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FACTORS RELATED TO INDIVIDUAL DIFFERENCES IN THE ACADEMIC AND BEHAVIORAL ADJUSTMENT OF YOUNG CHILDREN FROM LOW-INCOME FAMILIES

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FACTORS RELATED TO INDIVIDUAL DIFFERENCES IN THE ACADEMIC AND BEHAVIORAL ADJUSTMENT OF YOUNG CHILDREN FROM LOW-INCOME FAMILIES

By

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ABSTRACT

FACTORS RELATED TO INDIVIDUAL DIFFERENCES IN THE ACADEMIC AND BEHAVIORAL ADJUSTMENT OF YOUNG CHILDREN FROM LOW-INCOME FAMILIES

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The purpose of this study was to identify factors that predict individual differences in the academic and behavioral adjustment of children from low-income families. This study also examined the parenting process of low-income families, predictors of maternal behavior, and the effects of maternal parenting behavior on the developmental outcomes of children from low-income families. Specifically, this study investigated the relationships among child characteristics, maternal characteristics, maternal psychological well-being, contextual factors, maternal behavior, and children's academic achievement and behavioral problems.

Using data from the 1994 wave of the National Longitudinal Survey of Youth (NLSY), the study focused on 291 mothers and their 5 to 8-year-old children. Descriptive analysis, zero-order correlations, multiple regression analyses, t-tests, and chi-square analyses were used for data description and analysis. A structural equation model (SEM) was used to test the conceptual model for this study.

Consistent with Bronfenbrenner's ecological model, the study shows that the children develop in the relationships within various kinds of environments such as the child's family, neighborhood, and child care setting. Maternal

psychological well-being was affected by the mother's residence with both parents until her 18th birthday and her perception of neighborhood problems. The results of this study were also consistent with Belsky's model of the determinants of parenting. The quality of the home environment that mothers provided for their children was influenced by multiple factors, such as child characteristics, maternal characteristics, and contextual factors. Academically successful children from low-income families had grandmothers who were more educated and mothers with higher intelligence scores. Their mothers provided a more supportive home environment. Successful children in terms of behavioral adjustment tended to have heavier birth weights, mothers with higher level of psychological well-being, and better quality home environments.

To God

To my parents

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Chapter 1

INTRODUCTION

Although many researchers and practitioners as well as governing bodies have tried to find some ways to reduce the poverty rate, there are still 13.5 million children or about 20% of children in America who are living in poverty (Children's Defense Fund, 2000). Many previous studies have shown that children in poverty are more likely to be at risk in all developmental areas. According to McLoyd (1998), poverty experienced during early childhood disturbs the development of school-readiness skills and socioemotional functioning. Therefore, this study investigates the factors that influence the development of children in poverty.

Poverty thresholds differ by family size and are adjusted annually for changes in the average cost of living in the United States. In 1994, the estimated poverty line was $11,821 for a family of three and $15,141 for a family of four (Statistical Abstract of the United States, 1999). It is imperative to note that classifying segments of the population as either poor or nonpoor oversimplifies the economic circumstances of many individuals. Not only the experiences of the long-term poor are quite different from individuals who are poor only for short periods, but also some families have incomes falling below 50% of the poverty line. In addition, there are many near poor who have incomes between 100% and 185% of the poverty line although they are not officially considered as poor.

Experts of this matter indicate that families near poverty may have as much or more difficulty than officially poor families in obtaining food, shelter, and medical care, as well as other basic goods and services because fewer government programs are available for the near poor families (National Center for Children in Poverty, 1996).

An interesting finding is that there is a considerable amount of evidence that not all children from low-income families have poor academic and psychosocial competencies (Luster et al., 2000). There are also children from low-income families who do well in school and are successful in terms of social and emotional development. Although children have in common their families' lower economic resources, they vary on a number of other characteristics known to have an important influence on the well-being of children. It may include neighborhood quality, health, parenting practices, and parental psychological well-being. Data from this study could be beneficial in providing further evidence factors that contribute to the academic and psychosocial success of children from low-income families. The result of this study will attempt to provide evidence to understand what makes them different. If more is known about this, scholars and practitioners will be able to plan more effective programs for families and children in poverty.

In general, mothers in poverty can be supported in two important ways. One is in the form of material support and the other is through psychological support. When comparing existing studies of material and psychological support, relatively more studies have focused on the material support for mothers. More

information is needed from studies that focus on the psychological well-being of low-income mothers. Previous studies show that low-income mothers tend to have higher levels of depression than middle or high-income mothers, and among the highest rates of depression have been found among low-income mothers with young children. Results of several studies with this population have reported that from 45 to 60 percent of low-income mothers report clinically significant levels of depressive symptoms (Hall et al., 1991; McLoyd et al., 1994). These rates are more than double that found in surveys of the general population. However not all low-income mothers are psychologically depressed (Coiro, 1997). This study will investigate factors that may influence low-income mothers' psychological well-being. It is believed that psychologically healthy mothers are more likely to provide better home environments for their children than depressed mothers. This study can provide evidence to support or not support that commonly held belief.

Most of the previous studies have demonstrated a simple association between families' economic stress and the well-being of children. There is little research that focuses on intervening mechanisms between families' economic situations and children's outcome, such as maternal behavior and family relationships. This study focuses on identifying the factors that mediate the effects of poverty on development. It is both of scientific and practical value to understand the complex mechanisms through which poverty influences individuals and how the process of parenting is changed by the context of poverty (Kaiser & Delaney, 1996).

Statement of the Problem

The purpose of this study is to identify factors that predict individual differences in the academic and behavioral adjustment of 5 to 8 year-old children from low-income families. Specifically, this study will investigate the relationships among child characteristics, maternal characteristics, maternal psychological well-being, contextual factors, maternal behavior (quality of home environment that mothers provide for their children), and children's reading skills and behavior problems.

Main Research Questions

1. What are the factors that predict individual differences in academic and behavioral adjustment of young children from low-income families?
2. What are the factors that influence low-income mothers' psychological well-being?
3. What effect does maternal psychological well-being have on the academic and behavioral adjustment of young children from low-income families?
4. What are the factors that influence low-income mothers' parenting behavior (quality of the home environment mothers provide)?
5. What effect does mothers' parenting behavior have on the academic and behavioral adjustment of young children from low-income families?

Research Objectives

1. To determine what maternal characteristics and contextual factors are associated with maternal psychological well-being.
2. To determine what child characteristics, maternal characteristics, and contextual factors are associated with the quality of the home environment mothers provide.
3. To determine if maternal psychological well-being is related to the quality of the home environment mothers provide.
4. To determine if the quality of the home environment is related to children's academic and behavioral adjustment.
5. To determine the relations between the predictor variables (child characteristics, maternal characteristics, contextual factors, and maternal psychological well-being) and children's academic and behavioral adjustment, when the quality of the home environment is statistically controlled.
6. To identify what factors contribute to successful outcomes in young children from low-income families.

Theoretical Framework

Bronfenbrenner's ecology of human development is the background theory of this study. Belsky's model of the determinants of parenting behavior, McLoyd's analytic model of how poverty and economic loss affect children, and

Garmezy's work in investigating the protective factors of poor children are used as primary theoretical frameworks for this study.

Bronfenbrenner's Ecological Perspective of Human Development

The ecology of human development by Bronfenbrenner is used as the background theory of this study. He asserts that human development research should include an awareness of the environmental systems within which people are operating. Families and children live in a variety of physical and social environments.

> The ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded (Bronfenbrenner, 1979, p. 21).

Bronfenbrenner's (1979, 1986) model of the human ecology focuses upon the individual and his or her relationship within the environment. His model provides the basis for understanding family's influences on the developmental outcomes of children.

The developing individual is said to be embedded in not one but several environmental systems, ranging from immediate settings, such as the family, to remote contexts, such as the broader culture. He has systematically defined the environment as a four level system: microsystem, mesosystem, exosystem, and macrosystem (see Figure 1).

The microsystem consists of the immediate contexts that individuals actually experience. For most young infants the microsystem may be limited

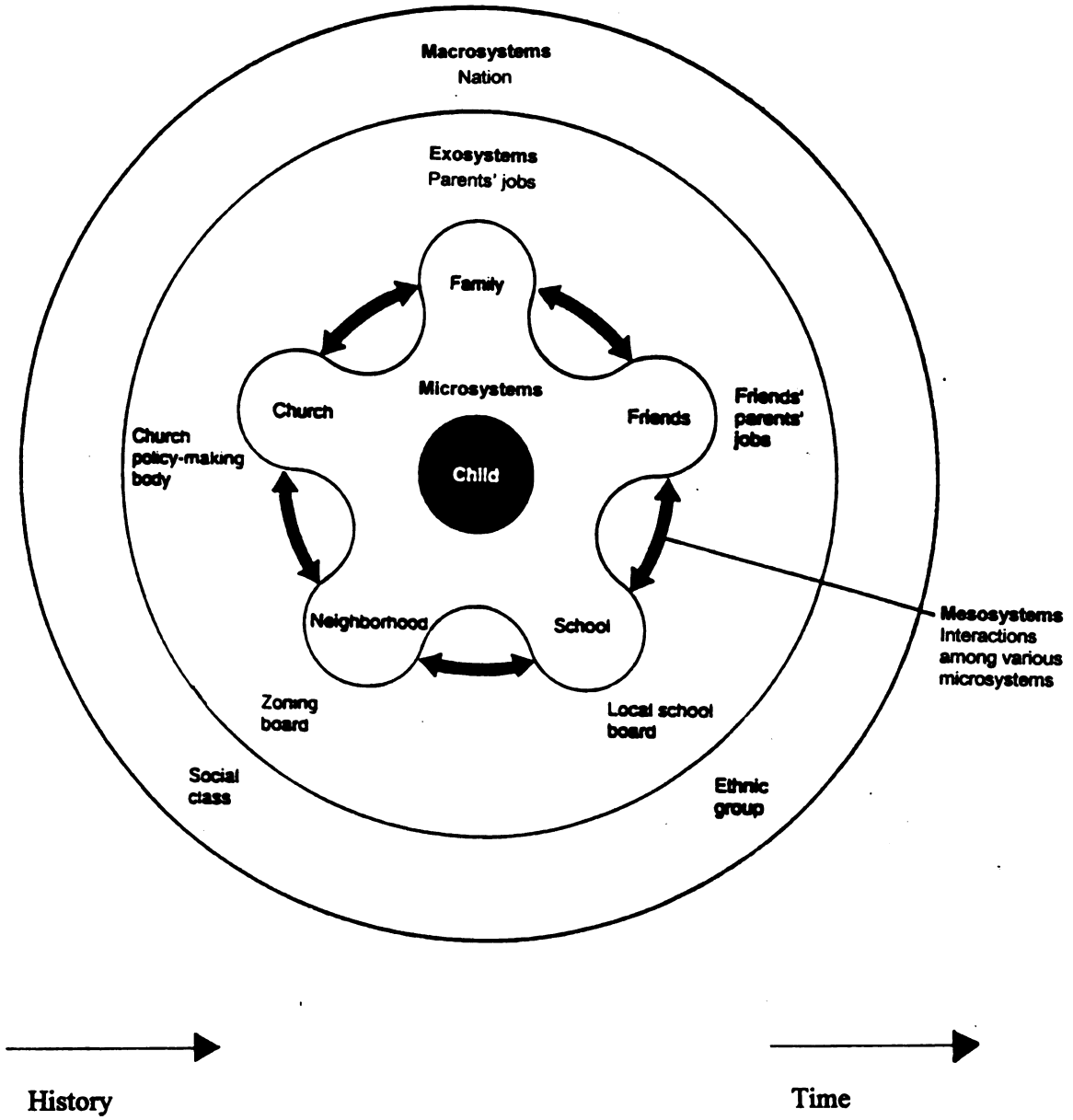


Figure 1. Bronfenbrenner's Model of the Human Ecosystem (Adopted from Stever, 1994, p.77).

to the family. Yet this structure becomes much more complex as children mature and are exposed to day care, preschool settings, and neighborhood play areas. Not only are children likely to be influenced by the people present in their microsystems, but children affect those people as well. For example, a very irritable or difficult infant can alienate her parents or even create friction between them that may be enough to challenge their marital relationship. Microsystems are dynamic systems in which each person influences and is influenced by the other persons present (Shaffer, 1994).

Mesosystem refers to the interconnections among microsystems. According to Bronfenbrenner, children's development is likely to be optimized by supportive links among microsystems. For example, a toddler who has established secure emotional ties to his or her parents may be well prepared to approach and to cooperate with other children upon entering day care (Shaffer, 1994). A child's ability to master arithmetic in elementary school may depend not only on the instruction the teacher provides but also on the extent to which such academic activities are valued and encouraged at home.

The exosystem consists of settings that children never experience directly but may still affect their development. For example, children's emotional relationships at home can also be influenced considerably by whether or not their parents enjoy their work. The type of parents' occupation can influence the values they hold for their children (Kohn, 1977).

Macrosystem refers to as the ideology, values, beliefs, rules, and customs that dictate how children should or should not be treated, what they

should be taught, and which goals they should strive for. These values differ from culture to culture and can greatly affect the kinds of experiences children have in their homes, schools, neighborhoods, and all other contexts that directly or indirectly influence them. For example, the occurrence of child abuse in families is much higher in those cultures (or macrosystems) that allow the use of physical punishment and adopt a permissive attitude toward violence (Belsky, 1980). Thus macrosystems are composed of cultural environments. The cultural values, rules, and religious beliefs of the macrosystem affect children's experience in the microsystem such as the type of home environment and parent-child interaction.

Bronfenbrenner's ecological approach of human development is the basis on which this study is designed. This study will examine portions of the child's microsystem, mesosystem, exosystem. The research will investigate the interaction among these systems in affecting the academic and behavioral adjustment of children.

Belsky's Model of the Determinants of Parenting Behavior

Belsky (1984) proposes that the three factors most influential in shaping parenting behavior are the characteristics of the child, the parent (ontogenic development, personality, and psychological resources) and the social context (marital relations, social networks, and occupational experiences) (see Figure 2).

> The model presumes that parenting is directly influenced by forces emanating from within the individual parent (personality), within the individual child (child characteristics of individuality), and from the broader social context in which the parent-child relationship is embedded-

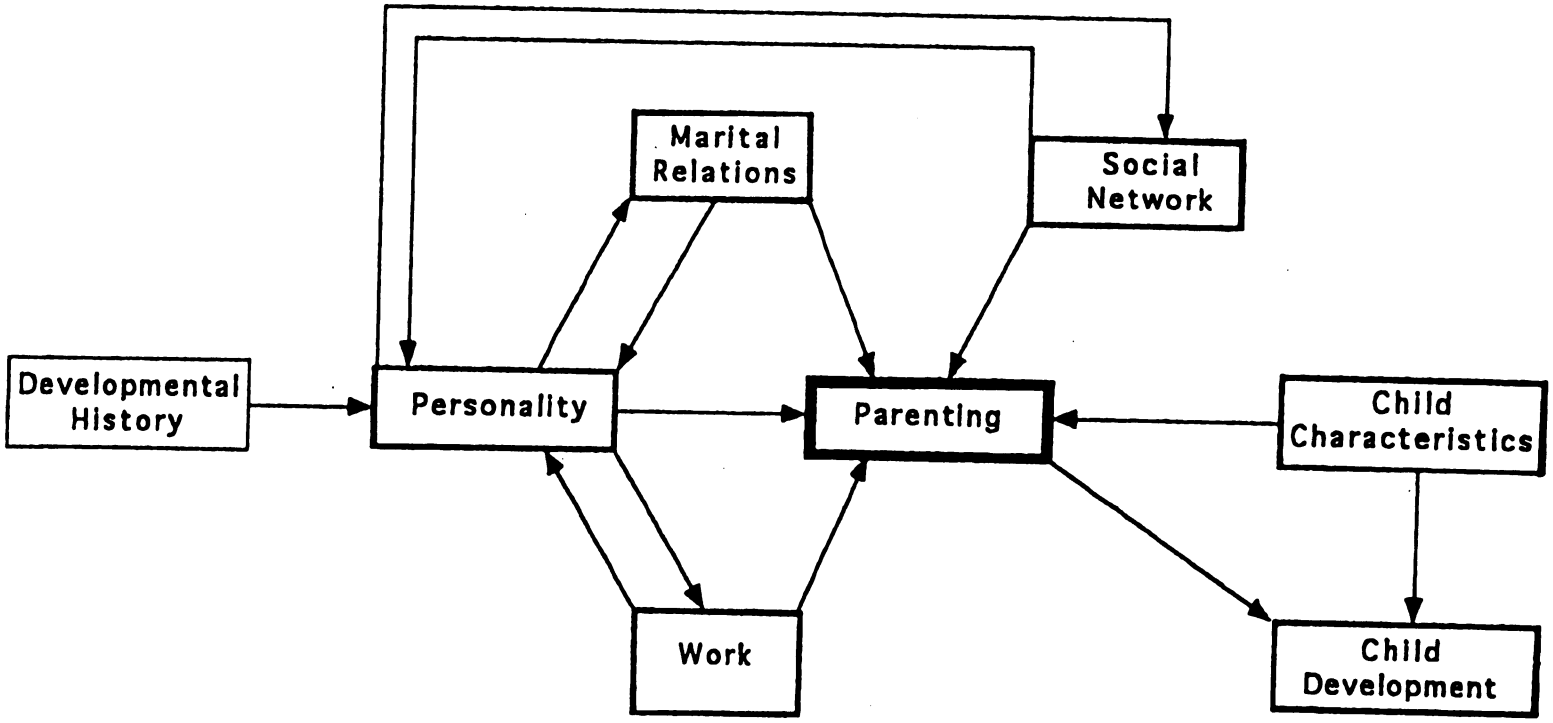


Figure 2. A Process Model of the Determinants of Parenting (Belsky, 1984, p.84).

> specifically, marital relations, social networks, and occupational experiences of parents. Furthermore, the model assumes that parents' developmental histories, marital relations, social networks, and jobs influence individual personality and general psychological well-being of parents and, thereby, parental functioning and, in turn, child development (Belsky, 1984, p.84).

a. *Child Characteristics*

There is clear evidence that attributes of mother and child affect the nature of the interactions because the parent-child relationship involves two parties (Belsky, 1997). According to studies (Brunk & Henggeler, 1984; Anderson, Lytton, & Romney, 1986), mothers and other adults react to disobedient, negative, and/or highly active children with negative, controlling behavior.

b. Parent Characteristics

It has been found that adults who are psychologically healthy and mature are more likely to provide the kind of care that promotes healthy psychological development in their children (Belsky, 1990). A large amount of research indicates that mothers who are depressed tend to be less affectionate, responsive, and spontaneous with their infants and to be irritable and punitive with their older children (Fleming et al., 1988; Conger et al., 1984). It has been also found that the quality of care that parents provide is related in their own families of origin. However, a supportive relationship with a spouse or mate functions to prevent the intergenerational transmission of negative, rejecting, and insensitive maternal care (Crockenberg, 1987).

c. The Marital Relationship

Repeatedly it has been found that spousal support of both the emotional

(e.g., love, intimacy) and instrumental (e.g., child care tasks) variety is related to enhanced parental performance (Cox et al., 1989).

d. Social Network Support

Mothers with more community support and less frequent negative interactions with significant others provide more positively affectionate and sensitive care to their preschoolers (Cotterell, 1986).

According to Belsky (1990), social support can function in a stress-buffering manner. For example, mothers with highly irritable infants benefit most from assistance received from friends and relatives (Crockenberg & McCluskey, 1986).

e. Occupational Experience

Jackson et al.'s study (1998) indicate that being employed is associated with higher educational attainment and lower scores on the measures of depressive symptoms and parental stress.

All three factors (characteristics of the child, the parent, and the social context) in the process model of parenting will be used in this study as predictors of maternal behavior.

McLoyd's Analytic Model of How Poverty Affects Children

McLoyd (1990) examines family processes affecting the socioemotional functioning of children living in poor families and families experiencing economic loss (Figure 3). She argues that:

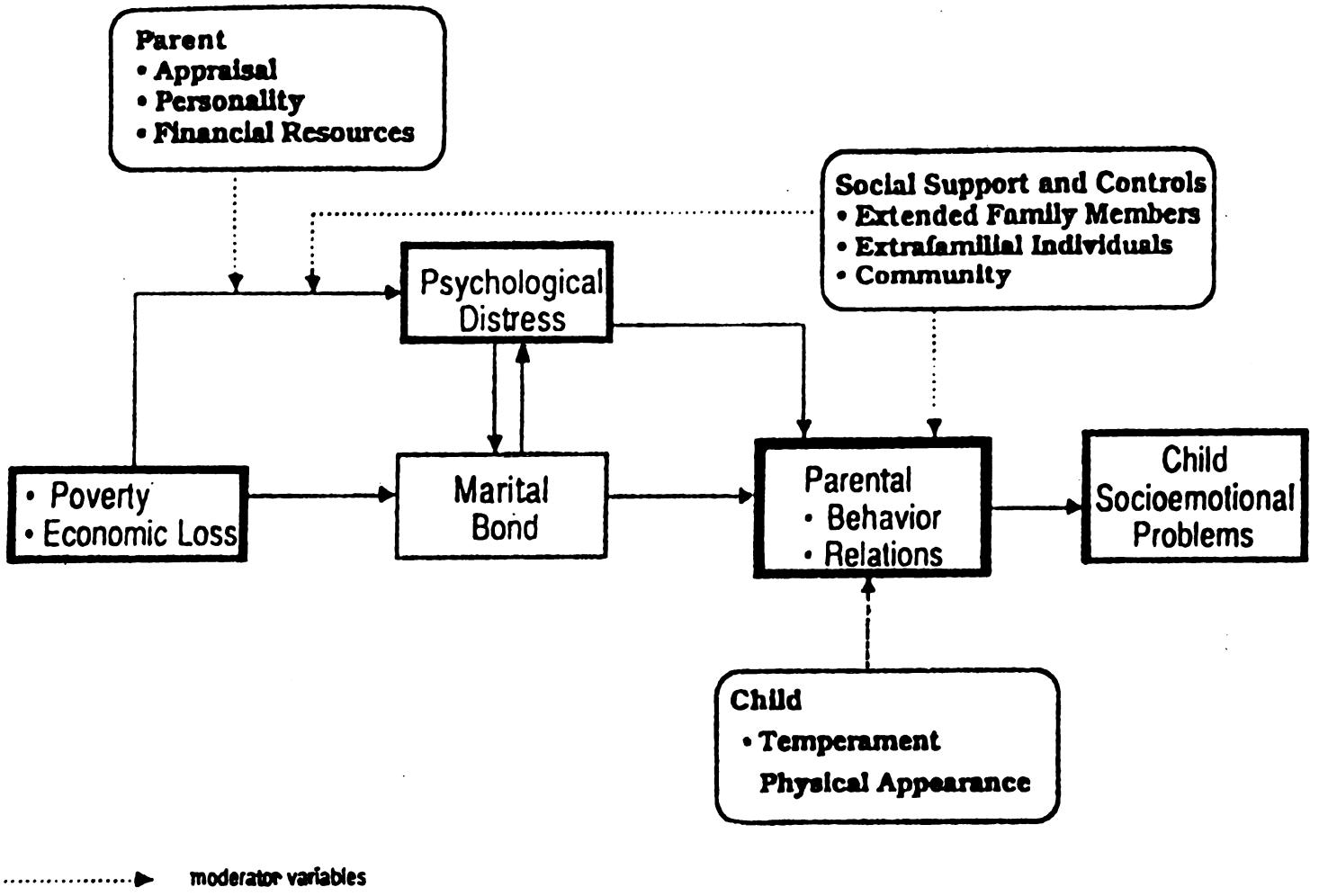


Figure 3. Analytic Model of How Poverty and Economic Loss Affect Black Children (McLoyd, 1990, p.312).

> (a) poverty and economic loss diminish the capacity for supportive, consistent, and involved parenting and render parents more vulnerable to the debilitating effects of negative life events, (b) a major mediator of the link between economic hardship and parenting behavior is psychological distress deriving from an excess of negative life events, undesirable chronic conditions, and the absence and disruption of marital bond, (c) economic hardship adversely affects children's socioemotional functioning in part through is impact on the parent's behavior toward the child, and (d) father-child relations under conditions of economic hardship depend on the quality of relations between the mother and father.

The model describes the impact of economic hardship on family processes as a function of personal characteristics of individual family members, including child. The model shows that parental depressed mood is a central mechanism through which economic circumstances influence parenting behavior and, thereby, child outcomes.

According to Patterson (1989), stressful experiences increase psychological distress in mothers and produce changes in family and child-management practices. McLoyd (1990) indicates that distressed mothers' increased use of aversive, coercive discipline contributes to antisocial behavior in the child.

The model is appropriate for white families although McLoyd generated the model for black families, because elements of the model are drawn from Elder's studies of white families of the Great Depression. McLoyd's model is important for this study because the study focuses especially on low-income families.

Garmezy's Work on the Protective Factors of Poor Children

Garmezy (1991) found certain factors that enable poor children to circumvent life stressors. According to his work, there is strong evidence that many children and adults do overcome life's difficulties. For example, he found that the patterns of high achievers included frequent school contact initiated by parents, the child's exposure to stimulating, supportive school teachers, and infrequent family conflict. He disagrees that disadvantaged children are doomed to fail in their lives. He categorizes the variables which may be effective in dealing with stressful life situations into three parts:

> One is the modification of stressors brought about by temperament, such as activity level, reflectiveness in meeting new situations, cognitive skills, and positive responsiveness to others. Another core of variables is to be found in families in poverty that are marked by warmth, cohesion, and the presence of some caring adult (such as a grandparent) in the absence of responsive parents or in the presence of marked marital discord. A third variable is the presence of a source of external support, as exemplified by a strong maternal substitute or a kindly concerned teacher, or the presence of an institutional structure, such as a caring agency or a church that fosters ties to a larger community (p. 421).

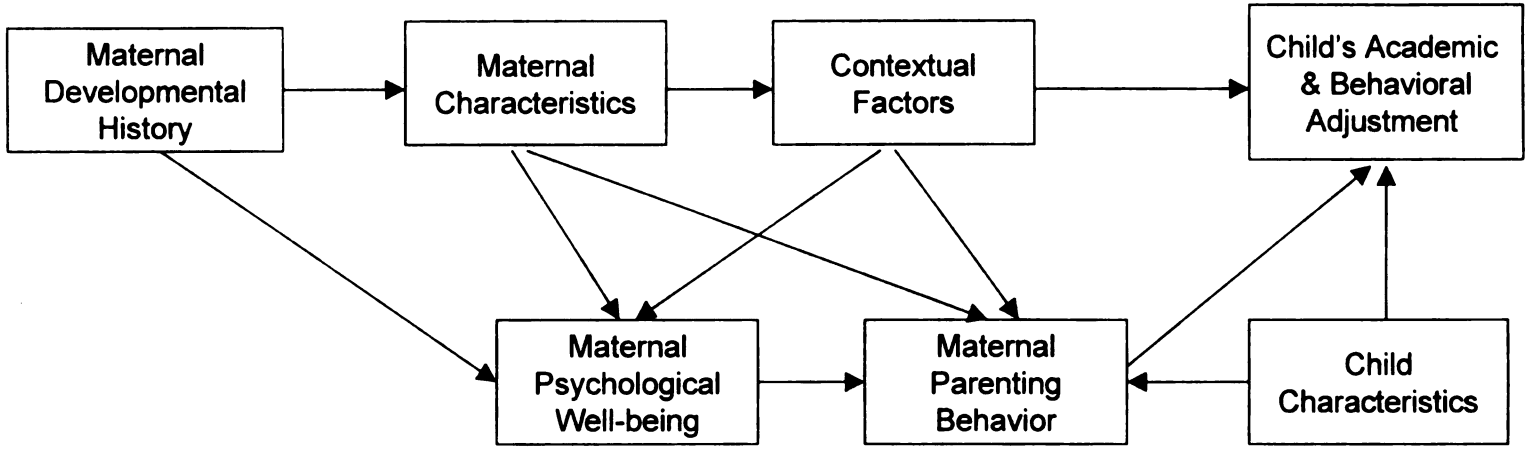
A Bridging of Concepts

The theoretical framework for this study will be the bridging of concepts of Belsky's model, McLoyd's model, and Garmezy's work (Figure 4).

The Effects of Lack of Economic Resources on Parenting

Family's economic hardship affects maternal psychological well-being, maternal behavior, and children's development. There is a large amount of

Figure 4. Theoretical Framework



TITLE: A Model of Predictors of Maternal Behavior and Adjustment of Children from Low-Income Families

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

McLoyd, V. C. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development. *Child Development, 61*, 311-346.

Garmezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioral Scientist, 34(4)*, 416-430.

research that shows relationships among family's economic hardship, maternal psychological well-being, maternal behavior, and the development of children. The lack of economic resources affects parents as individuals in a number of ways that may inhibit their healthy functioning in the parent-child relationship (Kaiser & Delaney, 1996). Living with low-income can create chronic psychological distress for individuals and rates of depression are elevated among poor mothers (Crnic & Acevedo, 1995).

According to Crnic and Acevedo (1995), chronic psychological distress becomes the psychological context from which parenting occurs. As a result of the context of psychological distress, expressions of frustration and aggression toward others increase and much of this aggression will be manifest in the context of the family and marital relationship (McLoyd, 1990). Not surprisingly, marital conflict is high among poor couples (Rubin et al., 1995).

The ability to parent is weakened by the effects of the stresses associated with the lack of economic resources on psychological well-being. According to Sampson and Laub (1995), parents living with low-income evidence less capacity for supportive, consistent parenting. There is direct evidence that anxiety, depression, and irritability increase the tendency of parents to be punitive, erratic, unilateral, and less supportive of their children (McLoyd, 1990; Webster-Stratton, 1990).

Garrett et al. (1994) report that the home environment of low-income families may contain fewer materials, activities, and child-inclusive routines that support children's development. According to Sampson and Laub (1994),

parents in low-income families appear to be less successful in monitoring and regulating their children's activities and behavior within the home and outside the home.

Heath (1989) and Purcell-Gates (1995) describe why support for emergent literacy is lessened in families with few economic resources. They are less likely to own and use books, parents typically have lower levels of reading skills, and the disorganization of the home environment may lessen contexts in which reading routinely occurs.

Parents most likely to be poor are female, unmarried, and members of races and ethnic groups that are the targets of discrimination (Garrett, Ng'andu, & Ferron, 1994). Parent characteristics, including education, their own experience as children, and their mental and physical health may buffer or exacerbate parents' responses to the stresses associated with the lack of economic resources (Kaiser & Delaney, 1996).

The Effects of Lack of Economic Resources on Young Children

In this part, the focus is on describing how economic hardship affects young children. The lack of economic resources in families affects children directly and indirectly, although it is difficult to separate the direct and indirect effects of the lack of economic resources on children.

According to Kaiser and Delaney (1996), the lack of economic resources affects children directly through substandard living conditions, lack of critical material resources, inadequate nutrition, inferior health care, and fewer

opportunities for formal education and other development enhancing experience. The lack of economic resources also indirectly affects children through their parents and caregivers, who are simultaneously affected by the physical conditions and the cumulative psychological stresses associated with being poor.

In general, the lack of economic resources has negative effects on child health, growth, and development. Children's academic and behavioral adjustments are considered in this part for the purposes of the study.

Emergent literacy skills such as naming letters, sightreading simple words, and showing interest in reading materials are a bridge indicating children's transition into reading and writing. Children from low-income families have less frequent opportunities to learn these skills (Sulzby, Branz, & Buhle, 1993).

According to Purcell-Gates (1995), children from low-income families enter kindergarten with fewer of the foundational language and emergent literacy skills and have a more difficult time acquiring the basic skills of reading in the early elementary grades.

Specific reading difficulties may be related to differences in vocabulary size, discourse, and narrative skills (Bloome, 1989) and familiarity with the social and cognitive expectations of the classroom context (Purcell-Gates & Dahl, 1991). The incidence of reading-related learning difficulties is significantly higher among children from low-income families, reflecting both increased biological risks and environmental contributions (Badien, 1988; Teale, 1986).

Children's socioemotional development is also negatively affected when

children are raised in low-income families. Poor children present more behavioral problems at home and in school (Duncan, Brooks-Gunn, & Klebanov, 1994; McLoyd, 1990) than children who are not poor. According to McLeod and Shanahan (1993), children from low-income families exhibit elevated levels of both externalizing (e.g., acting out, aggression) and internalizing (e.g., social withdrawal, negative self-confidnece) behavior.

Dodge, Pettit, and Bates (1994) identified a set of socialization patterns and social contexts that lead to poor child behavioral outcomes among children from low-income families: (a) harsh parenting, (b) lack of warmth toward the child, (c) modeling of aggressive behavior patterns by parents, (d) differential valuing of aggression as a problem-solving strategy, (e) high frequencies of stressful life events, (f) relative isolation and lack of social support experienced by parents, (g) limited experience with a stable group of well-adjusted nonaggressive peers, and (h) limited cognitive stimulation and support for academic development.

Mediators of Parenting in Low-Income Families

The effects of lack of economic resources in families are not homogeneous across children or parents. Not all parents are affected negatively by lack of economic resources, and some portion of children raised in low-income families are resilient to risk (Garmezy, 1983).

In this theoretical framework, maternal psychological well-being and maternal behavior are mediating factors between family's economic hardship and

the development of children. As described earlier, maternal psychological well-being and maternal behavior are influenced by maternal characteristics and contextual factors.

Kaiser and Delaney (1996) argue that both family and child factors mediate the effects of lack of economic resources.

> These factors include (a) maternal education and IQ (Bee et al., 1982); (b) social support experienced by the parent, including marital and family support and friendship support (Hashima & Amato, 1994; Rubin et al., 1994); (c) parent mental health (Webster-Stratton, 1990); (d) the family's income relative to need (Duncan et al., 1994); (e) family size (Bradley et al., 1994); (f) child temperament and health (Halpern, 1990); and the availability of quality child care and early intervention (Honig, 1995; Liaw & Brooks-Gunn, 1994) (p.74).

According to Duncan et al. (1994), parents who have more education, higher IQs, fewer mental health problems, and adequate social support are most likely to use coping strategies to mediate the direct effects of lack of economic resources on their children and to provide more stimulating and supportive home environment for their children.

Conceptual Map

A model of the predictors of maternal behavior and adjustment of children from low-income families will be used as the conceptual model for this study (Figure 5). This model was generated by adapting Belsky's (1984), McLoyd's (1990), and Garmezy's (1991) work. In this study, only young children from low-income families were included.

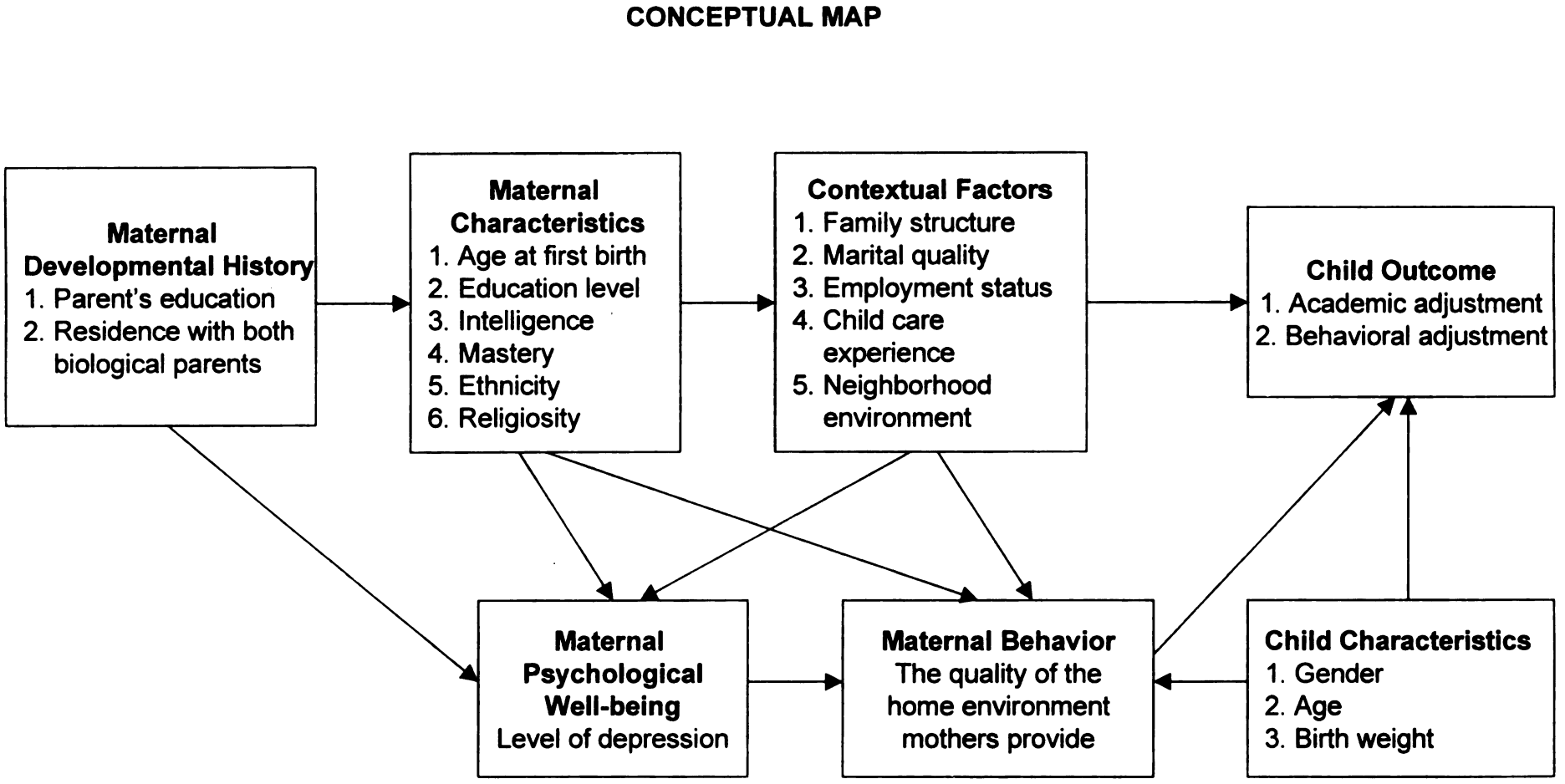


Figure 5. A Model of Predictors of Maternal Behavior and Adjustment of Children from Low-Income Families

According to the conceptual model, maternal psychological well-being is influenced by maternal developmental history, maternal characteristics, and contextual factors. Maternal behavior is influenced by maternal characteristics, child characteristics, contextual factors, and maternal psychological well-being. Finally, children's outcomes are determined by child characteristics, maternal behavior, and contextual factors.

Conceptual and Operational Definitions

1. LOW-INCOME FAMILIES
Real: Families that have restricted financial resources (Webster, 1981).
Conceptual: Families that carry the responsibility for raising a child, that have below average access to financial resources.
Operational: Families of young children that are at or below 185% of the poverty line at the 1993 and 1994 interviews.

2. MATERNAL DEVELOPMENTAL HISTORY
Conceptual: The mother's living environment or experience when she was young.
Operational: The mother's response to the questions regarding her own mother's education level and residence with both parents until 18th birthday.

3. MATERNAL PSYCHOLOGICAL WELL-BEING
Conceptual: The mother's psychological state of mind, for example, depression.
Operational: The mother's score of the Center for Epidemiological Studies Depression Scale (CESD) (Radloff, 1977).

4. MATERNAL BEHAVIOR
Real: A manner of conducting oneself in the role of being a mother (Webster, 1981).
Conceptual: The quality of the rearing environment provided by the mother for her child.
Operational: The mother's score on the Home Observation for Measurement of the Environment-Short Form (HOME-SF) (Baker & Mott, 1989).

5. MATERNAL CHARATERISTICS
Conceptual: The individual traits or attributes of the mother, for example, age at

first birth, education level, intelligence, mastery, religiosity, and ethnic group.

Operational: The mother's responses to the questions regarding her age at first birth, her highest grade completed, frequency of religious attendance, and her ethnic group. The mother's score on the Pearlin mastery scale and the Armed Force Qualification Test (AFQT).

6. CHILD CHARACTERISTICS

Conceptual: The individual traits or attributes of the child, for example, gender, age, and birth weight.

Operational: The assessment on whether the child is a male or female, and how old he or she is and what the child's birth weight was.

7. CONTEXTUAL FACTORS

Conceptual: The situational elements that can affect the parenting behavior of mothers, for example, structure of the family, marital quality, mother's employment status, child care experience, and neighborhood problem.

Operational: Family structure is the presence or absence of a spouse or male partner in the home. Marital quality is the mother's score on questions regarding her marital communication and marital conflict. Mother's employment status is whether the mother has a job outside of the home (full time or part time job).
Child care experience is the child's attendance in a regular child care setting during his/her first 3 years of life. The neighborhood problem is the mother's answer to questions about neighborhood problem.

8. CHILDREN'S OUTCOME

a. ACADEMIC ADJUSTMENT

Conceptual: The children's ability to know and interpret their environment, and ability to recall, reason, problem solve, think, and learn.

Operational: The children's score on the Revised Peabody Individual Achievement Test (PIAT-R) of reading recognition (Dunn & Markwardt, 1970).

b. BEHAVIORAL ADJUSTMENT

Conceptual: The child's level of social and emotional development. Specifically, the children's frequency, range, and type of childhood behavior problems.

Operational: The child's total score on the Behavior Problem Index (BPI) (Zill & Peterson).

Assumptions

The following underlying assumptions are made in this study.

1. Families in all cultures and at all level of SES organize their rearing environment in ways that affect the development of their children.
2. The National Longitudinal Study of Youth (NLSY) data are gathered from large numbers of mothers and children and provided data gathered from a varied grouping of assessment measures. Observations and interviews with the mothers made by the staff of the NLSY reflect the mother's actual child rearing behavior.
3. The children's responses on the PIAT-R subtests reflect the children's level of achievement in reading recognition and comprehension. Similarly, the mother's responses on the BPI subtests reflect the children's level of behavior problem.

Chapter 2

REVIEW OF THE LITERATURE

Factors Related to Maternal Psychological Well-Being and Behavior

Previous research has indicated that child characteristics, maternal characteristics, and contextual factors are related to maternal behavior. As described earlier, Belsky (1984) identified three primary factors that influenced parental behavior: (a) the child's characteristics, (b) personal resources of parents, and (c) social sources of stress and support.

1. Child Characteristics

It is evident that children influence the manner in which they are reared since the parent-child relationship involves two parties. That is, how parents behave toward their children depends to a large degree on how the children have influenced their parents to behave. According to Belsky (1984), four primary characteristics of children are temperament, physical health, age, and gender.

Several studies show that children with difficult temperaments negatively influence the nature and quality of parental care. In other words, because difficult children are more demanding to parents, the usual parenting strategies may be ineffective with them (Anderson et al., 1986; Lytton, 1990). It is evident that a difficult temperament contributes to the everyday stressors of parenting (Hinde, 1989; Lee & Bates, 1985). Although this study did not include child

temperament as a child characteristics due to the unavailability of the data, temperament is without doubt an important aspect of the child's contribution to the parent-child relationship.

The gender of the child is an important factor in parent-child interaction. According to Kochanska and Askan's study (1995), wholehearted compliance was higher for girls than for boys, and passive noncompliance was higher for boys than for girls after a parental request. The gender differences in compliance may have an important influence on the parenting style adopted by the parents. In addition, aggressive behavior is a more socially acceptable for boys than it is for girls (Maccoby & Jacklin, 1987).

2. Maternal Characteristics

McLoyd's study (1990) shows that mother's age at first birth, education level, mastery, and her ethnic group are related to maternal psychological well-being.

> Blacks probably are more distressed than whites at low levels of income because their caste-like inferiorized status thwarts mobility aspirations and results in greater exposure to chronic, ongoing stressors (McLoyd, 1990, p.321).

According to Luster & Mittelstaedt (1993), mother's age at first birth is one of the predictors of the quality of the home environment mothers provide for their children. Most teenage mothers have many kinds of difficulties to deal with in their lives. Number of studies found that teenage mothers provide less supportive environments for their children than older mothers (Luster & Mittelstaedt, 1993).

Their study also shows that mother's education level is one of the predictors of the quality of the home environment mothers provide for their children. Highly educated mothers tend to provide more supportive environments for their children than less educated mothers (Menaghan & Parcel, 1991). Children are strongly affected by parents' level of education. But it may be irrelevant to outcomes for children if parents are not an important part of their children's lives.

Fox (1995) also found that mothers who were younger, were single or unmarried, and had a lower educational attainment were likely to report less positive parenting practices concerning nurturing and discipline than comparison mothers. Previous study shows that the vulnerability of women rearing their children alone may affect parenting behavior directly and indirectly through reduced social supports and increased stress (Compas & Williams, 1990).

Maternal psychological well-being is one of the predictors of the quality of the home environment mothers. Barbarin's study (1993) shows that poverty-related stresses often reduce the availability of the parent to attend to a child's physical, emotional, and cognitive or intellectual needs.

The quality of the home environment has an effect on children's reading skills and their behavior problems. Pettit et al. (1997) found that supportive parenting predicted adjustment (behavior problems, social skills, and academic performance) in grade 6, even after controlling for kindergarten adjustment and harsh parenting. They also found that high levels of supportive parenting

mitigated the effects of family adversity (socioeconomic disadvantages, family stress, and single parenthood) on later behavior problems.

3. Contextual Characteristics

McLoyd's study (1990) shows that the presence or absence of a spouse or male partner in the home, marital quality, mother's employment status, and social support are related to maternal psychological well-being. Belsky (1997) proposes that the availability and the quality of relationships which parents have with friends, neighbors, extended family members, and community organizations influence the quality of care provided to children.

Generally, social support researchers have agreed that the presence of a strong social support has been linked with psychological well-being, as well as reduced stress. According to Choi (1997), perceived support promotes physical and psychological well-being whether or not this perception is accurate.

Burke et al. (1998) argue that it is very important for children's well-being within the family that the parent have satisfactory, functional, and supportive family and peer relationships. McLoyd et al. (1994) indicate that social support makes mothers feel less isolated and overwhelmed by their parenting situation and more satisfied with their children.

Suarez and Baker (1997) study the role of social support (marital adjustment, spousal support, and global support) in the relationship between child externalizing behavior problems and mothers' and fathers' well-being.

The result indicates that spousal support emerged as the most important resource variable for their sample of families. There was a main effect of spousal support on all outcome variables for parents. Moreover, spousal support moderated, or buffered, the relationship between child externalizing behavior and parental outcome.

Simons et al. (1997) document that exposure to negative life events and low access to social support are important determinants of psychological distress. According to them, most parenting models assume that life stress and access to social support influence quality of parenting through their effect on emotional well-being. Some models posit a direct effect from social support to parenting. They indicate that this may be true for spouse support, but that support from friends and relatives only influences parenting indirectly through its effect on emotional well-being. They found that social support contributes indirectly to quality of parenting by mediating a portion of the effect of community social disorganization on depressed mood.

Singer et al. (1996) found that social support is most salient under the most stressful conditions. It is consistent with the buffering hypothesis. Mothers' distress was greater when infant illness or very low birthweight (VLBW) was accompanied by perceived low social support. They concluded that the perceived availability of support plays a protective role in preventing the pathologic effects of negative events. They also found that high spousal or partner support mitigated maternal psychological distress for mothers with a lower sense of parenting competence.

Thomson et al.'s study (1993) suggests that higher levels of maternal daily stress related to coercive parent-child interactions with disruptions in children's development. Snyder (1991) also found that on days when mothers reported negative mood and frequent hassles, they were more likely to respond to child misbehavior in a negative way.

The literature on parenting makes it clear that parents in different social strata child rearing differently. For example, several studies show that higher SES families and higher income levels as being more democratic, less punitive, and more child centered than families with lower SES parents (Fox, 1995; Maccoby, 1980). The previous research on ethnicity demonstrated that ethnic minority families differ from White American families in family size, structure, and composition, their reliance on the kinship networks, and their levels of income and education (McAdoo et al., 1999; Phenice et al., 2000). Ethnic, minority, and cultural groups are characterized by relatively different parenting attitude, values, and behaviors.

It is evident that there is a relationship between parental employment and parenting behavior. Greenberger et al.'s study (1994) indicated that parents with more challenging and stimulating jobs and parents whose jobs involve complex interactions with people, were associated with less harsh disciplinary practices , more warmth, and greater responsiveness. Another study found that women's dissatisfaction with their role as employed mother was associated with negative moods. The mothers' negative moods in turn influenced the incidence of their rejecting and punishing behavior towards their children (MacEwen & Barling,

1991). McBride (1989) found that many working mothers have been subject to the stress associated with the multiple role demands of being a parent and working outside the home.

Several studies show that adults who are secure in their relationships with their own parents provide more emotional support and assistance when interacting with their young children (Crowell & Feldman, 1988; Grossmann et al., 1988). There is evidence that the supportive and harsh parenting of one generation may directly influence the parenting of the next generation through a modeling effect (Simons et al., 1991).

Findings from previous studies suggest a combined influence of several factors on individual differences in parenting behaviors. The studies also provide strong evidence that characteristics of the child, characteristics of the parent, and the context in which the parent-child relationship is evolving affect parenting behaviors.

Factors Contributed to Individual Differences among Young Children from Low-Income Families

The development of children living in poverty has been a huge issue for child development scholars and researchers. The effects of poverty on children and their families have been well documented. However, there is a relatively little amount of research on individual differences among poor children in their achievement and adjustment.

Garmezy (1991) asserts that it is important for researchers to study how to investigate the processes whereby protection transcends risk. To identify the

underlying processes, the identification of children who overcome odds in their lives is the first step.

1. Individual Factors

Previous studies show that young boys in poverty often reflect greater maladjustment than girls in relation to familial disruptions (Bolger et. al., 1995; Dodge et. al., 1994). According to Bolger et. al. (1995), elementary school boys have been found to be more affected than girls by family economic hardship in terms of externalizing behavior problems.

Most researchers have agreed that young children are particularly vulnerable to the experiences of chronic poverty because their defenses and coping resources are limited.

Positive temperaments are related to successful adaptations among young children in poverty (Werner & Smith, 1992). On the other hand, difficult temperament can increase the risks associated with life in poverty in many ways. For example, it may cause negative reactions from caregivers. However, there is a possibility that poor children who are demanding and assertive are more successful at getting some of their needs met than their counterparts.

2. Family Factors

Brooks-Gunn (1995) finds that the effects of family income on intelligence test scores and behavior problems are mediated in part by psychological

resources such as parental emotional and physical health, provision of experiences to the child, parenting behavior, and social support.

She indicates that single parenthood seemed to confer a risk in the cognitive arena, whereas marital disruption had more effects on behavior problems of children. She asserts that process-oriented work is needed to understand why family structure might have different effects on the children's cognitive and emotional outcomes.

Dubow and Ippolito's study (1994) focuses on examining the effects of poverty and the quality of the home environment on changes in the academic and behavioral adjustment of elementary school-age children. They conduct the study because they are aware of the importance of research designed to indicate the optimal timing of intervention and to identify factors that moderate the deleterious effects of child poverty.

This study uses the merged mother-child data set of the National Survey of Youth (NLSY). The authors mention that the national data set is appropriate for their study since this data set includes many poor respondents across geographic regions, ethnicity, and age and it provides longitudinal data. Among 1,632 children, a subset of 473 children who met criteria (available poverty data from the mother every year from 1983 to 1990) is included in this study. They explains that the significant differences between the omitted and included subjects were modest and attributable to the large sample size.

The poverty was measured by total net family income. It includes the value of noncash assistance such as food stamps, and is corrected for family

size and state of residence. For the purpose of the study, the authors created two poverty scores: prior poverty (the total number of years that the family was living below the poverty line during the 4 years prior to the first child assessment in 1986) and recent poverty (the total number of years that the family was living below the poverty line during the 4 years between two child assessments). The Home Observation for Measurement of the Environment (HOME) scale was used to measure the quality of cognitive stimulation and emotional support provided in the home. They examined children's scores on the Math and Reading Recognition sections of the Peabody individual Achievement Test (PIAT). For measuring children's behavioral adjustment, the Behavior Problems Index (BPI) was completed by mothers. All measures were reliable and valid except for the BPI scores. The scores might be biased because mothers completed the scale.

To analyze the data, they used descriptive statistics, correlations, and hierarchical regressions. The result of this study suggests that a cognitively stimulating and emotionally supportive home environment is associated with positive changes in adjustment irrespective of level of recent poverty. It shows that the effects of prior poverty on changes in children's academic and behavioral adjustment were independent of the child's sex, age, and race. It also indicates that the effects of poverty and the home environment on changes in academic and behavioral adjustment are significant irrespective of number of children in the home, number of years in which a father or father figure was present, mother's age at the child's birth, or mother's education.

The most important point that they found is that a quality home environment predicted increases in academic achievement and decreases in antisocial behavior scores during the elementary school years, independent of the effects of poverty status and other risk factors. One implication is that the providers of intervention programs should focus not only on educating at-risk children, but also on encouraging people who are responsible for creating the home environments of these children.

Although the NLSY data provides a large sample of economically and ethnically diverse children across of a time span of several years, many of the measures are shortened forms of the original instruments and there are incomplete data for a large number of potential subjects.

Luster and McAdoo's research (1996) focuses on finding factors that contribute to individual differences in the educational attainment of African American young adults from families of low socioeconomic status analyzing the Perry Preschool data set. The authors recognize that there is little research on the school success of African American children from poor families and the factors that contribute to this success. This study follows African American children over an extended period of time and it is very meaningful since longitudinal studies of African American children are rare.

One hundred twenty three participants and their families were included in this study. All of the participants were African American and came from low-SES families. Each child was randomly assigned to attend preschool or to be in a no-

preschool control group. As the authors indicated, the attrition rate in the Perry Preschool study has been very low.

Children were assessed regularly on measures of cognitive ability in kindergarten, in first grade, and eighth grade. The major outcome variable was educational attainment at age 27, measured in years and half-years. Kindergarten teachers' ratings of academic motivation, personal behavior, and maternal involvement in the school were included. The data of preschool attendance, the family of origin, parents' involvement in their adolescents' schooling, parental style, the adolescents' study habits, teenage childbearing, and the participants' role models were included for the purpose of this study.

Zero-order correlations, bivariate and multiple regression analysis, and path analysis were used to accomplish the study goals. According to correlation analysis, the most consistent predictors of child characteristics such as IQ, academic motivation, and personal behavior in kindergarten were maternal involvement in kindergarten and mother's education. The three child characteristics were positively correlated with achievement test scores and educational attainment.

According to the study, some factors related to high school completion among children who were at-risk in kindergarten were maternal education, school involvement, authoritative parenting style, higher educational expectation, time spent on homework at age 15, and teenage parenthood. One interesting finding is that at-risk children who graduate from high school tended to select a parent as their most influential role model.

The authors used path analysis to examine the linkage between assessments made in early childhood and outcomes in adulthood. The result shows that early experiences in the home and the preschool setting are likely to influence children's abilities and attitudes when they enter school and these children's characteristics also influence subsequent achievement and educational attainment.

This study is very unique in terms of research design. The research design allows us to see the developmental pathways of poor African American children from kindergarten to adulthood. Although there were some missing data, the attrition rate was relatively low. Through path analysis, the authors show us the predictors of educational attainment and income at age 27.

One thing that stands out is the finding related to role models. High school graduates were much more likely than non-graduates to identify their parents as their role models. The result of this study supports the hypothesis that positive parental role models contribute to higher levels of education.

Another study was conducted by Luster, Bates, Fitzgerald, Vandenbelt, and Key (2000). The study focuses on describing the different experiences and circumstances between the most successful children and the least successful children born to low-income adolescent mothers. The authors agree that there is a great variability within samples of children born to adolescent mothers on cognitive competence and school performance. They try to find some reasons why some children born to teens do well, while others do not. They also notice that there is little research on this issue.

In this study, success was defined as scoring in the top quartile of 86 children who were involved in the family TIES (Trust, Information, Encouragement, Support) family support program on the Peabody Picture Vocabulary Test (PPVT-R). The PPVT-R was completed when the children were 54 months old. The 22 children with the highest scores on the PPVT-R and the 22 children with the lowest scores on the PPVT-R were compared in this study.

The PPVT-R was used to measure outcomes and it was predictive of achievement test scores and academic success. The HOME, the Nursing Child Assessment Training (NCAT) HOME, videotaped maternal teaching tasks, and ratings of the teen's parenting practices were used to measure home environment and parenting. The study also included other variables that might influence the children's development either directly or indirectly such as maternal characteristics, current family and contextual characteristics, family background characteristics of the teen mothers (developmental history), and characteristics of the child.

The adolescent mothers and the children were interviewed and observed. The family advocates were also interviewed by the author. To analyze the data, t-test and chi square were conducted. Case studies were included to illustrate the complexity of the life experiences of children in the most successful and least successful groups, and of their adolescent mothers.

The result of this study suggest that the most successful children and least successful children received very different caregiving and lived in different contexts, although no causal relations can be determined by the descriptive data

available from this study. Several measures on caregiving revealed that the most successful children in the sample experienced more intellectually supportive environments when the assessments were carried out.

Although the sample was too small to examine many variables, the study is an exploratory one and provides possible hypotheses for future research as the authors indicated. Case studies for four children were beneficial to catch some complicated pictures of poor children and their families. Families are unique in terms of psychological and physical environments, even if they are in poverty or the mothers are adolescents.

Lester, McGrath, Garcia-Coll, Brem, Sullivan, and Mattis (1995) were interested in examining how risk and protective factors interact and exacerbate, or modify the effects of poverty on developmental outcome. They indicated that previous studies focus primarily on finding biological social-environmental risk factors related to child outcome but not protective factors. In the study, they applied a cumulative factor approach to protective factors as well as biological and social risk factors.

One hundred thirty four subjects were included in the longitudinal study of development of in term and preterm infants. Lester et al. assigned a risk score and a protective score to each subject based on the total number of risk and protective factors and they divided the subjects into four groups according to the combinations of high and low risk and high and low protective factors (low risk-low protect, low risk-high protect, high risk-low protect, high risk-high protect). They measured the developmental outcome of the four groups of children when

they were four years old after controlling for poverty. Different from the other studies, only 13.43% of the mothers were single and most families (85.60%) were white.

They used demographic, medical, home environmental, maternal personality and parenting measures to assess fourteen risk or protective factors. They also included child developmental outcome (cognitive, motor, visual-motor integration, language), temperament, and home environmental measures to assess child outcome and to describe the home environment when child outcome was assessed. They set criteria for risk and protective factors, and values closest to the upper and lower 25^{th} percentile were used as cut-off values for determining the high risk or high protective score. Each subject was assigned to low/high risk group and low/high protective group according to its risk and protective points. Although they referred to literature to set up criteria for some risk and protective factors, the criteria were somewhat subjective and hypothetical.

They compared the four groups using analysis of variance. According to the results, the two high risk groups did not show worse scores than the two high protect groups. The study showed that the interaction between risk and protective factors is a better predictor of child developmental outcome than the presence of other factors per se, that is, the combination of risk and protective factors mediates child outcome, not the presence or absence of these factors. Interestingly, the children in the high risk-high protect group did not do as poorly as the children in the high risk-low protect group.

The study also showed that the poor performance of the children in the high risk-low protect group was not due to the effects of low social class. The study confirmed that poverty is one of the risk factors and it has negative effects on the development of children when it is combined with the absence of protective factors to buffer the child. They concluded that poverty had no individual effect when it is treated as one of many contextual factors. However, the conclusion might be problematic because they used SES status as a poverty measure. As I mentioned earlier, the poverty cofactors such as education and occupation may not be substituted for income measures.

One important point that the study has made is that poverty effects can be mediated by environmental strengths and the forces in the individual, the family and the culture. Therefore, if we learn more about the processes that determine child outcome, we can provide more effective services or intervention programs to poor children.

One of limitations of the study is that they assigned the same weight to each factor and assumed that the number of factors represents the strength of the construct. They also ignored the possible role of the child as a contributor to his or her own developmental outcome. The sample size of the study was not large enough to explore the role of specific risk and protective factors.

Brooks-Gunn (1995) indicates that there is relatively little research on the contexts or resources available to the young child outside of the immediate family except for studying child care, grandparents, and early-intervention programs.

The community resources or neighborhood resources available to a family and used by a family have the potential effects on children's lives and parents' lives. Brooks-Gunn emphasizes the need for research on the interaction of community resources with personal characteristics.

Another point Brooks-Gunn has made in her article is that the family context might be influenced by the child's participation in an early-intervention program. Families might be favorably influenced by such intervention programs in several ways; altering income resources in the home, altering human capital resources, such as increasing maternal education or helping mothers enter the workforce, and altering psychological resources, such as maternal depression, social support, or parenting behavior. She indicates that little research has focused on the role of familial resources on child outcome and how the patterns of associations for those in the intervention group differ from those in the follow-up-only group.

Chase-Lansdale, Gordon, Brooks-Gunn, and Klebanov's (1997) examined the effects of family and neighborhood on preschool and early school-age children. Previous studies show that significantly more children in preschool years enter ecosystems outside the home through child-care participation. The authors assumed that although the family remains a central force in children's lives during early school years, many indirect effects of neighborhoods will flow through the family and direct effects of neighborhoods will increase when children are faced with transitions to new contexts like kindergarten and first grade. They indicated that actually 69% of children in the IHDP and 77% of

children in the NLSY are enrolled in some form of regular schooling by age five or six.

They analyzed secondary data from the IHDP and the NLSY. The sample for the study comprises 882 preschoolers and 697 early school-age children. The outcome measures were the PIAT tests to assess academic achievement and the BPI to measure behavioral functioning. They also included various kinds of individual and family-level measures such as the child's gender, age, race, mother's education, mother's age at the birth of her fist child, head of the family, maternal employment, and child's enrollment in school. There were five neighborhood factors such as low SES, high SES, male joblessness, family concentration, and ethnic diversity. Regressions were run for the purpose of the study.

The result showed that preschool children had few direct neighborhood effects as they expected. The only significant neighborhood effect on children's cognitive outcomes was the presence of affluent neighbors. There was the positive link between the presence of affluent neighbors and children's IQ scores. Interestingly, male joblessness was related to a decrease in internalizing problems in the IHDP and an increase in internalizing problems in the NLSY. Family factors such as family's income-to-needs ratio, mother's education, and race accounted for most of the variance in the regression equations.

According to the study, early school-age children were influenced more than preschoolers by neighborhood factors although the relative influence of neighborhood factors over family factors was modest. Affluent neighbors were

important for children's intellectual functioning. On the other hand, the concentration of poverty in the aggregate seems not to be deleterious. However, they found that male joblessness had negative consequences for African American children. Another interesting finding is that greater ethnic diversity in the neighborhood did not significantly affect African American children but negatively affected white children's intellectual functioning.

As they indicated, one of the limitations of the study is that neighborhood measures could not be adequately distinguished from family measures. This may cause the difficulty in separating the effects of the two measures. Although they have enough sample size, the IHDP and the NLSY are not fully representative of all U.S. children. The neighborhood influence on young children is a relatively new research area. This study can be used as a general outline for examining potential neighborhood influences on young children.

Caughy, DiPietro, and Strobino (1994) emphasize the need of studies which identify factors of the child and his environment which are related to reducing the risk of poor outcome. They agree that it is very important to identify protective factors for the development of effective intervention strategies for disadvantaged children. Their study primarily focuses on the relation between day-care participation during the first 3 years of life and the cognitive development (academic readiness) of low-income children. The study is unique because the effects of enrollment in ordinary day-care (without special enrichment activities) have not been investigated previously.

The study included 867 5- and 6-year-old children who completed the 1986 assessment wave of the NLSY. They used the HOME to assess the quality of the home environment and the PIAT to assess academic readiness of children. Other variables such as average family income, maternal education, and day-care participation (total number of years of day-care during the first 3 years of life, the year of initiation of day-care participation, the predominant type of day-care arrangement) were also included.

They used analysis of variance to test the effect of day-care participation and its interaction with family income on cognitive outcome. Multiple linear regression was used to examine the relationship between patterning of day-care participation and outcome, controlling for confounding variables. T-tests were conducted to compare reading recognition performance within each of the three income groups (less than $15,000 per year, $15,000-$29,999, $30,000 or more per year).

The result showed that lower-income children who participated in day-care at the first, second, and third years had significantly higher reading recognition scores than lower-income children who did not participate in day-care. However, upper-income children who participated in day-care at first year had significantly lower reading recognition scores than upper-income children who did not participate in day-care. The study confirmed that day-care participation during the first 3 years of life is positively related to the cognitive development for children from impoverished environments. Reading skills were better if the child attended day-care before his/her second birthday. Day-care patterning

contributed additional unique variance, however small, to cognitive outcome after controlling for confounding variable such as income, maternal education, and HOME scale.

Although the NLSY data provides a large sample for the study, it does not have specific information regarding the number of hours per week in day-care, the staffing patterns, and qualifications of day-care providers. One implication of the study is that providing quality and affordable day-care to low-income families is beneficial for fostering child development and promoting parental employment.

On the other hand, Clark (1983) focused on the internal dynamics of family life to examine children's achievement and success through the case studies of the families of successful achievers. He believed that by looking at family internal structure, one could examine the actual processes involved in the family background effect. In other words, Clark asserts that the structural characteristics of families such as working mothers, poverty, racial or ethnic background, and poorly educated parents neither predict nor explain the variation in academic achievement among children. He indicates the total quality of family life as the most important indicators of academic potential.

Clark describes the lives of ten poor Black families of high and low achievers in Chicago with focusing on the quality of home life, family habits and interactions affect school success. He tries to depict as completely as possible the family culture and processes in these homes. Clark's study shows how family values and communication patterns in homes of the high achievers differ in structure and content from those patterns found in the low achievers' homes.

Clark indicates seventeen achievement-fostering patterns. For example, parents psychologically and emotionally calm with child, parents expect to play major role in child's schooling, parents have explicit achievement-centered rules and norms, conflict between family members is infrequent, parents frequently engage in deliberate or implicit achievement-training activities, etc. He concludes that the form and substance of the family psychosocial patterns are the most significant components for understanding the educational effects of high achievers' families and low achievers' families – not their race or social class background per se. The result shows that the seventeen achievement-fostering patterns are seldom present in the low achievers' families. His study also indicates that parents with greater expectations, higher aspirations, and a stronger sense of well-being enjoy more balanced conjugal decision-making patterns, with a high degree of mutual agreement in decisions concerning the child's intellectual welfare, and engage family members in a wider variety of specific literacy-enhancing activities for a longer period of time. Clark emphasizes that it is not class position that determines a family's educational competence rather it is the quality of life within the home that makes a difference throughout his book.

Although Clark's study included only low-income Black families from urban ghettoes, he seemed to be convinced that the qualities of identified as being characteristics of the families of high achievers are generalizable across racial, ethnic, and social status. However, it is also important to consider careful attention to cultural differences in child-rearing practices among groups.

Clark suggests that the educational competence of a family can be enhanced through direct intervention. His study implies that it will not be enough to enhance interactional styles and educational skills of families of low achievers; these families must also be provided with realistic opportunities for improvement in living conditions. He asserts that "The solution involves economic opportunity, public support services, and creative family processes. The issue of family compositional structure is secondary to, even a by-product, of the other two." (p.211).

Chapter 3

METHODOLOGY

The chapter is divided into the following sections: (a) research hypotheses, (b) research design and procedures, (c) sample selection, (d) sample descriptions, (e) research instruments, and (f) data analysis.

Research Hypotheses

Ho 1: Maternal developmental history (grandmother's education, residence with both parents until 18th birthday) is unrelated to maternal characteristics.
Ha 1: There are relationships between maternal developmental history and maternal characteristics.

Ha 1.1: Mothers who had mothers with higher levels of education tend to delay child bearing.

Ha 1.2: Grandmother's level of education is positively related to mother's level of education.

Ha 1.3: Grandmother's level of education is positively related to mother's level of intelligence.

Ha 1.4: Grandmother's level of education is positively related to mother's level of mastery.

Ha 1.5: Non-Black/non-Hispanic mothers are likely to have more educated mothers than African American and Hispanic mothers do.

Ha 1.6: Mothers who lived with both parents until her 18th birthday tend to delay child bearing.

Ha 1.7: Mothers who lived with both parents until her 18th birthday tend to have more years of education.

Ha 1.8: Mothers who lived with both parents until her 18th birthday tend to have higher AFQT scores.

Ha 1.9: Mothers who lived with both parents until her 18th birthday tend to have higher mastery scores.

Ha 1.10: Non-Black/non-Hispanic mothers are more likely to live with both parents until her 18th birthday than African American and Hispanic mothers do.

Ho 2: Maternal developmental history (grandmother's education, residence with both parents until 18th birthday) is unrelated to maternal depression.
Ha 2: There are relationships between maternal developmental history and maternal depression.

Ha 2.1: Grandmother's level of education is negatively related to the level of maternal depression.

Ha 2.2: Mothers who lived with both parents until their 18th birthday are likely to have lower depression levels.

Ho 3: Maternal characteristics are unrelated to maternal depression.
Ha 3: There are relationships between maternal characteristics and maternal depression.

Ha 3.1: Mothers who delayed child bearing are likely to have lower levels of depression than mothers who started child bearing earlier.

Ha 3.2: Mother's level of education is negatively related to the level of maternal depression.

Ha 3.3: Mother's level of intelligence is negatively related to the level of maternal depression.

Ha 3.4: Mother's level of mastery is negatively related to the level of maternal depression.

Ha 3.5: There is a difference in the level of maternal depression between African-American mothers/Hispanic mothers and non-Black/non-Hispanic mothers.

Ho 4: Contextual factors are unrelated to maternal depression.
Ha 4: There are relationships between contextual factors and maternal depression.

Ha 4.1: Mothers who have a spouse or male partner in the home will have lower levels of depression than mothers who do not have a spouse or male partner in the home.

Ha 4.2: Mothers who experience higher levels of marital quality will have lower levels of depression than mothers who experience lower levels of marital quality.

Ha 4.3: Mothers who have full or part time jobs will have lower levels of depression than mothers who are not employed.

Ha 4.4: Mothers whose children have child care experience during the first 3 years of their children's lives will have lower level of depression than mothers whose children do not attend child care at that time.

Ha 4.5: Mothers who perceive their neighborhoods as less problematic will have lower levels of depression than mothers who perceive their neighborhood as more problematic.

Ho 5: Maternal developmental history is unrelated to the quality of the home environment mothers provide for their children.
Ha 5: There are relationships between maternal developmental history and the quality of the home environment mothers provide for their children.

Ha 5.1: Grandmother's level of education is positively related to the home environment mothers provide for their children.

Ha 5.2: Mothers who lived with both parents until their 18^{th} birthday will provide more supportive home environment for their children.

Ho 6: Maternal characteristics are unrelated to the quality of the home environment mothers provide for their children.
Ha 6: There are relationships between maternal characteristics and the quality of the home environment mothers provide for their children.

Ha 6.1: Mothers who delayed child bearing are likely to provide better quality home environments than mothers who started child bearing earlier.

Ha 6.2: Mothers with higher levels of education will provide better quality home environments than mothers with lower levels of education.

Ha 6.3: Mothers with higher levels of intelligence will provide better quality home environments than mothers with lower levels of intelligence.

Ha 6.4: Mothers with higher levels of mastery will provide better quality home environments than mothers with lower levels of mastery.

Ha 6.5: There is a difference in the quality of home environments mothers provide for their children between African-American/Hispanic mothers and non-Black/non-Hispanic mothers.

Ho 7: Child characteristics (age, sex, birth weight) are unrelated to the quality of the home environment mothers provide for their children.
Ha 7: There are relationships between child characteristics and the quality of the home environment mothers provide for their children.

Ho 8: Contextual factors are unrelated to the quality of the home environment mothers provide for their children.
Ha 8: There are relationships between contextual factors and the quality of the home environment mothers provide for their children.

Ha 8.1: Mothers who have a spouse or male partner in the home will provide better quality of home environments than mothers who do not have a spouse or male partner in the home.

Ha 8.2: Mothers who experience higher levels of marital quality will provide better quality home environments than mothers who experience lower levels of marital quality.

Ha 8.3: Mothers who have full or part time jobs will provide better quality of home environments than mothers who are not employed.

Ha 8.4: Mothers whose children have child care experience during the children's first 3 years of lives will provide better quality of home environments than mothers whose children do not attend child care during that time.

Ha 8.5: Mothers who perceive their neighborhood as less problematic will provide better quality home environments than mothers who perceive their neighborhood as more problematic.

Ho 9: Maternal depression is unrelated to the quality of the home environment mothers provide for their children.
Ha 9: Mothers who experience lower levels of depression will provide better quality home environments than mothers who experience higher levels of depression.

Ho 10: The quality of the home environment (more supportive environment) is unrelated to children's academic adjustment.
Ha 10: Children whose mothers provide more supportive home environments will demonstrate higher levels of reading achievement than children whose mothers provide lower quality home environments.

Ho 11: The quality of the home environment (more supportive environment) is unrelated to children's behavioral adjustment.
Ha 11: Children whose mothers provide more supportive home environments will demonstrate lower levels of behavioral problems than children whose mothers provide lower quality home environments.

Ho 12: Maternal developmental history is unrelated to children's levels of reading achievement, when the quality of the home environment is controlled.
Ha 12: There are relationships between maternal developmental history and children's levels of reading achievement, when the quality of the home environment is controlled.

Ha12.1: Grandmother's level of education is positively related to children's levels of reading achievement, when the quality of the home environment is controlled.

Ha 12.2: Maternal residence with both parents until her 18th birthday is positively related to children's levels of reading achievement, when the quality of home environment is controlled.

Ho 13: Maternal characteristics are unrelated to children's levels of reading achievement, when the quality of the home environment is controlled.
Ha 13: There are relationships between maternal characteristics and children's levels of academic adjustment, when the quality of the home environment is controlled.

Ha 13.1: Maternal age at first birth is positively related to children's levels of reading skills, when the quality of the home environment is controlled.

Ha 13.2: Mother's level of education is positively related to children's levels of reading skills, when the quality of the home environment is controlled.

Ha 13.3: Mother's level of intelligence is positively related to children's levels of reading skills, when the quality of the home environment is controlled.

Ha 13.4: Mother's level of mastery is positively related to children's levels of reading skills, when the quality of the home environment is controlled.

Ho 14: Child characteristics (age, sex, birth weight) are unrelated to children's levels of reading achievement, when the quality of the home environment is controlled.
Ha 14: There are relationships between child characteristics and children's levels of reading achievement, when the quality of the home environment is controlled.

Ha 14.1: Younger children are likely to have higher level of reading achievement, when the quality of the home environment is controlled.

Ha 14.2: There is a difference between male and female children in the levels of reading achievement, when the quality of home environments is controlled.

Ha 14.3: Children who had heavier birth weight are likely to have higher level of reading achievement, when the quality of the home environment is controlled.

Ho 15: Contextual factors are unrelated to children's levels of reading achievement, when the quality of the home environment is controlled.
Ha 15: There are relationships between contextual factors and children's levels of reading achievement, when the quality of the home environment is controlled.

Ha 15.1: The presence of a spouse or male partner in the home is positively related to children's levels of reading achievement, when the quality of the home environment is controlled.

Ha 15.2: Marital quality is positively related to children's levels of reading achievement, when the quality of the home environment is controlled.

Ha 15.3: Mothers who have full or part time jobs are positively related to children's levels of reading achievement, when the quality of the home environment is controlled.

Ha 15.4: Child care experience is positively related to children's levels of reading achievement, when the quality of the home environment is controlled.

Ha 15.5: Living in better neighborhood environment is positively related to children's levels of reading achievement, when the quality of the home environment is controlled.

Ho 16: Maternal developmental history is unrelated to children's levels of behavioral adjustment, when the quality of the home environment is controlled.
Ha 16: There are relationships between maternal developmental history and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Ha16.1: Grandmother's level of education is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 16.2: Maternal residence with both parents until her 18th birthday is negatively related to children's levels of behavior problem, when the quality of home environment is controlled.

Ho 17: Maternal characteristics are unrelated to children's levels of behavioral adjustment, when the quality of the home environment is controlled.
Ha 17: There are relationships between maternal characteristics and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Ha 17.1: Maternal age at first birth is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 17.2: Mother's level of education is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 17.3: Mother's level of intelligence is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 17.4: Mother's level of mastery is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ho 18: Child characteristics (age, sex, birth weight) are unrelated to children's levels of behavioral adjustment, when the quality of the home environment is controlled.
Ha 18: There are relationships between child characteristics and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Ha 18.1: Younger children are likely to have lower level of behavior problem, when the quality of the home environment is controlled.

Ha 18.2: There is a difference between male and female children in the levels of behavior problem, when the quality of home environments is controlled.

Ha 18.3: Children who had heavier birth weight are likely to have lower level of behavior problem, when the quality of the home environment is controlled.

Ho 19: Contextual factors are unrelated to children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Ha 19: There are relationships between contextual factors and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Ha 19.1: The presence of a spouse or male partner in the home is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 19.2: Marital quality is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 19.3: Mothers who have full/part time jobs are negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 19.4: Child care experience is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ha 19.5: Living in better neighborhood environment is negatively related to children's levels of behavior problem, when the quality of the home environment is controlled.

Ho 20: Maternal depression level is unrelated to children's levels of reading achievement, when the quality of the home environment is controlled.
Ha 20: There is a relationship between maternal depression level and the children's level of reading achievement, when the quality of the home environment is controlled.

Ho 21: Maternal depression level is unrelated to children's levels of behavioral adjustment, when the quality of the home environment is controlled.
Ha 21: There is a relationship between maternal depression level and the children's level of behavioral adjustment, when the quality of the home environment is controlled.

Ho 22: There is no difference between the most successful low-income children (scoring in the top quartile for the sample on PIAT reading recognition and scoring in the bottom quartile for the sample on BPI) and the least successful low-income children (scoring in the bottom quartile for the sample on PIAT reading recognition and scoring in the top quartile for the sample on BPI) in child characteristics.
Ha 22: There is a difference between the most successful low-income children and the least successful low-income children in child characteristics.

Ho 23: There is no difference between the most successful low-income children and the least successful low-income children in maternal developmental history, characteristics, and behavior.

Ha 23: There is a difference between the most successful low-income children and the least successful low-income children in maternal developmental history, characteristics, and behavior.

Ho 24: There is no difference between the most successful low-income children and the least successful low-income children in contextual factors.
Ha 24: There is a difference between the most successful low-income children and the least successful low-income children in contextual factors.

Research Design and Procedure

This study contains four major categories of independent variables: (a) maternal developmental history, which include the mother's own mother's education and residence with both parents until the mother's 18th birthday ; (b) characteristics of the child, which include gender, age, and birth weight; (c) maternal characteristics, which include age at first birth, education level, intelligence level (AFQT), mastery, religiosity, and ethnic group; (d) contextual factors, which include family structure, marital quality, employment status of mothers, child care, and neighborhood influence.

Three dependent variables examined in this study are maternal psychological well-being, the quality of home environment that mothers provide, and children's outcome (reading skills and behavior problem). Maternal psychological well-being and the quality of home environment that mothers provide are also considered as mediating variables between the independent variables and children's outcome (reading skills and behavior problem). As for purposes of this research, only low-income families and young children were included in this study.

The unit of analysis examined in this study is the mother and her 5 to 8-year-old children. The data for this study are drawn from a national data set called the National Longitudinal Survey of Youth 1979 (NLSY79). The data are collected by the National Opinion Research Center (NORC) of the University of Chicago. This project is directed and funded by the U.S. Department of Labor, Bureau of Labor Statistics. Additional funding to support the NLSY79 survey was received from the U.S. Department of Defense, the U.S. Department of Health and Human Services, the National Institute on Alcohol and Alcohol Abuse, and the National Institute on Drug Abuse.

Sample Selection

Data for this study were extracted from the National Longitudinal Survey of Youth (NLSY) data set. Most of the data selected for this study was drawn from the 1994 wave of the NLSY. For the purposes of this study, only young children from low-income families – at or below 185% of the poverty line at the 1993 and 1994 interviews – were selected. Two hundred ninety one children with their mothers were included in the data analyses of this study because their data provide information of all the variables that the study intended to examine.

The NLSY began in 1979 and study participants have been re-interviewed 16 times. Initially, the NLSY involved a national probability sample of 12,686 youth aged 14 to 21. The NLSY sampling design enables researchers to examine the experience of groups such as women, Hispanics, African-

Americans, and the economically disadvantaged since the sample included an overrepresentation of those people. The subjects have been interviewed annually since 1979, with an extremely high retention rate (close to 90%). The NLSY79 has included data on employment, educational, and family-related experiences of the subjects (Center for Human Resource Research, 1997).

The child sample consists of all children born to NLSY79 female respondents (6,283) who completed an interview during the even year interviews beginning in 1986. The number of children born to interviewed mothers has increased. Interviewers completed surveys with 7,089 children in 1994. It included 6,109 children who were under age 15. The overall sample of children interviewed during 1994 presents a cross-section of children born to women who were 29-37 years of age on December 31, 1993. The NLSY79 child data includes child demographic and family background characteristics, child health, child home environment, child cognitive development, child motor/social/emotional development etc. Trained interviewers assess each child directly and evaluate the home environment.

Sample Description

Table 1 presents a summary of the demographic and background characteristics of the sample of this study. The mean age of the 291 mothers sampled was 32.5 years. The range spanned 8 years with the youngest mother at 29 years and the oldest at 37 years. Most (82.5%) of the mothers were

between 30 and 35 years of age. The age of the mothers at the time of birth of their first child ranged from 13 years to 31 years, with a mean of 19.5 years.

Table 1

Sample Characteristics (N = 291)

Characteristics	Percentage	Mean	SD
Age of child (in months)		84.7	14.8
Sex of child (male)	52.9		
Birth weight of child (in ounces)		117.4	21.0
Age of mother		32.5	2.2
Age of mother at first birth		19.5	3.2
Education level		11.6	2.2
Family income		16,754	8,333
Presence of spouse/partner in household	46.4		
Number of children		2.9	1.2
Ethnicity (African-American)	38.8		
(Hispanic)	25.1		
(Non-Black/non-Hispanic)	36.1		
Employed mother	52.2		

The number of years of education completed by mothers in the sample ranged from 0 to 20 years. On average they achieved 11.6 years of formal

education. On the other hand, the education of the mothers' mothers ranged from 0 to 18 years, with a mean of 9.4 years. In 1994, the median family income of the sample was $15,601, and the mean was $16,754 (S.D. = $8,333). The families in the sample of this study were officially poor with incomes at or below poverty line and near poor with incomes between 100 percent and 185 percent of the poverty line. In addition, more than a half of the mothers (54%) were not living with a spouse or partner at the time of the interview.

The average number of children of the mothers was 2.9, with a range from 1 to 8. The age of the children included in this study ranged from 60 to 107 months, with a mean of 84.7 months (S.D. = 14.8). Originally, the study was designed for 5 to 6 year-old children and their mothers, but 7 to 8 year-old children were also included in this study to obtain a sufficient sample size for statistical analyses. About fifty-three percent of the children were male. The sample included 113 African-American (38.8%), 73 Hispanic (25.1%), and 105 non-Black/non-Hispanic (36.1%) children.

About fifty-three percent of the mothers lived with their biological parents until their 18th birthday. Half of the mothers were employed and 41% of the mothers were married at the time of the interview. Forty-five percent of the children had regular child care experience during the first three years.

Research Instruments

Armed Forces Qualification Test (AFQT)

Mothers' level of intellectual ability was measured using the Armed Forces Qualification Test (AFQT). The test was administered to all the mothers in the 1980 NLSY main survey. The AFQT score of the mothers is based on new procedures established in 1989 and is created in the following manner: (1) compute a verbal composite score by summing the word knowledge and paragraph comprehension raw score; (2) convert subtest raw scores to standard scores for verbal, math knowledge, and arithmetic reasoning; (3) multiply verbal by 2; (4) sum the standard scores for verbal, math knowledge, and arithmetic reasoning; and (5) convert the summed standard score to a percentile (Center for Human Resources Research, 1997). The AFQT has been shown to be a highly reliable and valid measure. Reliability coefficients (alternate form and internal consistency) for the AFQT subtests range from .7 to .9 (U.S. Department of Defense, 1982). However, a careful attention for interpreting the data is needed because this measure might be culturally biased and it was measured a long time ago.

Pearlin Mastery Scale

Mothers' mastery scores were measured by the Pearlin Mastery Scale in 1992. The scale is a seven-item questionnaire and for each item subjects are asked to rate themselves on a four-point scale. The items are; 'There is no way I can solve the problems I have', 'I sometimes feel I'm being pushed around', 'I

have little control over what happens to me', 'I can do just about anything I really set my mind to', 'I often feel helpless in dealing with problems of life', 'What happens to me in the future mostly depends on me', and 'There is little I can do to change important things in my life'. The items were derived from factor analysis of results from community interviews. The internal reliability of this measure exceeds .75 as measured by Chronbach's alpha (Bowen et al., 1994). Higher scores indicate a greater sense of mastery. One study indicated that there was a statistically significant relationship between mastery and depression scores (Walford-Kraemer & Light, 1984). Low control over life was related to high depression. According to Bowen and her colleagues (1994), the concept of mastery as measured by the Pearlin Mastery Scale has been shown to be a predictor of psychological symptoms associated with coping with daily stress.

Religiosity

Mothers' religiosity was measured by a question about frequency of the mother's religious attendance at the 1982 interview. The choices are 'not at all', 'several times a year', 'about once a month', 'two or three times a month', 'about once a week', and 'more than once a week'. Since it was measured a long time ago with one question, it may be hard to conclude anything about it. Recent data on religiosity was not available.

Marital Quality

The mother's level of marital quality was assessed using items about marital communication and marital conflict at the1994 interview (see Appendix A). Marital communication measures mothers' pattern of communication with

their husbands. This measure consists of 3 Likert-type scale items, with responses rated from 1 (less than once a month) to 4 (almost every day). A sample item is ' How often do you and your husband calmly discuss something?'. A ten item Likert scale with a response range from 1 (often) to 4 (never) was used to assess marital conflict. A sample item is 'How often do you and your husband argue about chores and responsibilities?'. The reliability coefficient for this scale was .80 for the present study sample.

CESD – The Center for Epidemiologic Studies Depression Scale

Maternal psychological well-being was measured by the widely used Center for Epidemiologic Studies Depression Scale (CESD). A shortened form of the CESD was used at the 1994 interview (see Appendix B). The scale contains items pertaining to feelings of fear, depression, and loneliness. A seven item Likert scale with a response range from 0 to 3 was used to measure the mother's level of psychological well-being. Mothers respond to each item using the following statement: rarely / none of the time / 1day (0), some / a little of the time / 1-2 days (1), occasionally / moderate amount of the time / 3-4 days (2), or most / all of the time / 5-7 days (3). A sample item is 'During the past week I did not feel like eating; my appetite was poor'. The other items included trouble keeping mind on tasks, depressed, everything took extra effort, restless sleep, sad, and could not get going. The scores range from 0 to 21. High scores on this measure are indicative of high mental depression. This scale has been demonstrated to be reliable and valid for adolescents and adults coming from

diverse ethnic/racial backgrounds (Safron, 1999). The reliability coefficient for this scale was .80 for the present study sample.

HOME – The Home Observation for Measurement of the Environment

Maternal behavior was measured using the preschool and elementary versions of the Home Observation for Measurement of the Environment-Short Form (HOME-SF) at the 1994 interview (see Appendix C). The HOME scale, developed by Bradley and Caldwell (1984), is an observation/interview instrument that assesses the quality of the social, emotional, and cognitive stimulation available to a child in the home. It provides information on the overall quality of the home environment, maternal emotional and verbal responsivity, maternal acceptance of and involvement with her child, organization of the environment, presence of materials for learning, and variety of stimulation. The abbreviated versions of HOME are comprised of 26 items for both the preschool and elementary versions. Each item is scored as 0 (indicating the absence of quality stimulation) and 1 (indicating the presence of quality stimulation). The total standard score of the HOME at the 1994 interview was used in this study. Bradley and Caldwell (1978) reported interrater reliabilities from six studies in the high .80s to low .90s, and 6 month test-retest subscale correlations ranging from .45 to .87. Internal consistency estimates based on the Kuder-Richardson 20 formula showed coefficients ranging from .53 to .83 for the HOME subscales while the internal consistency estimate for the total scale was .93. Baker and Mott (1989) reported that the items from the HOME included in the shorten versions were selected based on

reliability coefficients, discrimination indices, validity coefficients, and factor loadings from prior research. Similar to the original HOME, the shortened version is based on observations in the home and interviews with the mother. Coefficient alphas for the preschool version and for the elementary school-age version are .73. The internal consistency estimate is lower than that of the full HOME.

PIAT-R – The Revised Peabody Individual Achievement Test

The achievement of the child was measured using the Revised Peabody Individual Achievement Test (PIAT-R) at the 1994 interview. Three subtests (math, reading recognition, and reaiding comprehension) of the PIAT were administered to the NLSY children. For the purpose of this study only the reading recognition subtest was included in the analyses. The reading recognition subtest contains 84 multiple-choice items that increase in difficulty. It measures the child's ability in oral reading by first asking the child to read a word silently and then to say it aloud. Dunn and Markwardt (1970) presented adequate reliability and validity data for the PIAT on a national standardization sample. Baker and Mott (1989) also indicated that the PIAT is a widely used measure and has adequate reliability and validity. The total standard PIAT score was used in this study.

BPI – The Behavior Problem Index

The behavioral adjustment of the child was measured using the Behavior Problem Index (BPI) at the 1994 interview. The BPI score is based on responses (from the mothers) to 28 questions dealing with specific behaviors children may

exhibited in the previous three months (Peterson & Zill, 1986). Items represent problem behavior such as antisocial behavior, hyperactivity, anxiety, peer conflict, and head strong. Mothers respond to each item using the following statement: often true, sometimes true, or not true. Baker (1993) reported a coefficient alpha of .88 for the total score and alphas ranging from .57 to .71 across the subscales. In this study, only the total standard score was included. A high score on this measure indicates that the child is perceived by the mother as having behavior problems.

Neighborhood Problems and Rating

Two measures about neighborhood environment were used for the purpose of this study (see Appendix D). One of them is about the mother's rating on neighborhood as related to raising children. It was coded as follows: 1 = Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent. The other measure is an eight item Likert scale with a response range from 1 to 3 was used to measure the mother's perception of her neighborhood problems. Mothers respond to each item using the following statement: not a problem (1), somewhat of a problem (2), or big problem (3). Some sample items are 'People don't respect rules and laws enough', 'Crime and violence', 'Abandoned or run-down buildings' etc. The scores range from 8 to 24. The reliability coefficient for this scale was .83 for the present study sample.

Other Measures

The mother's residence with both parents until her 18th birthday was coded as follows: 0 = No, 1 = Yes. The presence of a spouse and partner was

coded as follows: 0 = No, 1 = Yes. Mothers employment status was coded as follows: 0 = Not employed, 1 = Employed. The sex of the child was coded as follows: 1 = Male, 2 = Female.

Data Analyses

The data were analyzed using the Statistical Package of the Social Science (SPSS) and the Analysis of Moment Structures (AMOS). Descriptive statistics were used to determine the basic distributional characteristics of each of the variables. Zero-order correlations were calculated to determine the extent of associations among the variables.

Multiple regression analyses were performed to examine the combined effects of several predictors on maternal psychological well-being and the quality of the home environment, and to identify which of the variables were related to psychological well-being and the quality of the home environment when other variables were controlled. Additional multiple regression analyses were computed to determine which of the predictors have a direct or an indirect (via maternal psychological well-being and home environment) effect on the adjustment of children. A chance probability level of less than .05 was set to reject the null hypotheses.

T-tests and Chi-square tests were computed to test for differences in characteristics between the most successful children and the least successful children in terms of their academic and behavioral adjustments.

To examine the conceptual model for this study, structural equation modeling (SEM) was performed using AMOS. AMOS implements the general approach to data analysis known as SEM – also known as analysis of covariance structures, or causal modeling. AMOS is an easy-to-use program for visual SEM. With AMOS, the researcher can quickly specify, view, and modify his model graphically using simple drawing tools. Several models were tested according to the purposes of this study.

Chapter 4

RESULTS AND DISCUSSION

This chapter will first present the results of the relation among the predictors. Second, the zero-order correlations between the predictor variables and the psychological well-being of mothers, and between the predictor variables and the quality of the home environment will be discussed.

Relations among the Predictor Variables

Correlational analyses were performed to determine the extent of associations among the predictor variables. Table 2 presents the zero-order correlations among the predictor variables. Several significant correlations among the predictor variables were found. Most of the correlations were in the expected directions, and small to moderate in magnitude. Significant correlations for the sample ranged from r = .12 to .49.

More educated grandmothers tended to have more educated and employed daughters (mothers of the children) and the daughters had higher intelligence scores. In addition, the mothers who lived with both parents until their 18th birthday tended to delay childbearing, to have more education, to have higher intelligence scores, and to have a spouse or partner.

Table 2

Relations among the Predictors Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Maternal Developmental History																
1. Education of Grandmother	1.00															
2. Residence with Parents	-.07	1.00														
Maternal Characteristics																
3. Age at first birth	.07	.22**	1.00													
4. Education	.39**	.15*	.21**	1.00												
5. Intelligence	.40**	.21**	.10	.47**	1.00											
6. Mastery	.04	-.06	-.06	.21**	.07	1.00										
7. Ethnicity	.34**	.19**	.07	.15**	.49**	-.07	1.00									
Contextual Factors																
8. Religiosity	.00	.02	.11	.10	-.03	.16**	-.17**	1.00								
9. Spouse/partner	.00	.12*	.07	-.05	.17**	-.06	.23**	.11	1.00							
10. Number of children	-.09	-.07	-.35**	-.13*	.03	.01	-.09	.06	.17**	1.00						
11. Employment	.18**	.09	.10	.24**	.27**	.14*	.12*	.03	.09	-.10	1.00					
12. Child care	.06	.05	.15**	.37**	.12*	.16**	-.07	.11	-.07	-.21**	.41**	1.00				
13. Neighborhood Problem	-.09	-.11	-.13*	-.17**	-.33**	-.09	-.23**	-.13*	-.22**	.01	-.34**	-.17**	1. 00			
Child Characteristics																
14. Age of child	-.11	.02	-.07	-.11	-.01	-.07	-.02	-.09	.02	.04	.03	.05	-.02	1.00		
15. Sex of child	.12*	.18*	.13*	.01	-.02	-.10	.02	.00	.03	-.06	-.01	.04	.05	-.06	1.00	
16. Birth weight of Child	.01	-.02	.00	.02	.00	.07	.06	.05	.16**	.05	.10	.05	-.09	-.01	-.14*	1.00

Note. Residence with both parents until the mother's 18th birthday was coded as follows: 0 = no, 1 = yes. Spouse/partner was coded as follows: 0 = not present, 1 = present. Ethnicity was coded as follows: 0 = African American/Hispanic, 1 = non-black/non-Hispanic. Sex of child was coded as follows: 1 = male, 2 = female. Employment was coded as follows: 0 = unemployed, 1 = employed, Child care experience: 0-3 years. * $p < .05$, ** $p < .01$

Consistent with expectation, mothers who delayed childbearing completed more years of schooling, and they tended to have more child care experience during the first three years of the child's life. As expected, more educated mothers have higher AFQT scores, and higher mastery scores. They tended to have jobs and child care experience.

Mothers with higher scores on the AFQT tended to have a spouse or partner and to report fewer neighborhood problems. Also, mothers who had higher AFQT scores tended to be employed and to have more child care experience. Similarly, mothers who had higher mastery scores tended to have jobs, and their children experienced more years of regular child care. They also tended to go to church more often than mothers who had lower mastery scores. It was found that the children of mothers who had a spouse or partner had heavier birth weights.

Mothers who reported more neighborhood problems tended to have children at younger ages, less education, lower AFQT scores, no job, less regular child care experience during the first three years of the children's lives, and did not have a spouse or a partner. The African American/Hispanic group of mothers reported more neighborhood problems than other low-income mothers. Mothers who had more frequent religious attendance tended to report fewer neighborhood problems.

The mothers of non-Black/non-Hispanic group tended to have more educated mothers, more education for themselves, and higher AFQT scores. This group also tended to live with both parents until their 18th birthday.

Relation between Predictor Variables and the Psychological Well-being of the Mother

This section discusses the associations between the predictor variables and the psychological well-being of the mother. Table 3 presents the zero-order correlations between the predictor variables and the psychological well-being of the mother. Several predictors were related to the psychological well-being of the mother.

According to the data analysis, more depressed mothers tended to have lower levels of education, lower intelligence scores, and lower mastery scores. In addition, more depressed mothers tended to rate their neighborhoods negatively for raising children and reported more neighborhood problems than less depressed mothers. Less depressed mothers tended to live with both parents until their 18th birthday. On the other hand, maternal depression was not related to religiosity, age at first birth, presence of a spouse or partner in household, employment status, ethnicity, and number of children the mother had.

In addition, maternal depression was significantly related to family income within the poverty sample ($r = -.12$, $p < .05$).

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Table 3

Zero-order Correlations: The Relations between the Predictor Variables and the Psychological Well-being of the Mother

Predictor Variables	CESD (1994)
Maternal Developmental History	
Grandmother's education	.01
Residence with parents	-.16**
Maternal Characteristics	
Age at first birth	-.07
Education	-.15**
Intelligence (AFQT)	-.16**
Mastery	-.13*
Religiosity	.07
Ethnicity	-.01
Contextual Factors	
Spouse/partner	-.08
Number of children	-.09
Employment status	-.11
Child care experience	-.01
Neighborhood Rating	-.13*
Neighborhood Problem	.20**
Child Characteristics	
Age	-.07
Sex	-.04
Birth weight	-.01

* $p < .05$, ** $p < .01$

Relations between Predictor Variables and the Quality of the Home Environment

To determine the relations between the predictor variables and the dependent variable (HOME), correlations were computed. Table 4 presents the zero-order correlations between the predictor variables and the quality of the

Table 4

Zero-order Correlations: The Relations between the Predictor Variables and the Quality of the Home Environment (HOME 1994)

Predictor Variables	HOME (1994)
Maternal Developmental History	
Grandmother's education	.18**
Residence with parents	.17**
Maternal Characteristics	
Age at first birth	.14*
Education	.20**
Intelligence (AFQT)	.32**
Mastery	.08
Religiosity	.08
Maternal depression	-.13*
Ethnicity	.28**
Contextual Factors	
Spouse/partner	.40**
Number of children	-.09
Employment status	.12*
Child care experience	.04
Neighborhood Rating	.19**
Neighborhood Problem	-.25**
Child Characteristics	
Age	-.04
Sex	.07
Birth weight	.21**

*p < .05, **p < .01

children's home environment. As expected, most of the predictor variables were found to be related to the quality of the home environment the mothers provided for their children.

Mothers who had more education, higher intelligence scores, more educated mothers, and residence with both parents until their 18th birthday

tended to provide better home environments for their children. Also, mothers who delayed childbearing and who had a spouse or partner at the time of the interview provided better quality home environments. Consistent with expectations, maternal depression was negatively related to the quality of the home environment. Employed mothers provide better home environments, and there was a positive relationship between the birth weight of the child and the quality of home environment that the mother provided for her child.

The results indicate that mothers' mastery scores, religiosity, number of children, and child care experience during the first three years of the child were not related to the quality of the home environment. However, mothers who rated their neighborhoods more positively and reported fewer neighborhood problems tended to provide more supportive home environments for their children.

According to the result of this analysis, non-Black/non-Hispanic mothers provided a more supportive home environment. An additional analysis was added to see if there are the differences between African American/Hispanic and non-Black/Hispanic mothers in some demographic and background characteristics. A series of independent t-test and chi-square analyses were run to examine the differences. Tables 5 and 6 present the results of the analyses. As can be seen from the tables, several differences were found between the two ethnic groups. The levels of educational attainment of the two groups of mothers and grandmothers were found to be different. Non-Black/non-Hispanic mothers and grandmothers had significantly more years of education.

Table 5

T-test for Differences between African-American/Hispanic and Non-Black/Non-Hispanic Subsamples in Demographic Characteristics

Independent Variables	Mean (SD) African-American Hispanic (N=186)	Non-Black Non-Hispanic (N=105)	t-value	Prob.
Maternal age	32.3 (2.1)	32.8 (2.2)	-1.82	.07
Age at first birth	19.3 (3.5)	19.8 (2.7)	-1.32	.19
Education level	11.4 (2.3)	12.1 (1.7)	-2.83	.01**
Number of children	3.0 (1.2)	2.8 (1.2)	1.46	.15
Family income	$16,124 (8,582)	$17,871 (7,787)	-1.77	.08
Age of child (in months)	84.9 (14.8)	84.3 (14.9)	.38	.70
Birth weight of child	116.4 (17.5)	119.0 (26.2)	-.88	.38
Grandmother's Education level	8.5 (3.6)	10.9 (2.5)	-6.75	.00***
Neighborhood problem	13.6 (4.0)	11.7 (3.6)	4.03	.00***

*p < .05, **p < .01, ***p < .001

There were also several significant differences in the contexts of the two groups of mothers. Although there was not a significant difference between the two groups on family income, a significantly larger percentage (54.3% vs. 34.3%) of the African-American/Hispanic families lived below the median family income of this study sample (below $15,601). A significantly smaller percentage (47.8%) of the African-American/Hispanic mothers was employed than the other group of mothers (60.0%). Furthermore, a larger percentage (62.4%) of the African-American/Hispanic mothers were not living with a spouse or partner, as

compared to Non-Black/non-Hispanic mothers. A larger percentage (65.7%) of the non-Black/non-Hispanic mothers had lived with both parents until their 18th birthday. Only 45.7 percent of African-American/Hispanic mothers had lived with both parents until their 18th birthday. In addition, Non-Black/non-Hispanic mothers reported significantly fewer neighborhood problems. This group probably lived in a better neighborhood environment. These group differences may partially suggest an explanation as to why African-American/Hispanic mothers provided significantly less supportive home environment for their children in this study.

Table 6

Chi-square Analyses for Differences between African-American/Hispanic and Non-Black/Non-Hispanic Subsamples

Independent Variables	African-American Hispanic	Non-Black Non-Hispanic	x2(1)	Prob.
Sex of child				
Male	100 (53.8%)	54 (51.4%)	.15	.702
Female	86 (46.2%)	51 (48.6%)		
Spouse/Partner				
Present	70 (37.6%)	65 (61.9%)	15.90	.000***
Absent	116 (62.4%)	40 (38.1%)		
Maternal employment				
Employed	89 (47.8%)	63 (60.0%)	3.97	.046*
Unemployed	97 (52.2%)	42 (40.0%)		
Residence with parents				
No	101 (54.3%)	36 (34.3%)	10.79	.001**
Yes	85(45.7%)	69 (65.7%)		
Family income				
Below median (of this sample)	101 (54.3%)	44 (41.9%)	4.13	.042*
Above median	85 (45.7%)	61 (58.1%)		

*p < .05, **p < .01

Multiple Predictors of the Maternal Psychological Well-being

In this section, the combined influence of the various factors identified in the conceptual model on the psychological well-being of the mothers is assessed. Multiple regression analyses were used to examine which of the predictor variables contributed uniquely to the psychological well-being of the mother. Table 7 presents the results of the regression analyses.

Only three variables were found to be predictive of maternal psychological well-being: mother's mastery score, mother's residence with both parents until her 18th birthday, and neighborhood problems. Although mother's level of education, religiosity, child care experience, and ethnicity were not significant at the .05 level, those variables were related, at the .10 level, to the maternal psychological well-being.

The predictor variables accounted for 14% of the variance in the CESD scores of the overall sample. The F value for the model was found to be significant ($p < .001$). However, when the marital quality variable was included in the analysis ($N = 118$), the R square of the model was increased to 29% (see Table 7). For the married sample, residence with both parents, mastery, and marital quality were found to be predictive of maternal psychological well-being. The F value for the regression model was highly significant ($p < .001$).

The result indicated that the residence with both parents until the mother's 18th birthday was a significant predictor of the maternal depression for the two samples. The mother's residence with both parents until her 18th birthday made

Table 7

Multiple Regression Analyses: Predictors of the Maternal Psychological Well-being (CESD)

Predictor Variables	Overall Sample (N=281)	Married Sample (N=118)
Maternal Developmental History		
Grandmother's education	.03	-.03
Residence with parents	-.14*	-.29**
Maternal Characteristics		
Current age (1994)	-.07	-.05
Age at first birth	-.03	-.06
Education	-.13	-.15
Intelligence (AFQT)	-.05	.11
Mastery	-.12*	-.30**
Religiosity	.12	.18
Ethnicity	.13	-.03
Contextual Factors		
Spouse/partner	-.07	
Marital quality		-.26**
Number of children	-.09	-.11
Employment status	-.07	-.07
Child care experience	-.12	.06
Neighborhood problem	.16*	.12
R Square	.14	.29
Adjusted R Square	.10	.20
F	3.1***	3.1***

Note. Betas presented are standardized betas. *p < .05, **p < .01, ***p < .001

a unique contribution to predicting lower depression scores later in her life in this study sample. Neighborhood problem was a significant predictor of mothers' depression scores, but not for the married mothers. This result is consistent with a finding of previous studies that stressful neighborhood environment is positively

related to maternal depression (Simons et al., 1996; Voydanoff & Donnelly, 1998).

Multiple Predictors of the Quality of the Home Environment

This section discusses the results of a multiple regression analysis that was computed to determine which of predictor variables are related to the quality of home environment. Only four variables were found to be predictive of the quality of the home environment of the overall sample: maternal intelligence, number of children, birth weight, and presence of a spouse or partner (see Table 8). For the married sample, the result was different. Five variables were significant and those included maternal education, number of children, maternal religiosity, mother's age at first birth, and marital quality. Only number of children was significant in the two samples.

The predictor variables accounted for 34% of the variance in the HOME scores of the overall sample. The F values for the model was found to be significant ($p < .001$). On the other hand, the predictor variables accounted for 46% of the variance in the HOME scores of the married sample with a significant F value ($p < .001$). Several differences in demographic and background characteristics existed between the married sample and the unmarried sample such as intelligence, number of children, birth weight, religiosity, neighborhood problem, and residence with both parents until the18th birthday of the mother. One notable difference was that married mothers rated their neighborhoods more

Table 8

Multiple Regression Analyses: Predictors of the Quality of the Home Environment

Predictor Variables	Overall Sample		Married Sample
	HOME Total (N=281)	HOME Cognitive Stimulation(N=268)	HOME Total (N=119)
Maternal Developmental History			
Grandmother's education	.02		.04
Residence with parents	.06		.13
Maternal Characteristics			
Age at first birth	-.06		-.19*
Education	.06	.20**	.25*
Intelligence (AFQT)	.17*		.05
Mastery	.06		-.00
Religiosity	.04	.12*	.21*
Ethnicity	.07		.10
CESD	-.05		.05
Contextual Factors			
Spouse/partner	.37***	.15*	
Marital quality			.32***
Number of children	-.19**	-.20**	-.25**
Employment status	-.03		-.07
Child care experience	-.03		-.08
Neighborhood problem	-.07		.04
Child Characteristics			
Age	-.01		.12
Sex	.07		-.13
Birth weight	.14**		.15
R Square	.34	.26	.46
Adjusted R Square	.30	.21	.37
F	7.9***	5.2***	5.1***

Note. Betas presented are standardized betas. *p < .05, **p < .01, ***p < .001

positively and reported fewer neighborhood problems. They also had higher HOME scores which could be translated as providing better quality home environments for their children than the unmarried mothers.

In the overall sample, higher levels of intelligence, fewer children in the family, heavier birth weight, and mothers with a spouse or partner made unique contributions to predicting a more supportive home environment. In the married group, higher levels of education, fewer children in the family, higher age at first birth, better marital quality, and frequent religious attendance were predictive of a more supportive home environment for the children. Contrary to expectation, mother's level of depression was not significantly related to the HOME scores of the overall sample and the married sample.

Relations between the Predictor Variables and the Academic and Behavioral Adjustment of Children

Table 9 presents the zero-order correlations between the predictor variables, the quality of the home environment, and the children's academic and behavioral adjustments for the overall sample, the married subsample, and the unmarried subsample. Small to moderate correlations were obtained between the predictor variables and the children's academic and behavioral adjustments.

Consistent with expectations, there were positive relationships between children's PIAT scores and mothers' education level for the overall sample and

Table 9

Relations between the Predictor Variables and the Adjustment of Children

Predictor Variables	Reading Recognition			Behavior Problem		
	Overall Sample (N=291)	Married Sample (N=119)	Unmarried Sample (N=171)	Overall Sample (N=291)	Married Sample (N=119)	Unmarried Sample (N=171)
Maternal Developmental History						
Grandmother's education	.21*	.28**	.16*	-.05	-.13	.003
Residence with parents	.05	.10	.01	-.09	-.08	-.08
Maternal Characteristics						
Age at first birth	.14*	.15	.14	-.01	-.01	-.004
Education	.16**	.27**	.10	-.08	-.07	-.09
Intelligence (AFQT)	.26**	.25**	.25**	-.08	-.08	-.05
Mastery	.09	.10	.09	-.15*	-.03	-.22**
Religiosity	.06	.12	.001	-.06	-.12	-.01
Ethnicity	.16*	.21*	.09	-.05	-.09	.001
Maternal depression	-.01	.04	-.02	.19**	.15	.21**
Contextual Factors						
Spouse/partner	.09			-.01		
Marital quality		.09			-.26**	
Number of children	-.13*	-.30**	-.06	-.13*	-.08	-.14
Employment status	.07	-.06	.13	-.07	.06	-.14
Child care experience	.13*	.03	.22**	.00	.11	-.08
Neighborhood problem	-.14*	-.12	-.10	.10	-.14	.19*
Child Characteristics						
Age	-.23**	-.24**	-.23	.12*	.03	.18*
Sex	.18**	.17	.18*	-.12*	-.02	-.18*
Birth weight	.03	.01	.02	-.12*	-.10	-.13
HOME (Total)	.24**	.09	.28**	-.16*	-.12	-.16*
HOME(Cognitive Stimulation)	.29**	.17	.35**	-.18**	-.21**	-.15

Note: *p < .05, **p < .01

the married sample. However, there was no significant relationship between children's PIAT scores and mothers' level of education for the unmarried sample.

There were positive relationships between mothers' intelligence scores and children's PIAT scores, and between grandmother's education level and children's PIAT scores for the all three samples. The number of children in the household was negatively related to children's PIAT scores for the overall sample and the married sample. Although non-black /non-Hispanic children tended to have higher reading recognition scores for the overall sample and the married sample, there was no relationship between ethnicity and children's PIAT scores for the unmarried sample. The presence of a spouse or partner was not significantly related to the PIAT scores for the overall sample. In addition, marital quality also was not significantly related to the PIAT scores of children from married mothers.

For the overall sample, there was a positive relationship between children's PIAT scores and the mother's age at first birth, and a negative relationship between children's PIAT scores and neighborhood problems. The results also indicated that there were positive relationships between children's PIAT scores and the children's regular child care experience during the first three years for the overall sample and the unmarried sample. The relationship was stronger for the children of unmarried mothers.

Some characteristics of the child were found to be related to the PIAT scores. There was a negative relationship between children's age and the PIAT scores for the overall sample and the married sample. One possible explanation for this result is that the negative effect of exposure to risk factors may increase over time. In addition, older children in this study were likely to be born when the

mothers were young in age. It is possible that the mothers may not have completed high school at the time the child was born. Thus, the mothers may lack the necessary parenting skills and knowledge to provide more cognitively stimulating home environments for their children. For the overall sample and the unmarried sample, the child's gender was also significantly related to the PIAT reading recognition scores. The result showed that girls had higher PIAT scores than boys. However, it was not true for the children of married mothers.

On the other hand, there was a negative relationship between children's BPI scores and the mothers' mastery scores, and a positive relationship between children's BPI scores and the maternal depression scores for the overall sample and the unmarried sample. For the overall sample, there was a negative relationship between children's BPI scores and the number of children in the household. There was a significant positive relationship between the child's BPI score and neighborhood problem scores for the unmarried sample.

The characteristics of the child were found to be related to the child's behavior problem for the overall sample and the unmarried sample. Children's age was positively related to the children's BPI scores. Again, it is evident from the findings that the negative effect of exposure to risk factors may increase over time. The child's gender was also significantly related to the child's BPI score. The result indicated that girls had lower BPI scores than boys except for the children from the married sample. For the overall sample, there was a negative relationship between the child's birth weight and the BPI score. There was a

significant negative relationship between the child's BPI score and the marital quality of the mother for the married sample.

As expected, the quality of the children's home environment was positively related to their academic adjustment and was negatively related to their behavioral adjustment for the overall sample and the unmarried sample. There was no relationship between children's PIAT scores and the quality of home environment for the married sample. On the other hand, there was a negative relationship between the child's BPI score and the total HOME score for the overall sample and the unmarried sample. Also, there was a negative relationship between the child's BPI score and the HOME cognitive stimulation subscore for the overall sample and the married sample. The HOME emotional support subscore was not related to the academic achievement and behavioral problem scores for the three samples.

Multiple Regression Analyses

In this section there is discussion of the results of several multiple regression analyses that were computed to determine which of the predictor variables are related to the children's academic and behavioral adjustments. In these analyses all of the maternal characteristics, contextual factors, and child's characteristics were entered simultaneously. The results of the regression analyses for the overall sample are presented in Table 10. As can be seen in Table 10, eighteen independent variables explained 26% of the variance in the

Table 10

Multiple Regression Analyses: Predictors of the Adjustment of Children

Predictor Variables	Reading Recognition Beta (N=268)	Behavior Problem Beta (N=281)
Maternal Developmental History		
Grandmother's education		
Residence with parents		
Maternal Characteristics		
Age at first birth		
Education		
Intelligence (AFQT)	.21**	
Mastery		
Religiosity		
Ethnicity		
Maternal depression		.14*
Contextual Factors		
Spouse/partner		.15*
Number of children		-.19**
Employment status		
Child care experience	.15*	
Neighborhood problem		
Child Characteristics		
Age	-.21***	
Sex	.16**	
Birth weight		
HOME (Total)		-.16*
HOME(Cognitive Stimulation)	.16*	
R Square	.26	.15
F	4.7***	2.6**

Note: *p < .05, **p < .01, ***p < .001

scores for the PIAT reading recognition. The F value for the model was highly significant ($p < .001$).

The analysis suggested that maternal intelligence, child care experience, child's age, child's gender, and the quality of the home environment (the HOME cognitive stimulation subscale was used in this analysis because the HOME total score was not significant for this model) were significantly related to children's academic adjustment. Maternal education, maternal religiosity, presence of a spouse or partner, and number of children were not related to the PIAT reading recognition scores, when the quality of the home environment was controlled. These findings indicate that these four variables do not have direct effects on the children's academic achievement. The effects of these maternal characteristics and contextual factors may be indirect, via the home environment. As shown in the earlier regression analysis, maternal education, religiosity, presence of a spouse or partner, and number of children were significantly related to the quality of the home environments the mothers provided for their children (see Table 8).

Mothers with higher levels of education, with more frequent religious attendance, with a spouse or a partner, and with fewer children create more cognitively stimulating home environments for their children. This, in turn, affects their children's academic adjustment.

On the other hand, the eighteen independent variables explained 15% of the variance in the scores for the BPI. The F values for the model was significant ($p < .01$). According to the analysis, number of children, presence of a spouse or a partner, maternal depression, and the quality of the home environment (HOME

total score) were significantly related to children's behavior problem. Maternal intelligence and child's birth weight were not related to the BPI score, when the quality of home environment was controlled. These findings indicate that the effects of maternal intelligence and child's birth weight on child's behavior problem may be of indirect influence, via the home environment, because the two variables were significantly related to the quality of the home environments the mothers provided for their children (see Table 8).

The result indicates that maternal depression directly affects child's behavior problem. Children's of less depressed mothers had fewer behavior problems. The results also suggest that number of children and presence of a spouse or a partner may be directly and indirectly (via home environment) related to child's behavior problem. Contrary to most research, the result showed that mothers who were with a spouse or a partner tended to have children with more behavior problems. In this case, it is possible that the spouse or the partner was not effective in monitoring the child's behavior. However, an additional analysis which included a variable of the child living with his or her father instead of the presence of a spouse or a partner showed a different result. The child living with his or her father was not significantly related to child's behavior problems (Beta=.08, t=1.17). The R square of the BPI model was relatively lower than that of the PIAT model.

The characteristics of the child were related to only PIAT reading recognition scores when the quality of the home environment was controlled. Younger children and females tended to obtain higher scores in reading

recognition. As noted earlier, the adjustment of children from low-income families may have been affected by a combination of several risk factors that they were exposed to. In earlier regression analyses, age and gender of the child were found to be unrelated to the quality of the home environment (HOME cognitive stimulation, Table 6). The results indicate that child's age and gender did not have any direct or indirect (via home environment) effects on the child's behavior problems.

Differences in the Circumstances of the Children Who Scored in the Top Quartile and Bottom Quartile on the PIAT and BPI

A series of independent t-test and chi-square analyses were run to examine the differences between the most competent children and the least competent children in this sample of low-income families on the independent variables. Those who scored in the highest quartile on the PIAT (n = 71) and in the bottom quartile on the BPI (n = 73) were designated the successful group, and those who scored in the highest quartile on the BPI (n = 72) and in the bottom quartile on the PIAT (n = 72) were used as the comparison group. Table 11, 12, 13, and 14 present the results of the analyses. As can be seen from the tables, several differences were found between the two groups.

For the PIAT reading recognition scores, it was found that the successful children were significantly younger than the comparison group. The

Table 11

T-test for Differences between the Successful Group and the Comparison Group on the PIAT Reading Recognition in Demographic Characteristics

Independent Variables	Mean (SD) Successful Group (N=71)	Comparison Group (N=72)	t-value	df	Prob.
Age at first birth	20.0 (3.4)	19.0 (2.9)	-1.78	141	.08
Education level	11.4 (2.2)	11.2 (2.3)	-1.70	141	.09
Number of children	2.8 (1.1)	3.1 (1.5)	.76	141	.45
Age of child (in months)	86.0 (14.5)	88.6 (13.8)	2.71	141	.01**
Birth weight of child	113.7 (19.3)	116.3 (18.5)	-.47	141	.64
Grandmother's Education level	9.1 (3.2)	8.2 (3.3)	-3.65	141	.00***

*p < .05, **p < .01, ***p < .001

Table 12

Chi-square Analyses for Differences between the Successful Group and the Comparison Group on the PIAT Reading Recognition

Independent Variables	Successful Group	Comparison Group	x2(1)	Prob.
Sex of child				
Male	33 (40.2%)	49 (59.8%)	6.80	.009**
Female	38 (62.3%)	23 (37.7%)		
Ethnicity				
African American/Hispanic	38 (41.8%)	53 (58.2%)	6.23	.013*
Non-Black/Non-Hispanic	33 (63.5%)	19 (36.5%)		
Spouse/Partner				
Present	38 (58.5%)	27 (41.5%)	3.70	.054
Absent	33 (42.3%)	45 (57.7%)		
Maternal employment				
Employed	34 (53.1%)	30 (46.9%)	.56	.454
Unemployed	37 (46.8%)	42 (53.2%)		
Residence w/h parents				
No	32 (47.8%)	35 (52.2%)	.18	.671
Yes	39 (51.3%)	37 (48.7%)		

*p < .05, **p < .01

Table 13

T-test for Differences between the Successful Group and the Comparison Group on the BPI in Demographic Characteristics

Independent Variables	Mean (SD) Successful Group (N=71)	Comparison Group (N=72)	t-value	df	Prob.
Age at first birth	19.7 (3.2)	19.7 (3.6)	.01	143	.995
Education level	11.7 (1.8)	11.4 (2.2)	1.11	143	.27
Number of children	3.2 (1.4)	2.8 (1.1)	1.76	143	.09
Age of child (in months)	83.0 (14.0)	86.0 (14.5)	-1.28	143	.20
Birth weight of child	121.5 (16.8)	113.7 (18.5)	2.59	143	.01*
Grandmother's Education level	9.3 (4.0)	9.1 (3.2)	.41	143	.69

*p < .05, **p < .01, ***p < .001

Table 14

Chi-square Analyses for Differences between the Successful Group and the Comparison Group on the BPI

Independent Variables	Successful Group	Comparison Group	x2(1)	Prob.
Sex of child				
Male	36 (46.2%)	42 (53.8%)	1.19	.28
Female	37 (55.2%)	30 (44.8%)		
Ethnicity				
African American/Hispanic	32 (49.4%)	43 (50.6%)	.07	.79
Non-Black/Non-Hispanic	31 (51.7%)	29 (48.3%)		
Spouse/Partner				
Present	33 (50.8%)	32 (49.2%)	.01	.93
Absent	40 (50.0%)	40 (50.0%)		
Maternal employment				
Employed	37 (52.1%)	34 (47.9%)	.17	.68
Unemployed	36 (48.6%)	38 (51.4%)		
Residence w/h parents				
No	29 (43.9%)	37 (56.1%)	1.99	.16
Yes	44 (55.7%)	35 (44.3%)		

*p < .05, **p < .01

grandmothers of the successful children had significantly higher levels of education although the levels of educational attainment of their mothers were found to be similar. A larger percentage (62.3%) of the successful group were female children. Additionally, more non-Black/non-Hispanic children (63.5%) were successful in terms of the PIAT scores than African American/Hispanic children (41.8%). This result may due to the differences of background characteristics between two groups (see Table 5 and 6). No significant differences were found between the two groups of children with respect to the presence of a spouse or a partner, maternal employment, and the mother's residence with both parents until her 18th birthday.

On the other hand, only one characteristic was significantly different between the two groups for the BPI score. It was found that the successful children were significantly heavier than the comparison children when they were born. The levels of educational attainment of the two groups of mothers and grandmothers were found to be similar. No significant differences were found between the two groups with regard to the sex of child, ethnicity of child, presence of a spouse or a partner, maternal employment, and residence with both parents until the mother's 18th birthday.

Other Differences between the Successful Group and the Comparison Group

Given that several significant differences existed in the circumstances of the successful group and the comparison group, an additional series of t-test was

done to determine if the groups also differ in maternal intelligent scores, mastery scores, religiosity, maternal depression, child care experience, neighborhood problems, the quality of the home environment and children's adjustment scores. Results of the analyses indicated that the mothers' intelligence test scores of the academically successful children were significantly higher than the mothers' intelligence test scores of the comparison children (see Table 15). In terms of the mothers' level of mastery, religiosity, and depression, no significant differences were found between the two groups of children.

Table 15

T-test for Differences between the Successful Group and the Comparison Group on the PIAT Reading Recognition in Other Characteristics

Independent Variables	Mean (SD) Successful Group (N=71)	Mean (SD) Comparison Group (N=72)	t-value	df	Prob.
Intelligence (AFQT)	32.7 (22.3)	17.6 (20.0)	-4.26	141	.00***
Mastery	21.9 (2.9)	21.0 (3.0)	-1.79	141	.08
Religiosity	3.5 (1.6)	3.1 (1.6)	-1.42	141	.16
CESD	5.7 (4.8)	5.9 (5.0)	.21	141	.83
Child care experience	1.4 (1.2)	1.1 (1.2)	-1.41	141	.16
Neighborhood problem	12.5 (3.8)	13.6 (4.3)	1.60	133	.11
HOME (Total standard score)	952.3 (141.3)	846.5 (163.1)	-4.15	141	.00***

*p < .05, **p < .01, ***p < .001

There were no significant differences found in regular child care experience during the first three years of the child and the neighborhood problem scores for the two groups. Significant differences were found between the successful children and the comparison children in the quality of the rearing environment they received from their mothers. The successful children in terms of the academic adjustment were shown to receive a more supportive home environment than the comparison children. Although all the children of this study were from poor (below or at poverty line) or near poor families (between 100% and 185% of poverty line), the mothers of the successful children provided a more supportive home environment for their children than the mothers of the comparison children did.

On the other hand, the intelligence test scores of the mothers of the successful children in terms of behavioral adjustment were not significantly different from that of the comparison children (see Table 16). Significant differences were found between the successful children and the comparison children in their mothers' depression scores. The mothers of the successful children were shown to have lower depression scores than the mothers of the comparison children.

Similar to previous results, in terms of the mothers' level of mastery and religiosity, no significant differences were found between the two groups of children. There were also no significant differences found in regular child care experience during the first three years of the child's life and the neighborhood problem for the two groups.

Table 16

T-test for Differences between the Successful Group and the Comparison Group on the BPI in Other Characteristics

Independent Variables	Mean (SD) Successful Group (N=71)	Comparison Group (N=72)	t-value	df	Prob.
Intelligence (AFQT)	29.6 (23.1)	25.4 (24.2)	1.06	143	.29
Mastery	21.5 (3.0)	21.0 (2.7)	1.20	143	.23
Religiosity	3.4 (1.7)	2.9 (1.6)	1.61	143	.11
CESD	4.5 (4.1)	6.6 (5.3)	-2.70	143	.01**
Child Care Experience	1.0 (1.3)	1.1 (1.2)	-.40	143	.69
Neighborhood Problem	12.6 (3.7)	13.3 (4.3)	-.99	138	.32
HOME (Total)	913.3 (145.8)	865.1 (158.3)	1.91	143	.06
HOME (COG.)	921.6 (145.2)	867.0 (147.9)	2.12	137	.04*
HOME (EMO.)	921.1 (149.7)	903.6 (191.8)	.60	137	.55

*p < .05, **p < .01

The HOME total standard scores and the HOME emotional support standard scores were also not significantly different for the successful children and the comparison children. However, significant differences were found between the successful children and the comparison children in the HOME cognitive stimulation standard scores. The mothers of the successful children were shown to provide a more cognitively stimulating home environment than the mothers of the comparison children.

Structural Equation Modeling of the Conceptual Model for this Study

To test the conceptual model for this study as a whole, a structural equation model with AMOS was used. Only a structural model was tested because a measurement model was not applicable for the data. A model is said to fit the observed data to the extent that the covariance matrix it implies is equivalent to the observed covariance matrix. The overall goodness-of-fit of the present model can be evaluated with the $\chi 2$ test, which is derived directly from the value of the fitting function. In a structural model, $\chi 2$ test is a likelihood ratio statistic for testing a hypothesized model against the alternative model in which the covariance matrix is unconstrained. However, careful inspection should be made because a valid model might be falsely rejected due to the presence of a large sample size. Bagozzi and Yi (1988) strongly argue that the dependence of the $\chi 2$ test on sample size makes contrasting outcomes possible. That is, not only might one falsely reject a valid model because of large sample size, but also one might falsely accept an invalid model when the sample size is too small. The power of $\chi 2$ is a function of sample size and the number of parameters while holding constant the alpha level.

A number of adjunct fit indexes, descriptive indexes of fit that often are intuitively interpreted, have grown due to the growing dissatisfaction with the $\chi 2$ goodness-of fit test. Adjunct fit indexes are not statistics. They are treated as global indexes of model adequacy (Hoyle, 1995). According to Bagozzi and Yi (1988), values of AGFI equal to or greater than about .9 and values of GFI equal to or greater than about .9 suggest that the model is meaningful from a pragmatic

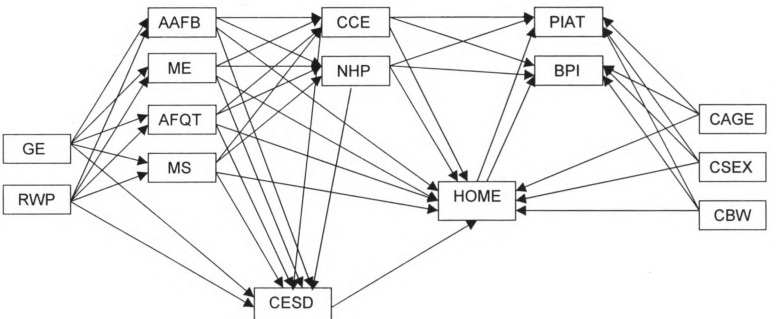
point of view. Joreskog and Sorbom (1988) suggested that in contrast to the $\chi 2$ test, the AGFI is independent of the sample size and relatively robust against departure from the normality assumption. Hoyle (1995) noted that an important distinction between the $\chi 2$ goodness-of-fit test and adjunct fit indexes concerns the magnitude of the value that indicates acceptable fit of a model. In $\chi 2$ test, smaller values indicate better fit. On the other hand, larger values are more desirable in adjunct fit indexes.

Relationships among the variables were examined simultaneously via analysis of covariance. Maximum likelihood (ML) estimation, using the covariance matrix as input data was used to estimate model parameters (Joreskog & Sorbom, 1988).

Figure 6 represents the structural model. When all the relationships among variables were tested (except for ethnicity, religiosity, family structure, marital quality, and employment status – the measurement levels of those variables are not appropriate for the SEM analysis), the statistics of model fit indicated that the model did not fit the data well [GFI = .965; AGFI = .912; RMSEA = .048; $\chi 2$ = 77.173 (df = 47, p = .004)]. Thus, the hypothesized model was rejected by the $\chi 2$ test, and the model failed to fit in an absolute sense. However, the values of GFI and AGFI were greater than .9. A general rule-of-thumb is to accept the hypothesized model if the AGFI index is greater than .9.

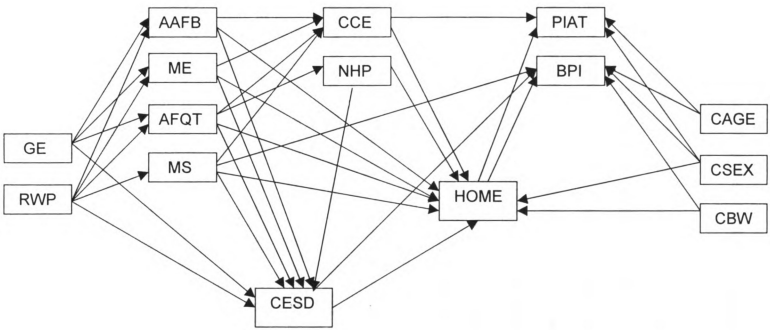
Based on AMOS output, a revised model was tested (Figure 7). The modification indices guide possible changes in model parameters. The revised model was obtained by constraining some of the insignificant paths, critical ratio

Figure 6. The Structural Model



References: GE – Grandmother's education, RWP – Residence with both parents until mother's 18th birthday, AAFB – Age at first birth, ME – Mother's education, AFQT – Mother's intelligent score, MS – Mother's mastery score, CESD – Mother's depression level, CCE – Child care experience during the first 3 years of the child, NHP – Neighborhood problem, HOME – Quality of the home environment, PIAT – Child's reading recognition score, BPI – Child's behavior problem score,

Figure 7. The Revised Structural Model



References: GE – Grandmother's education, RWP – Residence with both parents until mother's 18th birthday, AAFB – Age at first birth, ME – Mother's education, AFQT – Mother's intelligent score, MS – Mother's mastery score, CESD – Mother's depression level, CCE – Child care experience during the first 3 years of the child, NHP – Neighborhood problem, HOME – Quality of the home environment, PIAT – Child's reading recognition score, BPI – Child's behavior problem score, CAGE – Child's age, CSEX – Child's gender, CBW – Child's birth weight

(C.R.) less than ± 1.0 and by adding some of the significant paths, C.R. greater than ± 4.0. As a result, the statistics of the model fit were improved [GFI = .974; RMSEA = .018; $\chi 2$ = 58.683 (df = 54, p = .308)]. Table 17 represents parameter estimates, C.R., and model fits for the structural model and the revised structural model.

The results indicated that the positive effects of grandmother's education on mother's education and the effects of residence with both parents until mother's 18th birthday on mother's age at first birth, mother's education, and mother's intelligence were significant at $p < .05$ level. The results also indicated that mother's education has an effect on child care experience during the first three years of the child's life and that mother's intelligence score has an effect on neighborhood problem. Mother's depression was affected by residence with both parents until her 18th birthday and neighborhood problems.

On the other hand, the quality of the home environment was affected by mother's intelligence, neighborhood problem, child's sex, and child's birth weight. The effects of child care experience during the first three years of the child's life, the quality of the home environment, mother's intelligence, child' age, and child's sex on the child's PIAT reading recognition score were significant. The child's behavior problem was influenced by maternal depression and the child's age.

Although the overall structural model was rejected based on the $\chi 2$ test, other indices supported an adequate level of fit. The revised structural model adequately represented the causal relationships among the variables.

Table 17. Structural Model: Parameter Estimates, Critical Ratios, and Model fits

Parameters	Structural Model		Revised Structural Model	
	ML Estimates	C.R.	ML Estimates	C.R.
GE → AAFB	.06	1.08	.06	1.06
GE → ME	.40	7.39	.39	7.45
GE → AFQT	.42	7.97	.42	7.95
GE → MS	.04	.60		
RWP → AAFB	.26	4.56	.26	4.56
RWP → ME	.17	3.19	.17	3.18
RWP → AFQT	.23	4.33	.23	4.32
RWP → MS	-.06	-1.02	-.06	-1.06
CCE ← AAFB	.07	1.29	.06	1.07
CCE ← ME	.37	5.78	.34	5.99
CCE ← AFQT	-.07	-1.07		
CCE ← MS	.09	1.55	.08	1.45
NHP ← AAFB	-.10	-1.69		
NHP ← ME	.01	.11		
NHP ← AFQT	-.31	-4.93	-.33	-5.90
NHP ← MS	-.06	-1.05		
CESD ← GE	.09	1.30	.09	1.30
CESD ← RWP	-.13	-2.14	-.13	-2.14
CESD ← AAFB	.01	.13	.01	.13
CESD ← ME	-.13	-1.72	-.13	-1.73
CESD ← AFQT	-.07	-.99	-.07	-.99
CESD ← MS	-.11	-1.94	-.11	-1.95
CESD ← CCE	.11	1.71	.11	1.71
CESD ← NHP	.16	2.60	.16	2.62
HOME ← AAFB	.06	1.04	.06	1.05
HOME ← ME	.03	.49	.04	.52
HOME ← AFQT	.26	4.06	.26	4.05
HOME ← MS	.03	.60	.03	.62
HOME ← CCE	-.06	-.92	-.06	-.95
HOME ← NHP	-.13	-2.27	-.13	-2.29
HOME ← CAGE	-.01	-.21		
HOME ← CSEX	.12	2.17	.12	2.16
HOME ← CBW	.20	3.74	.20	3.75
HOME ← CESD	-.05	-.83	-.05	-.80
PIAT ← CCE	.11	2.01	.12	2.17
PIAT ← NHP	-.03	-.57		
PIAT ← HOME	.14	2.45	.15	2.60
PIAT ← CAGE	-.24	-4.43	-.24	-4.42
PIAT ← CSEX	.18	3.26	.18	3.26
PIAT ← CBW	-.00	-.05		

Table 17 (cont'd)

Parameters	Structural Model		Revised Structural Model	
	ML Estimates	C.R.	ML Estimates	C.R.
PIAT ← AFQT			.22	3.81
BPI ← CCE	.03	.45		
BPI ← NHP	.08	1.28		
BPI ← HOME	-.11	-1.83	-.10	-1.68
BPI ← CAGE	.11	1.93	.12	2.05
BPI ← CSEX	-.11	-1.93	-.11	-1.97
BPI ← CBW	-.11	-1.84	-.11	-1.94
BPI ← MS			-.10	-1.80
BPI ← CESD			.17	3.03
$\chi 2$	77.17		58.68	
d.f.	47		54	
p	.004		.308	
GFI	.965		.974	
AGFI	.912		.941	
RMSEA	.048		.018	

Summary of Results

In this section, the results of the study are summarized. The summary is presented in terms of the research hypotheses addressed in the study.

Hypothesis 1: There are relationships between maternal developmental history (grandmother's education, residence with both parents until 18th birthday) and maternal characteristics.

The results presented in the earlier section are consistent with the hypothesis. The level of grandmother's education was positively related to the

mother's education level and maternal intelligence scores (see Table 2). The results also indicated that mothers who lived with both parents until her birthday tended to delay childbearing, have higher education levels and intelligence scores. The maternal developmental history variables were also related to the mother's ethnicity. Most research in this area often disregards the importance of mothers' own raising environments and experiences. The findings of this study suggest that it is crucial to consider the grandparents' generation for the well-being of children in poverty because it influences children's development directly or indirectly.

Hypothesis 2: There are relationships between maternal developmental history (grandmother's education, residence with both parents until 18th birthday) and maternal depression.

Hypothesis 3: There are relationships between maternal characteristics and maternal depression.

Hypothesis 4: There are relationships between contextual factors and maternal depression.

The hypotheses are partially supported by the results presented in the earlier section. One of the maternal developmental history variables, the mother's residence with both parents until 18th birthday, was related to the level of maternal depression (see Table 3). Mothers who lived with both parents until their 18th birthday tended to have lower depression scores. Maternal depression was negatively related to the mother's education level, intelligence score, and mastery score. Also, neighborhood ratings and problems were related to the mother's level of depression. Mothers who rated the neighborhood positively and

reported fewer neighborhood problems tended to have lower levels of depression.

Of all the predictor variables, the residence of the mother with both parents until her 18th birthday, the mother's mastery score, and the neighborhood problem were significant predictors of maternal depression for the overall sample (see Table 7). For the married sample, marital quality was also a predictor of maternal depression, but the neighborhood problem variable was not a significant predictor.

Hypothesis 5: There are relationships between maternal developmental history and the quality of the home environment mothers provide for their children.

Hypothesis 6: There are relationships between maternal characteristics and the quality of the home environment mothers provide for their children.

Hypothesis 7: There are relationships between child characteristics and the quality of the home environment mothers provide for their children.

Hypothesis 8: There are relationships between contextual factors and the quality of the home environment mothers provide for their children.

The hypotheses are partially supported by the results presented earlier. The two maternal developmental history variables were significantly related to the quality of the home environment that mothers provided for their children (see Table 4). The mother's age at first birth, level of education, and level of intelligence were positively related to the quality of the home environment. In addition, mothers who had a spouse or a partner and who were employed provided a more supportive home environment for their children. Ethnicity also

was significantly related to the quality of home environment. As described earlier, it is probably because of the differences of background characteristics between African-American/Hispanic and non-Black/non-Hispanic mothers in this sample (see Table 5 and 6). For this study sample, non-Black/non-Hispanic mothers had more years of education, more educated mothers, and fewer neighborhood problems. Also, a larger percentage of African-American/ Hispanic mothers did not live with both parents until their 18th birthday and was not living with a spouse or a partner. African-American/Hispanic mothers had lower incomes than other mothers in this poverty sample. Only one child characteristic, child's birth weight, was positively related to the quality of the home environment.

Of all the predictor variables, maternal intelligence, presence of a spouse or a partner, and child's birth weight were significant predictors of the home environment (HOME total score) when other factors were controlled (see Table 8). Mothers' levels of education and religiosity were related only to the HOME cognitive stimulation scores of mothers. For the married sample, age at first birth, mothers' level of education, religiosity, marital quality, and number of children were significant predictors of the HOME total scores. It is known that a mother's relationship with her spouse influences the quality of care provided to children (Belsky, 1990).

The findings confirm Belsky's (1997) assertion that maternal behavior is multiply determined; that is, it is unlikely that any single factor in and of itself would determine how parents cared for their children. The result is also consistent with the belief that because the parent-child relationship involves two

parties, attributes of each participating member affect the nature of the interactions that transpire between mother and child (Belsky, 1997).

Hypothesis 9: Mothers who experience lower levels of depression will provide better quality home environments than mothers who experience higher levels of depression.

The results of the zero-order correlations indicated that there was a negative relationship between the mothers' level of depression and the quality of home environment that mothers provided for their children (see Table 4). This result is consistent with the previous study findings that parents who are more psychologically healthy tend to provide care that is more sensitive, responsive and authoritative rather than detached, intrusive or overcontrolling (Vondra & Belsky, 1993; Goodman et al., 1993; Harnish et al., 1995). However, the regression analysis indicated that the level of maternal depression was not a significant predictor of home environment when other variables were statistically controlled (see Table 8).

Hypothesis 10: Children whose mothers provide more supportive home environments will demonstrate higher levels of academic achievement than children whose mothers provide lower quality of home environments.

Hypothesis 11: Children whose mothers provide more supportive home environments will demonstrate lower levels of behavioral adjustment than children whose mothers provide lower quality of home environments.

The data were consistent with these hypotheses. There was a positive relationship between children's reading recognition scores and the quality of the home environment that mothers provided for their children (see Table 9). Also, there was a negative relationship between children's behavior problem scores and the quality of the home environment (see Table 9). Results of the multiple regression analyses showed that children whose mothers provided more cognitively stimulating home environment achieved higher reading recognition scores and that children whose mothers provided more supportive home environments had fewer behavior problems (see Table 10). The findings confirm Belsky's (1997) assertion that affectively negative and unresponsive maternal behavior - that is, generally insensitive care – tends to covary with an assortment of negative developmental outcomes such as behavior problems and academic difficulty.

Hypothesis 12: There are relationships between maternal developmental history and children's levels of academic achievement, when the quality of the home environment is controlled.

Hypothesis 13: There are relationships between maternal characteristics and children's levels of academic achievement, when the quality of the home environment is controlled.

Hypothesis 14: There are relationships between child characteristics and children's levels of academic achievement, when the quality of the home environment is controlled.

Hypothesis 15: There are relationships between contextual factors and children's levels of academic achievement, when the quality of the home environment is controlled.

Hypothesis 12 was not supported by the data. The two maternal developmental history variables were unrelated to the children's reading recognition scores when the quality of the home environment (cognitive stimulation) was controlled (see Table 10). It means that the grandmother's education had an indirect effect on the child's academic achievement because there was a significant positive relationship between the grandmother's education and the child's academic achievement (see Table 9). The other hypotheses were partially supported by the data. Maternal intelligence, regular child care experience during the first three years of the child's life, child's age, and child's sex were significant predictors of the child's reading recognition score when the quality of home environment was controlled. This finding indicated that these four variables had direct and indirect effects on the child's academic achievement. On the other hand, mother's age at first birth, mother's education, ethnicity, number of children, and neighborhood problems had only indirect influence on the child's academic achievement via the home environment that the mother provided for her child (see Table 9 and 10).

Hypothesis 16: There are relationships between maternal developmental history and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Hypothesis 17: There are relationships between maternal characteristics and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Hypothesis 18: There are relationships between child characteristics and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Hypothesis 19: There are relationships between contextual factors and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Hypothesis 16 and hypothesis 18 were not supported by the data. The two maternal developmental history variables and the three child characteristic variables were unrelated to the children's behavior problem scores when the quality of the home environment was controlled (see Table 10). The finding indicates that the mother's mastery score and the three child characteristics did not have direct effects on the child's behavior problem. Hypothesis 17 and 19 were partially supported by the data. The results showed that the presence of a spouse or a partner, and the number of children were significant predictors of the child's behavioral adjustment when the quality of the home environment was statistically controlled.

Hypothesis 20: There is a relationship between maternal depression level and children's levels of academic achievement, when the quality of the home environment is controlled.

Hypothesis 21: There is a relationship between maternal depression level and children's levels of behavioral adjustment, when the quality of the home environment is controlled.

Although Hypothesis 21 was supported by the data, Hypothesis 20 was not supported by the data. The results showed that maternal depression was a significant predictor only for the child's behavioral adjustment not for the child's academic achievement (see Table 10). The results of this study indicated that

maternal psychological well-being had a direct and an indirect influence on the child's behavioral adjustment (see Table 9 and 10). Although Coiro's study (1997) showed that mothers' depression scores predicted more behavior problems and lower school readiness, her study also indicated that depressive symptoms were much more strongly related to behavior problems than to school readiness. According to Coiro (1997), parenting that is more supportive and stimulating partially mediates the association between mothers' depressive symptoms and children's behavior problems. The result of this study supports this finding.

Hypothesis 22: There is a difference between the most successful low-income children (scoring in the top quartile for the sample on PIAT reading recognition and scoring in the bottom quartile for the sample on BPI) and the least successful low-income children (scoring in the bottom quartile for the sample on PIAT reading recognition and scoring in the top quartile for the sample on BPI) in child characteristics.

Hypothesis 23: There is a difference between the most successful low-income children and the least successful low-income children in maternal developmental history, characteristics, and behavior.

Hypothesis 24: There is a difference between the most successful low-income children and the least successful low-income children in contextual factors.

For the child's academic achievement (PIAT), there were significant differences between the most successful low-income children and the least successful low-income children in terms of child's age, child' sex, grandmother's education level, ethnicity, maternal intelligence score, and the quality of home environment (see Table 11, 12, and 15). On the other hand, for the child's behavioral adjustment (BPI), child's birth weight, maternal depression, and the

cognitively stimulating home environment for the child were significantly different between the most successful low-income children and the least successful low-income children (see Table 13, 14, and 16). The results are consistent with the previous study finding that the most successful and the least successful children from low-income families received very different caregiving and lived in different contexts (Luster et al., 2000).

Chapter 5

SUMMARY, CONCLUSIONS, LIMITATIONS, IMPLICATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

This chapter presents a summary of the study, conclusions, limitations, implications, and suggestions for future research.

Summary of the Study

The major purposes of this study were to investigate some predictors of maternal psychological well-being and the quality of home environment that mothers provide for their children, to identify factors that predict individual differences in academic and behavioral adjustments of 5 to 8 year-old children from low-income families, and to examine a conceptual model of predictors of maternal behavior and the adjustment of children from low-income families using the NLSY data. In this section, the purposes and findings of this study pertaining to the objectives of the study are summarized.

Objective 1

The first objective was to determine what maternal characteristics and contextual factors are associated with maternal psychological well-being. Results of the study show that for the overall sample, the mother's residence with parents until her 18th birthday, mastery, and neighborhood problems were predictive of her psychological well-being. In other words, mothers who lived

with both parents until their 18th birthday and mothers with higher mastery scores showed higher levels of psychological well-being. The results indicated that mothers who reported fewer neighborhood problems showed higher level of psychological well-being.

For the sample of those who were married, their response to questions about marital quality was one of the significant predictors of maternal psychological well-being. That is, mothers with better marital quality showed higher psychological well-being. Again, mothers who lived with both parents until their 18th birthday and mothers with higher mastery scores showed higher psychological well-being for the married group. The relationships were stronger than those of the overall sample.

Objective 2

The second objective was to determine what child characteristics, maternal characteristics, and contextual factors are associated with quality of the home environment. The results of the analysis indicated that mothers' higher levels of intelligence, the presence of a spouse or partner living in the home, fewer children, and heavier birth weight children were predictive of higher HOME (Home Observation for Measurement of the Environment) scores in the overall sample.

Objective 3

The third objective was to determine if maternal psychological well-being is related to the quality of the home environment that mothers provide. The result showed a positive relationship between maternal psychological well-being

and the quality of the home environment mothers provide. In other words, mothers with higher levels of psychological well-being tended to provide more supportive home environments for their children. However, maternal psychological well-being was not a significant predictor of the quality of the home environment mothers provide according to the regression analyses.

Objective 4

The fourth objective of this study was to determine if the quality of the home environment is related to children's academic and behavioral adjustment. The result of the analyses showed that there were relationships between the quality of the home environment and children's academic achievement and behavioral adjustment. Children whose mothers provided a more supportive home environment had higher reading recognition scores and lower behavioral problem scores.

Objective 5

The fifth objective was to determine the relationships between the predictor variables (child characteristics, maternal characteristics, contextual factors, and maternal psychological well-being) and children's academic and behavioral adjustment, when the quality of the home environment is statistically controlled. For the children's reading recognition scores, mothers' intelligence scores, regular child care experience during the first three years of the children's lives, child's age and sex were significant predictors. In other words, children who had mothers with higher intelligence scores and children who had more years of regular child care experience during the first three years of their lives

showed higher reading recognition scores when the quality of the home environment was statistically controlled. Younger children and girls showed higher reading recognition scores. Maternal psychological well-being, the presence of a spouse or a partner, and the number of children in the household were significant predictors of the children's behavior problems when the quality of the home environment was statistically controlled. Children who have psychologically healthy mothers and more siblings showed fewer behavior problems. Contrary to most research, children who lived with their mothers' spouse or partner showed more behavior problems. Probably the spouse or partner was not a supportive figure for the child in this sample. However, as described earlier in the result section, the child living with his or her father was not significantly related to child's behavior problems. One finding of this study indicated that children who have mothers with better marital quality showed fewer behavior problems.

Objective 6

The final objective of this study was to identify what factors contribute to successful outcomes, in terms of academic achievement and behavioral adjustment of young children from low-income families. According to the result of the analyses, academically successful children were relatively young and female. Academically successful children had grandmothers who were more educated and had mothers with higher intelligence scores. Their mothers also provided a more supportive home environment. The result also indicated that a larger percentage of non-Black/non-Hispanic children was academically successful as

compared to African-American/Hispanic children. As described in the earlier chapter, the two groups of this study sample showed significantly different background characteristics. In this study sample, African-American/Hispanic mothers had lower levels of education and their own mothers also had fewer years of education. A larger percentage of African-American/Hispanic mothers did not live with both parents until their 18th birthday and were not living with a spouse or a partner than other mothers. These differences must be taken into consideration as to why a larger percentage of African-American/Hispanic children were in the group of academically least successful children.

Successful children in terms of behavioral adjustment tended to have heavier birth weight, less depressed mothers, and a more cognitively stimulating home environment. There was no significant difference between the most successful and the least successful children in terms of behavioral adjustment on ethnicity. Ethnicity was not a significant predictor of maternal psychological well-being and the quality of the home environment.

Conclusions

Findings from this study are consistent with Bronfenbrenner's ecological model of human development. Bronfenbrenner (1979) emphasizes the importance of the family and other microsystems as the context in which the child develops. The child develops in relationships within various kinds of environments. For example, findings of this study confirm that the child's family,

neighborhood, as well as child care setting influence the developmental outcomes of the child.

The proposed model (see Figure 5) was tested partially and wholly by the analyses of selected NLSY data. Although it was difficult to draw latent variables from the data by grouping with limited variables, the proposed model was meaningful according to SEM analyses (see Figure 6). In addition, the revised structural model adequately represented the causal relationships among the variables (see Figure 7). This study extends a theoretical model in which multiple factors influence the adjustments of the children from low-income families. The findings of this study extend previous research on relationships among family factors, maternal well-being, maternal parenting behavior, and the development of young children by examining the effects of relatively wide range of predictors on relationships between maternal well-being and maternal parenting behavior, and their direct effects on the adjustments of children in poverty.

One of the major findings of this study is that there was a positive effect of the grandmother's education on the mother's education, and the residence with both parents until the mother's 18th birthday was positively related to the mother's age at first birth, the mother's education and intelligence. The findings suggest that the grandmother's education and the mother's own family experience have indirect influences on the developmental outcomes of the child. According to the results of this study, the mother's age at first birth, the mother's education and intelligence were positively related to the quality of the home environment that the mother provided for her child. Also it was found that the mother's age at first

birth, the mother's education, the mother's intelligence, and the quality of the home environment were positively related to the child's academic achievement, and the quality of the home environment was negatively related to the child's behavior problem.

The findings of this study also confirm the importance of early intervention programs like regular child care for a favorable outcome of children from low-income families. The results indicated that regular child care experience during the first three years of the child's life had positive influence on the child's academic achievement. Previous studies indicate that enhancing the cognitive and social competence in children and changing patterns of interactions in the family through early intervention programs can have long-term cumulative protective effects, resulting in prevention of antisocial behavior and delinquency (Yoshikawa, 1994; Zigler et al., 1992). Therefore, it is very important to provide quality and affordable child care programs for promoting healthy development of low-income children.

Another major finding of this study is that maternal psychological well-being was affected by the mother's residence with both parents until her 18th birthday and by her perception of neighborhood problems. It shows how important the mother's own family experience was for her well-being. In addition, it shows that it is imperative to consider the neighborhood environment for the mother's well-being and the healthy development of low-income children. The neighborhood environment also had an influence on the quality of the home environment that mothers provided for their children. The results of this study

are consistent with previous research findings about the neighborhood environment. That is, the neighborhood environment influences the development of the child directly and indirectly (Chase-Lansdale et al., 1997).

Results from this study were also consistent with the assumption that parental behavior influences child development. Children who achieved higher scores on the academic achievement measures had mothers who provided more cognitively stimulating home environments. Also, children who had fewer behavioral problems had mothers who provided more supportive home environments. It is known that the combination of warm and structured child-rearing practices in parents with reasonably high expectations for the competence of their children is strongly tied to success in multiple domains and resilience among children at risk (Masten & Coatsworth, 1998).

The results of this study support Belsky's (1984) assertion that the quality of the home environment mothers provide for their children is influenced by multiple factors, such as child characteristics, maternal characteristics, and contextual factors. In this study, the mother's intelligence, the mother's age at first birth, the mother's education, the mother's religiosity, the presence of a spouse or a partner, the mother's marital quality, the number of children in the household, and child's birth weight were the predictors of the quality of the home environment that mothers provided for their children.

Although maternal psychological well-being was not a significant predictor of the quality of the home environment mothers provide, the present study showed the direct effect of maternal psychological well-being on the child's

behavioral adjustment. The result is somewhat supported by the findings of Coiro's study (1997) that mothers' depression scores predicted more behavior problems and lower school readiness, and depressive symptoms were much more strongly related to behavior problems than to school readiness.

For the overall study sample, the family factors that significantly related to the academically successful children were the grandmother's education, the mother's intelligence, and the quality of the home environment. Maternal psychological well-being and the quality of the home environment were the family factors that made a difference between the most successful and the least successful children in terms of the behavioral adjustment. Additional analyses indicated that children who had more regular child care experience as well as a supportive home environment were academically successful, and children who had mothers with higher mastery scores and lower depression scores were successful in terms of behavioral adjustment among the children from single parent families. For the African-American/Hispanic sub-sample, the academically successful children had mothers with higher ages at the start of first pregnancy in addition to the three variables (grandmother's education, mother's intelligence, the quality of the home environment). Children with the mothers who had a higher level of psychological well-being showed significantly lower behavior problems in this sample. The results are consistent with of the previous research findings on the characteristics of resilient children (Garmezy, 1991; Werner, 1992).

Limitations

Although the proposed model adequately represented the causal relationships among the variables, several other variables that would have been useful to test a more complete model were not available in the NLSY data set. For example, there was no data on social support networks for the mothers. In addition, variables of child characteristics were limited. Despite the range of variables included this study, additional measures of contextual factors would have strengthened the study further. The effects of school environments, peer relationships, and sibling interactions on the development of the children were not examined in this study.

Since the short-form of the HOME Inventory was used in this study instead of the complete version, the relations between the predictor variables and the quality of the home environment mothers provided may have been attenuated. Likewise, the relationship between the HOME and the child outcomes may have been underestimated.

Although this study included only poor (incomes below poverty line) and near poor children (incomes between 100% and 185% of the poverty line), it was difficult to exclude the income effect in this group. Even though the family income was not a significant predictor of the quality of the home environment and children's adjustments, there was a positive relationship between family income and the quality of home environment, and there was a negative relationship between the family income and the maternal depression within this poverty

sample. It was impossible to completely exclude the income effect on other variables in this study.

In this study, maternal psychological well-being was measured only by the maternal depression score (CESD). Although maternal depression is one of the representative components of maternal psychological well-being, including other variables such as maternal happiness or satisfaction with her life would be helpful for more understanding of maternal psychological well-being. If it were possible to get more integrative measures of maternal psychological well-being, the relationships between maternal psychological well-being and other variables would be more clearly explained.

Only maternal variables were used in this study. Examining paternal variables, such as father's characteristics, paternal psychological well-being, and the father's relationship with his child would enhance the understanding of the developmental outcomes of children.

Implications

The results of this study confirm the findings of previous studies that parenting behavior is multiply determined and parenting behavior is related to children's outcomes. The findings imply that it is important to take an ecological perspective in working with families. That is, one should consider parents' developmental histories and characteristics of parents, the child, and the context for making a difference in the child's developmental outcomes. This approach

will be effective for changing parenting behavior and improving family functioning. In addition, the family systems perspective, which complements the ecological approach, views the family as an organized system composed of interdependent relationships or subsystems (Chase-Lansdale et al., 1992). Roles in these subsystems such as parental, sibling, spousal, and extra familial change over time and with different circumstances. Adoption of the basic tenets of the ecological and family systems perspectives is crucial to an understanding of how best to intervene to promote the optimal development of children.

Several findings of this study suggest implications for child and family policy for low-income families. The result of this study indicated that child care experience during the first three years of the child's life had a positive effect on the academic achievement of poor child. Data showed that child care, especially in the early years of life, is very important for enhancing the healthy development of the poor child. Child and family policy makers should pay attention to the findings and ensure that poor children have an opportunity to get child care experience. Through quality child care, children are exposed in supportive environments, and parents of the children may get some useful information about parenting and educating their children.

The findings of this study also indicated that multigenerational programs are needed for the optimal development of children in poverty. Not only maternal characteristics influenced the adjustment of the children, but also grandmothers' characteristics such as education level had an indirect effect on the adjustment of the children. Programs that only focus on the children may not be effective since

it has been argued that disadvantaged children and families need a more intensive and encompassing treatment. There is a need for programs that aim to increase the participation of mothers and children in early childhood education, parenting education, adult education, and job training. Furthermore, services which broadly focus on the family as a whole, rather than just on mothers or just on children will be more effective. It may be more effective if the services for families begin as early as possible in the life of the child.

This study also indicated that it is important to support parents not only physically but also psychologically for the healthy development of the children. In this study, several predictors of maternal psychological well-being were found. Parent educators and service providers should keep in mind the research findings so that they may support the low-income families more effectively.

In addition, one should not disregard the effects of the neighborhood environment on the development of children. The result of this study indicated that the development of children is indirectly influenced by the neighborhood environment. Serious neighborhood problems are associated with maternal depression and maternal depression has a negative influence on parenting behavior and the child's developmental outcome. Therefore, it is important to make some plans for improving the neighborhood environment for the optimal development of the poor child.

It is evident that parents should use their influence to initiate educational activities in the household and regularly monitor the young child's use of time and space for the sake of the child's healthy development. It is also important that

parents clearly define and fully accept their responsibilities for parenting. That is parents should be a provider, a teacher, a guide, and a role model for their children.

Basically, the economic problems must be solved through the opportunity structure of larger society. The problems of the low-income families, even those fostering children's developmental outcomes, are not simply a consequence of family members' behavior. Limited access to needed resources plays a considerable part (Clark, 1983).

Suggestions for Future Research

Much of the previous research on children living in poverty has focused on identifying the negative consequences of poverty on children and finding risk factors of poor children and their families. Researchers have tended to overlook the positive aspects of family life among low-income families. However, recently many researchers have become aware of the importance of studying why many poor children are successful in school and are well adjusted. If we learn what makes the children different from other poor children, it would be beneficial for not only poor children and their families, but also intervention program providers and policy makers.

More research is needed to fully understand what factors influence the psychological well-being of low-income parents and how the parental psychological well-being is related to the quality of the home environment

parents provide for their children, and the developmental outcomes of the children. Other predictor variables such as a social support network, parents' expectations and aspirations for the child, levels of tension or cohesion in the family, housing quality, and parents' health status need to be investigated.

The effect of parental religiosity on the parental psychological well-being and on the parental behavior is also meaningful to study although the present study could not investigate these relationships in depth because of the lack of the information on religiosity. In addition, it is important to examine the relationships between other family members such as fathers, siblings, grandparents and the child. It will be interesting to study whether those relationships influence the developmental outcomes of the child.

Garmezy (1991) categorized possibly effective variables in dealing with stressful life situations into three parts: individual, family, and social support factors. Individual factors such as child's temperament, personality, intelligence, physical distinctiveness, self-regulation, and gender have not been examined very well.

Many studies have focused on identifying risk and protective factors implicated in poor children's academic achievement and behavioral adjustment. While it is important to identify those factors, it is more important to understand how risk and protective factors affect children's developmental outcomes. Good empirical research is needed to document the specific effects of particular family interaction processes such as sibling recreational interaction or the pedagogic

effects of specific television and radio programming on children's academic achievement and behavioral adjustment.

One interesting variable is the parental role model, that is, whether children select one of their parents as their most influential role model. This variable is valuable to study more because it may provide children's own overall appreciation on their parents' characters, behaviors, and values. This factor is different from variables such as parental education, occupation, or home environment which is prejudged by other people's standards and values. It is also valuable to investigate whether children meet a supportive mentor during his or her life. The supportive mentor can be not only their mother or father but also a teacher, a friend, a pastor, a grandmother, a grandfather, a relative, or a service provider. One continuously supportive figure in someone's life may have the great power to change his/her life or to help him/her overcoming his obstacles.

Future studies may focus on examining the effect of different cultures and ethnicities to find some differences and similarities on parenting behavior, parental belief system, and developmental outcomes of the child. It may be meaningful to investigate unique child rearing systems of different cultures and the contribution of them on the child's developmental outcomes. Increased knowledge of the home functioning patterns in different ethnic communities will enhance the prospect of developing appropriate family and child policies.

Researchers should avoid their biased understanding of the target population if they want to produce true knowledge for serving the target

population. Researchers often misjudge other people's world according to their preoccupied norms or standards. There might be a gap between researchers and subjects in perceiving or interpreting the same life situation. Researchers should put their efforts on understanding a target population's own perceptions of risk and protective factors. One possible solution for this task is using a qualitative research method such as a case study or a focus group. Sound qualitative studies on the issue can provide proper directions for quantitative studies.

More conceptual or theoretical models that explain normative child development in the context of poverty are needed to guide research on individual differences in achievement and adjustment of children from low-income families. Also, there is a need for developing relatively limited conceptual models that fit into specific research areas such as a particular ethnic group, an adolescent mother group, or familial factors as mediators of links between poverty and children's developmental outcomes.

Many studies have examined the effects of home environment on the developmental outcomes of children from low-income families. However, future research should focus on investigating the effects of the quality of the home environment according to children's ages. There might be a different amount of influence of the home environment on poor children's outcomes with different ages of children. Longitudinal studies on this topic will be beneficial for examining the developmental pathways of the child. The NLSY data set provides

an opportunity to study the changes on maternal parenting behavior, child's outcome, and the family's living environments.

Less work has been conducted on the effects of extra-familial or community-level forces on the development of poor children. A growing body of research indicates that living in disorganized, socially isolated (few adults who are employed, a large number of single mothers, and few opportunities for work), and resource-poor neighborhoods may have negative influences on children and their parents.

It may not be possible to find all the factors that make individual differences among poor children and to identify the processes underlying between these factors and children's outcomes; the children are different from birth and they live in diverse and complex environments. However, researchers should continuously put their efforts toward identifying developmental pathways of poor children for increasing opportunities to better their lives.

APPENDIX A

APPENDIX A

A Measure of the Marital Quality

R49580. Frequency R & Husband/Partner Calmly Discuss Something
(Hand Card) How often do you and your (husband/partner) calmly discuss something...Almost every day, once or twice a week, once or twice a month or less than once a month?
1 Less than once a month
2 Once or twice a month
3 Once or twice a week
4 Almost every day

R49581. Frequency R & Husband/Laugh Together
(Hand Card) How often do you and your (husband/partner) laugh together something...Almost every day, once or twice a week, once or twice a month or less than once a month?
1 Less than once a month
2 Once or twice a month
3 Once or twice a week
4 Almost every day

R49582. Frequency R & Husband/Partner Tell Each Other About Day
(Hand Card) How often do you and your (husband/partner) tell each other about your day...Almost every day, once or twice a week, once or twice a month or less than once a month?
1 Less than once a month
2 Once or twice a month
3 Once or twice a week
4 Almost every day

R49583. Frequency R & Husband/Partner Argue About-Chores & Responsibilities
(Hand Card) How frequently do you and your (husband/partner) have arguments about chores and responsibilities...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

R49584. Frequency R & Husband/Partner Argue About-Children
(Hand Card) How frequently do you and your (husband/partner) have arguments about your children...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes

3 Hardly ever
4 Never

R49585. Frequency R & Husband/Partner Argue About-Money
(Hand Card) How frequently do you and your (husband/partner) have arguments about money...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

R49586. Frequency R & Husband/Partner Argue About-Showing Affection
(Hand Card) How frequently do you and your (husband/partner) have arguments about showing affection to each other...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

R49587. Frequency R & Husband/Partner Argue About-Religion
(Hand Card) How frequently do you and your (husband/partner) have arguments about religion...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

R49588. Frequency R & Husband/Partner Argue About-Leisure Time
(Hand Card) How frequently do you and your (husband/partner) have arguments about leisure or free time...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

R49589. Frequency R & Husband/Partner Argue About-Drinking
(Hand Card) How frequently do you and your (husband/partner) have arguments about drinking...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

R49590. Frequency R & Husband/Partner Argue About-Other Women
(Hand Card) How frequently do you and your (husband/partner) have arguments about other women...often, sometimes, hardly ever, or never?

1 Often
2 Sometimes
3 Hardly ever
4 Never

R49591. Frequency R & Husband/Partner Argue About-His Relatives
(Hand Card) How frequently do you and your (husband/partner) have arguments about his relatives...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

R49592. Frequency R & Husband/Partner Argue About-Your Relatives
(Hand Card) How frequently do you and your (husband/partner) have arguments about your relatives...often, sometimes, hardly ever, or never?
1 Often
2 Sometimes
3 Hardly ever
4 Never

APPENDIX B

APPENDIX B

A Measure of Maternal Psychological Well-Being

A short form of the Center for Epidemiologic Studies Depression (CESD) scale was used for the 1994 interview.

(Hand Card) Now I am going to read a list of the ways that you might have felt or behaves recently. After each statement, please tell me how often you felt this way during the past week.

R49783. CESD – Poor Appetite
(Hand Card) During the past week...I did not feel like eating; My appetite was poor.
(Interviewer: If necessary, remind Respondent:) Please tell me how often you felt this way during the past week.
0 Rarely/None of the Time/1Day
1 Some/A Little of the Time/1-2 Days
2 Occasionally/Moderate Amount of the Time/3-4 Days
3 Most/All of the Time/5-7 Days

R49784. CESD – Trouble Keeping Mind on Tasks
(Hand Card) During the past week...I had trouble keeping my mind on what I was doing.
(Interviewer: If necessary, remind Respondent:) Please tell me how often you felt this way during the past week.
0 Rarely/None of the Time/1Day
1 Some/A Little of the Time/1-2 Days
2 Occasionally/Moderate Amount of the Time/3-4 Days
3 Most/All of the Time/5-7 Days

R49785. CESD – Depressed
(Hand Card) During the past week...I felt depressed.
(Interviewer: If necessary, remind Respondent:) Please tell me how often you felt this way during the past week.
0 Rarely/None of the Time/1Day
1 Some/A Little of the Time/1-2 Days
2 Occasionally/Moderate Amount of the Time/3-4 Days
3 Most/All of the Time/5-7 Days

R49786. CESD – Everything Took Extra Effort
(Hand Card) During the past week...I felt that everything I did was an effort.
(Interviewer: If necessary, remind Respondent:) Please tell me how often you felt this way during the past week.

0 Rarely/None of the Time/1Day
1 Some/A Little of the Time/1-2 Days
2 Occasionally/Moderate Amount of the Time/3-4 Days
3 Most/All of the Time/5-7 Days

R49787. CESD – Restless Sleep
(Hand Card) During the past week...My sleep was restless.
(Interviewer: If necessary, remind Respondent:) Please tell me how often you felt this way during the past week.
0 Rarely/None of the Time/1Day
1 Some/A Little of the Time/1-2 Days
2 Occasionally/Moderate Amount of the Time/3-4 Days
3 Most/All of the Time/5-7 Days

R49788. CESD – Sad
(Hand Card) During the past week...I felt sad.
(Interviewer: If necessary, remind Respondent:) Please tell me how often you felt this way during the past week.
0 Rarely/None of the Time/1Day
1 Some/A Little of the Time/1-2 Days
2 Occasionally/Moderate Amount of the Time/3-4 Days
3 Most/All of the Time/5-7 Days

R49789. CESD – Could Not Get Going
(Hand Card) During the past week...I could not get "going".
(Interviewer: If necessary, remind Respondent:) Please tell me how often you felt this way during the past week.
0 Rarely/None of the Time/1Day
1 Some/A Little of the Time/1-2 Days
2 Occasionally/Moderate Amount of the Time/3-4 Days
3 Most/All of the Time/5-7 Days

APPENDIX C

APPENDIX C

Measures of the Home Environment

The number of the home environment items correspond to the number of the items in the original measures, as presented in the 1984 Home Observation Measurement of the Environment (HOME) manual. Items marked with an asterisk were items that were not included on the original versions of the HOME but were added to the Home Observation Measurement of the Environment-Short Form (HOME-SF) for the National Longitudinal Survey of Youth. The subscales which the items were taken are included.

HOME-SF (Preschool)

Learning Stimulation
3. Child has record player and at least five children's records.
7. Child has at least 10 children's books.
10. Family subscribes to at least one magazine.
11. Child is encouraged to learn shapes.

Language Stimulation
13. Child is encouraged to learn the alphabet.
17. Parent's voice conveys positive feeling to child.
18. Child is permitted choice in breakfast or lunch menu.

Physical Environment
20. Play environment appears safe. (This item combines 19 and 20 from original HOME: Building appears safe (19), and outside play environment appears safe (20).)
21. Interior of apartment is not dark or perceptually monotonous.
25. House is reasonably clean. (in the original HOME the item is: House is reasonably clean and minimally cluttered. This item was divided into two items for the HOME-SF.)

Warmth and Acceptance
27. Parent converses with child at least twice during visit.
28. Parent answers child's questions or requests verbally.
31. Parent caresses, kisses, or cuddles child during visit.

Academic Stimulation
32. Child is encouraged to learn colors.
36. Child is encouraged to learn numbers.

Modeling
39. TV is used judiciously.
40. Parent introduces visitor to child.
41. Child can hit parent without harsh reprisal.

Variety in Experience
44. Child is taken on outing by family member at least every other week.
45. Child has been taken to a museum during past year.
50. Child eats at least one meal per day with mother and father.

Acceptance
53. Parent does not use physical restraint during visit.
54. Parent neither slaps nor spanks child during visit.
55. No more than one instance of physical punishment during past week.

* About how often do you read stories to your child? (This item was developed by the National Institute of Child Health and Human Development for inclusion in the HOME-SF).
* All rooms in the house are reasonably free of clutter (see number 25).

HOME-SF (Elementary School)

Emotional and Verbal Responsivity
5. Parent encourages child to contribute to the conversation during visit.
7. Parent responds to child's questions during interview.
9. Parent's voice conveys positive feelings about child.

Encouragement of Maturity
11. Family requires child to carry out certain selfcare routines, e.g., makes beds, cleans rooms, cleans up after spill, bathes self.
12. Family requires child to keep living and play area reasonably clean and straight.
15. Parent introduces interviewer to child.

Emotional Climate
19. Mother reports no more than one instance of physical punishment occurred during past week ("past month" in the original version of the HOME).
20. Child can express negative feelings toward parent without harsh reprisals.
23. Parent talks to child during visit (beyond correction and introduction).

Growth Fostering Materials and Experiences
27. Child has free access to musical instrument (piano, drum, ukulele, or guitar, etc.)
29. Child has free access to at least ten appropriate books.
30. Parent buys and reads a newspaper daily.

Provision for Active Stimulation

35. Family encourages child to develop and sustain hobbies.
37. Family provides lessons or organizational membership to support child's talents (especially Y membership, gymnastic lessons, art center, etc.)
40. Family member has taken child, or arranged for child to go to a scientific, historical or art museum within the past year.

Family Participation in Developmentally Stimulating Experiences

42. Family visits or receives visits form relatives or friends at least once every other week.
44. Family member has taken child, or arranged for child to attend some type of live musical or theatre performance.
46. Parents discuss television programs with child.

Parental Involvement

48. Father (or father substitute) regularly engages in outdoor recreation with child.
49. Child eats and spends some time with father or father figure, 4 days a week.
50. Child eats at least one meal per day, on most days, with mother and father (or mother and father figures).

Aspects of the Physical Environment

53. The interior of the apartment is not dark or perceptually monotonous.
55. All visible rooms of the house are reasonably clean. (In the original HOME, the item is: All visible rooms in the house are reasonably clean and minimally cluttered. This item was divided into two items for the HOME-SF).
58. Building has no potentially dangerous structural or health defects (e.g., plaster coming down from ceiling, stairways with boards missing, rodents, etc.).

* About how often do you read stories to your child? (This item and the next item were developed by the National Institute of Child Health and Human Development for inclusion in the HOME-SF).
* About how often does your child read for enjoyment?
* All visible rooms in the house are minimally cluttered (see item 55).

APPENDIX D

APPENDIX D

A Measure of the Neighborhood Environment

Neighborhood Rating

R49598. R's Rating of Neighborhood for Raising Children
How would you rate your neighborhood as a place to raise children? Would tou say it is excellent, very good, good, fair, or poor?
1 Poor
2 Fair
3 Good
4 Very Good
5 Excellent

Neighborhood Problems

I am going to read a list of problems that neighborhoods sometimes have. For each one please tell me if it is a big problem in your won neighborhood, somewhat of a problem or not a problem at all.

R49600. Neighborhood Problems – People Don't Respect Rules and Laws Enough
(Hand Card)...People don't have enough respect for rules and laws.
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem
3 Big problem

R49601. Neighborhood Problems – Crime and Violence
(Hand Card)...Crime and violence
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem
3 Big problem

R49602. Neighborhood Problems – Abandoned or Run-Down Buildings
(Hand Card)...Abandoned or run-down buildings
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem

3 Big problem

R49603. Neighborhood Problems – Not Enough Police Protection
(Hand Card)...Not enough police protection.
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem
3 Big problem

R49604. Neighborhood Problems – Not Enough Public Transportation
(Hand Card)...Not enough public transportation
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem
3 Big problem

R49605. Neighborhood Problems – Too Many Parents Who Don't Supervise Their Children
(Hand Card)...Too many parents who don't supervise their children.
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem
3 Big problem

R49606. Neighborhood Problems – People Keep to Themselves, Don't Care About Neighborhood
(Hand Card)...People keep to themselves and don't care what goes on in the neighborhood.
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem
3 Big problem

R49607. Neighborhood Problems – Lots of People Who Can't Find Jobs
(Hand Card)...Lots of people who can't find jobs.
(Interviewer: If necessary remind respondent:) Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?
1 Not a problem
2 Somewhat of a problem
3 Big problem

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