symptoms of the parent, decreased parental functioning in daily living activities, lack of support from the parent, negative interactions that focus on faults, and negative perceptions of themselves due to the parental interactions. Depressed individuals, "tend to view themselves, the world, and others in a more negative manner than non-depressed people" (Arean et al., 1997, p. 237). They often generalize failures beyond a particular event or situation, and feel as if they are letting themselves and others down with their daily lives and habits. Depressed individuals often harshly and unnecessarily criticize themselves and feel unworthy.
of affection from others. These factors highlight several main interaction and environmental consequences of maternal depression that may unintentionally be transmitted to the child through the course of the disorder. Interaction factors that are unique to depression can increase the risk of problem behaviors in children parented by these mothers. These social factors may be exemplified by the genetic predisposition to depression experienced by the same children.

Considering all the social and genetic factors that have been shown to influence depression, it is persuasive that depression does not have a single most important causal factor. There is no set formula that guarantees to cause or prevent depression. Arean et al. (1997) explored the possibility that the most accurate way to conceptualize depression is to look at many factors across many disciplines. Scientific researchers continue to be baffled by not only the prevalence rates of depression, but also the variety of causes and influences on the disorder.

Before complete blame is placed on mothers for the negative effects of depression, the cyclical nature of depression needs to be pointed out (i.e., Arean et al., 1997; Caplan, Cogill, Alexandra, Robson, Katz, & Kumar, 1989; Kandel & Wu, 1995). Symptoms in any family member can cause disruptions in the interactions of others, and children do influence the behaviors and depressive symptoms of their parents, as their parents influence them. Kandel and Wu (1995) summarize this relationship from their findings as, “Children who manifest behavioral problems suffer over time from an increase in the risk factors and a decrease in the protective factors created by quality parenting” (p. 120). As children display more problems, the mothers withdraw further from them, creating an increase in risk factors.

Knowledge of Development

Benasich and Brooks-Gunn (1996) operationally defined parental knowledge as, “the parent’s understanding of developmental norms and milestones, processes of child development, and familiarity with caregiving skills” (p. 1187). Information encompassed by knowledge would include common behaviors at certain stages of development, and needs of children that encourage growth and
development. It would also include how to interact with children so their social needs are met. In other words, higher knowledge is associated with increased parenting skill (Benasich & Brooks-Gunn, 1996).

Despite the minimal amount of research in this area, the relationship between maternal knowledge of child development and later behavior outcomes has been shown (i.e., Benasich & Brooks-Gunn, 1996; Shonkoff & Philips, 2000). For example, Benasich and Brooks-Gunn (1996) investigated maternal knowledge of child development scores of premature children. Mothers with higher knowledge levels had children who scored closer to age appropriate norms in academics and behaviors, despite additional risk factors, than mothers with low knowledge levels (Benasich & Brooks-Gunn, 1996). The level of knowledge can vary greatly between mothers, and parents in general, due to instinctive or biological knowledge of how to raise a child combined with years of learning opportunities. These instincts not only guide a mother’s interactions with her child, but also build in her a desire to be near her child to meet its needs. By nature of the disorder, mothers who are depressed seem to have a difficult time listening to or hearing their instincts when children are concerned. The interactions between mother and child become depressed and the mother’s desire to respond to her child is diminished. For example, these mothers may not disregard their child’s cries intentionally, but are unmotivated to respond to them due to their depression.

Having accurate and adequate information concerning the development of a child is vital to reducing risks for children in any household (Benasich & Brooks-Gunn, 1996). When a mother increases her knowledge of child development, she discovers new ways to interact with and teach her child. With awareness of appropriate developmental milestones, mothers can reduce the risk of problem behaviors and increase the chances of success for their children. Benasich and Brooks-Gunn (1996) hypothesized that the transmission of behavior problems to children through knowledge was due to how the early home environment was structured by the mother.
Since both maternal depression and knowledge of development are related to behavioral outcomes, knowledge may moderate the effects of maternal depression on child outcomes. Despite being depressed, a mother’s knowledge of child development could increase her awareness of developmentally appropriate practices and rituals. With increased knowledge of child development, a depressed mother may interact with her child in a manner that more closely resembles non-depressed mothers.

**Children’s Externalizing Problem Behaviors**

Externalizing behavior describes overt behaviors that display internal states, in contrast to internalizing, which indicates suppressed or depressed emotions. Kendall and Hammen (1998) define externalizing disorders as, “maladaptive behavior patterns in children, across several situations, that create problems for others. In these uncontrolled disorders, which are also called behavioral disorders, the child’s behavioral problems result in conflicts between the child and the social context” (pp. 469-470). Externalizing behaviors, such as acting out, throwing tantrums, and not listening, are apparent in most children at some point in their development. The distinction between appropriate development and problematic development is drawn when the externalizing behaviors do not diminish with age or vary between situations. When the externalizing behaviors are continual, they cause significant impairment for children in their personal, family, and community lives. Research examining externalizing problem behaviors began over 50 years ago, and is continually being updated based on the current cultural definitions of appropriate child behaviors. The definitive explanation of the origin of externalizing behaviors is currently unknown. Social, environmental, and genetic factors are all highly influential in the development of externalizing behavior problems.

Over time, structural and definitional modifications in the DSM have affected the reported prevalence rates of disruptive disorders in children. Although diagnoses or definitions have varied over time, the actual problems and themes have not changed. Current definitions focus on the presence of disruptive behaviors that impair functioning for the child and family significantly. The
DSM-IV-TR includes problematic externalizing behaviors in several disorders, including aggression, hyperactivity or attention deficit (ADHD), conduct (CD), adjustment, avoidant, oppositional and defiant (ODD), and attachment (American Psychological Association, 2000). Symptoms of problem behaviors are typically reported at home, school, and with peers, and are displayed more frequently and more severely than in children at comparable levels of development. The DSM-IV-TR defines the key features of ADHD as, “persistent patterns of inattention and/or hyperactivity” (American Psychological Association, 2000, p. 85) that interfere with daily functioning for the child for at least six months. CD is conceptualized as a, “repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate social norms or rules are violated” (American Psychological Association, 2000, p. 93). CD encompasses aggression, threats, deceitfulness and serious violations of rules in the past 12 months. Finally the DSM-IV-TR defines ODD as, “recurrent patterns of negativistic, defiant, disobedient, and hostile behavior toward authority figures” (American Psychological Association, 2000, p. 100) over six months and includes losing temper, arguing, defying, deliberately annoying, blaming others, and being easily annoyed and vindictive.

Children who display characteristics of problem behaviors are highly sensitive to environmental stimulation and changes in routine, easily distracted, inattentive, impulsive, and have an excessive need for attention (Cohen, 1998). Drawing from the DSM-IV-TR, in general, externalizing problem behaviors bring with them difficulties in listening, following directions, getting along with others, or completing chores and duties. They tend to indicate disrupted interactions with teachers, peers, and parents, and tend to bring affected children into contact with authority figures such as the principal or police. These children tend to avoid and dislike activities that force them to follow rules and agendas, and are constantly on the go. Children diagnosed with externalizing problems tend to be more aggressive, deceitful, disrespectful, argumentative, and avoidant than are children with internalizing problems (Kendall & Hammen, 1998). They tend to be identified by the
police, school officials, neighbors, and teachers as class clowns, uncooperative, troublemakers, and frustrating.

Problematic behavior is becoming more prevalent in society. Lahey, Miller, Gordan, and Riley (1999) summarized several epidemiological studies of problem behaviors and estimated prevalence rates. To accomplish this task, Lahey et al. (1999) worked to overcome the differences in definitions, measurements, time frames, and informants of the various studies. In the general population, ADHD was estimated to range from 0.0% to 16.6% (Mdn = 2.0%), CD from 0.0% to 11.9% (Mdn = 2.0%), and ODD from 0.3% to 22.5% (Mdn = 3.2%) (Lahey et al., 1999). Although these statistics were combined with attention to definition and measurement issues, they notably contain errors. Despite these errors, the rates still indicate that disruptive externalizing problem behaviors in children are apparent in our culture, and intervention is necessary.

Since there is a lengthy list of possible origins of externalizing behaviors in children, it is unlikely that any one cause will be determined. Despite this unlikelihood, it is important to families and society to find ways to decrease the prevalence of problem behaviors in children. The epidemiology of problem behaviors indicates that there are distinct conditions that increase the display of problem behaviors compared to the general population (Lahey et al., 1999). When viewed from this perspective, the conditions that create and increase the chances of externalizing problem behaviors for some children need to be identified and prevented.

Negative Effects of Depression

Growing up with a depressed parent can lead to dangerous and significant disruptions in a child’s development, even if these disruptions are not displayed with externalizing behaviors. Ferro et al. (2000) found that children with depressed mothers were at a, “two-to-threefold greater risk for major depressive disorder with an early age of onset as well as persistent behavioral, medical, and social problems” (p. 375) throughout the rest of their childhoods. Weissman (1990) stated that, “There is overwhelming evidence from clinical, family, epidemiologic, and pedigree studies that
depression is a family affair” (p. 187). Merikangas, Weissman, and Prusoff (1990) found in children that, “major depression, anxiety disorders, and antisocial personality/conduct disorder showed significant linear trends” (p. 94) according to the diagnoses of their parents. In other words, the number of children with depressive disorders was directly related to parental diagnosis. These research findings point to the conclusion that depression is not an isolated incident or contained within one member of a family. The negative effects of depression within families can be grouped into three categories: parent variables, environmental and family variables, and child variables. Although there is considerable overlap between the categories, these groupings reflect the influence of depression within the category, in addition to how each category influences the others.

**Parenting Variables**

Shonkoff and Philips (2000) state that, “children’s early development depends on the health and well-being of their parents,” as well as that, “a significant number of children are burdened by untreated mental health problems in their families” (p. 7). Sheffield (1998) noted that depression could change relationships and interactions drastically and unexpectedly. People cannot predict or plan for the effects of depression in a marriage or on a family, leaving them vulnerable and uncertain. These changes can occur at any point in the relationship. Sheffield (1998) found evidence in Coyne’s (1992) research of “assortative mating,” or the tendency for troubled mates to seek out troubled mates up to 50% of the time. In addition to this pattern of mating, depression often leads to serious marital difficulties. Non-depressed partners report, “disappointing and unfulfilling marriages; interactions with their mates that reveal a pattern of mutual hostility and anger, or of inhibition, avoidance, and withdrawal; and reduced intimacy” (Sheffield, 1998, p. 249). While the depressed parent has decreased parenting abilities, the well parent who is subjected to an unsupportive or critical spouse can reflect these feelings from his/her marriage onto interactions with the children, which takes away support for the child and reinforces negative interactions.
A child's interactions with a depressed mother generally include inconsistent or rejecting parenting. Lutenbacher and Hall (1998) found that depressive symptoms lead directly to at-risk parenting, which included having inappropriate expectations for children's abilities, decreased empathy for children, use of corporal punishment as discipline, and parent-child role reversal. These factors were shown to increase the demand for children to act in developmentally inappropriate ways. Factors included in the definition of at-risk parenting increased both the frustration and abuse in parents and aggression in children, while decreasing the parent and child's ability to empathize with others, maintain order, and implement appropriate parent-child boundaries (Lutenbacher & Hall, 1998). In addition to the transmission of at-risk parenting attitudes, poor parenting can lead to acting out behaviors.

Jacob and Johnson (1997) explored the family based negative effects of depression and how parent-child interactions influence depression. They highlighted research findings that mothers with depression used "more negative and less positive affective styles, and were more dysphoric and less happy" (Jacob & Johnson, 1997, p. 391) than non-depressed mothers. Maternal characteristics, such as being dysphoric or apathetic, lead to less positive interactions between her, the child, and other family members. Jacob and Johnson (1997) discovered that maternal depression accounted for more problem behaviors and externalizing than did paternal depression, and was found to lead directly to an increased risk of depression and other maladaptive behaviors in the children. This interaction was not mediated by maternal communication style or family dynamics. Having a depressed parent, therefore, decreases the functioning of the family as a whole, in addition to decreasing the functioning of the child. Decreasing the negative interaction patterns associated with depression would therefore increase positive family and child functioning. If, for example, a mother knew the damaging effects of the characteristics of depression on her child, she may be able to counteract or decrease the prevalence of some of them.
Environmental and Family Variables

Children are not only predisposed to depression through genetics and parental characteristics, but also through the home environments created by the depressed parent and family member's reactions to the illness. Cummings (1995) outlined several environmental risk factors for children raised by depressed mothers. Some of these include, "exposure to depressive behaviors and communications, altered patterns of parent-child interactions and attachment, increased conflict and discord within the family, the role children play within the family process, child response processes, and functioning in stress-inducing tasks" (Cummings, 1995, pp. 425-426). These factors of depressed families create different environments than in non-depressed families, and so create unique experiences and contexts for these children.

Lahey et al. (1999) outlined what they labeled "potential family level risk factors" that they found to be related to disruptive behavior disorders in children. These include family structure and family size, maternal age, parental psychopathology and substance abuse, family functioning, and parenting (Lahey et al., 1999). By investigating the roles of these variables in their correlations, they were able to determine that, while individual characteristics were important, family factors were more influential in the development and maintenance of problem behaviors for children. Overall, the potential family influences had more impact on problem behaviors than did individual factors.

Billings and Moos (1985) identified additional depressed environmental factors influencing children. In addition to disrupted communication and parenting abilities, they include, "increased parent-child conflict, and decreases in family cohesion" (Billings & Moos, 1985, p. 150). The depressed parents in their study reported, "lower levels of cohesion, expressiveness, independence, recreational orientation, organization, and higher levels of conflict" (pp. 158-159) than control families. Since these mothers struggle with communication, social skills, and positive relationships, they may become isolated and lack social support. This gap limits children's and mother's access to non-depressed role models and friends. Increased conflict can drive family members apart, reducing
the chances for children to have access to a non-depressed role model. Again, these factors increase the risks for children who are exposed to the depressive environment and family attitudes surrounding depression.

**Child Variables**

Many child-related variables affect how children are influenced by maternal depression. One is how the child copes with maternal depression. Individual differences in coping can lead a child to act out, remove himself or herself, internalize, avoid, deny, withdraw, blame, get help, take care of parents, or talk. Early coping patterns found in childhood, as early as infancy, become long-term patterns. Radke-Yarrow and Klimes-Dougan (1997) distinguish three main categories of available skills, or responses, to distress in a child’s life. Children, who cope by removing themselves, or seeking out a non-depressed role model, reduce their potential for problem behaviors. These role models may be siblings, a non-depressed parent, or family member, or an outside person such as a sitter, teacher, neighbor, or parent of a friend. If, on the other hand, children internalize they may become depressed. These children repress and take the negative depressive interactions personally. Finally, if children externalize, problem behaviors become their coping repertoire. All children learn to cope early in life with frustrations and troubles. If children discover that they cannot find positive ways to cope with a mother’s depression or get help, they may turn to negative behaviors to draw attention to the problem. Negative behaviors, or problem behaviors, resulting from externalization in childhood have direct influences on later development. In other words, if children learn to externalize when faced with family problems, they may continue to do so when they are older.

Kendall and Hammen (1998) note that, “A parent who is rejecting, uncaring, unavailable, or inconsistent may foster a negative self-concept in the child” (p. 233). This may lead to cognitions characteristic of depression, including negative self-talk and self-image, blaming oneself for negative outcomes, and hopelessness in the child. A negative self-concept also may lead to other problems with emotional expression, such as acting out, aggression, and defiance. Depressed parents tend to
encompass the characteristics outlined above, suggesting that a child with a depressed parent is at a greatly increased risk to develop a negative self-concept and problem behaviors compared to a child who is not exposed to depressed interaction patterns from a parent. Sheffield (1998) stated that children born to women who exhibit depression are, “more self-critical, less skilled in their interactions with people, and have more difficulty dealing with their emotions” (p. 248) while also battling lower self-esteem. Negative self-concept and decreased social skills are typical of children who do not have access to consistent and dedicated role models. Depressed mothers tend not to be effective interaction role models because they do not display characteristics that promote a positive self-image and socially acceptable solutions. As a result, the child displays decreased emotional control.

Cummings (1995) suggested that children raised by depressed mothers have lower emotional security than other children. Emotional security allows children to regulate their own behaviors within their social environments and not focus on controlling the emotions of others. The decreased security of being raised with an inconsistent caregiver, “may result in problems in children’s regulation of their own emotions, excessive motivation to regulate the parent’s behavior, and maladaptive representations of social relationships” (Cummings, 1995, p. 426). Jacob and Johnson (1997) also investigated the interactions between depressed mothers and their children. Through this investigation, Jacob and Johnson clarified that, “Children of depressed parents display increased emotional and somatic symptomatology, increased behavioral impairment, social problems, and more school problems than do children of non-depressed parents” (p. 391). As found in these studies, depression lowers children’s ability to regulate their emotions, and increases their behavior problem potential. Behavior problems can lead to difficulties at home and school, and create inappropriate behavioral responses that linger into adulthood.
Continuity of Behavior Patterns

In addition to the relationship between maternal depression and problem behaviors, there is continuity between problem behaviors manifested in childhood and later in life. Most researchers agree that the impairments in children's behaviors resulting from maternal depression are long-standing and influential on almost all aspects of their lives, rather than transient or short-lived (i.e., Beardslee et al., 1983; Billings & Moos, 1985; Radke-Yarrow & Klimes-Dougan, 1997; Sheffield, 1998). Sheffield (1998), for example, reported that up to a year after remittance or successful treatment for the parent, children continue to display negative effects of depression. Schemas learned in the home environments as young children are pervasive even when improvements were made in the environment. Pepler, Craig, and Roberts (1995) found that, "Disruptive and bellicose children have a tendency to become adults who are at risk for marital conflict and child abuse, to engage in criminal behavior, and to become addicted to drugs and/or alcohol" (p. 213).

In their original study, Billing and Moos (1985) found that children with nonremitted depressed parents reported more health and functioning problems (39.1%) compared to control (12.6%) and remitted families (25.5%). In their longitudinal study, it was found that even when parents no longer suffered from depression, their children had more overall problems than control groups with no history of depression. In addition, they noted that adolescents who had depressed mothers as infants, "were less likely to show good adjustment than were controls who had non-depressed mothers" (Billings & Moos, 1985, p. 150) as infants. In fact, even though children who had remitted parents (26.5%) functioned better than those who had nonremitted (52.2%) parents at follow up they, "showed little improvement and continued to evidence more dysfunction than children of controls (9.5%)" (Billings & Moos, 1985, p. 163). Overall, children still showed disturbances in functioning and behaviors 5 years after their depressed parent was no longer depressed.
Radke-Yarrow and Klimes-Dougan (1997) looked at children of well and depressed mothers and their disruptive disorders, along with their ability to control their behaviors and emotions. Families with two children were interviewed first when the children were approximately 2 1/2 and 6, again 3 years later, and then again another 3 years later. Radke-Yarrow and Klimes-Dougan found, of children who were 13 years of age, 69% of those with a depressed parent had a diagnosed problem of controlling their behavior and/or emotions, compared to 37% of 13-year-olds of well parents. At 10 years of age, 62% of children exposed to depression were having problems controlling themselves, while only 30% of children with well parents were having similar problems. Radke-Yarrow and Klimes-Dougan found that at age 6, 60% of children of well mothers and 76% of children with depressed mothers were having generalized difficulties with controlling their behaviors and emotions. Of the 60% of children with well parents who had early difficulties, 37% only experienced these troubles in early childhood, while 23% had continuing problems throughout childhood. Among the 76% of children with depressed mothers who were having difficulty at age 6, only 12% confined their problems to childhood and 64% of the children had continuing difficulties. Specifically looking at disruptive behaviors, at 6 (10%) and 11 (7%) well parents had children with few problems, while 38% of depressed parents had children with problems at 6, and 26% continued to have problems at 13 (Radke-Yarrow & Klimes-Dougan, 1997). The overall pattern from this research indicates that children with depressed parents show the highest continuing pattern of problem behaviors, even when depression has been removed from the environment.

Rationale for this Review

Many children exposed to maternal depression do not exhibit characteristics associated with depression, such as externalizing problem behaviors. These children offer valuable insight into the topic of the negative effects of depression and merit additional study. Children who are resistant to the multiple risk factors of maternal depression allow for hope, and indicate that some combination of their environments and personal characteristics immunizes them against depression. What makes
these children resistant to depression needs to be explored. Previous hypotheses of buffers against depression for children have included social support from inside or outside the family, seeking out the non-depressed spouse or parent, using different coping skills, and the availability of other role models (i.e., Billings & Moos, 1985; Radke-Yarrow & Klimes-Dougan, 1997).

There is no way to determine one causal link between depression and problem behaviors due to the large number of risk factors. Since it is not possible to remove a particular factor and eliminate problem behaviors, interventions that consistently increase the number of resistant children need to be found. Reducing the negative effects of depression allows optimism and hope that children will not be defined by negative labels and behaviors based on their mother’s illnesses. In addition, beneficial interventions would decrease the intergenerational transmission of depression and problem behaviors.

When children are unable to behave in socially appropriate ways, they become burdens on society. Teachers identify them as disruptions in classrooms and learning environments; police, mental health, and community agencies know these children and spend money to treat them in reactive ways. Possibly, these resources could be used for more effective preventative measures. Children’s problem also reduce the family’s ability to cope and function, increasing the chance of transmitting the problems of one generation to the next, and the next, and so on. Children who are identified with problem behaviors generally display these problems long into adulthood. Understanding how to reduce the negative effects of depression on children is an essential piece of this larger societal problem. Increasing a mother’s knowledge of child development may be one such intervention that reduces the negative effects of depression on children, and of problem behaviors on society.
Chapter 3: Methodology

Purpose

The purpose of this study is to investigate the relationships between maternal depression and knowledge of child development, and externalizing behavior problems in children. Understanding these relationships is vital to devise intervention strategies that could reduce the negative effects of maternal depression on children. The link between maternal depression and problem behaviors has been well established (see Chapter 2; i.e., Beardslee, Bemporad, Keller, & Klerman, 1983; Billings & Moos, 1985; Cummings, 1995; Ferro, Verdell, Weissman & Myrna, 2000; Radke-Yarrow & Klimes-Dougan, 1997; Sheffield, 1998). In summary, a depressed mother’s illness may influence her child’s development negatively through personal and household characteristics that differ from households with non-depressed mothers. Children’s individual characteristics both result from and influence their interactions with the depressed mother. As a result of the combination of parental, environmental and family, and child variables, children are both influenced by and react to maternal depression. Children may cope with these conditions in several ways, one of which is to externalize their emotions. Externalization, or problem behaviors, cause major disturbances in the lives of the child and the family.

Validated ways to moderate the negative effects of maternal depression as problem behaviors on children continue to be investigated inadequately. Intervention strategies that consistently decrease the negative effects of problems have not yet been discovered. It may be less likely for the negative influences of maternal depression to affect children if helpful interventions are found. One possible intervention is to increase a depressed mother’s knowledge of development. This investigation examined whether knowledge of child development was a moderator between maternal depression and children’s problem behaviors. The larger social goal is a reduction in the number of problem behaviors experienced by children raised by depressed mothers.
This investigation explored how maternal depression and knowledge of child development when their children were 14 months and 36 months was related to children’s problem behaviors at 36 months of age. The focus was on these early years because they are crucial to later outcomes. Three factors influenced the selection of 14 months and 36 months of age. The first reason is that early learning and experiences characterize later development. Second, by 14 months if postpartum depression affected the mother, it either has diminished or developed into depression. Finally, by 14 months families generally have adjusted to the addition of a new child into their lives, and interaction patterns are fairly stable. By investigating the effects of early interactions within families, the long-term effects they have on children can be hypothesized. This creates a better picture of where interventions could be beneficial. The implications of this study include development of intervention strategies for family therapy and mental health counseling, in addition to an examination of children’s early problem behaviors.

Research Questions

This investigation was designed to examine whether a depressed mother’s knowledge of child development was related to the number of problem behaviors her child displayed. The scores of children and their mothers were compared at 14 and 36 months to determine the relationships between the three constructs of maternal depression, knowledge of child development, and children’s problematic behaviors. Three research questions were proposed for this study.

The first question focused on maternal depression and its links to children’s externalizing problem behaviors. What is the relationship between maternal depression when their children were 14 months and 36 months and children’s problem behaviors at 36 months? The second research question centered on maternal knowledge of development and its relationship to children’s problem behaviors. What is the relationship between maternal knowledge of child development when their children were 14 months and 36 months and children’s problem behaviors at 36 months? The third research question combined the negative effects of depression on children’s behaviors and the
depressed mother's knowledge of child development. Does maternal knowledge of child
development when their children were 14 and 36 months moderate the relationship of maternal
depression when their children were 14 months and 36 months and problem behaviors in children at
age 36 months? Table 1 outlines the research questions, variables, and data types.

Table 1: Research Questions, Variables, Data Type, and Hypotheses

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Variables</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Maternal Depression, CESD, CESD-S Children's Behavior Problems, CBCL</td>
<td>PV (Maternal Depression) OV (Behavior Problems)</td>
</tr>
<tr>
<td>#2</td>
<td>Maternal Knowledge of Child Development, KIDI, AAPI Children's Behavior Problems, CBCL</td>
<td>PV (Maternal Knowledge) OV (Behavior Problems)</td>
</tr>
<tr>
<td>#3</td>
<td>Maternal Depression, CESD, CESD-S Maternal Knowledge of Child Development, KIDI, AAPI Children's Behavior Problems, CBCL</td>
<td>PV (Maternal Depression) PV (Knowledge of Child Development) OV (Behavior Problems)</td>
</tr>
</tbody>
</table>

Procedure

The sample for this study was compromised of local participants drawn from the sample of a
national longitudinal study. This study was funded by the Administration on Children, Youth, and
Families (ACYF) within the U.S. Department of Health and Human Services. Iowa State University
(ISU) was one of seventeen sites chosen throughout the country to participate and collect data about
families that applied for Early Head Start (EHS) services. The research goals of the national study
were to increase the, "1) understanding of the extent to which the Early Head Start intervention can
be effective for infants and toddlers and their low-income families, and 2) understanding what kinds
of programs and services can be effective for children and families with different characteristics
living in varying circumstances and served by programs with varied approaches” (Administration on Children, Youth and Families, Building, Volume I, 2001, pp. 13-14). ACYF contracted Mathematica Policy Research (MPR), Inc. and Columbia University to direct the national study in collaboration with local teams. MPR is a private agency that was responsible for, “all aspects of preparation for data collection, tracking of interview status, data entry, quality control, coding of interview responses, coding of parent-child interaction videotapes, and data analysis” (Administration on Children, Youth and Families, Building, Volume II, p. B.3, 2001). The consolidated interim report produced by MPR was presented to the United States Congress by ACYF. The National Head Start Research Consortium coordinated the local efforts with the national requirements.

The sample for the national study was drawn at the 17 local sites between July 1996 and September 1998 from families who applied for welfare assistance. These families were screened to determine if they were eligible for Early Head Start (EHS) services. To be income eligible, families needed to have an income below the national poverty level and be eligible for public assistance in the fiscal year before and at the time of application. In addition, families needed to have a child younger than 1 year of age or pregnant woman to be eligible. Nationally, 3,001 families were selected for the study. After selection at the local sites, the names and identifying information for the families were sent to MPR to be assigned randomly to the program or control group.

Once group membership was determined, control families (1,488 dyads) did not receive EHS until the child was at least 3 years old, but could receive other community services and public assistance. Program families (1,513 dyads) received EHS in addition to any community services they were eligible for and desired to receive. This strategy was used to ensure that the study results demonstrated the influence of EHS, and that families were not denied needed services due to the research process. In addition, at the time of application EHS was not a proven intervention strategy so families were not being denied access to a guaranteed program. According to MPR, the program and control group demographic information confirms that the groups were similar to each other and
representative of the general population of low-income families (Administration on Children, Youth and Families, Building, Volume I, 2001). It should be noted that intake workers who assessed families for their financial needs could ask MPR for an exemption to exclude a family from random selection and place them in EHS; nationally, no exemptions were requested.

Each site selected to collect national data hired their own site coordinator and data collectors. In addition to national guidelines, local research sites could determine additional eligibility guidelines. The Iowa State University (ISU) site worked in partnership with Mid-Iowa Community Action (MICA). MICA provides services, including EHS, to low-income families in five counties in central Iowa. After group selection by MPR, MICA workers contacted program families and research staff at ISU contacted control families. Standardized consent and program participation agreement forms that explained the research process and financial incentives for participation were used for all participants. Withdrawal from the study was voluntary and unrelated to services received. In Iowa, each assessment included monetary incentives for parents and toys for the children in appreciation of their participation. In addition, children received presents from researchers at Iowa State annually throughout their participation in the study.

MPR determined an assessment schedule using both age and time-based intervals (Administration on Children, Youth and Families, Building, Volume II, 2001). Both program and control families were interviewed in their homes at baseline (application for services), and again when the children were 14 months, 24 months, 36 months, and pre-kindergarten (spring/summer before eligible to begin kindergarten). At 24 months, 36 months, and pre-kindergarten the father or father figure(s) for the child were also interviewed, if applicable, in a separate in-home assessment. At the 14 month, 24 month, 36 month, and pre-kindergarten visits, observations of the childcare setting were conducted, if applicable. Families also participated in over-the-phone service interviews (PSI) at 6, 15, and 26 months after random assignment by MPR. In the time span between the 36 months and pre-kindergarten assessments families participated in over-the-phone 10-minute tracking
interviews. The assessment schedule described here is diagramed in Table 2. Specific windows of response time were allowed for each assessment related to the target date of the assessment. Detailed information about data sources and outcome measures can be found in Early Head Start Research reports (Administration on Children, Youth and Families, Building, Volume I & II, 2001).

Table 2: Assessment Schedule

<table>
<thead>
<tr>
<th>BIRTHDAY RELATED</th>
<th>SERVICE RELATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 months: IH, CC</td>
<td>Baseline/application for services: in-home</td>
</tr>
<tr>
<td>24 months: IH, FS, CC</td>
<td>6 months: PSI</td>
</tr>
<tr>
<td>36 months: IH, FS, CC</td>
<td>15 months: PSI</td>
</tr>
<tr>
<td>Pre-Kindergarten: IH, FS, CC</td>
<td>26 months: PSI</td>
</tr>
<tr>
<td></td>
<td>36 months: PSI</td>
</tr>
<tr>
<td></td>
<td>Between 36 and Pre-K: Phone Tracking</td>
</tr>
</tbody>
</table>

KEY

IH: In-home Assessment
FS: Father Study
CC: Child Care Observation
PSI: Phone Service Interview

Similar interview and observation formats were used throughout the study for each type of assessment. At each in-home assessment, which lasted approximately two hours, trained interviewer/assessors (IA’s) went into the family home where the child was currently living. The heads of these households varied, but children were assessed with their custodial parent. IA’s were trained by MPR and/or the local research team certified to conduct research in the field. Each participating site maintained inter-rater reliability throughout the longitudinal study. While in the homes of the families, the IA’s conducted both assessments of the child’s current knowledge and functioning, as well as a parent interview. Sections of the parent interview could be completed through self-report measures or administered by the IA. In addition, interactions between the primary caregiver and child were videotaped. When interviewers were in the homes of participants, normal routines were respected, confidentiality and agreement to participate forms were signed, and all directions were explained carefully. National data then were sent to MPR for coding and
consolidation. Data files were sent back to ISU from MPR, and were analyzed to create a profile for each family. Additional information about the national study, demographics, and goals can be found in the Early Head Start Research reports in 2000 and 2001.

Sample

ISU and MICA recruited 225 families, divided into control and program groups, who were followed from application for services (baseline) to pre-kindergarten. Demographics of all Iowa participants at baseline are summarized in Table 3. The mean age of the applicant was 23.5 years, with a range of 15 to 39 years. The greatest percentage of applicants was single (43.2%), followed by married (38.3%) and cohabitating (10.8%). Two-parent families (married or common law) made up 48.0% of the applicants, 45.3% were single-mother families, 0.9% were single-father families, and 3.6% were single-mother families but were living with their partners. Of the target children, 51.6% were female and 48.4% were male. Of these 225 families, between 141 and 160 were used in this study, depending on the instrument.

Instruments

Instruments used for this investigation are outlined in Table 4, where each instrument’s name, purpose, scale of measurement, and range of possible scores for this study is identified. Standardized scores were not used, due to the differences in measures. All instruments used in this study were collected during the birthday related in home interviews when the children were 14 months and 36 months of age.

Maternal Depression

The Center for Epidemiological Studies Depression Scale (CESD) (Radloff, 1977) was used in the 14 month interview to determine level of maternal depression. Radloff (1977) stated that the scale was, “designed to measure depressive symptomatology in the general population” (p. 385) in a shorter scale than used previously. The CESD was designed to be short, easy, and an accurate way to assess mood disturbances as categorized by the DSM, but is not meant to be a diagnostic tool.
Table 3: Local Sample Demographic Information for All Participants at Application for Services

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>Total percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender of applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>224</td>
<td>99.6%</td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>Gender of child</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>117</td>
<td>51.6%</td>
</tr>
<tr>
<td>Male</td>
<td>106</td>
<td>48.4%</td>
</tr>
<tr>
<td>Race of applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>182</td>
<td>80.9%</td>
</tr>
<tr>
<td>Black</td>
<td>9</td>
<td>4.0%</td>
</tr>
<tr>
<td>Mexican/Chicano</td>
<td>13</td>
<td>5.7%</td>
</tr>
<tr>
<td>Biracial</td>
<td>9</td>
<td>3.9%</td>
</tr>
<tr>
<td>Age of Applicant (Random Assignment)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20 years</td>
<td>59</td>
<td>26.2%</td>
</tr>
<tr>
<td>20 to 29 years</td>
<td>134</td>
<td>59.5%</td>
</tr>
<tr>
<td>30 years or greater</td>
<td>32</td>
<td>14.1%</td>
</tr>
<tr>
<td>Marital Status of applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>96</td>
<td>42.7%</td>
</tr>
<tr>
<td>Married</td>
<td>85</td>
<td>37.8%</td>
</tr>
<tr>
<td>Cohabitating</td>
<td>24</td>
<td>10.7%</td>
</tr>
<tr>
<td>Separated/Divorced</td>
<td>17</td>
<td>7.6%</td>
</tr>
<tr>
<td>Education Level of applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade or Less</td>
<td>14</td>
<td>6.2%</td>
</tr>
<tr>
<td>High School (no diploma)</td>
<td>58</td>
<td>25.8%</td>
</tr>
<tr>
<td>HS diploma or GED</td>
<td>75</td>
<td>33.3%</td>
</tr>
<tr>
<td>Some college or AA</td>
<td>55</td>
<td>24.4%</td>
</tr>
<tr>
<td>BA or above</td>
<td>19</td>
<td>8.4%</td>
</tr>
<tr>
<td>Occupation of applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paying job</td>
<td>65</td>
<td>28.9%</td>
</tr>
<tr>
<td>In school or job training</td>
<td>42</td>
<td>18.6%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>36</td>
<td>16.0%</td>
</tr>
<tr>
<td>Family Type of applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two Parent</td>
<td>108</td>
<td>48.0%</td>
</tr>
<tr>
<td>Mother only</td>
<td>102</td>
<td>45.3%</td>
</tr>
<tr>
<td>Father only</td>
<td>2</td>
<td>0.9%</td>
</tr>
<tr>
<td>Single parent living with partner</td>
<td>8</td>
<td>3.6%</td>
</tr>
<tr>
<td>Monthly Income of applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; $200</td>
<td>43</td>
<td>19.1%</td>
</tr>
<tr>
<td>$200-$900</td>
<td>101</td>
<td>44.9%</td>
</tr>
<tr>
<td>$1000-$2799</td>
<td>48</td>
<td>21.2%</td>
</tr>
<tr>
<td>&gt; $3000</td>
<td>2</td>
<td>0.9%</td>
</tr>
<tr>
<td>Services Received by applicant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicare/Medicare</td>
<td>168</td>
<td>74.7%</td>
</tr>
<tr>
<td>AFDC</td>
<td>68</td>
<td>30.2%</td>
</tr>
<tr>
<td>Food Stamps</td>
<td>119</td>
<td>52.9%</td>
</tr>
<tr>
<td>WIC</td>
<td>208</td>
<td>92.4%</td>
</tr>
<tr>
<td>SSI</td>
<td>12</td>
<td>5.3%</td>
</tr>
<tr>
<td>Public Housing Assistance</td>
<td>27</td>
<td>12.0%</td>
</tr>
<tr>
<td>Energy Program</td>
<td>20</td>
<td>8.9%</td>
</tr>
<tr>
<td>Child Support/alimony</td>
<td>7</td>
<td>3.1%</td>
</tr>
</tbody>
</table>
### Table 4: Instruments

<table>
<thead>
<tr>
<th>Name of Instrument</th>
<th>Purpose</th>
<th>Scale of Measurement</th>
<th>Potential Range of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center for Epidemiological Studies-Depression (CESD)</td>
<td>Non diagnostic tool to assess level of depressive symptomatology</td>
<td>Interval Scale</td>
<td>40-80</td>
</tr>
<tr>
<td>Center for Epidemiological Studies-Depression Short (CESD-S Scale)</td>
<td>Non diagnostic tool to assess level of depressive symptomatology, self report</td>
<td>Interval Scale</td>
<td>12-48</td>
</tr>
<tr>
<td>Knowledge of Infant Development (KIDI)</td>
<td>Assess level of parental knowledge of infant development</td>
<td>Interval Scale</td>
<td>14-70</td>
</tr>
<tr>
<td>Adult-Adolescent Parenting Inventory (AAPI)</td>
<td>Determine attitudes about parenting and of knowledge of child development, self report</td>
<td>Interval Scale</td>
<td>13-65</td>
</tr>
<tr>
<td>Child Behavior Checklist (CBCL)</td>
<td>Determine level of problem behaviors, maternal report</td>
<td>Interval Scale</td>
<td>30-117</td>
</tr>
</tbody>
</table>

Areas of depression specifically addressed include, “depressed mood, guilt/worthlessness, helplessness/hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance” (Rabkin & Klein, 1987, p. 76). Radloff (1977) found the scale to have high internal consistency ($\alpha = .90$ and above for both normal and patient groups), and adequate test-retest reliability ($\alpha = .67$ for 4 weeks) (Robinson, Shaver, & Wrightsman, 1991). In addition, Radloff (1977) reported moderate correlations with other self-report measures and good discriminant validity (Robinson et al., 1991) across a demographically diverse population.

Directions for the CESD in the 14 month parent interview were, “I am going to read a list of ways you may have felt or behaved. Looking at the categories on this card, please tell me how often you have felt this way during the past week. How often during the past week have you felt (READ STATEMENT)—would you say: rarely or never, some or a little of the time, occasionally or a moderate amount of time, or most or all of the time?” (Early Head Start Parent Interview, 14-month-
olds). The available quantitative responses were rarely or none of the time, less than one day (coded 1), some or a little of the time, one to two days (coded 2), occasionally or a moderate amount of time, three to four days (coded 3), and most or all of the time, five to seven days (coded 4). The range of CESD scores in this study was 20 to 65 from the possible range of 40 to 80. Specific questions used in the assessment are reported in Appendix A.

The Center for Epidemiologic Studies Depression Scale Short version (CESD-S), as designed by MPR, was used in the 36 month assessment to investigate maternal depression. From the CESD, 12 questions were used. No reliability or validity scores have been reported. The CESD-S could have been administered by the IA or as a self-report form during the assessment. The instructions were, “Please mark the circle which best describes how often you felt or behaved this way during the past week” (Early Head Start Parent Interview, 3 year olds). The available quantitative responses were rarely or none of the time, less than one day (coded 1), some or a little of the time, one to two days (coded 2), occasionally or a moderate amount of time, three to four days (coded 3), and most or all of the time, five to seven days (coded 4). For this time period, the possible range of scores for this study was 12 to 40, out of a possible range of 12 to 48. Specific questions used in the assessment are reported in Appendix B.

Knowledge of Child Development

Knowledge of Infant Development Inventory (KIDI) (MacPhee, 1981), was used at 14 months to examine knowledge of development. The scale was designed to “assess a person’s knowledge of developmental processes and infant norms” (MacPhee, 1981, p. 1) under the assumption that effective child rearing is, fundamentally, dependent upon parent education. The entire KIDI encompasses four domains of parental knowledge: infant developmental norms and milestones, principles of developmental processes, parenting strategies, and health and safety. Although the KIDI does contain items that may be influenced by class, the items were normed based on developmentally appropriate practices for all children and does not show an effect of SES.
(MacPhee, 1981). The KIDI has high test-retest reliability ($\alpha = .92$), and internal consistency ($\alpha = .82$) in addition to displaying high construct and convergent validity (MacPhee, 1981). The KIDI was found to be sensitive to interventions when used as a pretest-posttest measure (MacPhee, 1981).

At the 14 month parent interview, 14 items from the infant scale were included. The directions were, “The first set of questions asks about how you think most babies act, how they grow, and how to care for them. Please answer each of the following questions based on your knowledge of babies in general. Do not answer about (CHILD) and how (he/she) acts. Think about what you know about babies you have had contact with or anything you have read. For each statement I read, please tell me whether, for most babies, you strongly agree, mildly agree, mildly disagree or strongly disagree with the statement” (Early Head Start Parent Interview, 14-month-olds). Statements were followed by standard responses of strongly agree (coded 1), mildly agree (coded 2), mildly disagree (coded 4) or strongly disagree (coded 5). The range of scores for this research was 43 to 66, with a possible range of 14 to 70. Specific questions used in the assessment are reported in Appendix C.

Bavolek designed the Adult-Adolescent Parenting Inventory (AAPI) in 1989. The scale was designed to assess if parents needed education to prevent child abuse and neglect. The AAPI investigates the degree that adolescents and adults agree or disagree with the parenting attitudes and child rearing practices of: parental expectations of the child, empathy toward the children’s needs, parental value of physical punishment, and parent-child role reversal (Bavolek, 1989). Bavolek labeled the combination of these four variables “at-risk parenting.” The AAPI was found to be “useful in assessing individual strengths and weaknesses involved in child rearing” (Bavolek, 1989, p. 106). Bavolek warns that the AAPI is not a valid predictor of future abusive parenting though. The AAPI has test-retest reliability of .76 (Bavolek, 1989) and overall reliability and validity when used with adolescents and adults (Bavolek, 1989).

The Empathetic Awareness of Children’s Needs ($r = .82$ adults) and Developmental Expectations of Children ($r = .75$ adults) subscales of the AAPI were used in the 36 month
assessment (Thompson & Harm, 2000). The parent interview instructions state, “I’m going to read you some statements about parenting and raising children. For each one, please tell me if you strongly agree with it, mildly agree, mildly disagree or strongly disagree” (Early Head Start Parent Interview, 3-year-olds). Available responses were strongly agree (coded 1), mildly agree (coded 2), uncertain (not read, coded 3), mildly disagree (coded 4), and strongly disagree (coded 5). Scores for this study range from 30 to 61, with a possible range of 13-65. Specific questions are listed in Appendix D.

Problem Behaviors

The Child Behavioral Checklist (CBCL), designed by Achenbach in 1978 and revised by Achenbach and Edelbrock in 1979, was constructed to assess childhood problem behaviors. Both teacher and parent report forms are available for the CBCL. Together these are used to determine academic and social competencies of the child. The entire parent version of the CBCL includes 118 statements about problem behaviors, divided into the subscales of activities, social, and school behaviors. Achenbach (1978) factor structured children’s profiles into three groups of behaviors: internalizing, mixed, and externalizing syndromes. The CBCL was tested on children by gender and age, which created six groups. Test-retest reliability is high (.95 problem behaviors and .99 social competence over 1 week); validity and correlations with similar scales are also high (Ollendick & Hersen, 1993).

At the 36 month assessment, 31 items from the aggression subscale plus 8 additional items selected by MPR for their ability to discriminate children who were receiving clinical mental health services (Early Head Start Research Consortium, B.10) were administered. These 39 items were selected both for their ease of administration and time purposes, but also because of their ability to predict later problem behaviors. The instructions for the CBCL were, “Next I am going to read a list of behaviors. Some may be true for (CHILD) and some may not be true for (him/her). For each one please tell me if, now or within the past 2 months, this has been not true, somewhat or sometimes true
or very often or often true for (CHILD)” (Early Head Start Parent Interview, 3-year-olds). The available quantitative responses to the items were never or not true (coded 1), sometimes or somewhat true (coded 2), and often or very true (coded 3). MPR recoded these scores to 1 to 3. Scores for this study range from 40 to 92, out of a possible range of 39-117. Specific questions are listed in Appendix F.
Chapter 4: Results

The data collected for this study were analyzed in SPSS format. First, summed scores for the predictor and outcome variables were explored. Then, each individual research question was investigated separately. Next, interrelations were explored between variables using correlation and regression analyses. Finally, a path analysis was conducted. The data from each of these investigations are outlined here.

For this quantitative between-subjects design with interval-scale data, descriptive statistics were calculated for all variables. These frequencies are summarized in Table 5. The maternal depression score when their children were 14 months (CESD) sample was minimally skewed to the left, which is expected since this indicates an overall non-depressed population or normal range. The maternal knowledge of child development score when their children were 14 months (KIDI) distribution was normally distributed. The maternal depression score when their children were 36 months (CESD-S) distribution was also skewed to the left due to a majority mothers responding that they were non-depressed. Finally, the maternal knowledge of child development score when their children were 36 months (AAPI) distribution was skewed slightly to the right, indicating a slightly higher than normal set of knowledge levels. Frequencies for the outcome variable, child behavior at 36 months (CBCL), was calculated. The CBCL was normally distributed.

Table 5: Frequencies of predictor and outcome variables

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Deviation</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>CESD</td>
<td>158</td>
<td>33.78</td>
<td>32</td>
<td>8.43</td>
<td>45</td>
<td>20</td>
<td>65</td>
</tr>
<tr>
<td>CESD-S</td>
<td>147</td>
<td>19.84</td>
<td>18</td>
<td>6.08</td>
<td>28</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>KIDI</td>
<td>160</td>
<td>56.24</td>
<td>56</td>
<td>4.22</td>
<td>23</td>
<td>43</td>
<td>66</td>
</tr>
<tr>
<td>AAPI</td>
<td>141</td>
<td>48.76</td>
<td>49</td>
<td>5.71</td>
<td>31</td>
<td>30</td>
<td>61</td>
</tr>
<tr>
<td>CBCL</td>
<td>145</td>
<td>60.60</td>
<td>59</td>
<td>10.36</td>
<td>52</td>
<td>40</td>
<td>92</td>
</tr>
</tbody>
</table>
Research Questions

Question One

What is the relationship between maternal depression when their children were 14 months and 36 months and children's problem behaviors at age 3 years? Maternal depression from the 14 month CESD and 36 month CESD-S were predictor variables, and children's problem behaviors measured by the 36 month CBCL was the outcome variable. Question one was investigated with a univariate analysis of variance (ANOVA), shown in Table 6. The overall corrected model showed a significant relationship between maternal depression and children's problem behaviors ($F = 17.03, p = .05$). Model one explained 23% of the variance in children's problem behaviors at 36 months. Within this model, depression when their children were 36 months played the most significant role ($F = 14.81, p < .001$). Depression when their children were 36 months explained 11.4% of the variance of model one.

Table 6: Question One Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>$\eta^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Month Depression</td>
<td>1</td>
<td>3.551</td>
<td>.030</td>
<td>.062</td>
</tr>
<tr>
<td>CESD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Month Depression</td>
<td>1</td>
<td>14.808</td>
<td>.114</td>
<td>.000</td>
</tr>
<tr>
<td>CESD-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>115</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Computed using alpha = .05

$N = 118$

$R^2 = .228$

Question Two

What is the relationship between maternal knowledge of child development when their children were 14 and 36 months and children’s problem behaviors at age 3 years? This model combined maternal knowledge of child development from the 14 month KIDI and 36 month AAPI as
predictors, and children’s problem behaviors from the 36 month CBCL as the outcome variable.

Research question two was also investigated with an ANOVA, shown in Table 7. The overall corrected model was not significant \( (F = 1.46, p = .24) \). Only 2.5% of the variance in children’s problem behaviors was accounted for by maternal knowledge of child development.

**Table 7: Question Two Analysis of Variance**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>( F )</th>
<th>( \eta^2 )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Month Knowledge KIDI</td>
<td>1</td>
<td>2.149</td>
<td>.019</td>
<td>.145</td>
</tr>
<tr>
<td>36 Month Knowledge AAPI</td>
<td>1</td>
<td>.465</td>
<td>.004</td>
<td>.496</td>
</tr>
<tr>
<td>Error</td>
<td>114</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Computed using alpha = .05
N = 117
\( R^2 = .025 \)

**Question Three**

How does maternal depression and maternal knowledge of child development when their children were 14 and 36 months moderate behavior problems at age 3 years? Scores of maternal knowledge of child development from the 14 month KIDI and 36 month AAPI, and maternal depression scores from the 14 month CESD and 36 month CESD-S were the predictor variables. Children’s problem behaviors from the 36 month CBCL was the outcome variable. Research question three, the full model, was investigated with an ANOVA, shown in Table 8. The overall corrected model was significant \( (F = 7.6, p = .05) \). Of the variance in children’s problem behaviors 21.7% was accounted for. Again, the depression score at 36 months was the most significant of the predictors \( (F = 13.68, p = .05) \), and accounted for 11.1% of the variance.

Within this full model, the demographic variables of income level, education level, child gender, and marital status were investigated in an ANOVA, as found in Table 9. This model was
Table 8: Question Three Analysis of Variance

The relationships between maternal depression and knowledge of child development and children’s problem behaviors

<table>
<thead>
<tr>
<th>Between Subjects</th>
<th>df</th>
<th>F</th>
<th>( \eta^2 )</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Month Knowledge</td>
<td>1</td>
<td>1.545</td>
<td>.014</td>
<td>.217</td>
</tr>
<tr>
<td>KIDI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Month Knowledge</td>
<td>1</td>
<td>.155</td>
<td>.001</td>
<td>.694</td>
</tr>
<tr>
<td>AAPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Month Depression</td>
<td>1</td>
<td>2.471</td>
<td>.022</td>
<td>.119</td>
</tr>
<tr>
<td>CESD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Month Depression</td>
<td>1</td>
<td>13.676</td>
<td>.111</td>
<td>.000</td>
</tr>
<tr>
<td>CESD-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Computed using alpha = .05
N = 115
\( R^2 = .217 \)

significant \((F = 4.34, p < .001)\) and accounted for 33.8% of the variance in children’s problem behaviors. Despite the increase in accounted for behaviors, marital status \((F = 3.72, p = .02)\) was the only significant demographic variable. With these variables in the model, marital status accounted for 11.6% of the variance in children’s problem behaviors. A pairwise comparison found that children from households with single mothers \((p = .03)\) had higher problem behaviors than those from any other marital status group. A difference was also found between male and female children and the amount of problem behaviors they exhibited, although the \(\alpha = .05\) criteria for significance was not met. Male children displayed more problem behaviors than female children regardless of marital status.

Correlations were significant between depression when their children were 14 months and 36 months \((r = .510, p = .01)\), between depression when their children were 14 months and knowledge when their children were 36 months \((r = -.196, p = .05)\), between depression when their children were 14 months and behaviors at 36 months \((r = .359, p = .01)\), and finally between depression when their
Table 9: Question Three Expanded Analysis of Variance

The relationships between maternal depression and knowledge of child development and children's problem behaviors, considering income level, maternal education, child gender, and marital status

<table>
<thead>
<tr>
<th>Between Subjects</th>
<th>df</th>
<th>F</th>
<th>η²</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Month Knowledge</td>
<td>1</td>
<td>2.30</td>
<td>.026</td>
<td>.133</td>
</tr>
<tr>
<td>KIDI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Month Knowledge</td>
<td>1</td>
<td>.294</td>
<td>.003</td>
<td>.589</td>
</tr>
<tr>
<td>AAPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Month Depression</td>
<td>1</td>
<td>.161</td>
<td>.002</td>
<td>.690</td>
</tr>
<tr>
<td>CESD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Month Depression</td>
<td>1</td>
<td>14.687</td>
<td>.147</td>
<td>.000</td>
</tr>
<tr>
<td>CESD-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>1</td>
<td>1.268</td>
<td>.015</td>
<td>.263</td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
<td>1.592</td>
<td>.018</td>
<td></td>
</tr>
<tr>
<td>Child Gender</td>
<td>1</td>
<td>2.554</td>
<td>.029</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>3</td>
<td>3.716</td>
<td>.116</td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Computed using alpha = .05
N = 96
R² = .338

children were 36 months and behaviors at 36 months (r = .464, p = .01). Regression analyses were run between these variables, found in Table 10, and all four of these paths were significant at the p < .05 level. Between maternal depression when their children were 14 months and maternal depression when their children were 36 months (F = 41.38, p < .001), maternal depression when their children were 14 months and maternal knowledge of child development when their children were 36 months (F = 4.50, p = .04), maternal depression when their children were 14 months and behaviors at 36 months (F = 17.20, p < .001), and maternal depression when their children were 36 months and behaviors at 36 months (F = 39.28, p < .001).
Finally, a path analysis was conducted in LISREL, shown in Figure 1. The significant paths were between maternal depression when their children were 14 months and 36 months, maternal depression when their children were 36 months and behaviors at 36 months, and maternal depression when their children were 14 months and knowledge of child development when their children were 36 months months. The overall goodness of fit (GFI = 1.00) for the path analysis indicated that this model was as good as any other combination of significant variables. This model was not significantly different from parsimonious models ($x^2(2, N = 115) = .17, p = .92$). The three structural equations used in this path analysis were:

1) 14 Month Depression: $.51 \times \text{sumcesd}, \text{Errorvar.} = 0.74, R^2 = .26$

2) 36 Month Depression: $.38 \times \text{scesdsum} + .17 \times \text{sumcesd}, \text{Errorvar.} = 0.76, R^2 = .24$

3) 36 Month Knowledge: $-0.20 \times \text{sumcesd}, \text{Errorvar.} = 0.96, R^2 = .038$

Figure 1: Path Analysis
Table 10: Regressions of Predictor and Outcome Variables

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Outcome variable</th>
<th>N</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 M CESD</td>
<td>36 M SCESD</td>
<td>120</td>
<td>.362</td>
<td>.056</td>
<td>.510*</td>
</tr>
<tr>
<td>14 M CESD</td>
<td>36 M CBCL</td>
<td>118</td>
<td>.447</td>
<td>.108</td>
<td>.359*</td>
</tr>
<tr>
<td>14 M CESD</td>
<td>36 M AAPI</td>
<td>115</td>
<td>-.137</td>
<td>.065</td>
<td>-.196*</td>
</tr>
<tr>
<td>36 M SCESD</td>
<td>36 M CBCL</td>
<td>145</td>
<td>.634</td>
<td>.165</td>
<td>.364*</td>
</tr>
</tbody>
</table>

*p < .05.
Chapter 5: Discussion

This study represents an attempt to bridge the gap in research concerning maternal depression and children's problem behaviors. The connection between these two phenomena is well established; how to protect children from the deleterious effects of maternal depression remains unknown. Both environmental and individual factors support maternal depression as well as create resistance to depression and problem behaviors for children. Environmental factors that influence resistance include having access to a non-depressed caregiver or adult, decreased conflict within the home, increased cohesion within the marriage, and minimal marital strain (Beardslee et al., 1983; Benasich & Brooks-Gunn, 1996; Billings & Moos, 1985; Radke-Yarrow & Klimes-Dougan, 1997). Individual factors that impact resistance include temperament, coping skills, self-reliance, independence, and self-worth (Beardslee et al., 1983; Benasich & Brooks-Gunn, 1996; Billings & Moos, 1985; Radke-Yarrow & Klimes-Dougan, 1997). Since there are numerous unique factors involved within mothers, environments, and children, it is nearly impossible to determine which ones are most influential in the production of problem behaviors or resiliency. Based on this multi factor system of influences, finding reliable ways to reduce the negative effects of depression and resulting problem behaviors would be beneficial.

Models

Findings for 2 of the 3 original questions proposed for this study were significant. Analysis for the first research question yielded significance. Maternal depression was a significant predictor of problem behaviors for their children at 36 months of age. Depression when their children were 36 months explained more of in this relationship than did maternal depression when their children were 14 months. This is logical since the 36 month scores were reflective of what was currently happening in the home. Although maternal depression when their children were 14 months and behaviors at 36 months were significantly correlated, depression when their children were 36 months was more strongly associated with this outcome. The second research question was not found to be significant.
There were no direct links between maternal knowledge of child development when their children were 14 months and 36 months on children's behaviors at 36 months.

The full model, research question number three, was found to be significant. The best predictor of children's problem behaviors at 36 months was the mother's depression score when their children were 36 months, followed by the maternal depression score when their children were 14 months. Again, knowledge of child development played a minimal role in explaining the variance in behaviors. Baseline demographic variables of marital status, maternal education level, child gender, and income level were added to the model to investigate if interactions were apparent. Although these variables did not create a significant model, marital status and depression when their children were 36 months were significantly associated with children's behavioral outcomes at 36 months. The indication was that single mothers had children with significantly more problem behavior than mothers from other marital status groups. Because this group experienced the most problem behaviors in their children, this suggests that additional factors associated with marital status should be investigated. Factors such as family structure and support can vary significantly between marital status groups without being reflected in these analyses. For example, there is a logical difference between a household run by a single mother where the father is present on a regular basis and a household run by a single mother with no paternal influence. Despite this difference, both of these households would be in the category of single mother.

Overall, four significant correlations were discovered in this study. The first was between depression levels; generally, mothers who had higher depression scores when their children were 14 months old continued to have higher depression scores when their children were 36 months. The second significant correlation was between depression and knowledge levels. Mothers who had lower depression scores when their children were young had higher knowledge scores at 36 months. The third and forth significant correlations were between depression and behaviors, and indicated higher maternal depression when their children were 14 months and at 36 months lead to higher
problem behaviors at 36 months. Regressions analyses confirmed the significance of these direct paths, shown in Table 10.

A path analysis was conducted to better explain the negative effects of depression on children based on the significant correlations and regressions found. Results of this analysis are shown in Figure 1. All four paths that had significant correlations were examined; three were significant. The path that originated from maternal depression when their children were 14 months, went through depression when their children were 36 months, and ended at behaviors at 36 months was significant in both sections. The path from maternal depression when their children were 14 months to maternal knowledge of child development when their children were 36 months is negative and significant. The path directly from maternal depression when their children were 14 months to children's behavior at 36 months was not significant. This path analysis indicates that, although maternal depression when their children were 14 months does not have a direct effect on children's behaviors at 36 months, it does have an indirect effect through depression when their children were 36 months. The association between depression when their children were 14 months and knowledge of child development when their children were 36 months is encouraging. Mothers who had lower depression scores when their children were young were more knowledgeable about their children's developmental needs when they were 3 years old. These findings suggest that maternal education programming is not sufficient to decrease the negative effects of maternal depression on children. It is also necessary to focus on the mental health of the mother. If decreasing maternal depression when a child is young allows a mother to increase her knowledge of child development, the results for the child could be an increase in appropriate parenting.

Although this study's full model, which contained both maternal depression and knowledge of child development was supported, the direct connection between knowledge and behavior was not. The prediction was that increasing maternal knowledge of development would be one way to reduce the negative effects of depression on children. Supporting research indicated that mothers with
greater levels of knowledge have children with fewer behavior problems (i.e. Benasich, 1996; Pelaez-Nogueras, Field, Hossain, & Pickens, 1996). The idea is that, regardless of other life circumstances within the mother and environment, maternal knowledge of child development decreases the chances that problematic behaviors are the result for the children. Although this hypothesis was not supported in this particular study, this research has increased the field’s knowledge of what does not work with this type of highly diverse and at-risk population. The door remains open to new ideas of how to protect children with multiple risk factors. The need for reduced effects of maternal depression on children remains of momentous importance.

Confounds

Several confounding variables can be identified in relation to this study. The dynamic interrelation between mothers and their children may have influenced the results of this study. Hammen et al. (1987) explained, “It is possible that critical and negative interactions may result in part from problematic behavior of the child” (p. 116). The use of maternal depression as the predictor variable may have been an incorrect presumption. Indeed, the direction may have been that the negative environments and dysfunctional children increased the maternal depression (Billings & Moos, 1985; Hammen et al., 1987; Kandel & Wu, 1995; Lahey et al., 1999). As with most interactions, there is evidence of bi-directional influences between mothers and their children. Kandel and Wu (1995) emphasized these concepts of knowledge and influence by focusing on types of discipline and their influence on child behavioral outcomes. Parents and children are in a system of reciprocal influence, where each influences the other. Parents are responsible for discipline, but children respond uniquely to different disciplinary techniques. Parents can increase their disciplinary success if they try different techniques until they find ones that fit with the individual needs and temperament of the child within the family system (Kandel & Wu, 1995). Knowing how to apply different discipline techniques comes from training and knowledge of child development.
In addition to the mutual influence between mothers and their children, the three concepts of depression, knowledge, and behaviors may overlap. Both maternal depression and knowledge of child development may be related to the motivational level, mental ability, and amount of support received by the mother, or the family's current financial situation. A recent breakup or divorce, financial crisis, or excessive stressors within the family system may affect both maternal depression and children's behaviors. Maternal knowledge and children's behaviors may vary with the mother's age, number of additional children in the home, education level, or a mother's enthusiasm about parenting. In other words, the three concepts involved in this study may not be mutually exclusive.

An additional confound is the potential problem of rating, or respondent bias. In this study mothers exclusively rated their children's behaviors. Previous research has indicated that depressed mothers do not make accurate or unbiased reports of their children's behaviors due to their mental condition, called the distortion model (Boyle & Pickles, 1997; Fergusson, Lynskey, & Horwood, 1993; Wright, George, Burke, Gelfand, & Teti, 2000). The distortion model assumes that there are unobservable factors that influence how mothers rate their children's behaviors (Fergusson et al., 1993). This body of research brings out the concern that depressed mothers inflate their ratings of their children's problematic behaviors as a result of their depression. On the other hand, it may be possible that depressed mothers are not as affected by the social desirability to rate their children positively, and so rate them accurately, called the accuracy model (Billings & Moos, 1985; Civic & Holt, 2000, Lovejoy, 1991). The accuracy model advocates that depressed mothers do not rate their circumstances significantly differently than what is really happening. Lovejoy (1991) found that trained raters more often agreed with depressed mother's recall of their children's problematic behaviors than the recall of non-depressed mothers. This "normal bias" increases the accuracy of depressed mother's ratings, but decreases the protective factor of a mother's selective memory for negative interactions with her child.
Looking at another dimension of rating, mothers rated their own depressive symptoms. Mothers may have decreased the level of their responses due to social desirability. Although depression and behaviors seem to be affected most obviously by social desirability, all scales used in this study could have been influenced. Along with possible misrepresentation of actual actions, all of the measures in this study drew a limited sample of constructs and gave no definitions or explanations of items. This could have lead to confusion for respondents in their conceptualization of what the scale was asking for, especially with this low-SES population.

Although the predictor and outcome variables were normally distributed, the population for the overall study was limited by demographics, age of children, and income level. Due to these characteristics, this population may be distinct from those used when the measures were normed. In addition, the national sample from which this sample was drawn has produced a massive amount of data; only a minimal amount is represented here. The possibility of extraneous variables is large considering the data pool. Some of these variables, or the overlap of variables, could have created differences that distracted from the hypotheses selected in this study.

Additional extraneous variables exclusive to each construct also need to be addressed. The first area to examine is maternal mental health because reported behavior could vary based on the health of the mother. Mental health could be influenced by use of medications or therapy. How a mother views herself, her parenting skills, and abilities are internal characteristics that influence the reporting of behaviors. How a mother feels about the child could influence the way she rates that child's behaviors. These rating may be due to child characteristics (temperament, gender) or maternal characteristics (self-esteem, motivation). A mother's report may also be based on her self-esteem, attachment style and relationship with family of origin, and her perceived quality of life overall. Finally, specifics about the depression may influence the report of symptoms, such as the degree of symptoms, timing of the onset of the depression, and the type of depression. External influences include the amount of social support that a mother has from friends and family, presence of a spouse
or partner, and the cultural differences in behavioral expectations. Recent tragedies or life stresses experienced by the mother or family could influence mental health.

Maternal knowledge of child development could be influenced by internal and external characteristics, similar to maternal depression. Internal examples include how driven she is to gain knowledge, how much she values education, and her desire to use resources. Genetics could impact these internal examples. Depressed mothers may not have the motivation to do these things due to the characteristics of the depression. External examples include the number of previous children she has, and the number of children with which she was raised. Her level and type of education would greatly influence the amount of knowledge she has. The amount of time spent with the child, and other children, by the mother can allow comparisons of children and increase knowledge. Without this contact a mother may not know what behaviors are appropriate. Other examples include how old she is, and how closely she works with her childcare program or provider. A final influence on knowledge could include the family’s history of interventions or services. Intensive in-home training for mothers, for example, could increase knowledge independently of other circumstances within the home.

The final construct explored in this study was child behaviors. How children display their emotions could be influenced by both internal and environmental characteristics. For the child, internal influences include genetics, temperaments, and personality characteristics. Also, the courses of the problematic behaviors, for example if they have just begun or have been longstanding, are internal characteristics. Environments may influence behaviors both within and outside the home. Disruptions in the family routine by the researchers could have increased the “show off” behaviors, and thus the behavioral ratings. Another explanation could be that behaviors were not rated as negative because at 36 months of age, developmentally behaviors may be more external than later in life. Discipline within the home and how parents respond to child behaviors influence their display. Also, history of abuse or stress and tragedy are external to the child, but important determinants of
behaviors. Children who have structured time in their days outside of the home, especially if they have behavioral programming, may have learned behaviors that influence their actions at home.

Positives for this study include that it was not conducted in a lab setting, but in the homes of participants. This may have increased the honesty and comfort level of the mothers (Weissman, 1990). In addition, this particular study has a respectable number of participants, and the attrition rate was low (between 11 and 18 respondents, depending on the measure) between the 14 month and the 36 month assessment points. Finally, the longitudinal nature of this study allows for an observation of the process of depression, knowledge, and behaviors when a child is young.

Summary

The direct link between maternal depression and knowledge of child development on children’s problem behaviors was not found to be significant in this study. Despite the lack of significance, the findings should not be downplayed. Billings and Moos (1985) indicate that although the changes were not apparent, “Positive changes in the family milieu may occur slowly and at different rates for various dimensions, leading to a delay in improvements in child functioning” (p. 163). The specifics of the maternal depression and knowledge, and child behaviors varied between families to such a degree that changes may not have been apparent by 36 months of age. Pepler et al. (1995) helps explain these complexities by stating, “Considering the socialization experiences of aggressive children, it becomes apparent that a linear, unidirectional causal model is inadequate to capture the complexities of the process. There are several feedback loops that may exacerbate the situation for aggressive children” (p. 215).

Despite the lack of significance indicating that higher levels of maternal knowledge of child development are associated with lower levels of problem behaviors in children, development can be altered for the better in early childhood by age-appropriate interaction patterns from caregivers. These patterns help shift the balance of risk and protection toward protection (Shonkoff & Phillips, 2000). Using discipline as one example, if a mother had more knowledge about interactions and
discipline techniques, she may be able to counter the negative effects of aggression. If some parts of aggression stem from ineffective discipline and allowing children to ‘win’ to get out of things they don’t want to do, increasing maternal knowledge would decrease the number of times this happens. These techniques could increase the draw to positive behaviors and help mother’s respond effectively to children’s problematic behaviors.

From a different perspective, since model three of this study suggested that decreased depression tended to lead to higher knowledge, interventions could also need to focus on the mental health of mothers. If a mother does not or is not able to consistently interact in developmentally appropriate ways with her child due to depression, additional training in child development may have minimal effects on the family structure. The risk factors may not be reduced. Based on this study, if maternal education programs first focused on helping a depressed mother cope with her diminished mental health, the risk factors might be more consistently reduced. This type of program may then increase the effectiveness of maternal education programs that focus on increasing knowledge of child development.

Future Research

From here, research needs to focus on what can moderate the negative effects of depression on children consistently. Benasich and Brooks-Gunn (1996) suggest finding effective interventions can be done by exploring the systems mothers employ that influence the development of their children and their child-rearing behaviors. This investigation would seek to discover what specifically increases or decreases problem behaviors, including mother’s responses to their children’s behaviors. Investigating systems within families would include habitual patterns of interaction that maintain a problematic pattern. Another aspect would be to look at the child and family characteristics that have a dual influence on each other, and lead to problematic child behavior outcomes. A focus on interventions in this arena could work to change the family dynamics that rotate around depression or encourage acting out behaviors. Exploring dual influence reduces the
amount of blame placed on one family member alone. Finally, investigating the child behaviors that influence the family and maternal behaviors would be beneficial to understanding the connections between maternal depression and children’s behavioral outcomes. Research in this area would look at how children increase depression in their mothers and stresses in their families with their behaviors.

Additional research needs to draw distinctions between types and operationalizations of depression. Mothers with a few depressive episodes throughout their children’s early development may interact differently with their children than mothers with long standing bipolar depression.

Research also needs to draw more distinct lines between the investigation of adjustment of children with depressed parents and the investigation of parenting behaviors of depressed individuals. Without this distinction, research purposes get blurred, and the results are not applicable to interventions. Overall, continuing research in this area needs to look at what is working in families in order to replicate these interactions in families that are not working. Focusing research on resiliency and the breaks in intergenerational effects of depression will increase the chances of finding effective intervention techniques.
Appendix A: Center for Epidemiological Studies-Depression (CESD) Scale (14 months)

A. Bothered by things that usually don’t bother you.

B. You did not feel like eating; your appetite was poor.

C. That you could not shake off the blues, even with help from family and friends.

D. That you were as good as other people.

E. You had trouble keeping your mind on what you were doing.

F. Depressed.

G. That everything you did was an effort.

H. Hopeful about the future.

I. Your life has been a failure.

J. Fearful.

K. Your sleep was restless.

L. You were happy.

M. You talked less than usual.

N. You felt lonely.

O. People were unfriendly.

P. You enjoyed life.

Q. You had crying spells.

R. You felt sad.

S. You felt that people dislike you.

T. You could not get “going”
Appendix B: Center for Epidemiological Studies-Depression Short (CESD-S) Scale (36 months)

A. Bothered by things that usually don’t bother you
B. You did not feel like eating; your appetite was poor
C. That you could not shake off the blues, even with help from family and friends
D. You had trouble keeping your mind on what you were doing
E. Depressed
F. That everything you did was an effort
G. Fearful
H. Your sleep was restless
I. You talked less than usual
J. You felt lonely
K. You felt sad
L. You could not get “going”
Appendix C: Knowledge of Infant Development Inventory (KIDI) (14 months)

A. Babies with colic sometimes cry for 20 or 30 minutes at a time, no matter how much you try to comfort them.

B. All infants need the same amount of sleep.

C. Taking care of a baby can leave the parent feeling tired, frustrated or overwhelmed.

D. A one-year-old knows right from wrong.

E. Some normal babies do not enjoy being cuddled.

F. The more you comfort crying babies by holding and talking to them, the more you spoil them.

G. A frequent cause of accidents for one-year-olds is pulling something like a frying pan, a tablecloth, or a lamp down on top of them.

H. A good way to train children not to hit is to hit them.

I. A baby of 6 months will respond to someone differently depending on whether the person is happy, sad, or upset.

J. Most infants are ready to be toilet trained by one year of age.

K. Five-month-olds understand what ‘no’ means.

L. One-year-olds often cooperate and share when they play together.

M. A baby is about 7 months old before he or she can reach for and grab things.

N. A baby usually says its first real word by six months of age.
Appendix D: Adult-Adolescent Parenting Inventory (AAPI) (36 months)

A. Parents will spoil their children by picking them up and comforting them when they cry
B. Children should not be expected to talk before the age of one year
C. Children under three years should not be expected to take care of themselves
D. Parents should expect their children to feed themselves by twelve months
E. Parents should expect their children to grow physically at about the same rate
F. Young children who feel secure often grow up expecting too much
G. Children under three years should not be expected to feed, bathe, and clothe themselves
H. Parents who are sensitive to their children’s feelings and moods often spoil their children
I. Children whose needs are left unattended will often grow up to be more independent
J. Parents who encourage communication with their children only end up listening to complaints
K. Children will quit crying faster if they are ignored
L. Children five months of age are seldom capable of sensing what their parents expect
M. Children who are given too much love by their parents often grow up to be stubborn and spoiled
Appendix E: Child Behavior Checklist (CBCL) (36 months)

A. (CHILD) can’t concentrate, can’t pay attention for long
B. (CHILD) can’t sit still or is restless
C. (CHILD) can’t stand waiting, wants everything now
D. (CHILD) cries a lot
E. (CHILD) is cruel to animals
F. (CHILD) is defiant
G. (CHILD)’s demands must be met immediately
H. (CHILD) destroys (his/her) own things
I. (CHILD) destroys things belonging to (his/her) family or other children
J. (CHILD) is disobedient
K. (CHILD) is disturbed by any change in routine
L. (CHILD) doesn’t answer when people talk to (hem/her)
M. (CHILD) doesn’t get along with other children
N. (CHILD) doesn’t seem to feel guilty after misbehaving
O. (CHILD) is easily frustrated
P. (CHILD) is easily jealous
Q. (CHILD) gets hurt a lot, is accident-prone
R. (CHILD) gets in many fights
S. (CHILD) gets into everything
T. (CHILD) has trouble getting to sleep
U. (CHILD) hits others
V. (CHILD) has angry moods
W. (CHILD) is nervous, high strung or tense
X. (CHILD) physically attacks people
Y. (CHILD)'s punishment doesn’t change (his/her) behavior

Z. (CHILD) quickly shifts from one activity to another

AA. (CHILD) screams a lot

BB. (CHILD) is selfish or won’t share

CC. (CHILD) is stubborn, sullen or irritable

DD. (CHILD) has sudden changes in mood or feelings

EE. (He/She) sulks a lot

FF. (CHILD) talks or cries out in sleep

GG. (He/She) has temper tantrums or a hot temper

HH. (CHILD) is uncooperative

II. (He/She) is unusually loud

JJ. (He/She) wakes up often at night

KK. (CHILD) wants a lot of attention

LL. (He/She) whines

MM. (CHILD) has speech problems (SPECIFY):
References


Pepler, D. J., Craig, W., & Roberts, W. L. (1995) Social skills training and aggression in the peer
group. In J. McCord (Eds.), *Coercion and punishment in long-term perspectives* (pp. 213-228). New York: Cambridge University Press.


(Eds.), *Handbook of attachment: Theory, research and clinical applications* (pp. 265-286). New York: Guilford Press.

