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Linking Characteristics of the Adolescent Mothers to the Context in which Parenting Occurs: A Study on Adolescent Mothers and Their School-aged Children of the National Longitudinal Survey of Youth

presented by

Seungwon Chung

has been accepted towards fulfillment of the requirements for

Ph.D degree in Family and Child Ecology

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### LINKING CHARACTERISTICS OF THE ADOLESCENT MOTHERS TO THE CONTEXT IN WHICH PARENTING OCCURS:A STUDY ON ADOLESCENT MOTHERS AND THEIR SCHOOL-AGED CHILDREN OF THE NATIONAL LONGITUDINAL SURVEY OF YOUTH

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Ву

Seungwon Chung

### A DISSERTATION

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Family and Child Ecology

1995

### ABSTRACT

### LINKING CHARACTERISTICS OF THE ADOLESCENT MOTHERS TO THE CONTEXT IN WHICH PARENTING OCCURS: A STUDY ON ADOLESCENT MOTHERS AND THEIR SCHOOL-AGED CHILDREN OF THE NATIONAL LONGITUDINAL SURVEY OF YOUTH

Ву

### Seungwon Chung

The primary purpose of the present study was to identify factors that may influence the quality of care adolescent mothers provide for their children. The factors related to the children's cognitive and behavioral outcomes were also examined. The analysis in this study was based on 566 children (341 African-American, 225 Caucasian), who were 10 to 17 years-old, from the National Longitudinal Survey of Youth (NLSY) merged mother-child data set.

Results showed that maternal characteristics at the beginning of the study influenced the life-course of the mother, and contexts in which the children were reared, namely, marital relationships, level of family income, and number of children in the household. Both maternal characteristics and contextual factors influenced the mothers' caregiving practices, and ultimately the developmental outcomes of their children. Based on regression analysis, mothers who had higher levels of intelligence and self-esteem provided better quality home environments. Children who had higher scores in two PIAT reading measures tended to come from more supportive home environments and had mothers who were more intelligent. Copyright by SEUNGWON CHUNG 1995

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vi

### TABLE OF CONTENTS

Page

CHAPTER I - INTRODUCTION	1
Purpose of the Study	3
Rationale for the Present Study	5
Conceptual Model	8
Conceptual and Operational Definitions	14
Assumptions	16

# CHAPTER II - REVIEW OF LITERATURE

Effect of the Maternal Characteristics and	
Contextual Factors on the Achievement and	
Adjustment of Children Born to Teenage Mothers	17
Combined Influence of Maternal and Contextual	
Factors on Maternal Behavior	25
Effect of Maternal Behavior on Children's	
Achievement	31

### CHAPTER III - METHODOLOGY

Research	Design	•••••	 • • • • • • • • • • • • • • • •	39
Research	Hypotheses	•••••	 •••••	40
Research	Questions	• • • • • •	 	43

Sample Selection	43
Sample Characteristics	46
Measures	48
Data Analyses	53

# CHAPTER IV - RESULTS

Ethnic Group Differences 56
Differences in Maternal and Contextual Factors 57 Differences in HOME and Children's Outcomes 60
Relations among the Predictor Variables
Correlates of Maternal and Contextual Factors to the
Quality of Home Environments
Multiple Predictors of the Quality of
Home Environment 69
Correlations between Maternal and Contextual Factors
and the Children's Outcomes
Multiple Predictors of the Children's Outcomes 76
Home Environment and Maternal Intelligence as
Predictors of Children's Academic Achievement 81
Paths of Influence 84
Summary of Results 88

## CHAPTER V - DISCUSSIONS AND IMPLICATIONS

Factors Related to Individual Differences in	
Children's Outcomes	104
The Relation between the Home Environment and	
Children's Outcomes	107
Implications	109
Limitations	112
Suggestions for Future Research	114
APPENDIX A - Measures of Home Environment	116
Behavior Problem Index	118
Peabody Individual Achievement Test	125
APPENDIX B - Tables	137
BIBLIOGRAPHY	142

# LIST OF TABLES

Tables	Page
1. Sample Descriptions	46
2. ANOVAS for Differences between African-Am	merican
and Caucasian Subsamples in Predictor Var	Siables 57
3. Chi-square Analyses for Differences betwee African-American and Caucasian Subsamples	en 5 58
4. ANOVAS for Differences between African-Am	merican
and Caucasian Subsamples in HOME Scores a	and
Children's Outcomes	60
5. Relations among the Predictor variables f	for
Overall Sample	63
6. Relations among the Predictor variables f	cor
African-American Subsample	64
7. Relations among the Predictor variables f	for
Caucasian Subsample	65
8. Zero-Order Correlations: The Relations be	etween
the Predictor Variables and the Quality o	of the
Home Environment	67
9. Multiple Regression Analyses: Predictors	of the
Quality of the Home Environment (HOME 199	90) 70
10. Relations between the Predictor Variables Children's Outcomes	and the 73
11. Multiple Regression Analyses: Predictors Children's Outcomes	of the 77
12. Multiple Regression Analyses: The Quality	v of
Home Environment and Maternal Intelligenc	ce as
Predictors of Children's Achievement	83
13. Multiple Regression Analyses: Predictors	of the
Quality of the Home Environment (HOME 199	90 -

	Unstandardized Betas)	137
14.	Zero-Order Correlations: The Relations between the Predictor Variables and the Quality of the Home Environment (HOME 1986)	138
15.	Zero-Order Correlations: The Relations between the Predictor Variables and the Quality of the Home Environment (HOME 1988)	138
16.	Multiple Regression Analyses: Predictors of the Quality of the Home Environment (HOME 1986)	139
17.	Multiple Regression Analyses: Predictors of the Quality of the Home Environment (HOME 1988)	140
18.	Multiple Regression Analyses: Predictors of the Children's Outcomes (Unstandardized Betas)	141

# LIST OF FIGURES

Figure	Page
1. Conceptual Model	8
2. Path Model for African-American Subsample	86
3. Path Model for Caucasian Subsample	87
4. Conceptual Model Revisited	99

### CHAPTER I

#### INTRODUCTION

During the last several decades, a considerable amount of attention has been focused on the issue of adolescent pregnancy and its consequences for the children born to these mothers. An abundance of recent literature, mainly focused on infants, has pointed to the deleterious effects for adolescent mothers (mothers who began childbearing during their teenage years are referred to as "adolescent mothers" or "teenage mothers" regardless of their current age, hereafter) and their children. Investigations into the reasons for poor outcomes in these children have led to ideas about the factors that might be responsible, but they do not deeply explore the nature of the relationships among these factors.

Though the empirical base is limited, several studies have suggested that school-aged children of adolescents exhibit more behavioral problems and score lower on intellectual tests than school-aged children of older mothers (Dubow & Luster, 1990; Furstenberg, Brooks-Gunn, & Morgan, 1987). However, it is not clear why these children

have more developmental problems. Whether the antecedents of these children's behavioral and cognitive problems lie in the mother-child interaction, the absence of a father figure, socioeconomic disadvantage, the lack of support system, or all of these variables is yet undetermined.

Several studies have looked at the characteristics of the person at time 1 and examined how these are related to the context in which the parent-child relationship occurs at time 2 (Caspi, Elder, and Bem, 1987, 1988; Polansky, Gaudin, Ammons and Davis, 1985). In these studies, it is clear that differences in the mothers' characteristics ("who they are"), contribute to vastly different childrearing environments, which in turn, influence children's behavior. In other words, characteristics of the person influence parenting indirectly, through the context in which parenting occurs, as well as directly (Luster and Okagaki, 1993).

As the evidence on this issue continues to accumulate due to the availability of more and more longitudinal data, it becomes clear that more information is needed on what factors account for parenting behavior and child outcomes. This research will help us to better understand the relationships between the characteristics of mothers and their parenting behavior, and the combined influence of maternal characteristics and contextual factors on the developmental outcomes of their children.

### Purpose of the Study

The primary purpose of this study is to identify factors that may influence the quality of care adolescent mothers provide for their children, 10-years-old and older. The study also focuses on how characteristics of the mother in 1979-1980 (maternal intelligence, self-esteem, delinquency, and age at first birth) affect characteristics of the mother (maternal self-esteem and level of education) and characteristics of the context (marital relationship, number of children, and level of income) in 1987-1990. Moreover, the study also examines how these maternal characteristics and contextual factors relate to the children's outcomes (in 1990) when the quality of home environment is controlled. The child outcomes of interest are cognitive competence and behavioral adjustment.

The reasons for focusing only on mothers are: first, the availability of maternal variables in the NLSY data set; second, studies have shown that mothers, rather than fathers, on average have more influence on children's development (Bigner, 1989).

An impressive body of work has been generated which addresses the issue of what accounts for individual differences in parenting behavior. However, Luster and Okagaki (1993) write in their review article on multiple influences on parenting:

To understand who the parent is today, we have to look at who the parent was, where the parent was, and what the parent was doing in the years prior to parenthood (p.30).

The present study considers maternal characteristics as a part of the history of the mother that she brings to the situation, and examines the relationship between maternal characteristics and the contexts in which parenting occurs.

This study will examine the possibility that five maternal characteristics assessed at the beginning of the study are predictive of the context in which parenting The four maternal characteristics occurs ten years later. are: intelligence, self-esteem, delinguency, and age at first birth. It seems reasonable that these characteristics may influence the life-course of the mother, and thus, the circumstances in which the children are reared. For example, maternal intelligence may influence level of education attained, and thus whether or not the mother and her children are living in poverty. Other maternal characteristics, such as age at first birth, could influence marital status, fertility patterns, and level of income. Both maternal characteristics and contextual factors, such as poverty, are likely to influence the mothers' caregiving practices, and ultimately the developmental outcomes of their children.

The research objectives of this study are to: 1. Examine which maternal characteristics predict the

quality of the home environment mothers provide.

2. Examine which contextual factors predict the quality of the home environment mothers provide.

3. Determine if the same factors predict the quality of home environment provided by African-American and Caucasian mothers.

4. Determine if maternal characteristics in 1979-1980 are related to the context in which parenting occurs in 1990. 5. Determine if a variety of maternal characteristics and contextual factors are related to the children's outcomes, when the quality of the home environment is statistically controlled.

6. Determine if the same factors predict the children's outcomes of two ethnic groups.

7. Determine if the quality of the home environment is predictive of children's academic achievement when maternal intelligence is statistically controlled.

### Rationale for the Present Study

The research design applied to this study is a multivariate model that permit analysis of maternal and contextual characteristics that may be associated with the quality of home environment and children's developmental outcomes at the same time. A review of the literature shows that studies investigating the factors that contribute to

variation within the quality of care adolescent mothers provide for their children, and the relation between home environment and child development in the same study, are scarce. Most studies have either focused on factors affecting adolescent mothers' parenting behavior or the effects of their parenting behavior on child outcome.

The present study also is different from earlier studies in that it uses a large and longitudinal data set, whereas most previous studies have utilized small samples and cross-sectional data. This study is based on a secondary analysis of the data from the National Longitudinal Survey of Youth (NLSY). These comprehensive, longitudinal data provide an opportunity for this study to incorporate both initial characteristics and experiences of mothers and their children's current cognitive and behavioral outcomes in the conceptual model. These longitudinal data also permit the researcher to examine the quality of the home environments at three points in time. This study should contribute to a more integrated and comprehensive understanding of the life-course of adolescent mothers and their children.

Although recent studies have examined factors affecting adolescents' parenting behavior, most studies have dealt with infants born to adolescent mothers. However, this study is distinctive in that it looks at school-aged children. This enables the researcher to examine the long-

term effects of differences among teenage parents. This study also attempts to investigate the unexplored connections among the mothers' delinquency in their teens (age 14-21 in 1979), the quality of home environment mothers provide, and eventually the cognitive and behavioral outcomes of their children.

#### Conceptual Model

The conceptual model guiding this research was influenced by Belsky's (1984) work on the determinants of parenting, and by research on the life-course of mothers by Caspi, Elder, and Bem (1987; 1988) and Furstenberg et al. (1987). The conceptual model for this study is illustrated in Figure 1.

This conceptual model contains maternal characteristics and contextual factors which are two of the important factors in determining parenting behavior, according to Belsky. The maternal characteristics that were included in the conceptual model are maternal intelligence, self-esteem, age at first birth, and delinguency.

As shown in the conceptual model, maternal characteristics are likely to have a direct effect on the quality of the home environment. In addition, maternal characteristics are expected to have an indirect effect on caregiving, by influencing the broader social context in



Figure 1. Conceptual Model

which the mother-child relationship exists, namely marital relationships, level of family income, and number of children in the household. For example, maternal intelligence may affect how mothers interact with their children on a daily basis, but it may also influence level of income, which in turn, influences quality of the home environment. Maternal self-esteem may influence parenting behavior directly, and it may also influence parenting indirectly if self-esteem influences marital quality, or level of education obtained. Past research has examined how the context in which parenting occurs influences caregiving practices, but typically, earlier studies have not attempted to study how characteristics of parents assessed at earlier points in time may influence the context in which parentchild transactions occur. This study attempts to understand how characteristics of the mothers influence their lifecourse trajectories, and how the life-course of the mothers influences the experiences and opportunities of their children. Do characteristics of the mother assessed in 1979-1980 help us to understand the circumstances of the mothers and their children in 1990?

Although the proposed conceptual model has not been tested in previous studies, earlier research has provided support for many of the paths in the model, or have suggested that such relationships may exist. Illustrative studies that provide support for these paths are noted

briefly below.

Maternal intelligence has been found to be related to the quality of care mothers provide for their children and to children's IQ level (Longstreth, Davis, Carter, Flint, Owen, Richert, and Taylor, 1981; Scarr, 1985). In another study, Hannan and Luster (1991) argued for the importance of parents' intelligence in providing a supportive environment for their children.

Studies of general population samples are in agreement in that high maternal self-esteem is associated with positive maternal behavior and favorable child outcomes (Ricks, 1985; Small, 1988). Several studies also found that maternal age at first birth was related to the quality of the home environment. Luster and Rhoades (1989) also have demonstrated that teenage mothers provide less supportive care for their infants than mature mothers, when quality of care is assessed with the HOME inventory. However, a thorough review of studies about adolescent mothers concludes as follows: " ... Poor social-economic status, family support systems, marital stability, nutrition, and prenatal care may be far more important determinants of development for these children than the age of their mothers" (Roosa, Fitzgerald, and Carlson, 1982, p.15).

The effect of the mothers' delinquent behavior in their teens is expected to relate to their children's behavioral outcome. Mothers who themselves were delinquent might be

assumed to hold somewhat more permissive attitudes, which in turn might contribute to their children's antisocial behavior. Although research has seldom focused on the effect of maternal delinquency on their children's outcome, the results of Martin and Burchinal's study (1992) is consistent with the anticipated findings of the present study. Martin and Burchinal found an association between the severity of women's antisocial behavior in their teen years and the severity of their children's emotional and behavioral problems. Although causal relations could not be determined, Martin and Burchinal concluded that the effects of parents' delinquency were transmitted through their social ecology, such as their family dysfunction and undesirable community/neighbors.

Martin and Burchinal's study is one of few studies to consider a mother's previous delinquency as a possible predictor of parenting behavior. However, they did not test this hypothesis. Thus, the analysis of relation between maternal delinquency and parenting behavior is exploratory to determine whether these variables are related to each other.

Researchers consistently have found that level of education completed by parents had a positive effect on the children's academic competence (Bradley and Caldwell, 1984; Menaghan and Parcel, 1991). However, level of education is confounded with maternal intelligence, and seldom have both

variables been utilized in the same study.

The contextual factors that were examined in this conceptual model include marital relationships, family income, and number of children. Earlier studies have shown that marital status of the mother per se, when viewed as an isolated predictor after SES and race were controlled, was not related to either the child's social adjustment or intellectual functioning (Barocas, Seifer, and Sameroff, 1985). However, characteristics of the context, such as the quality of the marital relationship, influence the parents' psychological well-being and their parental behavior (Belsky, 1984; Emery and Tuer, 1993). These studies suggested that marital discord may place parents at risk for negative interactions with children. These interactions may further place the children at risk for poor adjustment.

Level of family income or poverty status was found to be a significant predictor of the quality of care adolescent mothers provide for their children (Hannan and Luster, 1991; Luster and Dubow, 1990). Poverty is likely to influence parenting by affecting the parents' level of psychological well-being and availability of resources.

In examining the relationship between the number of children and home environment, studies typically find a significant correlation. The presence of a greater number of children in the family is associated with a less supportive home environment (Blake, 1989; Luster and Dubow,

1990).

As indicated earlier, the factors that influence the children's outcomes also are of interest in this study. One factor that is likely to contribute to individual differences among children is the quality of the home environment in which they are reared. Some factors that may influence the child indirectly, via the home environment, also may have a direct effect on child outcomes (or at least one that is not mediated by home environment). For example, poverty may affect children's experiences in the home, but it may also affect children's experiences in the schools and the neighborhood. Number of children may affect aspects of experience tapped by the HOME inventory, but may also influence children's experience in ways not captured by the HOME.

Similarly, maternal characteristics may have an effect on child outcomes that are not mediated by HOME environment. An obvious example is maternal intelligence. Maternal intelligence is likely to influence caregiving, but it is also likely to be related to children's cognitive competence because the mothers and children are genetically related. Likewise, mothers with a history of delinquency may have children who display similar behavior due to experience (e.g., home environment, marital quality), or because of shared genes, if an antisocial disposition is a heritable trait.

One of the difficulties of this study is that none of these predictor variables occur in isolation. Rather, they are intertwined, so that it is difficult to disentangle the separate effects of these variables.

### Conceptual and Operational Definitions

The following section will provide definitions of the major variables used in this study. Operational definitions will follow the conceptual definitions. In this study, the adolescent mother is conceptually defined as a women who was less than 20 years of age at the time of the birth of the first child. The dependent variables are the children's cognitive competence and behavioral adjustment. The predictor variables are maternal intelligence, maternal self-esteem, maternal age at first birth, maternal delinquency, quality of the marital relationship, level of family income, number of children, and level of education. Home environment is viewed as a mediating variable that is influenced by maternal characteristics and the context, and in turn, influences child outcomes.

MATERNAL INTELLIGENCE: Conceptually this is defined as the ability to learn and understand or to deal with new situations. Maternal intelligence was measured by the Armed Forces Qualification Test (AFQT). This test was administered to all the mothers in the 1980 phase of the study (U.S. Department of Defense).

MATERNAL SELF-ESTEEM: Conceptually this is defined as one's perception of self-worth or value. The mother's level of self-esteem is scored on Rosenberg's 10-item self-esteem scale (Rosenberg, 1965), administered in 1980 and 1987.

MATERNAL DELINQUENCY: Conceptually this is defined as mothers' violation of the law or social norms while still a minor. Operationally, this refers to mother's self-reports of delinquency from the 1980 survey. This is a self report measure of the mother's participation in any delinquent activities such as skipping school or running away from home (17 questions) during the previous 12 month period.

MARITAL RELATIONSHIP: Conceptually this is defined as the quality of relationship between couples. This was measured by 13 questions in three areas: global happiness with marriage (1 item), communication between spouses (3 items), and marital discord (9 items).

MATERNAL BEHAVIOR: This is defined as the quality of the childrearing environment provided by the mother for her child. Operationally, mothers were interviewed and observed to complete the Home Observation for Measurement of the Environment - Short Form (HOME-SF; see Appendix A) (Baker and Mott, 1989).

CHILDREN'S ACADEMIC COMPETENCE: Conceptually this is the ability to perform at a specified level on intellectual skills such as reasoning, problem solving, and recalling. It was measured through 3 different subscales of the Peabody Individual Achievement Test (PIAT; see Appendix A): Mathematics Assessment, the PIAT Reading Recognition, and the PIAT Reading Comprehension (Dunn and Markwardt, 1970).

CHILDREN'S BEHAVIORAL PROBLEMS: Conceptually this is the ability or the lack of ability to function in various roles as designated and/or expected by a given society. It was assessed through the mother's responses to the statements in the Behavior Problem Index (BPI; see Appendix A) in 1990 (Peterson and Zill, 1986). Based on maternal responses, behavioral problems such as antisocial, anxious/depressed, headstrong, hyperactive, immature dependency, and peer conflict/social withdrawal were defined. In the present study, the BPI total standard score and the antisocial subscale standard score are used.

### ASSUMPTIONS

The assumptions underlying this conceptual model are: 1. No single factor identified here uniquely enhances or limits children's cognitive and behavioral outcomes. 2. From the ecological perspective, the individual's development is embedded in a social context.

#### CHAPTER II

### **REVIEW OF LITERATURE**

### 1. EFFECT OF THE MATERNAL CHARACTERISTICS AND CONTEXTUAL FACTORS ON THE ACHIEVEMENT AND ADJUSTMENT OF CHILDREN BORN TO TEENAGE MOTHERS

The first section of the literature review will focus on the studies that determine the relations between the various predictor variables (maternal and contextual factors) and children's achievement and adjustment level.

Over the years, numerous studies continue to document the link between teenage parenthood and the outcomes of their children. In all the studies, maternal characteristics, especially maternal age at first birth, were most commonly focused on as predictor variables. Baldwin and Cain (1980), in their review article on children of teenage parents, reported on Sheppard Kellam's longitudinal study of 1,242 children and their families in a low-income, urban, black community (Kellam, 1978, cited in Baldwin and Cain, 1980). Kellam found that children who were born to mothers 17 years old or younger were less likely to adapt to school, as rated by their first grade teachers, than were children born to older mothers.

Measures were taken 10 years later with the same group

Mother's age at first birth was not found to of children. have a direct effect on the 16-year-old children's psychiatric symptoms rating. However, failure to adapt to school at age six was strongly related to more intense psychiatric symptoms as a teenager. The psychiatric symptoms at 16 years were associated with first-grade adaptation problems, and this association was particularly strong for boys. The researcher suggested that adolescent childbearing affected the child's teenage emotional adjustment indirectly through its effect on early adaptation to school. According to their findings, the negative effect of having an adolescent mother was offset by the presence of either a father or a grandmother in addition to the mother in the household.

Although this study has strengths related to the large sample and longitudinal research design, the conclusions drawn from this study seem to suffer from a number of weaknesses. Foremost among the weaknesses is the sample. The subjects were mainly low-SES blacks residing in an urban area. Maternal age at first birth might be confounded with other factors such as SES, ethnicity, and residence, and therefore it is difficult to assess the contribution of maternal age only to the outcome.

Davis and Grossbard (1980) examined the relationship between a mother's age and a child's intellectual and school performance, using a subsample from the Health Examination

Surveys (HES) Cycle II data. The HES data were collected at 40 locations across the United States on the physical and psychological characteristics of the civilian noninstitutionalized population. Cycle I, an initial wave of the project, examined adults. Cycle II included data on 7,119 children between the ages of 6 and 11 during 1964-1965.

A subsample of 1,750, 10 and 11-year-old children were all from intact families. Children's intellectual development was measured by the vocabulary and Block Design subsets of the WISC, and school performance was measured by grade repetition and reading scores. Davis and Grossbard (1980) reported that children's IQ scores declined by approximately one point for every year of schooling that their mother did not complete. Within the group of children born to teenage mothers, financially disadvantaged children did significantly poorer in school, as measured by grade repetition and reading scores, than those more financially These findings were supported by Maracek (1979), secure. who also found that among the children of adolescent mothers, every additional year of mother's education retained in grade by almost 50 percent. Similarly, Kinard and Reinherz (1984) found that mother's education was the major factor affecting children's achievement scores, with substantial and consistent differences on almost every measure favoring children of more educated mothers.

Taking into account the weakness of simple approaches in comparing adolescent and older mothers in terms of age at first birth, Furstenberg, Brooks-Gunn, and Morgan (1987) considered various factors associated with adolescent parenthood in the Baltimore study. In a 17-year study of Black teenage mothers and their children, they examined possible negative outcomes associated with teenage parenthood at three different stages: infancy, preschool, and high school years. At the 17-year follow-up, interviews were conducted with the adolescents, their parents (or parent surrogates), and their teachers to collect information on the adolescents' social and psychological adjustment, school performance, sexual and fertility experience.

In attempting to interconnect the mothers' life course and their children's developmental trajectories over the 17 years, this follow-up study revealed that the children of the women in the Baltimore sample generally had average scores on an achievement and aptitude test when they were evaluated as four- and five-year-olds; however, these children experienced "massive school failure" by age 16. Half of the sample had repeated at least one grade during K-12, whereas only 17% of the children of late child-bearers (20 & over) in the 1981 National Survey of Children (NSC) had repeated one grade. The children of the Baltimore study group also experienced higher rates of school-related

behavioral problems, such as receiving a note from the school about a behavior problem (56%) or being suspended or expelled from school (49%), compared with late child-bearers sampled in the NSC (15% and 19% respectively, according to parental report).

The Baltimore study also showed that the 16-year-old children of adolescent mothers tended to exhibit higher levels of juvenile delinquency and antisocial behavior --for example, running away from home, stealing, being stopped by police, and feeling in need of emotional, mental, or behavioral help --- than children of late child-bearers in the NSC. This association was generally weak and was less significant than findings for educational achievement, yet maternal age seemed to influence social-emotional development indirectly through unstable family structure and low socioeconomic status.

As another indication of misbehavior, substance abuse, also occurred frequently in the adolescents of the Baltimore study group. Fifty percent of 15-to 16-year-olds born to teen mothers said they had drunk alcohol, 44% had smoked marijuana, and 4% had tried other drugs.

Strengthening the notion that the factors affecting children of teenage mothers include a variety of interconnected forces, Dubow and Luster (1990) observed findings consistent with those of Furstenberg and his colleagues. Using data from a subset of the merged mother-
child data set of the National Longitudinal Survey of Youth (NLSY), they examined the association between teenage mothers' personal and family characteristics and the social and academic adjustment of school-aged children born to them. The investigators focused on 721 children aged 8-15 who were born to teenage mothers.

Seven factors which were expected to place children at risk of behavioral or academic problems were: absence of a father or father figure at home, crowdedness (4 or more children living in the home), urban residence, poverty level income, maternal education of less than 12 years, a mother who was younger than 17 when the first child was born, and low maternal self-esteem.

Dubow and Luster found that three\_of these risk factors were significantly related to an increased risk of behavioral and academic problems: poverty, low maternal self-esteem, and a mother younger than 17 at first child's birth. When multiple regression analysis was performed, poverty and low maternal self-esteem emerged as being associated with an increased risk of behavioral problems, whereas urban residence was associated with low mathematics scores and poor reading recognition and comprehension.

An important finding of this study was that as the number of risk factors increased, the child's risk of having academic and behavior problems also increased. However, these children appear to overcome the risks if they have

specific protective factors: above average intelligence, high self-esteem, emotionally supportive home environments, and cognitive stimulation in the home. An average or better than average intelligence score (PPVT IQ) protected at-risk children from academic difficulties, but not from behavioral problems. High self-esteem appeared to prevent antisocial behavior as well as academic problems. Among children who had been exposed to at least one risk factor, high emotional support, indicated by favorable scores on the HOME inventory (Home Observation for Measurement of the Environment, Caldwell and Bradley, 1984), was associated with fewer behavior problems. For academic outcomes, both emotional support and cognitive stimulation were associated with fewer difficulties.

The researchers pointed out that there may have been other variables influencing the outcome, which could not be examined with the data available, such as the quality of the schools and the children's involvement with other supportive adults or peers. They also indicated that efforts to enhance the educational and employment prospects of teenage mothers, and the self-esteem of the mothers and their children, may reduce the negative effects of adolescent childbearing.

Dubow and Luster's study is significant in terms of considering the effect of child characteristics (verbal intelligence and self-esteem) and contextual factors

(emotional support and cognitive stimulation at home) as well as maternal characteristics. From this study we know which factors put children of adolescent mothers at risk, yet we still do not know which risk factors are impinging on children the most. What remains to be addressed is the relative contribution made by each of these factors.

A study of NLSY women and children by Martin and Burchinal (1992) provided further evidence for the influence of maternal characteristics on children's outcome. The study determined if women's antisocial behaviors are related to the later emotional and behavioral health of the their children. A total of 1425 NLSY young women and their firstborn children were involved in this study. The results of a multiple regression showed that the mother's severity of non-drug offenses was significantly related to the children's problem behavior (measured by Behavioral Problem Index scale). However, interestingly, neither the children's BPI Total Problem nor any subscale scores were associated with the mothers' severity of drug offenses.

Martin and Burchinal (1992) pointed out two limitations of the study: the relatively small size of the drug offenses group, and possible biases of self-report data. They also argued that causal relations cannot be determined from this study. However, they proposed that the effects of mothers' early antisocial behavior on children's problem behavior are likely to be indirect, via the parents' social ecology such

as family dysfunction and undesirable community or neighborhoods.

# 2. COMBINED INFLUENCE OF MATERNAL AND CONTEXTUAL FACTORS ON MATERNAL BEHAVIOR

This second section of the literature review will focus mainly on the relation between predictor variables and maternal behavior. As Luster and Okagaki (1993) write, it is necessary to look at the relation between characteristics of the parent and characteristics of the context over time to enhance our understanding of parenting behavior at the present time.

A study of younger children by Coll, Hoffman, and Oh (1987) provided evidence for the combined influence of maternal and contextual factors on maternal behavior. A total of 50 primiparous, Caucasian mothers (25 adolescent and 25 non-adolescent mothers) and their 4-month-old infants were involved in the study. The results showed that adolescent mothers provided less optimal home environments than non-adolescent mothers.

According to the results of a Multivariate Analysis of Variance (MANOVA), adolescent mothers spent less time in positive verbal interactions with their infants after controlling for SES. Adolescent mothers also were found to be less responsive, showed less involvement with their infants, and had significantly lower total HOME scores.

In an attempt to find multiple influences on the quality of care adolescent mothers provided for their children, Luster and Dubow (1990) sought to distinguish between adolescents who provided high quality home environments for their school-aged children and those who did not. Utilizing data from the National Longitudinal Survey of Youth (NLSY), they focused on 898 mothers from three ethnic groups (356 African-Americans, 391 Caucasians, and 151 Hispanics). The possible influences included (a)maternal characteristics, (b)current SES, (c)SES of the family of origin, and (d)current household composition.

Luster and Dubow's results showed that current poverty status was a significant predictor of the quality of the home environment the mothers provided. The presence of spouse or a male partner in the home and grandfather's education were positively correlated with the quality of the home environment the mothers provided for their children. Number of children in the home was negatively related to the measure of home environment. The age of the mother at child's birth was related to home environment when other factors were controlled, but the direct effect was modest. Maternal self-esteem also was predictive of the outcome when other factors were controlled.

Surprisingly, the presence of a grandmother in the home y was not a strong predictor. Yet, because the children were of school age, these results make sense. Stronger effects

may have been expected if the children were infants or toddlers. Moreover, teen mothers who maintain a long-term, dependent relationship on their mothers may differ from other teens on a number of dimensions.

One unique aspect of this study was that the researchers did separate analysis for blacks, whites, and Hispanics to see whether a variable would predict the quality of the home environment for one group and not the other, or have a greater influence for one group than the other. For instance, grandfather's education appeared to be more strongly related to HOME scores for Hispanics than for the other groups. There could have been greater variability in this group on that particular item, which might have contributed to the magnitude of the correlation. Thus, it appears that not all of the factors examined are equally important for all groups. The authors explain that this analysis is exploratory in nature and should be viewed cautiously.

It appears then that adolescent mothers differ in the quality of home environment they provide for their school aged children. Living in poverty seems to stand out as an important predictor of home environment, as does maternal self-esteem. A corresponding study of school-aged children who live in varying home environments could explore whether the quality of the home environment predicts favorable outcome in achievement and adjustment, and also, which other

variables are related to individual difference among the children.

Hannan and Luster's (1991) study on 602 NLSY mothers and their infants was consistent with Belsky's concept of multiple determinants of parenting. In the multiple regression analyses, six factors were significantly related to the quality of the home environment. They were two maternal characteristics (level of intelligence and age at first birth), three contextual factors (presence of spouse or partner, number of children, and family income), and a child characteristic (infant temperament). The investigators concluded that maternal characteristics, contextual factors, and child characteristics all contributed to the quality of the home environment mothers provided for their infants.

Menaghan and Parcel (1991) investigated if working conditions, current family circumstances, and maternal and child characteristics are related to the home environments that working mothers provided for their young children. The sample for the study consisted of 795 employed mothers with their three to six-year-old children from the NLSY 1986 Mother-Child Supplement.

The researchers found that mothers who worked in more complex occupational conditions and who had higher wage levels had higher scores on the NLSY-HOME measure. Of the family variables, a greater number of children in the family

was negatively related to the home environments mothers provide for their children. However, the presence of a spouse and higher spousal earnings were positively associated with home environments.

In examining the relationship between maternal characteristics and home environment scores, Menaghan and Parcel found that mothers with higher self-esteem scores, higher internal locus of control, and higher intelligence scores provided more supportive home environments for their children. In addition, mothers who were older in age and had more schooling provided a higher quality home environment.

Menaghan and Parcel argued that all of the maternal working conditions, current family characteristics, and maternal and child characteristics are the determinants of the home environment mothers created for their children. However, the researchers suggested that of all the predictors, maternal characteristics (age, education, selfesteem, ethnicity, and locus of control) were the most grucial.

In the very well-known study that focused upon the implications of parental characteristics for the context in which the parent-child relationship develops, Caspi, Elder, and Bem (1987) utilized data from the Berkeley Guidance Study (Macfarlane, Allen, and Honzik, 1954). They identified children with a pattern of temper tantrums in

late childhood and traced the continuities and consequences of this behavioral style across the subsequent 30 years of their lives.

The results of a path analysis showed an indirect link between a history of child-tantrums, erratic work life, and inadequate parenting. The early tendency toward explosive, undercontrolled behavior was evoked in new roles and settings, such as the work-place and parenting situations. Children with a stable pattern of temper tantrums in late childhood experienced difficulties across many life tasks. As adults, women with a history of childhood tantrums became ill-tempered mothers as well. These women were perceived by both their husbands and their children as less adequate and more ill-tempered mothers than women with no history of childhood tantrums.

In a parallel study (Caspi, Elder, and Bem, 1988), Caspi and his colleagues identified individuals who were shy and reserved in late childhood and traced the continuities and consequences of this behavioral style across the subsequent 30 years of their lives. Men with childhood histories of shyness were more likely than their peers to delay entry into marriage, parenthood, and stable careers. Shy men who delayed entry into a stable career were at risk for marital instability. In contrast to the men, women characterized by shyness in childhood were more likely than their peers to follow a conventional pattern of marriage,

childbearing, and homemaking.

In these two studies by Caspi and his colleagues, evidence indicates that personality characteristics in childhood are predictive of parents' educational attainment, occupational prestige, marital quality, and the timing of family formation.

# 3. THE EFFECT OF MATERNAL BEHAVIOR ON CHILDREN'S ACHIEVEMENT

In an early study, Wolf (1966) attempted to associate home conditions with children's intellectual development. He created the Home Environment Interview, consisting of 63 questions. Wolf reported significant correlations between Home Environment scores and child IQ (.69) and with achievement test scores (.80). With these high correlations, Wolf concluded that, " A measure of what parents do in the home can be used to predict school achievement with a fairly high degree of accuracy" (p.498).

Over the years there have been efforts made to develop other measures of children's home environments (Bradley and Caldwell, 1978). Bradley and Caldwell devised a measure of the overall quality of the home environment parents provide for their children, called the Home Observation for Measurement of the Environment (HOME).

Elardo, Bradley, and Caldwell (1975) administered this HOME inventory to 77 poor, working-class families when their

children were 6-month-olds and 24-month-olds. Then, children's IQs were tested when they were 36-month-olds and 54-month-olds. The study found positive relations between 6 and 24 months HOME scores and 54 months Binet IQ scores.

In keeping with earlier observations of the role of home environment, Bradley and Caldwell (1984) also found strong positive correlation between children's early HOME scores and their later intellectual and academic performance scores. All 37 families were administered the HOME inventory infant version when their children were 12 and 24months-old. When these children became 3 years old, the Early Childhood version was administered. To assess children's academic competence, the MDI (from the Bayley Scales of Infant Development) at age 1, the Stanford-Binet Intelligence Test at age 3, and the Science Research Associates achievement battery in first grade were used.

Bradley and Caldwell found that the "maternal responsivity" subscale was less strongly related to achievement test scores than it was to IQ scores. However, the "variety of stimulation" subscale was strongly related to achievement scores. The researchers concluded that as children develop, different subscales of the HOME inventory showed a stronger relation to cognitive competence. For example, as children grow, their cognitive development is more strongly related to providing "varied materials and experiences" or "encouraging achievement" than "parental

responsivity".

Bradley and his associates (1988) developed a new version of the HOME inventory for families with children ages 6 to 10. The investigators gathered evidence suggesting that the Elementary version of the HOME may function in much the same manner as the Infant and the Early Childhood versions. Analyses showed low to moderate correlations between Elementary HOME scores and sociodemographic measures, similar to those found for the Infant and Early Childhood versions of the HOME. Children's achievement scores, measured by the SRA (Science Research Associates) achievement battery, were modestly correlated with Elementary HOME scores (.3 to .4). These coefficients were somewhat lower than those obtained between the Infant HOME or the Early Childhood HOME and children's IQ scores, but still indicate a significant relationship.

More recently, findings by Bradley and his associates (1989) parallel previous evidence on the effect of the home environment on child's IQ. In their study, they assessed the HOME of 931 children and families in North America. The sample, which came from six cities in North America, consisted of 497 Caucasians, 161 African-Americans, 262 Mexican Americans, and 11 other. The quality of the home environment was assessed with Caldwell and Bradley's HOME Inventory. The cognitive development of the children was assessed with the Bayley Scales of Infant Development and

the Stanford-Binet.

This collaborative study found that among the three ethnic samples, HOME scores for Caucasians were most highly correlated with the cognitive measures. The investigators also found that children's cognitive development was more strongly related to specific aspects of the home environment such as parental emotional and verbal responsivity, and parental acceptance of, and involvement with the child, than non-specific measures of the environmental quality such as SES indices.

Overall, several studies (Bradley and Caldwell, 1984; Bradley, Caldwell, Rock, Barnard, Gray, Hammond, Mitchell, Siegel, Ramey, Gottfried, and Johnson, 1989; Bradley, Caldwell, Rock, Hamrick, and Harris, 1988; Elardo, Bradley and Caldwell, 1975) indicated that the HOME inventory is a useful measure for assessing the home environments of children and further predicting their IQ and subsequent academic achievement.

The importance of aspects of the home environment on cognitive development also was studied by Sigman and her associates (1988). A total of 110 Embu toddlers in Kenya (52 boys and 58 girls) between the ages of 15 and 30 months were involved in the study. The overall findings from this study showed that children who were raised in an environment where responsivity to vocalizations, frequency of talking, and engagement in social interactions were high, had higher

scores on a revised version of the Bayley Mental Scale than children who had been less engaged in verbal and social interaction.

With the notion that measuring only home environment to determine its influence on child IQ and other achievement scores is oversimplified, Longstreth et al. (1981) attempted to measure the separate influences of maternal intelligence and home environment on the child's IQ while partialling out the influence of the confounding variable. The 80 families participating in this study were diverse in their ethnicity, but many of them (68%) were Caucasian. They also were educationally and intellectually above average. Parental intelligence and child's IQ were assessed by Raven's Standard Progressive Matrices (RPM), which tests nonverbal, spatial reasoning, and the Peabody Pictured Vocabulary Test (PPVT). Home environment was assessed through Wolf's Home Environment Interview with the mother.

Maternal IQ (average) correlated .45 with child IQ (average). The total Home Environment ratings correlated .32 with child IQ. Using hierarchical regressions, the relative contributions of maternal IQ and home environment to child IQ were estimated. The results showed that the relation between home environment and child IQ was nonsignificant when the effect of maternal IQ was removed. On the other hand, maternal IQ remained a significant predictor of the child's IQ when the effects of the home

environment was statistically controlled. Drawing from their findings, Longstreth and his associates argued for the relative importance of genetic factors in determining children's intelligence rather than environmental factors.

In an attempt to replicate and extend Longstreth et al.'s research (1981), Yeates et al. (1983) adopted a longitudinal design and studied 46 black children at risk for sociocultural mental retardation from birth to 4 years of age. Maternal IQs were measured by the WAIS even before their children were born. Children were tested with the Bayley Scales of Infant Development at 6 and 18 months of age, and with the Stanford-Binet Intelligence Scale at 24, 36, and 48 months of age. The home environments of the families were assessed using the HOME inventory at 6, 18, 30, and 42 months of age.

The path analyses revealed the increasing contributions to child IQ by both maternal IQ and home environment. According to the results of the multiple regression analysis, when the effect of home environment was statistically controlled, maternal IQ was significantly related to child's IQ at 24 months but not at 36 and 48 months. On the other hand, when the effect of maternal IQ was controlled, home environment was not related to child's IQ at 24 and 36 months but was related at 48 months.

Using a dynamic and ontogenetic perspective, the researchers found that both maternal IQ and home environment

accounted for 11%, 17%, and 29% of the variance in the child's IQ at 24, 36, and 48 months, respectively. They observed an increase in the predictability of child's intellectual development within the context of a shift in the relative importance of maternal IQ and home environment as predictors.

In examining the relationship between maternal behavior and children's development, Luster and Dubow (1992) looked at 3 to 5-year-olds and 6 to 8-year-olds to determine the extent to which home environment and maternal intelligence are predictive of verbal intelligence among children, using the NLSY data set. Children's verbal intelligence was measured by Peabody Picture Vocabulary Test-Revised (PPVT-R). The possible influences included maternal intellectual ability, and HOME scores as an index of the quality of cognitive stimulation and emotional support provided in the home.

The results of a hierarchical regression found that for both groups of children, a significant relation was found between home environment and children's verbal intelligence as measured by the Peabody Picture Vocabulary Test-Revised (PPVT-R) scores, when the effect of maternal intelligence was statistically controlled. Maternal intelligence also was a significant predictor of children's verbal intelligence when the effect of home environment was partialled out. For the preschoolers, the relative

contributions of maternal intelligence and home environment to children's PPVT-R scores were of similar magnitude, whereas for the elementary school children, maternal intelligence was a stronger predictor of PPVT-R scores than was home environment.

The researchers explained these results in two ways; one explanation was that the version of the HOME for elementary school children may be a less adequate measure of the quality of the home environment than the version for preschoolers. The second explanation was that since older children get to experience different settings (e.g., schools) other than the home and select environments where they want to be, the influence of the home environment is expected to be less important for older children.

In previous analyses of the importance of the nature and the quality of the home environment for various age groups of children and its relation to the child's cognitive and socioemotional development, researchers found that home environment was an important predictor of children's cognitive and socioemotional development (Bradley and Caldwell, 1984; Bradley et al., 1989). Clearly, the HOME inventory has been the most widely used instrument to assess the quality of the home environment.

#### CHAPTER III

#### METHODOLOGY

The primary purposes of this study are to identify factors that may influence the quality of care adolescent mothers provide for their children, and to examine, how these factors are related to the children's outcomes of interest. The methods used to achieve these goals will be discussed here. This chapter is divided into six sections as follows: (a) research design, (b) research hypotheses, (c) research questions, (d) sample selection, (e) sample characteristics, (f) measures, and (g) data analyses.

# RESEARCH DESIGN

In order to meet the objectives most adequately, a correlational research design was used. The research design applied to this study is a multivariate model that permits simultaneous analysis of maternal and contextual characteristics. This correlational study of the adolescent mother's characteristics and contextual factors as predictors of their parenting behavior and child-outcome is non-experimental in nature. This study used selected data from a longitudinal survey with the unit of analysis being

teenage mothers and their first-born children who are 10 to

17 year-old.

#### **RESEARCH HYPOTHESES**

For this study, the following hypotheses were proposed:

1. To examine which maternal characteristics and contextual factors predict the quality of the home environment mothers provide;

Ho 1: Mothers' level of intelligence is not related to the quality of home environment mothers provide for their children. Ha 1: Mothers with higher levels of intelligence will provide better quality home environments than mothers with lower levels of intelligence.

Ho 2: Mothers' level of self-esteem is not related to the quality of home environment mothers provide for their children. Ha 2: Mothers with higher levels of self-esteem will provide a better quality home environment than mothers with lower levels of self-esteem.

Ho 3: Maternal age at first birth is not related to the quality of home environment mothers provide for their children. Ha 3: Mothers who delayed child bearing are likely to provide better quality home environments than mothers who started child bearing earlier.

Ho 4: Mothers' level of education is not related to the quality of home environment mothers provide for their children. Ha 4: Mothers with higher levels of education are likely to provide better quality home environments than mothers with lower levels of education.

Ho 5: Mothers' marital relationships are not related to the quality of home environment they provide for their children. Ha 5: Mothers with higher quality marital relationships will provide a better quality home environment than mothers with lower quality marital relationships.

Ho 6: Level of income is not related to the quality of home environment mothers provide for their children. Ha 6: Mothers with higher levels of income will provide better quality home environments than mothers with lower levels of income.

Ho 7: Number of children is not related to the quality of home environment mothers provide for their children. Ha 7: Mothers who have smaller numbers of children will provide better quality home environments than mothers who have more children.

2. To examine how a variety of maternal characteristics and contextual factors are related to children's achievement level, when the quality of the home environment is statistically controlled;

Ho 8: Mothers' level of intelligence is not related to the children's level of cognitive competence when the quality of the home environment is controlled. Ha 8: Mothers with higher levels of intelligence are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled.

Ho 9: Mothers' level of intelligence is not related to the children's level of behavioral problems when the quality of the home environment is controlled. Ha 9: Mothers with higher levels of intelligence are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

Ho 10: Maternal self-esteem is not related to the children's level of cognitive competence when the quality of the home environment is controlled.

Ha 10: Mothers with higher levels of self-esteem are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled.

Ho 11: Maternal self-esteem is not related to the children's level of behavioral problems when the quality of the home environment is controlled.

Ha 11: Mothers with higher levels of self-esteem are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

Ho 12: Mother's age at first birth is not related to the children's level of cognitive competence when the quality of the home environment is controlled. Ha 12: Mothers who delayed childbearing are likely to have children who perform at higher levels on measures of cognitive competence when the quality of the home environment is controlled.

Ho 13: Mother's age at first birth is not related to the

children's level of behavioral problems when the quality of the home environment is controlled.

Ha 13: Mothers who delayed childbearing are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

Ho 14: Mothers' level of education is not related to the children's level of cognitive competence when the quality of the home environment is controlled.

Ha 14: Mothers with higher levels of education are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled.

Ho 15: Mothers' level of education is not related to the children's level of behavioral problems when the quality of the home environment is controlled. Ha 15: Mothers with higher levels of education are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

Ho 16: The quality of the marital relationship is not related to the children's level of cognitive competence when the quality of the home environment is controlled. Ha 16: Mothers with supportive marital relationships are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled.

Ho 17: The quality of the marital relationship is not related to the children's level of behavioral problems when the quality of the home environment is controlled. Ha 17: Mothers with supportive marital relationships are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

Ho 18: Level of income is not related to the children's level of cognitive competence when the quality of the home environment is controlled. Ha 18: Mothers with higher levels of income are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is

competence when the quality of the home environment is controlled.

Ho 19: Level of income is not related to the children's level of behavioral problems when the quality of the home environment is controlled. Ha 19: Mothers with higher levels of income are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

Ho 20: Number of children in the family is not related to

the children's level of cognitive competence when the quality of the home environment is controlled. Ha 20: Mothers who have fewer children in the family are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled.

Ho 21: Number of children in the family is not related to the children's level of behavioral problems when the quality of the home environment is controlled. Ha 21: Mothers who have fewer children in the family are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

3. To examine if the quality of the home environment is related to the achievement of children when maternal intelligence is statistically controlled;

Ho 22: The quality of the home environment is not related to the children's academic achievement when maternal intelligence is controlled. Ha 22: The quality of the home environment is related to the children's academic achievement when maternal intelligence is controlled.

# **RESEARCH QUESTIONS:**

In addition to the hypotheses listed above, the questions that follow are explored. Thus, these are presented in terms of research questions rather than hypotheses.

To examine the relationship between maternal delinquency and the quality of the home environment mothers provide as well as child outcomes;

1. Does the mothers' degree of previous delinquency predict the quality of home environment mothers provide for their children?

2. Is there a direct or indirect relationship between maternal delinquency and children's level of cognitive and behavioral outcomes?

#### SAMPLE SELECTION

The original NLS samples were drawn to represent the civilian, noninstitutionalized population of the United States at the time of the initial survey. Initial

interviews with the original four cohorts consist of four samples: 5,020 men who were 45-59 years of age in 1966; 5,083 women who were 30-44 years of age in 1967; 5,225 young men ages 14-24 in 1966; and 5,159 young women ages in 14-24 in 1968. Youth survey (NLSY) that includes 12,686 civilian and military young people was added in 1979.

NLSY who can be considered representative of all American men and women born in the late 1950s and early 1960s is comprised of three subsamples: 1) a cross-sectional sample representing the total civilian population living in the United States and born January 1, 1957 through December 31, 1964; 2) a supplemental sample which overrepresents civilian Hispanic, black and economically disadvantaged nonblack/non-Hispanic youth living in the United States and born January 1, 1957 through December 31, 1964; and 3) a military sample representing the youth population serving in the armed forces as of September 30, 1978 and born January 1, 1957 through December 31, 1961. The military sample was dropped as of 1985, and the economically disadvantaged nonblack/non-Hispanic sample was last interviewed in the 1990 survey.

This study utilizes the merged mother-child data set from the National Longitudinal Survey of Youth (NLSY). The NLSY is concerned with the employment, educational and family-related experiences of the subjects (Baker & Mott, 1990).

The first wave of the NLSY data was collected in 1979 to investigate factors that influence the labor force participation of American young people and sampled 6,282 females between the ages of 14 and 21, with an overrepresentation of African Americans, Hispanics, and economically disadvantaged Caucasian youth. Attempts to reinterview these women were made each year from 1979 until the present. Sample retention of NLSY respondents has been very high; by 1986, over 90% (n = 5,403, 92.7%) of the original female sample remained intact. In 1986, the mothers were given supplemental questionnaires regarding maternal and child health, the home environment, family relationships, child's behavior and activities, and childcare histories. As part of the 1986 survey, extensive data on the social, emotional, and cognitive functioning of the children born to these women were collected for the first time, and data were collected on the children again in 1988 and 1990, thus permitting the longitudinal examination of the development of these children.

The NLSY data are especially well-suited to the study of the consequences of early childbearing because they follow young women through the teenage and young adult years when life events such as marriage and childbearing take place.

For purposes of this study, the 1990 merged motherchild data set was utilized. Children aged ten and above in

1990 were selected for the study sample. They were the children who were born before the maternal delinquency measure was assessed in 1980. Thus, the delinquency scores were not affected by the presence or absence of children in this subsample of the NLSY. Only first-born children were selected for this study. This insures that only one child per family is included in the sample.

These criteria yielded a subsample of 566 mothers between the ages of 25 and 33 years, with their first-born children between the age of 10 and 17 as of January 1, 1990. Three hundred and forty-one of the mothers were African-American and 225 were Caucasian. The sample size for each ethnic group was large enough to do separate analyses.

The number of subjects varied for the type of measures because all of the children and the mothers did not complete every assessment. For example, since a large portion of people in the sample were unmarried or not living with their spouse/partner when marital quality was measured, only 169 subjects responded to the questions regarding marital quality.

# Sample Characteristics

Demographic characteristics of the study samples are summarized in Table 1. The target children ranged in age from 120 months to 214 months (mean = 154.72, SD = 23.12) with girls and boys being equally represented in the sample

# Table 1

Sample	Description

	Overall sample	African-American	Caucasian
Variables	(n = 566)	(n = 341)	(n = 225)
Age of child(in	months)		
Mean SD	154.72 23.20	156.51 23.58	152.01 22.40
Sex of child	50.0	52.4	47 4
<pre>% males % females</pre>	50.9 49.1	53.4 46.6	47.1 52.9
Age of mother			
Mean SD	30.02 1.91	29.94 1.92	30.13 1.92
Presence of spor	use/partner		
% Yes % No	31.8 68.2	17.8 82.2	47.2 52.8
Number of child	ren		
Mean SD	2.56 1.15	2.64 1.19	2.42 1.04
Age of mother at	t first birth		
Mean SD	17.05 1.36	16.83 1.37	17.30 1.28
Level of educat:	ion		
<b>M</b> ean SD	11.38 1.91	11.64 1.87	10.99 1.89
Family income			
Mean SD	24,075 18,841	19,748 16,314	30,142 20,449
Poverty status % in poverty	34.3	44.9	18.7
<pre>% not in pove</pre>	rty 65.7	55.1	81.3

(288 boys [50.9%] and 345 girls [49.1%]).

The mean age of the mothers was 30.02 years, with a range from 25 to 33. The majority (68.2%) of those sampled were not living with a spouse or partner in 1990. The average number of children of these mothers was 2.56, with a range from one to nine children. The age of the mothers at the birth of their first child ranged from 13 to 19 years, with a mean of 17.05 years.

The level of educational attainment of the mothers in 1990 ranged from 1 to 18 years, with a mean of 11.38 years (SD = 1.91). The mean family income of the sample was \$24,075 (SD = \$8,841). Thirty-four percent of the sample were living in poverty at the time of the 1990 survey.

The children in the sample appeared to perform within the average range across academic achievement tests (PIAT Math, mean = 96.4, SD = 13.37; PIAT Reading Recognition, mean = 99.4, SD = 15.76; PIAT Reading Comprehension, mean = 96.21, SD = 14.6). However, these children scored slightly above the population mean on the BPI Total Standard score (mean = 108.03, SD = 14.3) and the Antisocial Subscale score (mean = 109.68, SD = 13.83). High scores are less desirable.

# **MEASURES**

The AFQT, which was used to assess maternal intelligence is the sum of four subtests of the Armed

Services Vocational Aptitude Battery (ASVAB) including word knowledge, arithmetic reasoning, paragraph comprehension, and numeric operations. This scale was administered to all the mothers in the 1980 survey. Reliability coefficients of alternate form and internal consistency for the AFQT subtests were from .7 to .9 (U. S. Department of Defense, 1982).

The level of maternal self-esteem was measured by Rosenberg's self-esteem scale (Rosenberg, 1965). The scale was designed to measure an individual's feeling of selfworth. The respondent indicates whether he or she strongly agrees, agrees, disagrees, or strongly disagrees with each of 10 statements. A high score on this scale indicates high self-esteem. The self-esteem scale was administered to the mothers in the NLSY project in 1980 and 1987. This scale is widely used and has been shown to be valid and highly reliable (Baker and Mott, 1989).

During the 1980 interview, the Self Reported Delinquency Index was assessed to investigate the mothers' antisocial activities (e.g., shoplifting, vandalism, and stealing). Mothers responded to the listing of 17 specific antisocial behaviors by noting the frequency of their participation in each of the behaviors during the past year. Response choices were: 0 (never), 1 (once), 2 (twice), 3 (three to five times), 4 (six to ten times), 5 (eleven to fifty times), to 6 (more than 50 times). For this study,

each item was recorded in a binary fashion (0 = 0 and 1, 2, 3, 4, 5, 6 = 1). A score of 0 indicated that no delinquent behaviors were displayed, while 1 indicated that delinquent behavior was displayed. Then, a summary index was created by summing the subject's scores on each of the items.

The marital relationships were assessed using 13 items which were categorized into three subsets of the measure: global happiness, marital communication, and marital discord. Global happiness measures the level of marital happiness based on mothers' responses to one item ( 1 = not too happy, 2 = happy, and 3 = very happy). Marital communication assesses the mothers' levels of communication with their husbands. This was measured by 3 items using a 4 point Likert-type scale (1 = less than once a month, 4 =almost every day). A sample item is, " How often do you and your husband tell each other about your day?" The reliability coefficient for this scale was .72 for the overall sample of the present study. The marital discord measure includes 9 specific questions on conflict (e.g., How often do you and your husband argue about chores and responsibilities?). Mothers' responses on these items ranged from 1 (never) to 4 (often). The reliability coefficient for this scale was .82 for this study sample. Significant correlations were found among these three measures: .48 (p <.001) between global happiness and marital communication, .25 (p <.001) between marital communication

and marital discord, and .35 (p < .001) between marital discord and global happiness.

The dependent and mediating variable, the quality of home environment, was measured by the elementary version of the Home Observation for Measurement of the Environment -Short Form (HOME-SF) in 1986, 1988, and 1990 (Baker and Mott, 1989). The original elementary version of the HOME contains 59 items, and the abbreviated version contains 26 items. The total raw score for the HOME-SF is a summation of the recorded individual item scores and has one imputed decimal place (i.e., a total standard score of 929.23 is really 92.923).

These data permitted the researcher to examine the quality of the home environments at three points in time. The HOME is a highly regarded and widely used measure for assessing aspects of the stimulation provided in the home environment. This assessment has been found to have adequate reliability and validity, and predicts later cognitive outcomes of children (Bradley, Caldwell, Rock, Hamrick, and Harris, 1988). This shortened version has a lower internal consistency estimate than the original version of the HOME (.70 vs. .90 respectively) (Caldwell and Bradley, 1984). The items in the HOME-SF are presented in Appendix A.

The dependent variable, the behavioral problems of the child, was measured using the Behavior Problem Index (BPI)

(Peterson and Zill, 1986), derived from Achenbach and Edelbrock's (1981) Behavior Problems Checklist. The respondent, typically the child's mother, indicates whether the child exhibited any specific childhood problem behaviors or symptoms within the past 3 months. There are 28 items in the scale and possible responses are "often true," "sometimes true," or "not true." Positive responses to the item are summed to create a Total Problem score and six subscale scores were defined based on factor analysis: 1) Antisocial, 2) Hyperactive, 3) Anxious/Depressed, 4) Headstrong, 5) Peer Conflict/Social Withdrawal, and 6) Immature Dependency (see Appendix A). Children's scores have been standardized within age and gender based on general population samples (with mean = 100 and standard deviation = 15). Reliability estimates of the Total Problem score ranged from .86 to .89 (Baker and Mott, 1990). The Total Problem score and Antisocial subscale score were used in the analyses. Higher scores indicate more behavior problems.

The other dependent variable, the cognitive competence of the child, was measured by the Peabody Individual Achievement Test (PIAT) (Dunn and Markwardt, 1970). The PIAT assessment is widely used and is generally considered to be highly reliable (test-retest reliability) and valid (concurrent validity). PIAT scores reported here are based on a mean of 100 and a standard deviation of 15. Three

subtests (mathematics, reading recognition, and reading comprehension) from the full PIAT battery were administered to the NLSY children. The items in three subtests are presented in Appendix A.

The PIAT Math, which measures a child's attainment in mathematics as taught in mainstream education, consisted of 84 multiple-choice items. The test requires the child to look at the problem and then to point to the answer.

The PIAT Reading Recognition subtest measures the child's skills in translating sequences of printed alphabetic symbols which form words, into understandable words. This test contains 84 items and is found to be moderately correlated with PIAT Mathematics scores.

The PIAT Reading Comprehension subtest which consists of 66 items of increasing difficulty is designed to measure the child's ability to understand what he/she reads silently. The child is required to pick one of four pictures which he/she decides is the best delineation of the meaning of the sentence.

### DATA ANALYSIS

Descriptive statistics were used to determine the frequency distribution of each of the variables, i.e., independent, dependent, and intervening variables for the overall sample and African-American and Caucasian subsamples. ANOVAS and Chi-square statistics were

calculated to test if the differences between ethnic groups in maternal and contextual factors were statistically significant. Zero-order correlations were used to explore the extent of associations among the predictor variables of interest, the relations between the predictor variables and the quality of the home environment, and the relation between the predictor variables and the children's cognitive and behavioral outcomes.

Linear regression analysis was conducted to explore the potential associations between mothers' antisocial behaviors and the quality of the home environment the mothers provided. Multiple regression was performed to examine if maternal delinquency was related to the cognitive and behavioral measures when other factors were controlled.

Several multiple regression analyses were performed to determine which of the variables were related to the quality of the home environment when other variables are controlled. The method used was a forced entry procedures. All of the variables listed under maternal characteristics and contextual variables were entered simultaneously.

Similar multiple regression analyses were performed to determine the combined influence of maternal and contextual factors, including the quality of the home environment, on the children's achievement. The regression analyses were done for the overall samples, and then separate analyses were done for the two ethnic groups.

To test the hypothesis that the regression coefficients differ in the African-American and Caucasian population, the unstandardized regression coefficients were compared to see if the difference in magnitude is statistically significant. Only if the coefficients are significantly different from each other, it can be concluded that different predictors are important for different ethnic groups.

Paths of influence Assessing the influence of these various competing sets of factors was the primary analytic task of this study. Path analysis was used to explore possible causal relationships among the variables in the conceptual model. According to Hunter and Gerbing (1982), one of the major contributions of path analysis is that it decomposes relations among variables into numerical components, so separate effects and directions of relationships among variables can be observed.

In this study, path analysis examines if much of the influence of maternal characteristics and contextual factors are transmitted via the home environment. The possible influences of all the predictor variables and home environment on PIAT Reading Recognition for each ethnic group are presented as an illustration. The results of the path analyses are presented in Figures 2 and 3, at the end of Chapter IV.

#### CHAPTER IV

#### RESULTS

This chapter presents the differences in predictor variables, HOME scores, and children's outcome scores between the African-American and Caucasian subsamples. Next, the relationships among the predictor variables are presented for the entire sample, the African-American subsample, and Caucasian subsample. The results of zeroorder correlations between the predictor variables and the quality of home environment at three different points in time are discussed. The presentation of regression analyses on multiple predictors of the home environment follows the zero-order correlations. This shows how maternal and contextual factors are related to the quality of the home environment in which the children are reared.

The correlational analyses between the predictor variables and the children's outcomes are presented in the fifth part of this chapter. Multiple regression analysis is used to determine which of the predictor variables are related to the children's outcomes when confounding factors are controlled. Finally, two path

models are illustrated to discuss the fit of the data to the conceptual model (Figure 1) presented in Chapter I. A summary of the research findings are presented in terms of the research hypotheses and research questions posed in Chapter III, at the end of this chapter.

# Ethnic Group Differences

1. Differences in maternal and contextual factors

A number of ANOVA and Chi-square analyses on maternal and contextual variables were performed in order to determine if there were differences between the African-American and Caucasian subsamples. A summary of the results is presented in Table 2 and Table 3. As can be seen from the Tables, several differences were found between the two groups. To the extent that differences between the two ethnic groups exist, such differences suggest different levels of risk or protector status in the socio-ecological environments of the children.

As can be seen from Tables 2 and 3, in comparison to African-American mothers, Caucasian mothers were significantly advantaged on most of the variables included in this analysis. For the maternal characteristics, Caucasians had significantly higher AFQT scores than African-American mothers at the time of the 1980 survey. In terms of the time of mother's first birth, Caucasian mothers were significantly older than African-American mothers. However, there was a
Table	2
	_

	Mean (	SD)		
Predictor Z Variables	African-American (n = 341)	Caucasian (n = 225)	F	Sig.
Intelligence	461.95 (171.85)	650.21 (193.33)	140.90	.0000
Self-Esteem (1980	0) 31.68 (3.99)	31.16 (3.85)	2.29	.1306
Age at First Birt	ch 16.83 (1.37)	17.39 (1.28)	24.23	.0000
Maternal Delinque	ency 1.89 (1.83)	2.07 (2.27)	1.02	.3123
Level of Educatio	on 11.64 (1.87)	10.99 (1.89)	16.15	.0001
Self-Esteem (1987	7) 32.45 (3.95)	32.46 (4.4)	.001	.9709
Global Happiness	2.51 (0.59)	2.73 (0.5)	11.8	.0007
Marital Communication	7.23 (0.98)	7.45 (0.85)	4.13	.0431
Marital Discord	10.82 (2.44)	9.69 (2.54)	14.35	.0002
Family Income	19,748 (16,314)	30,142 (20,449)	38.10	.0000
Number of Childre	en 2.65 (1.19)	2.42 (1.04)	5.05	.0250

# ANOVAS for Differences between African-American and Caucasian Subsamples in Predictor Variables

#### Table 3

#### Chi-square Analyses for Differences between African-American and Caucasian Subsamples

	number of resp	ponse (%)		
- Variables	African-American (n = 323)	Caucasian (n = 213)	Chi- Square	Prob.
Spouse/Partner				
absent	263(82.2%)	100(47.2%)		•
present	57(17.8%)	112(52.8%)	70.53	.0000
Poverty Status				
in poverty	124(44.9%)	37(18.7%)		
not in poverty	152(54.5%)	161 (81.3%)	37.37	.0000
Maternal Delingu	lency			
displayed	226(74.9%)	248(69.5%)		
not displayed	85(25.1%)	55(30.5%)	16.68	.1147

difference in the level of educational attainment of the two groups of mothers, with African-American mothers' attainment being significantly higher (F = 16.15, p = .0001). Furthermore, mothers' level of self-esteem measured at two different points in time (1980 and 1987) was found to be similar in the two groups of mothers.

Several differences also existed for the contextual factors for the two ethnic groups. African-American mothers were found to have significantly lower family incomes than Caucasian mothers. Additionally, on the marital relationship measure, Caucasian mothers were found to be significantly happier than African-American mothers. Similarly, African-American mothers were shown to have a higher incidence of marital discord than Caucasian mothers. The pattern of marital communication between the two groups was found to be marginally different. Additionally, African-American mothers, on average, were found to have more children in the household than Caucasian mothers.

# 2. Differences between ethnic groups in HOME scores and children's outcomes

With respect to the quality of the childrearing environment mothers in the two ethnic groups provide for their children, significant differences were found (see Table 4). Caucasian mothers were shown to provide a more supportive home environment for their children than African-American mothers for Total Home Score (1990) as well as two subscale scores (cognitive stimulation and emotional support). Caucasian mothers also received significantly higher scores on the HOME in 1986 and 1988.

Significant differences were found between African-American and Caucasian children in their outcomes. In terms of academic achievement, the children of Caucasian mothers were shown to have higher scores on all three achievement measures (Math, Reading Recognition, and Reading Comprehension) when compared to the children of African-American mothers.

With respect to the Total Behavioral Problem score, no difference was found between the two groups of children.

	Mean (	SD)		
Afr Variables	ican-American (n = 341)	Caucasian (n =225)	F	Sig.
HOME (1986)	92.9 (15.0)	103.4 (14.2)	64.77	.0000
HOME (1988)	92.6 (15.6)	103.7 (13.5)	70.53	.0000
HOME (1990)	91.7 (14.7)	102.8 (13.4)	76.61	.0000
Cognitive Stimulation (1990)	95.1 (14.3)	101.9 (14.8)	27.37	.0000
Emotional Support (1990)	91.1 (16.1)	102.5 (13.2)	65.12	.0000
PIAT Math	93.78 (12.97)	100.64 (12.95)	34.61	.0000
PIAT Reading Recognition	96.90 (15.26)	103.48 (15.73)	22.39	.0000
PIAT Reading Comprehension	93.73 (14.36)	100.24 (14.11)	25.37	.0000
BPI Total	108.33 (14.51)	107.59 (14.02)	.35	.5544
BPI Antisocial	111.70 (13.67)	106.71 (13.57)	17.68	.0000

ANOVAS for Differences between African-American and Caucasian Subsamples in HOME Scores and Children's Outcomes

Table 4

However, a significant difference was found between African-American and Caucasian children on the Antisocial subscale. Caucasian children received more favorable scores on the Antisocial subscale.

## Relations among the Predictor Variables

Correlational analyses were performed to examine the relations between the maternal characteristics in 1979-80 and the maternal characteristics in 1987-88. It was also of interest to examine how these maternal characteristics are associated with the context where parenting occurs. The zero-order correlations among the predictor variables for the overall samples, African-American subsample, and Caucasian subsample are presented in Tables 5, 6, and 7, respectively.

As expected, mothers in the overall samples and the two ethnic subsamples who experienced their first birth at a later age had more schooling, had higher family incomes, and thus were less likely to be living in poverty. Mothers who had higher AFQT scores tended to have higher self-esteem at two different points in time compared to the mothers who had lower AFQT scores.

In the overall sample and Caucasian subsample, the delinquency measure was negatively related to mothers' selfesteem (only the 1980 assessment for the entire group), age

Relations Among the Predictor Variables for Overall Sample

	Intelligence	Self-Esteem (in 1980)	Age at First Birth	Maternal Delinquency	Education	Self-Esteem (in 1987)	Global Happiness	Marital Communication	Marital Discord	Family Income	Number of Children
Intelligence	1.00										
Self-Esteem (1980)	OE.	1.00									
Age at First Birth	.28***	.17	1.00								
Maternal Delinquency	.05	10•	• 60 <sup></sup>	1.00							
Education	.40	.36	.26	06	1.00						
Self-Esteem (1987)		.48***	.13	07	.27	1.00					
Global Happin <del>es</del> s	.05	.07	80.	-01	90.	.07	1.00				
Marital Communication	.10•	.07	.03	.05	00	9	.48	1.00			
Marital Discord	22	10•	16	.10	05	01	35••	25•••	1.00		
Family Income	.40	.20***	.24	14**	.22	.21	.07	90.	02	1.00	
Number of Children	14	90	15•••	-01	16•••	90	60	05	.17	8.	1.00

\*p<.05 \*\*p<.01 \*\*\*p<.001

TABLE 5

Relations Among the Predictor Variables for African-American Subsample

	Intelligence	Self-Esteem (in 1980)	Age at First Birth	Maternal Delinquency	Education	Self-Esteem (in 1987)	Global Happiness	Marital Communication	Marital Discord	Family Income	Number of Children
Intelligence	1.00										
Self-Esteem (1980)	.40	1.00									
Age at First Birth	.16	.14	1.00								
Maternal Delinquency	.03	02	04	1.00							
Education	.54	.40*	.23	04	1.00						
Self-Esteem (1987)	.37	.51 • • •	.13.	02	.36	1.00					
Global Happin <del>ess</del>	.02	90.	.13	14	.22.	.13	1.00				
Marital Communication	.10	<u>0</u> .	01.	80.	٥.	.02		1.00			
Marital Discord	.03	02	11.	.03	.13	<b>1</b> 0 <sup>.</sup>	37•••	24••	1.00		
Family Income	.35 • • •	.23	.20.	14•	.25 • • •	.24 • • •	90.	01.	.05	1.00	
Number of Children	-11-	80	18**	.03	25•••	•.10•	90	8.	-21•	.02	1.00

\*p<.05 \*\*p<.01 \*\*\*p<.001

TABLE 6

TABLE 7 Relations Among the Predictor Variables for Caucasian Subsample

	Intelligence	Self-Esteem (in 1980)	Age at First Birth	Maternal Delinquency	Education	Self-Esteem (in 1987)	Global Happiness	Marital Communication	Marital Discord	Family Income	Number of Children
Intelligence	1.00										
Self-Esteem (1980)	.35	1.00									
Age at First Birth	.29	.27	1.00								
Maternal Delinquency	.02	19••	18••	1.00							
Education	.55	.27***	.41***	06	1.00						
Self-Esteem (1987)	.35	.45	۲.	12•	.15•	1.00					
Global Happiness	60	.13•	02	90.	<u>4</u> 0.	.05	1.00				
Marital Communication	.03	.15•	05	.03	.03	90.	.44	1.00			
Marital Discord	26•••	23••	16•	.15•	25**	03	29•••	23**	1.00		
Family Income	.29	.22	.20.	18••	.30	.20.	.02	00	.03	1.00	
Number of Children	-11-	04	06	05	05	02	07	03	60.	10.	1.00

\*p<.05 \*\*p<.01 \*\*\*p<.001

at first birth, and family income. It also was found that Caucasian mothers who displayed delinquent behaviors in their teens appeared to have more conflict in their marriages. Caucasian mothers who had higher scores on selfesteem (1980) tended to report their marital relationship more positively and the level of marital communication tended to be higher. In addition, these mothers were less likely to be engaged in marital discord. The marital discord measure also was negatively related to the mothers' AFQT scores and education levels. However, no significant relationships were shown among these variables for African-American mothers.

With respect to the number of children, African-American mothers who were early childbearers tended to have more children and less schooling. Marital discord also was found to be positively related to the number of children. However, none of the predictor variables were found to be related to the number of children for Caucasian mothers.

# <u>Correlates of Maternal and Contextual Factors to the guality</u> <u>of home environments</u>

In this section, the relations between the maternal and contextual factors described in the conceptual model and the quality of the home environments mothers provide are presented. Table 8 shows the zero-order correlations

# Table 8

Zero-Order Correlations: The Relations between the Predictor Variables and the Quality of the Home Environment

		HOME Scores (199	0)
Predictor Ov Variables	verall Sample (n = 566)	African-American (n = 341)	Caucasian (n = 225)
<u>Maternal Characteri</u>	<u>stics</u>		
Intelligence	.34***	.21***	.22***
Self-Esteem (1980)	.21***	•23***	.29***
Age at First Birth	•25***	.19***	.21***
Maternal Delinquenc	cy09*	02	24***
Self-Esteem (1987)	.19***	.17**	.26***
Education	.12**	.24***	.17**
<u>Contextual Factors</u>			
Global Happiness	.24***	.31***	.05
Marital Communicati	on .16**	.09	.18**
Marital Discord	15**	14	04
Family Income	.38***	.34***	.30***
Number of Children	11**	14**	04

\* p <.05 \*\* p <.01 \*\*\* p <.001

between the predictor variables and the quality of the home environment in 1990 for the overall sample and the ethnic subsamples.

Almost all of the maternal variables and many of the contextual factors were found to be significantly related to the HOME scores for the overall sample and ethnic subsamples. Most of the correlations between the maternal characteristics and the NLSY-HOME scores were in the expected directions, and were small to moderate in magnitude. Mothers in the overall sample who scored higher on the intelligence test, had higher self-esteem at two different points in time, delayed childbearing, and completed more years of schooling provided higher quality home environments for their children in 1990. Maternal delinquency was negatively related to the quality of the home environments provided by Caucasian mothers (r = .23), but not by African-American mothers.

Significant correlations for the overall sample ranged from .09 to .38. These significant correlations also were found consistently for the Home scores in 1986 and 1988 (see Appendix B). Therefore, the hypothesis that maternal characteristics are related to the quality of the home environment is supported by these correlational analyses.

For the contextual variables, across ethnic groups, mothers who had higher family incomes provided more supportive home environments. There was a significant

negative association between the number of children in the household of African-American mothers and the quality of the home environments they provided. In other words, the greater the number of children, the less supportive the home environment; however, the correlation was modest in magnitude.

The level of global happiness in their marriage was significantly related to the quality of the home environments provided by African-American mothers, but the correlation was not significant for Caucasian mothers. The level of marital communication was related to the quality of the home environments Caucasian mothers provided. Neither group showed a significant relationship between the HOME scores and marital discord.

## Multiple Predictors of the Quality of Home Environment

Multiple regression analysis was performed to determine the combined influence of maternal characteristics and contextual factors on the quality of home environment. The analysis was done to see the unique contribution of each variable when other variables were statistically controlled. The results are presented in Table 9. The unstandardized regression coefficients also are presented in Table 13 (see Appendix B).

For the African-American subsample, mothers who had

# Table 9

Predictor	Overall Sample (n = 566)	African-American (n = 341)	Caucasian $(n = 225)$
variables	В	В	В
Intelligence	.19***	.01	.09
Self-Esteem (1980	0) .09+	.12+	.11
Age at First Birt	th .13**	.09	.10
Maternal Delinque	ency05	.04	17*
Self-Esteem (1987	7).04	01	.11+
Education	10*	.05	02
Global Happiness	.11*	.18*	.01
Marital Communica	ation .03	07	.15+
Marital Discord	00	01	.06
Family Income	.26***	.30***	.19*
Number of Childre	en <b></b> 06	10	.03
R-Square	.24	.20	.21
F	11.87***	5.40***	4.08***

Multiple Regression Analyses: Predictors of the Quality of the Home Environment (HOME 1990)

Note: Betas (B) presented are standardized betas.
All of the maternal characteristics and contextual factors
were entered simultaneously.
+ p <.10 \* p <.05 \*\* p <.01 \*\*\* p <.001</pre>

higher levels of self-esteem (1980), marital happiness, and family income tended to provide more supportive home environments. It is interesting to note that the earlier measure of self-esteem was found to be a better predictor of HOME scores rather than self-esteem measured in 1987 for the African-American subsample. Twenty percent of the variance was accounted for by these predictor variables.

For Caucasian families, absence of delinquent behaviors in their teens and higher levels of self-esteem (1987), marital communication, and family income made contributions to predicting a more supportive home environment, and together the variables accounted for 21% of the variance in HOME scores. The F values for each of the models were significant (p < .001).

For variables that were significant predictors of home scores in at least one of the ethnic groups, the magnitude of the unstandardized regression coefficients were compared for the two ethnic groups to determine if the two coefficients differed significantly from each other. The effect of maternal delinquency on HOME scores was greater for the Caucasian subsample than for the African-American subsample (Z = 2.10, p < .05). On the other hand, the effect of self-esteem (1987) was greater for the African-American subsample than for the Caucasian subsample (Z = -0.87, p < .05). The effect of the rest of the variables (i.e. self-esteem (1980), global happiness, marital

communication, and family income) on HOME scores was not significantly different for the two ethnic groups.

Additional analyses were performed to see the extent to which the predictor variables were related to the 1986 and 1988 HOME scores. For the 1986 HOME, only maternal characteristics measured at an earlier point in time were entered for the analysis, because maternal variables (1987-1990) and the contextual factors were measured later in time. The results of the correlational analyses and regressions are presented in Tables 14, 15, 16, and 17 (see Appendix B)

# <u>Correlations between Maternal and Contextual Factors and the</u> <u>Children's Outcomes</u>

In this section, the associations between the predictor variables and the children's outcomes for the overall samples and the ethnic subsamples are discussed. The zeroorder correlations between each of the maternal and contextual factors and children's BPI and PIAT scores are presented in Table 10.

Children whose mothers were more intelligent and more educated had higher scores on the three measures assessing cognitive competence for both ethnic groups. These high achieving children also tended to have mothers who had higher self-esteem at two different points in time, and who experienced their first birth at a later age. The Maternal

TABLE 10

Relations Between the Predictor Variables and the Children's Outcomes

						0	CURELATION	COEFF ICIE	NTS						
	PIAT MA	H		REA	DING RECOG	NOILINE	READING	S COMPREHE	NOISN	1 <b>4</b> 8	TOTAL		ANT	LISOCIAL	
Predictor S Variables (	bverall A lample A n=566) (	√frican- merican n=341)	Cauca- sian (n=225)	Overal Sample (n=566)	African- American (n=341)	Cauca- sian (n=225)	Overall Sample (n=566)	African- American (n=341)	Cauca- sian (n=225)	Overall Sample (n=566)	African- American (n=341)	Cauca- sian (n=225)	Overall Sample (n=566)	African- American (n=341)	Cauca- s i an (=225)
Intel I igence	.04***	.37***	.31***	.40**	.35***	.34***	.40***	.32***	.38***	03	12*	.10+	11**	13*	80.
Self-Esteem	. 17***	.21***	*90.	. 18***	. 19***	.21**	.22***	.25***	.22**	16***	18**	- 14*	13**	18**	10
Age at First Birth	. 19***	. 15**	.13*	.21	. 18**	. 18**	.25***	.20***	.25***	- 04	8	90	08	01	- 09
Maternal Delinquency	01	.02	06	04	.02	13*	03	04	.04	•80.	<b>.</b> 05	. 13*	••11.	90.	.20**
Self-Esteem	.20***	.26***	. 13*	.20***	.22***	.20**	. 16***	.24***	.07	18***	21***	14*	13**	16**	12*
Education	. 13**	. 15**	.24***	. 12**	. 13**	.29***	.14**	.16**	.28***	98.	90.	80.	.07	90.	8
Global Happiness	8	8.	03	90.	60.	8	•11.	.15	90.	07	- 14	04	11*	09	73 83.
Marital Communication	•11-	Ŧ.	8.	10*	.12	8.	. 13*	60.	. 15*	8.	8	01	.01	.07	8
Marital Discord	27***	22**	24**	16**	15	14*	24***	20*	25**		8	05	.02	01	02
Family Income		.23	<b>+!</b> .		.21***	. 13*			.12+	00*	. 17**	8.	16**	19**	02
Number of	. 16***	-, 18**	80	20**	18***	19**	23	23	20**	8.	8	.02	90.	90.	60.
Home(1986)	.31***	27***		.31	.28***	.2.	.25***	.20***	.20**	15***	24***	03	24***	25	13*
Home(1988)		.23***		.30	.25	.25***		.24***	.27***	20***	-, 18**	24	23***	17**	23**
Home(1990)	.23***	.12*	.23**	.29***	.22		.30***	.22***	.30***	16***	10*	25	23***	16**	23
Cognitive Stimulation	.22.	. 14**	.23.	. 29	.25***	.26***	.31***	.27***	.29***	13**	06	22**	22***	17**	22**
Support	.17***	-02	.13*	. 19***	.12*	. 14*	. 19***		.17**	- 13**	10*	17*	14**	07	- 10

+p < .10 \*p < .05 \*\*p < .01 \* \*\*p < .001

Delinquency Index did not appear to have a relationship with the achievement level of the children, with one exception. Children whose mothers displayed delinquent behavior in their teens tended to have lower scores on the Reading Recognition test.

High levels of marital communication also tended to have a positive effect on the Reading Comprehension test among Caucasians. In addition, children in both groups who did well on every achievement measure were less likely to have parents who frequently engaged in marital conflict.

Consistent with expectations, children with higher scores on the achievement tests tended to come from homes that were more financially secure and were more supportive, as assessed by the HOME-SF. However, family income was marginally related to Math and Reading Comprehension in the Caucasian subsample. Number of children in both ethnic households was negatively related to the three PIAT subtests, with one exception. The Math test scores in Caucasian subsample was not significantly related to the number of children in households. Total Home Scores for 1986, 1988 and 1990 were modestly related to all three subscales with correlations, ranging from .12 to .31.

With respect to behavioral problem measures, the magnitude of the correlations with the predictor variables tended to be smaller. The significant correlations between BPI total and predictor variables ranged from .09 to .21.

Across ethnic groups children whose mothers had lower selfesteem at two points in time tended to be perceived as having more behavioral problems by their mothers. This also was true for the antisocial subscale scores in the case of African-American children, but not for the Caucasian children. Caucasian mothers' delinquent behavior in their teens affected their children's behavioral adjustment negatively.

The level of family income also was found to be related to the BPI Total Problem scores and Antisocial subscale scores for the African-American subsample. The years of education attained by both ethnic subsamples was not associated with the two behavioral problem measures.

None of the measures of marital relationship showed a significant association with either of the Behavior Problem Total scores for both ethnic groups. Global happiness in the marriage was negatively related to the antisocial subscale scores for the total sample.

The quality of home environment was found to be negatively related to the behavioral adjustment of the children. In other words, children who were perceived as having many behavioral problems tended to come from less supportive home environments. The quality of the home environments measured in 1986 and 1988 also showed a similar pattern of relationships with the BPI Total scores and Antisocial subscale scores.

## Multiple Predictors of the Children's Outcomes

In this section, multiple regression analysis was performed to investigate which of the maternal and contextual variables are related to the children's outcomes. In this analysis, all of the independent variables (maternal characteristics and contextual factors), including the quality of the home environment were entered simultaneously. Table 11 presents the results of the analyses for the overall sample and the results of the separate analyses for each ethnic group.

Results of the analysis showed that the total amount of variance accounted for by the models ranged from 17 to 28% for the three academic achievement tests. The F values were highly significant (p < .001) for all of the outcome measures except for the Math scores for the Caucasian subsample (p < .01).

Maternal intelligence was found to be the only variable that was consistently related to all three measures of cognitive competence for both groups. Mothers' self-esteem (1980), delinquency, and level of education were not related to any of the children's achievement measures, when the quality of the home environment was controlled. These findings indicate that these three variables do not have a direct effects on the children's achievement. Mothers' age at first birth failed to emerge as a predictor of any of the

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Multiple Regression Analysis: Predictors of the Children's Outcomes

						S	(ANDARD I ZEI	) BETAS( B)							
	٩	IAT MATH		READIN	I RECOONIT	NOI	READING	COMPREEN	RION		BPI TOTAL		M	NTISOCIAL	
Predictor Variables	Overal I Sample (n=566)	Africar America (n=341)	n sian (n=225)	Overal I Sample (n=566)	African- American (n=341)	Cauca- sian (n=225)	Overall Sample (n=566)	African- American (n=341)	Cauca- sian (n=225)	Overall Sample (n=566)	African- American (n=341)	Cauca- sian (r=225)	Overall Sample (n=566)	African- American (n=341)	Cauca- sian (n=225)
Intel I igence	····0E.	.24**	:20*	.28***	.23**	.21*	.24***	. 15*	.26**	88.	.01	.17+	8	8	.13
Self-Esteem (1980)	01	8	02	8	01	8	8	8	8	10+	08	8	99 -	8.	8
Age at First Birth	8	8	02	8.	.07	8	8.	15*	8.		8	8.	8.	8	8
Maternal Delinquency	10.	8	8.	03	8	80	01	01	-01	8	8	8	ą	8	<del>4</del> .
Self-Esteem (1967)	8	.12+	8	98.	8.	8.	02	20.	12	13*	13+	÷.	90	98	8.
Education	8	90.	8.	8	8.	80.	.07	8.	90.	8	01	8.	8.	8	8
Global Happiness	07	10	90	10	90	02	01	02	.01	07	07	89	<del>1</del> 80	07	<del>.</del>
Marital Comunicatio	8.	8	8	8.	8	8	8	8	8	99.	8	8	10.	8	8
Marital Discord	- 12	12+	16*	<b>10</b>	90	01	<del>1</del> 88. -	07	60	04	00	8.	04	8.	8.
Family Income	8	Ħ.	- 8	8.	8	02	8	8	90	8	12+	8	90	14*	8
Number of Children	8	1+	07	13**	- 11+	18*	-, 15***	20.	16*	8	8	8	8.	8.	8
Hame(1990)	8	01	. 19*	. 15**	-11-	.17*	. 15**	89.		12*		26**	17*	80	20
R-square	ĸ	8	.17	8	.19	.21	8	8	89	20.	.07	. 13	80.	8	.12
ш	9.59***	5.11***	2.71**	9.86**	** 4.59**	* 3.60***	11.37***	4.97***	4.97***	2.50**	1.53	2.01*	3.37*	1.76+	1.79
+ pc.10	•	×.05	** pc.01	*** pc.001											

children's achievement measures in Caucasian ethnic groups, when other factors were controlled. However, contrary to expectation, African-American mothers' age at first birth was found to be negatively related to the Reading Comprehension measure. African-American children whose mothers delayed childbearing achieved relatively lower scores in Reading Comprehension. African-American mothers' self-esteem (1987) also was found to affect their children's Math scores positively.

For the contextual factors, number of children in African-American families was negatively related to the children's Math and Reading Recognition scores; however, they were only marginally related. For the Caucasian subsample, number of children was found to be negatively related to the two reading scores. Family income was not related to the achievement of the children in both ethnic groups. Among marital variables, marital discord was the only variable that made a unique contribution to predicting Math scores of children for both ethnic groups. Children who experienced higher levels of marital discord tended to show lower Math scores. As expected, the measure of home environment was predictive of all the achievement measures of the Caucasian children. However, for the African-American subsample, it was marginally related to the children's Reading Recognition scores only.

In the case of behavioral outcome measures, the

percentage of variance explained by maternal and contextual factors was not large, ranging from 7% to 13%. The later measure of maternal self-esteem was negatively related to the African-American children's Total Behavioral Problem scores. The level of family income was found to be significantly related to the two behavioral problem outcomes of African-American children.

Meanwhile, for the Caucasian subsample, the level of intelligence was marginally related to the Total Behavioral Problem scores of these children; Caucasian children whose mothers' levels of intelligence were higher were perceived to have a higher Total Behavioral Problem scores by their mothers. Maternal delinquency was positively related to the Antisocial scores of these children. The measure of home environment was negatively related to the two behavioral scores for the Caucasian subsample, with higher HOME scores related to fewer behavioral problems perceived by mothers.

As shown in Table 11, total amount of the variance in the children's outcomes explained by predictor variables and HOME scores ranged from 7% of the variance for the Total Behavioral Problem scores (for overall sample and African-Americans) to 28% of the variance for Reading Comprehension (for the Caucasian sample). The F values for each model were found to be statistically significant except for the BPI Total measure for African-American subsample.

The analysis was done in the same way as previous

analysis of HOME scores. For variables that were significant predictors of children's outcomes in at least one of the ethnic groups, the magnitude of the unstandardized regression coefficients were compared for the two ethnic groups to determine if the two coefficients differed significantly from each other. The unstandardized beta coefficients are presented in Table 18 (see Appendix B).

For Math scores, the effect of marital discord was greater for the Caucasian subsample than for the African-American subsample (Z = -0.22, p < .05). On the other hand, the effect of number of children on Math scores was greater for the African-American subsample than for the Caucasian subsample (Z = -0.32, p < .05). For the rest of the variables that were significant in at least one of the ethnic groups, such as intelligence, and self-esteem (1980), the effect on Math was not significantly different for the two groups.

For Reading Recognition, the effect of home environment was greater for the Caucasian subsample than for the African-American subsample (Z = 5.0, p < .000). However, the effects of intelligence and number of children on Reading Recognition scores for the two ethnic groups were not significantly different from each other.

For Reading Comprehension, the effect of intelligence (Z = -0.67, p < .05), age at first birth (Z = -0.06, p < .05)

.05), and home environment (Z = 2.12, p < .05) was greater for the Caucasian subsample than for the African-American subsample. However, the effect of number of children on Reading Comprehension scores for the two ethnic groups was not significantly different from each other.

For the behavioral outcomes, the effect of intelligence (Z = 12.8, p < .000) and home environment (Z = 2.27, p < .05) on Total Behavioral Problem scores was greater for the Caucasian subsample than for the African-American subsample, while the effect of self-esteem (1987) (Z = 2.06, p < .05) and family income (Z = -0.32, p < .05) was greater for the African-American subsample than for the Caucasian subsample. In the case of Antisocial scores, for the variables that were signiciant predictors in one of the ethnic groups, their effects on Antisocial scores were not significantly different from each other.

# <u>Home Environment and Maternal Intelligence as Predictors of</u> <u>Children's Academic Achievement</u>

The zero-order correlations between home environment (1990) and three cognitive measures (Math, Reading Recognition, and Reading Comprehension) for the entire sample were .23, .29, and .30, respectively. Also, the correlations between maternal intelligence and the cognitive outcomes were .41, .40, and .40 (see Table 10).

In this analysis, the effect of maternal intelligence was statistically controlled to determine whether the HOME makes a unique contribution to predicting children's academic achievement. The two behavioral problem outcomes were excluded from the analyses because they were not strongly related to maternal intelligence (see Table 10). Table 12 shows the results of several multiple regression analyses.

In the first set of analyses, maternal intelligence was entered first as a predictor of children's achievement , and the home environment measures at three different points in time were all entered in the second step. The results of the analyses showed that maternal intelligence by itself accounted for a relatively large portion of the variance in the children's achievement (16-17% for the overall sample). The F values for the models were all found to be highly significant (p < .001).

In the second step of the analysis, the HOME was entered into the models. When it was added, it enhanced the prediction of children's achievement, accounting for an additional 3 to 6% of the variance, for the overall sample and for both ethnic groups. As shown in Table 12, the results indicated that children from more favorable home environments achieved higher scores on all the cognitive measures, with one exception; none of the HOME measures (1986, 1988, & 1990) predicted Caucasian children's Math scores when maternal intelligence was controlled. Moreover, it couldn't be concluded that any of the HOME measures at

TABLE 12

Multiple Regression Analysis: The Quality of Home Environment And Maternal Intelligence as Predictors of Children's Achievement

			STAN	owdized reta	(B)				
		PIAT MATH		READI	ING RECOGNITIO	z	HEA01	ING COMPRENE	N
Predictor Variables	Overall Sample (n=506)	African- American (n=341)	Caucasian (n=225)	Oveeral Sample (n⇔5055)	African- American (n=341)	Caucesian (n≃225)	Overall Sample (n=508)	African- American (n=341)	Caucasian (n=225)
AFQT	.41***	£.	.31***			.34***	<b>**</b> *0 <b>*</b> ·		
R 2	.17	4.	8.	.16	5.		.16	. 10	¥.
u.	103.46***	50.28***	20.12***	83.66***	43.60***	24.78***	<b>96.20***</b>	34.73***	31.99***
AFOT		ġ.	.8.				.31***		
Hame (1986)	.12*	. 16 <b>°</b>	8	<b>\$</b> .	. 15*	ଞ	8	8	8
Home (1988)	₫.	8	S.	8	6.	8	₫.	8	8
Hame (1980)	8	8	6.	.10	8	\$ <u>.</u>	. 14**	<b>+</b> 1.	Ŕ
R 3	8	8.	.13	8	. 18	.16	R	. 14	କ୍ଷ
u.	31.01***	15.67***	6.88***	30.32***	15.55***	8.53***	29.99***	11.81***	11.32***
F for Change	6.91***	4.88**	2.63+	9.02***	6.70***	3. 15*	8.23***	4.49**	4.24**

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three different points in time was the best predictor of the children's achievement. Rather, each HOME measure made a unique contribution to predicting each achievement measure, in combination or in isolation. The standardized beta for maternal intelligence was considerably larger than the standardized betas for each home environment score. Together maternal Intelligence and the HOME accounted for between 13 and 20% of the variance in children's achievement. The F values at the very end of table informs if the F for the change in R-square is significant or not. They were highly significant for all of the achievement measures; however, the F for the change in R-square for Math scores among Caucasian subsample was only marginally significant (p < .10).

## Paths of Influence

As suggested in the conceptual model, this study attempted to understand how characteristics of the mothers affect the quality of the home environment directly and indirectly by influencing the broader social context in which the mother-child relationship is evolving. Ultimately, the quality of the mothers' caregiving practices is likely to influence the developmental outcomes of children. In this section, the extent to which the data are consistent with the conceptual model is discussed. Based on the theoretical model (Figure 1) and the results of observed

correlations among variables, two path models are presented in Figures 2 & 3. For each model, path coefficients are standardized betas except for the paths linking maternal intelligence, age at first birth, maternal delinquency, and self-esteem (1980) in Figure 2, and paths showing links among maternal intelligence, self-esteem (1980), and delinquency in Figure 3. For those coefficients, the zeroorder correlations are presented in brackets.

For both ethnic groups, maternal intelligence, number of children in household, and home environment were significant predictors of children's Reading Recognition scores. The effects of maternal intelligence were largely direct on child outcome for both groups. However, its effect on outcome scores also was indirect, mediated through other factors. For the African-American subsample, mothers with higher AFQT scores tended to have higher income, and they were more likely to provide cognitively stimulating and emotionally supportive home environments for their children, which in turn influenced children's cognitive competence positively. African-American mothers' age at first birth and delinquency had also indirect effects on parenting, by influencing the social contexts in which the mother-child relationship exists (i.e., level of family income). Maternal self-esteem (1980) influenced parenting behavior directly in African-American families. Of the marital variables, marital happiness had indirect effects on





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children's Reading Recognition by influencing the quality of the home environment.

For the Caucasian subsample, besides its direct effect on child's PIAT score, maternal intelligence was related to their level of family income, and the effects of this factor on children's outcomes were mediated through the home environment. Maternal intelligence also predicted marital variables (i.e., global happiness and marital discord). For the Caucasian subsample, maternal delinquency influenced parenting behavior directly and it also influenced parenting indirectly, by influencing the level of income. Maternal self-esteem (1980) influenced the level of marital communication, which in turn influenced the parenting.

### Summary of Results

In this section, the results of the present study are summarized according to the research hypotheses and research questions presented in Chapter III.

<sup>&</sup>lt;u>Hypothesis 1</u>: Mothers with higher levels of intelligence will provide better quality home environments than mothers with lower levels of intelligence. <u>Hypothesis 2</u>: Mothers with higher levels of self-esteem will provide better quality home environments than mothers with lower levels of self-esteem. <u>Hypothesis 3</u>: Mothers who delayed child bearing are likely to provide better quality home environments than mothers who started child bearing earlier. <u>Hypothesis 4</u>: Mothers with higher levels of education are likely to provide better quality home environments than mothers with lower levels of education.

In the bivariate analyses, for the entire sample and each ethnic group, mothers who had higher levels of intelligence, self-esteem, and education and mothers who delayed their childbearing were more likely to provide better quality home environments than their counterparts (see Table 8).

Of all the maternal characteristics, self-esteem measured at an earlier period (1980) emerged as a unique predictor of HOME scores of African-American mothers. Level of maternal self-esteem (1987) was significantly related to the HOME scores of the Caucasian mothers, but not the African-American mothers. The presence of maternal delinquency was negatively related to the quality of home environments mothers provide. Maternal intelligence, age at first birth, and levels of education completed by mothers were found to be related to the HOME scores for the entire group, but failed to emerge as a unique predictor for both ethnic groups (see Table 9).

<u>Hypothesis 5</u>: Mothers with higher quality marital relationships will provide a better quality home environment than mothers with lower quality marital relationships.

The results of the bivariate analyses provided some support for this hypothesis. For the entire sample, mothers who experienced higher levels of global happiness and marital communication, and lower levels of marital discord

in their marriages tended to provide more supportive home environments. For African-American mothers, the level of global happiness in their marriage was significantly related to the quality of the home environment. In contrast, the level of marital communication was positively related to home environment scores in the Caucasian subsample (see Table 8).

For African-American mothers, higher levels of global happiness in their marriage made a unique contribution to predicting a better quality home environment in the regression analyses. On the other hand, the level of marital communication was marginally related to the HOME scores of Caucasian families in the regression analyses (see Table 9).

<u>Hypothesis 6</u>: Mothers with higher levels of income will provide better quality home environments than mothers with lower level of income. <u>Hypothesis 7</u>: Mothers who have smaller numbers of children will provide better quality home environments than mothers who have more children.

Zero-order correlation for the overall sample and both ethnic groups showed that mothers who had higher levels of family income and fewer children tended to provide more supportive home environments, with one exception. Number of children was not related to the HOME scores for the Caucasian subsample. Regression analyses showed that only level of family income was a significant predictor of home environment for both ethnic groups when other factors were controlled (see Table 9).

<u>Hypothesis 8</u>: Mothers with higher levels of intelligence are likely to have children who perform at higher levels on measures of cognitive competence when the quality of the home environment is controlled.

The data supported this hypothesis. Maternal intelligence was significantly related to the children's academic achievement for the entire sample and both ethnic subsamples when the quality of home environment was controlled (see Table 11).

<u>Hypothesis 9</u>: Mothers with higher levels of intelligence are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

Mother's intelligence was found to be unrelated to the behavioral problem scores of children, with one exception, when the quality of the home environment was controlled (see Table 11). Surprisingly, Caucasian mothers with higher levels of intelligence tended to have children who were perceived of having higher scores on Total Behavioral Problem measure when other factors were controlled (see Table 11).

<u>Hypothesis 10</u>: Mothers with higher levels of self-esteem are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled. Limited support was found for this hypothesis. Mothers' self-esteem (1987) was only related to the Math scores for the African-American subsample when the quality of the home environment was controlled (see Table 11). However, for the African-American subsample, self-esteem (1980) was a significant predictor of the quality of the home environment when other factors were controlled. For the Caucasian subsample, self-esteem (1987) was a significant predictor of the quality of home environment when other factors were controlled (see Table 9). These results indicate that the effect of maternal self-esteem on children's achievement may be largely indirect, via the home environment.

# <u>Hypothesis 11</u>: Mothers with higher levels of self-esteem are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

African-American mothers' self-esteem (1987) was negatively related to Total Behavioral Problem scores, but Caucasian mothers' both measures of self-esteem were not related to any of the behavioral problem measures of their children, when the quality of the home environment was controlled (see Table 11). As pointed out above, the effect of maternal self-esteem is found to be both direct and indirect via the home environment. <u>Hypothesis 12</u>: Mothers who delayed childbearing are likely to have children who perform at higher levels on measures of cognitive competence when the quality of the home environment is controlled. <u>Hypothesis 13</u>: Mothers who delayed childbearing are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

These hypotheses were generally not supported by the When other factors were controlled, mothers' age at data. first birth was not related to the children's cognitive and behavioral outcomes, with the exception of reading comprehension for the entire sample and African-American subsample; children whose mothers delayed their childbearing tended to score higher on the Reading Comprehension test for the entire sample. However, in the case of African-American mothers, mothers who delayed childbearing were likely to have children who perform at higher levels on Reading Comprehension test (see Table 11). Age at first birth was related to several of the other predictor variables used in the analysis, and this may explain why it did not have an effect on the outcome of interest when these other factors were controlled.

<u>Hypothesis 14</u>: Mothers with higher levels of education are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled.

The data did not support this hypothesis. Maternal education was found to be unrelated to the children's
cognitive outcomes for overall sample and both ethnic groups when other factors were controlled (see Table 11). According to the zero-order correlation, maternal education was significantly related to all three cognitive measures for the entire group and both ethnic groups, ranging from .12 to .29. The bivariate relation between maternal education and children's achievement may be due to the fact that both variables are related to maternal intelligence.

<u>Hypothesis 15</u>: Mothers with higher levels of education are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

This hypothesis was not supported by the data. Maternal education was found to be unrelated to the behavioral outcomes for the entire group and both ethnic groups (see Table 11).

<u>Hypothesis 16</u>: Mothers with supportive marital relationships are likely to have children who perform at higher levels on cognitive measures when the quality of home environment is controlled. <u>Hypothesis 17</u>: Mothers with supportive marital relationships are likely to have children who show fewer behavioral problems when the quality of home environment is controlled.

Global happiness in their marriage and level of marital communication were found to be related to none of the cognitive outcomes, when the quality of the home environment was controlled. The level of marital discord was negatively related to African-American and Caucasian children's Math scores and overall sample's Math and Reading Comprehension scores (see Table 11).

When the quality of the home environment was controlled, the marital variables were not related to the behavioral outcomes, with one exception. Global happiness in the marriage was found to be negatively related to the Antisocial scale scores for the overall sample. The effect of marital quality on the children's behavioral adjustment may be largely indirect.

<u>Hypothesis 18</u>: Mothers with higher levels of income are likely to have children who perform at higher levels on cognitive competence when the quality of the home environment is controlled. <u>Hypothesis 19</u>: Mothers with higher levels of income are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

The level of family income was consistently related to the behavioral outcomes of African-American children, when the quality of the home environment was controlled. For the Caucasian subsample, none of the outcome scores was related to the level of income (see Table 11). Given that family income was a significant predictor of HOME scores for both African-American and Caucasian subsample, its effect on the children's outcomes may be largely indirect, via the home environment.

Hypothesis 20: Mothers who have fewer children in the family

are likely to have children who perform at higher levels on cognitive measure when the quality of the home environment is controlled. <u>Hypothesis 21</u>: Mothers who have fewer children in the family are likely to have children who show fewer behavioral problems when the quality of the home environment is controlled.

The number of children in the household was negatively related to the African-American children's Math and Reading Recognition scores, when the quality of the home environment was controlled. For the Caucasian subsample, it was also negatively related to the two reading measures (see Table 11); children from larger families tended to score lower on the Reading Recognition and Reading Comprehension test.

No support was found for the hypothesis regarding behavioral outcomes in the overall sample and both ethnic groups. The number of children in the household typically did not have an effect on behavioral outcomes when other factors were controlled.

<u>Hypothesis 22</u>: The quality of the home environment is related to the children's academic achievement when maternal intelligence is controlled.

This hypothesis was somewhat supported by the data. The results of the analyses suggested that both maternal intelligence and home environment were significantly related to the Caucasian children's academic achievement (see Table 11). For the African-American subsample, home environment was positively related to the Reading Recognition measure.

<u>Research Question 1</u>: Does the mothers' previous delinquency predict the quality of the home environment mothers provide for their children?

Correlations showed that maternal delinquency was related to the HOME scores of Caucasian mothers. When other factors were controlled, maternal delinquency was a significant predictor of the quality of the home environment among Caucasians (see Table 9).

<u>Research Question 2</u>: Is there a direct or indirect relationship between maternal delinquency and children's level of cognitive and behavioral outcomes?

For African-American families, maternal delinquency was not related to any of the cognitive and behavioral measures. Given that maternal delinquency was not significantly related to the HOME scores among African-Americans, neither direct nor indirect effects appeared to exist.

For Caucasian families, maternal delinquency was found to be positively related to the Antisocial scores, when the quality of the home environment was controlled. Moreover, maternal delinquency was related to the quality of the home environment, when other factors were controlled. This implies that maternal delinquency also has an indirect effect on children's Antisocial behaviors.

# CHAPTER IV

# DISCUSSION AND IMPLICATIONS

This chapter begins with a summary of the major findings pertaining to the research objectives posed in Chapter I. The extent to which the data are consistent with the conceptual model guiding this research is also discussed as the findings are reviewed. Discussion of the limitations of the present study, the implications of the findings, and suggestions for future research are then presented.

1. Factors related to the home environment

Objective 1 To examine which maternal characteristics predict the quality of the home environment mothers provide. Objective 2 To examine which contextual factors predict the quality of the home environment mothers provide. Objective 3 To determine if the same factors predict the quality of home environment provided by African-American and Caucasian mothers.

The first three objectives of the present study were to identify factors that may influence the quality of care adolescent mothers provide for their children. As shown in the conceptual model, maternal characteristics, such as self-esteem and intelligence, and contextual factors, such





as number of children and level of family income, were expected to influence the quality of the home environment the mothers provided. As expected, the results of the study showed that no single variable determined the outcome, rather maternal characteristics and contextual factors in which the mother and child relationship is embedded were all related to the quality of care children received. Findings from this study were consistent with Belsky's (1984) view that parenting is multiply determined.

For the entire sample, maternal intelligence, selfesteem (1980), mothers' age at first birth, level of education, global happiness in their marriage, and family income were found to be significantly related to the quality of the home environment mothers provide for their children. Twenty to twenty-four percent of variance in HOME scores was explained by predictor variables for the overall sample and two ethnic groups.

For variables that were significant predictors of home scores in at least one of the ethnic groups, the magnitude of the unstandardized regression coefficients were compared for the two ethnic groups to determine if the two coefficients differed significantly from each other. There were two findings where the Z scores were significant; first, the effect of maternal delinquency on HOME scores was greater for the Caucasian subsample than for the African-American subsample. Second, the effect of self-esteem

(1987) was greater for the African-American subsample than for the Caucasian subsample. Therefore, not all of the factors examined in this study were equally important for both groups. These findings are consistent with the results of a study by Luster and Dubow (1990).

Contrary to expectation, maternal intelligence was not found to be related to the quality of the home environment when other factors were controlled for both ethnic subsamples. This finding is consonant with the results reported by Luster and Dubow (1990). They did not find a relation between maternal intelligence and HOME scores for African-American, Caucasian, and Hispanic teenage mothers.

The zero-order correlations in Table 8 showed that intelligence was positively correlated with HOME scores (r =.22). However, when maternal intelligence was entered in the regression equation, it failed to emerge as a unique predictor. Given that intelligence was significantly correlated with other predictor variables, the effect of intelligence on the quality of home environment appeared to be mediated by other variables (i.e., self-esteem [1987], family income).

Another possible explanation can be offered for the failure to find a relationship between maternal intelligence and HOME scores. Since the NLSY mothers in this study are not fully representative of the entire population, there may be a restricted range on both maternal intelligence and HOME

scores. This restricted range could attenuate the relation between the two variables. Other studies with samples not restricted to teen mothers have reported a significant relation between these two variables (e.g., Baharudin, 1992).

It is also important to note that because the abbreviated version of the HOME Inventory was used in this study instead of the original version, the relations between the predictor variables and the quality of the home environment provided by the mothers may have been underestimated.

2. The relation between characteristics of mothers in 1979-1980 and the context in which parent-child transactions occurs in 1990

# <u>Objective 4</u>

To determine if maternal characteristics in 1979-1980 are related to the context in which parenting occurs in 1990.

As shown in the conceptual model, characteristics of the mothers assessed in 1979-1980 were expected to predict the context in which parenting occurred in 1990. To some extent, the data were consistent with this expectation. For the Caucasian subsample, maternal intelligence influenced their global happiness in marriage, marital discord, and level of family income. Deviating from the expected direction, maternal intelligence was found to be negatively related to global happiness; mothers with higher AFQT scores tended to experience lower levels of global happiness. Maternal delinquency also was found to influence level of marital discord and family income; mothers who displayed antisocial behaviors in their teens tended to raise their children at higher levels of marital discord and lower levels of family income. The level of marital communication was influenced by maternal self-esteem measured at an earlier point in time. Number of children in household was not found to be predicted by any maternal characteristics.

For the African-American subsample, both maternal intelligence and mothers' age at first birth influenced level of family income. Mothers' age at first birth was also negatively related to number of children in the household. Mothers who delayed childbearing somewhat tended to raise their children in smaller families and had higher levels of family income than their counterparts. The presence of maternal delinquency also predicted the level of family income.

In summary, characteristics of the mother assessed at earlier points in time helped us to better understand the context in which parenting occurs ten years later. This finding is in line with Furstenberg et al.'s (1987) view that the life circumstances of teen parents have implications for the family environment in which children are raised, and eventually the well-being of their children.

3. Factors related to individual differences in children's outcomes

Objective 5 To determine if a variety of maternal characteristics and contextual factors are related to the children's outcomes, when the quality of the home environment is statistically controlled. <u>Objective 6</u> To determine if the same factors predict the children's outcomes of two ethnic groups.

With respect to the children's achievement, the children of Caucasian mothers were shown to have higher scores on all three achievement measures. Considering the context in which the African-American children are reared, this is not a surprising finding. As seen from Tables 2 and 3, African-American children in this study sample experienced more disadvantaged circumstances than Caucasian children. African-American mothers scored significantly lower on the AFQT, were younger when the first child was born, and received lower scores on the home environment African-American children also more often measure. witnessed marital discord between their parents in twoparent families. In addition, they more often came from a home that was not financially secure and where the father/mother's partner was absent. Thus, to understand parenting appropriately, consideration of the broader ecology of the family may be useful rather than focusing on limited aspects of the family environment (Luster & Okagaki, 1993).

Concerning the factors related to individual differences in children's outcomes, the conceptual model suggested that maternal characteristics and contextual factors including home environment were expected to predict the children's outcomes. To some extent the data were consistent with this expectation. The percentage of variance explained by maternal and contextual factors together was from .17 to .28 for the cognitive outcome measures and .07 to .13 for the behavioral outcome measures.

The data from this study showed that maternal intelligence was the only variable that was consistently related to all three cognitive outcomes for both groups. Unexpectedly, mothers' age at first birth tended to have a negative effect on the Reading Comprehension scores of African-American children. For the most part, maternal self-esteem, delinquency and level of education were not related to the achievement scores of children. The one exception involves Math scores in the African-American subsample. African-American mothers who had higher levels of self-esteem (1987) had children with relatively high Math scores.

Marital discord was found to affect the children's Math scores negatively in both ethnic groups. The number of children in the household was found to be related to the two reading measures for the Caucasian children, and the Math and the Reading Recognition for the African-American

children. The measure of home environment was predictive of all the achievement measures of the Caucasian children. It was only marginally related to African-American children's Reading Recognition scores.

For the behavioral outcome measures, maternal intelligence was found to be predictive of the Behavior Problem Total scores for the Caucasian subsample only. African-American children whose mothers had higher selfesteem (1987) were perceived as having lower scores on the Total Behavioral Problem scores by mothers. Maternal delinquency was found to influence Caucasian children's Antisocial scores; Caucasian mothers who displayed antisocial behaviors in their teens tended to report more antisocial behaviors of their children. The level of family income was negatively related to the African-American children's two behavioral outcomes, while the quality of home environment was negatively related to the Caucasian children's behavioral outcomes.

The variables in the conceptual model accounted for little of the variance in behavioral problems (7 to 13%) in comparison to cognitive outcomes. Behavioral problems may be better explained by the relationship history the child has had with the mother and other significant adults in his or her life. Behavioral problems may also be influenced by peers and other extrafamilial factors (e.g., television content). In addition, genetic differences among children,

in conjunction with how caregivers respond to those differences (i.e., goodness of fit between the characteristics of caregiver and child), are likely to contribute to individual differences in behavioral adjustment. A model designed to explain individual differences in behavioral problems would need to be more inclusive than the model developed for this study.

4. The relation between home environment and children's outcomes

# **Objective** 7

To determine if the quality of the home environment is predictive of children's academic achievement when maternal intelligence is statistically controlled.

Another objective of the present study was to determine if the quality of the home environment was predictive of children's outcomes when maternal intelligence was controlled. As shown in the conceptual model, children who did well on the achievement measures and were perceived as having lower behavioral problems by mothers were expected to have mothers who provided more supportive home environments. To some extent the data supported this expectation. The data from this study suggested that home environment was related to all cognitive and behaivoral outcome scores for the Caucasian subsample. Caucasian children who did well on all the achievement measures and were perceived as having lower beahvioral problems by mothers had mothers who provided more supportive home environments. However, for the African-American subsample, Reading Recognition scores only was found to be related to the HOME measure.

As indicated by Bradley et al. (1988) earlier, these coefficient scores were lower than those assessed between the Infant HOME or the Early Childhood HOME and children's academic achievement scores. As children get older, the effects of home environment on the children's cognitive outcomes seem to be attenuated. This is consistent with the findings from adoption studies. Adopted siblings tend to be more alike in early childhood than in adolescence.

The discussion of this study is not intended to suggest that all adolescent mothers are less facilitating of appropriate development or otherwise less competent than older mothers. There is sufficient research clearly documenting a range of parenting skills among adolescent mothers (King & Fullard, 1982, Luster & Rhoades, 1989).

To summarize, the life course of the child was strongly linked to the life course of the mother. Children who were doing well on the three achievement tests tended to have mothers who had limited further childbearing and had higher levels of income. In addition, factors influencing the quality of home environment and contributing to individual differences in children's outcomes may vary depending upon the age of the children and other factors such as ethnicity.

### Implications

One of the implications is derived from the linkage between the life course of the mother and the life course of the child. Strikingly, little coordination has occurred between those who study child development and those who study adult development. Human development scholars should be knowledgeable about research in each other's area and try to integrate research from each area to increase their understanding of human development across the life span.

The present study suggests that in order to understand teenage mothers and their children there is a need to develop complex, multivariate models that take into account both maternal characteristics and contextual factors as well as the interactive effects existing between them. Such considerations are necessary so that efforts at changing parenting behavior and enhancing child functioning can be maximally effective.

The proposed model of adolescent parenting can serve as a guide for basic research. An appreciation of the various levels of analysis included in this conceptual framework and attempts toward determining some testable hypotheses may facilitate the conceptual clarity which is a prerequisite for grounded theory. Further, increased knowledge and understanding about these relationships may have significance at a practical level for public decision making about teenage mothers, and therefore it can be placed in

appropriate context. Those concerned with the design, implementation, and further evaluation of intervention and primary prevention programs may find this information particularly useful in guiding decision making for resource allocation.

Based on the findings of the present study and other literature, there must be increased emphasis on the provision of comprehensive services to pregnant and parenting adolescents. Programs aimed at enhancing the parenting competence of teenage mothers and the development of their children at the same time are more likely to be effective (Luster & Mittelstaedt, 1993). This is necessary because mothers' competence and children's appropriate development are intertwined.

A review of intervention programs for teenage mothers by Clewell et al. (1989) shows that there are several promising programs underway that provide services for both adolescent mothers and their children. Child-focused interventions strive to prevent the intergenerational transmission of poverty. Center-based care offers substitute experiences for the child in terms of enriched environments, enhanced nutrition, and quality caregiver interactions. These centers seek to use various strategies for mother's effective interaction skills, child development, and sensitive child-rearing practices. The data of the present study support this view that programs to enhance parenting skills to provide supportive care for the child might be beneficial for teenage mothers and subsequently their children.

Programs also aimed at the mother attempt to alter maternal internal resources for coping (e.g. self-esteem), and encourage the mother to move toward self-sufficiency. As seen in the results, level of family income seems to be such an important factor as to who's providing quality care and who's not. Therefore, it is important for the adolescent to finish high school and perhaps continue her education in order to acquire a higher paying job.

The results of this study also suggest that children born to adolescent mothers were more likely to perform poorly in achievement tests if there are large number of children in the household. Therefore, another goal of intervention programs should be to help the adolescent mother in limiting further unintended childbearing. In summary, the findings of this study suggest that to be successful programs, they should be ecologically oriented, focusing on the mothers, their children, and the larger context in which these families are functioning.

One question that was considered in reviewing the findings was: Do these findings have implications for program and practice in Korea? This is a difficult question to answer because of the dearth of information about teenage parenthood in Korea. There is virtually no published work

on teenage parenthood in Korea. Conversations with adoption workers in Korea indicate that teen mothers are concealed within the family system. Teenage parents do not seek assistance outside their families because they believe that teenage pregnancy brings disgrace to their families. Problems associated with early parenthood are well hidden in Korea. Given the lack of information about teenage parenthood in Korea, a logical step would be to try to replicate these findings with a Korean sample. However, given the way that families in Korea deal with early childbearing, it is doubtful that this research could be conducted at this time.

# Limitations

Although the NLSY data set affords an excellent opportunity for researchers to examine a broad range of factors related to home environment and the developmental outcomes of children, there are several other variables that would have been useful to include in this study. Among the characteristics of the young mothers, measures of mother's psychological well-being other than self-esteem (e.g., depression level, and ego-resiliency) were not available in the data set. Likewise, there were no measures of childrearing beliefs or attitudes available in the data set.

Separate analyses were done for two ethnic subsamples (African-Americans vs. Caucasians) to investigate whether

the same set of predictors was significantly related to the quality of the home environment and child outcomes within each ethnic subsample. The analyses that examined the effects of marital quality on HOME environment and child outcomes are based on a small number of cases in the African-American subsample. Therefore, it is important to note that these analyses are exploratory and descriptive rather than testing specific hypotheses.

Observed correlations among the predictor variables ranged from .00 to .59 (less than 8% of the correlations were above .30), suggesting that there was no serious multicollinearity problem. However, as indicated in Chapter III, since almost all of the predictor variables (except for marital variables) were correlated, it may be difficult to isolate the specific effect of each of the predictor variables in the multiple regression analysis.

Despite the fact that no multicollinearity problem was anticipated, entering two self-esteem scores from two different times simultaneously was a concern, since selfesteem(1980) and self-esteem (1987) had a correlation of .43. Therefore another regression analysis was performed by excluding the earlier measure of self-esteem from the predictor variables. Nonetheless, entering the later measure of self-esteem only in the equation did not significantly change the results. Thus, a decision was made to keep both measures of self-esteem in the analyses.

Suggestions for Future Research

Social scientists continue to devote their attention to investigating factors that influence childrearing practices and their effects on children's development, particularly cognitive development. Information on the social-emotional adjustment of children born to teenage mothers is limited, compared to the data on academic achievement. Only a few studies that examined the relation between the life course of mothers and their children's social adjustment were located (e.g., Dubow & Luster, 1990). It seems clear that more research is needed to fully understand how characteristics of mothers and contexts combine to influence the children's social-emotional outcomes.

Future studies also may investigate the effects of other contextual factors such as level of social support that the teenage mother receives, presence of grandparents or other adults in the household, and quality of the neighborhood on parenting. Other family members, such as aunts and siblings, may also have a great influence on the child in some ethnic groups.

Finally, in the present study, the important notion that different children may evoke different environmental inputs from their parents and other adults are missing. From the finding of this study while there is strong evidence that maternal and contextual factors are critical in the development of children, it must also be taken into

account that some children may initiate problem behaviors which lead to negative parental socialization practices and negative family environments. Future research may also examine how child characteristics (i.e., age and sex of child, physical attractiveness, temperament, health status) are related to HOME scores and the developmental outcome measures. APPENDICES

APPENDIX A HOME(Home Observation for Measurement of the Environment) PIAT(Peabody Individual Achievement Test) BPI(Behavior Problem Index)

# Measures of 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 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-SF for the National Longitudinal Survey of Youth. The subscales from which the items were taken are also included.

#### HOME Inventory: Short Form (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 self-care routines, e.g., makes bed, cleans room, cleans up after spills, 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.).
- 28. Child has free access to at least ten appropriate books.
- 29. 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.).
- 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 from 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 theater performance.
- 46. Parents discuss television programs with child.

Paternal Involvement

- 48. Father (or father substitute) regularly engages in outdoor recreation with child.
- 49. Child sees 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 items 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).

# SECTION 4: BEHAVIOR PROBLEMS INDEX

# FOR CHILDREN WHO ARE 4 YEARS AND OLDER

For \_\_\_\_\_\_ who is at least 4 years old or older.

CHILD'S NAME

INSTRUCTIONS TO MOTHER/GUARDIAN:

(If your child has not yet had his/her 4th birthday, then you are finished with this booklet.)

These statements are about behavior problems many children have.

As you read each sentence, decide which phrase best describes your child's behavior over the last three months then circle the number that goes with the answer you choose.

If any question is not clear, please circle the question number and ask the interviewer about it when you have finished the booklet.

1. He/She has sudden changes in mood or feeling.

	(CIRCLE ONE)	
Often true	1	.72/
Sometimes true	2	
Not true	3	

2. He/She feels or complains that no one loves him/her.

	(CIRCLE ONE)	
Often true	1	73/
Sometimes true	2	
Not true	3	

3. He/She is rather high strung, tense and nervous.

	(CIRCLE ONE)	
Often true	1	74/
Sometimes true	2	
Not true	3	

4. He/She cheats or tells lies.

	(CIRCLE ONE)	
Often true	· · · · · · · 1	75/
Sometimes true	2	
Not true	3	

5. He/She is too fearful or anxious.

	(CIRCLE ONE)	
Often true	1	76/
Sometimes true	2	
Not true	3	

6. He/She argues too much.

	(CIRCLE ONE)	
Often true	1	17/
Sometimes true	2	
Not true	3	

7. He/She has difficulty concentrating, cannot pay attention for long.

# (CIRCLE ONE)

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Often true	1	78/
Sometimes true	2	
Not true	3	

27. He/She is disobedient at school.

	(CIRCLE ONE)	
Often true	1	31/
Sometimes true	2	
Not true	3	
Never Attended School	4	

28. He/She has trouble getting along with teachers.

(CIRCL)	E ONE)
Often true	1 32/
Sometimes true	2
Not true	3
Never Attended School	4

29. He/she feels others are out to get him/her.

	(CIRCLE ONE)
Often true	1 33/
Sometimes true	2
Not true	3

30. He/she hangs around with kids who get into trouble.

	(CIRCLE ONE)	
Often true	1	34/
Sometimes true	2	
Not true	3	

31. He/she is secretive, keeps things to himself/herself.

(CIRCLE ONE)	
Often true	. 1 35/
Sometimes true	. 2
Not true	. 3

32. He/she worries too much.

	(CIRCLE ONE)	
Often true	1	36/
Sometimes true	2	
Not true	3	

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121 8. He/She is easily confused, seems to be in a fog. (CIRCLE ONE) Often true..... 1 12/ Sometimes true..... 2 9. He/She bullies or is cruel or mean to others. (CIRCLE ONE) Often true..... 1 13/ Sometimes true..... 2 10. He/She is disobedient at home. (CIRCLE ONE) Often true..... 1 14/ Sometimes true..... 2 11. He/She does not seem to feel sorry after he/she misbehaves. (CIRCLE ONE) Often true..... 1 15/ Sometimes true..... 2 12. He/She has trouble getting along with other children. (CIRCLE ONE) Often true..... 1 16/ Sometimes true..... 2 

122 13. He/She is impulsive, or acts without thinking.

	(CIRCL	e one)	
Often tr	ue	1	17/
Sometime	s true	2	
Not true	• • • • • • • • • • • • • • • • • • • •	3	

14. He/She feels worthless or inferior.

	(CIRCLE ONE)	
Often true	1	18/
Sometimes true	2	
Not true	3	

15. He/She is not liked by other children.

	(CIRCLE ONE)	
Often true	1	19/
Sometimes true	2	
Not true	3	

16. He/She has a lot of difficulty getting his/her mind off certain thoughts (has obsessions).

	(CIRCLE ONE)	
Often true	1	20/
Sometimes true	2	
Not true	3	

17. He/She is restless or overly active, cannot sit still.

#### (CIRCLE ONE)

Often true	1	21/
Sometimes true	2	
Not true	3	

.

Please turn to next page

.

123 18. He/She is stubborn, sullen, or irritable.

(CIRCLE ONE)	
Often true 1	22/
Sometimes true	
Not true	

19. He/She has a very strong temper and loses it easily.

	(CIRCLE ONE)	
Often true	1	23/
Sometimes true	2	
Not true	3	,

20. He/She is unhappy, sad, or depressed.

(CIRCLE ONE)		(CIRCLE ONE)	
C	Often true	1	24/
5	Sometimes true	2	
1	Not true	3	

21. He/She is withdrawn, does not get involved with others.

	(CIRCLE ONE)	
Ofte	en true 1	. 25/
Some	times true 2	
Not	true 3	

22. He/She breaks things on purpose or deliberately destroys his/her own or another's things.

124

23. He/She clings to adults. (CIRCLE ONE) Often true..... 1 27/ Sometimes true..... 2 24. He/She cries too much. (CIRCLE ONE) Often true..... 1 28/ Sometimes true..... 2 25. He/She demands a lot of attention. (CIRCLE ONE) Often true..... 1 29/ Sometimes true..... 2 26. He/She is too dependent on others. (CIRCLE ONE) Often true..... 1 30/ Sometimes true..... 2 

#### Please turn to next page

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#### SECTION 8: PLAT MATH TEST

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AGES: 5 YEARS AND OLDER

STEP ONE: CHECK CHILD FACE SHEET (ITEM 4). IS CHILD'S <u>PPVT</u> AGE 5 YRS OR OLDER?

> YES..... 1 49-50/ NO...(SKIP TO SECTION 10, CS-63)... 0

[STEP TWO: IF NEEDED, READ TO MOTHER/GUARDIAN.]

This section measures (CHILD)'s mathematical skills. The questions begin at a very basic skill level and go to a very high skill level. No one is expected to answer all the questions.

- [STEP THREE: IF NEEDED, SEE Q X Q.]
- STEP FOUR: PRACTICE EXERCISES.
  - A. CHECK CHILD FACE SHEET (ITEM 5). IS CHILD IN 1ST GRADE OR HIGHER? YES.....(SKIP TO C)..... 1 51-52/

YES.....(SKIP TO C)..... 1 51-52/ NO......(GO TO B)..... 0

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- B. PRACTICE EXERCISES FOR CHILDREN NOT YET IN 1ST GRADE.
  - TURN TO "INTRODUCTION TO THE MATHEMATICS SUBTEST" (IN PIAT VOLUME I). READ: Let's start with some math problems. First, we'll do some just for practice to show you what they are like.
  - (2) FOLLOW TEXT IN EASEL FOR PRACTICE EXERCISES A E THEN GO TO STEP FIVE.
- C. NO PRCTICE FOR CHILDREN IN 1ST GRADE OR HIGHER. READ: We are going to start with some mathematics problems.

Some of the first ones would be too easy for you, so let's start with this one.

(aa ma a 1

STEP FIVE: CODE CHILD'S GRADE. TURN TO APPROPRIATE EASEL PAGE AND PROCEED.

KINDERGARIEN OR LESS (GO 10 Q.1, $CS=52$ ) 00	
1ST GRADE (GO TO Q.15, CS-52) 01	
2ND GRADE (GO TO Q.25, CS-52) 02	
3RD GRADE (GO TO Q.30, CS-52) 03	53-54/
4TH GRADE (GO TO Q.35, CS-52) 04	•
5TH GRADE (GO TO Q.40, CS-52) 05	
6TH GRADE (GO TO Q.45, CS-52) 06	
7TH GRADE (GO TO Q.50, CS-52) 07	
8TH GRADE (SKIP TO Q.54, CS-53) 08	
9TH GRADE (SKIP TO Q.58, CS-53) 09	
10TH GRADE (SKIP TO Q.60, CS-53) 10	
11TH GRADE (SKIP TO Q.62, CS-53) 11	
12TH GRADE (SKIP TO 0.64, CS-53)	

BASAL =	5	OF 5	5 CORRECT
CEILING	=	5 OF	5 WRONG

IF STARTING Q. IS WRONG, DROP
BACK TO NEXT GRADE LEVEL
UNTIL CHILD ANSWERS CORRECTLY.
****THEN TEST FORWARD****
IF CHILD CAN'T GET 5 IN A ROW
CORRECT, WORK BACK, ITEM BY
ITEM TO GET BASAL

			RECO	RD	(CODE C	NE)			·		RECOF	B	(CODE	ONE	2)
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	3.	(3)	( BEGIN	)63-64/ DECK 31	1	2	65-66/		29.	(3)	(	) 55-56/	1	2	57-58/
	4.	(1)	(	)11-12/	1	2	13-14/	3rd	30.	(2)	(	) 59-60/	1	2	61-62/
	5.	(4)	(	)15-16/	1	2	17-18/		31.	(2)	( BEGIN	) 63-64/	1	2	65-66/
	6.	(3)	(	)19-20/	1	2	21-22/		32.	(4)	(	)11-12/	1	2	13-14/
	7.	(3)	(	)23-24/	1	2	25-26/		33.	(4)	(	)15-16/	1	2	17-18/
	8.	(1)	(	) 27-28/	1	2	29-30/		34.	(2)	(	) 19–20/	1	2	21-22/
	9.	(4)	(	)31-32/	1	2	33-34/	4th	35.	(3)	(	)23-24/	1	2	25-26/
	10.	(4)	(	) 35-36/	1	2	37-38/		36.	(1)	(	) 27–28/	1	2	29-30/
	11.	(1)	(	) 39-40/	1	2	41-42/		37.	(2)	(	)31-32/	1	2	33-34/
	12.	(3)	(	)43-44/	1	2	45-46/		38.	(3)	(	)35-36/	1	2	37-38/
	13.	(4)	(	)47-48/	1	2	49-50/		39.	(1)	(	) 39-40/	1	2	41-42/
	14.	(2)	(	)51-52/	1	2	53-54/	5th	40.	(3)	(	)43-44/	1	2	45-46/
lst	15.	(4)	(	) 55-56/	1	2	57-58/		41.	(4)	(	) 47-48/	1	2	49-50/
	16.	(3)	(	) 59-60/	1	2	61-62/		42.	(4)	(	)51-52/	1	2	53-54/
	17.	(1)	(	)63-64/	1	2	65-66/		43.	(1)	(	) 55-56/	1	2	57-58/
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	19.	(2)	(	)15-16/	1	2	17-18/	6th	45.	(4)	(	) 63 <b>-64</b> /	1	2	65-66/
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	22.	(1)	(	) 27–28/	1	2	29-30/		48.	(1)	(	) 19–20/	' 1	2	21-22/
	23.	(2)	(	)31-32/	1	2	33-34/		49.	(3)	(	)23-24/	' 1	2	25-26/
	24.	(2)	(	) 35-36/	1	2	37-38/	7th	50.	(3)	(	) 27-28/	' 1	2	<b>29-</b> 30/
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8th	54.	(4)	(	) 43-44/	/ 1	2	45-46/	70.	(1)	(	)51-52/	1	2 53-54/	
	55.	(2)	(	) 47-48/	/ 1	2	49-50/	71.	(2)	(	) 55-56/	1	2 57-58/	
	56.	(3)	(	) 51-52,	/ 1	2	53-54/	72.	(1)	(	) 59-60/	1	2 61-62/	
	57.	(1)	(	) 55-56,	/ 1	2	57-58/	73.	(1)	( BECIN	)63-64/	1	2 65-66/	8
9th	58.	(2)	(	) 59–60,	/ 1	2	61-62/	74.	(3)	(	)11-12/	1	2 13-14/	
	59.	(2)	( BECIN	)63-64,	/ 1	2	65-66/	75.	(3)	(	)15-16/	1	2 17-18/	
10th	60.	(1)	(	)11-12,	/ 1	2	13-14/	76.	(4)	(	)19-20/	1	2 21-22/	
	61.	(3)	(	) 15-16,	/ 1	2	17-18/	77.	(3)	(	)23-24/	1	2 25-26/	
11th	62.	(1)	(	) 19–20,	/ 1	2	21-22/	78.	(2)	(	) 27–28/	1	2 29-30/	
	63.	(4)	(	)23-24,	/ 1	2	25-26/	79.	(3)	(	)31-32/	1	2 33-34/	
12th	64.	(3)	(	) 27–28,	/ 1	2	<b>29-</b> 30/	80.	(4)	(	)35-36/	1	2 37-38/	
	65.	(2)	(	) 31-32,	/ 1	2	33-34/	81.	(2)	(	) 39-40/	1	2 41-42/	
	6 <b>6</b> .	(2)	(	) 35-36,	/ 1	2	37-38/	82.	(1)	(	)43-44/	1	2 45-46/	
	67.	. (4)	(	) 39-40,	/ 1	2	41-42/	83.	(2)	(	) 47-48/	1	2 49-50/	
	6 <b>8</b> .	. (4)	(	) 43-44,	/ 1	2	45-46/	84.	(2)	(	) 51–52/	1	2 53-54/	

85.	INTERVIEWER:	<ul> <li>A. DID YOU GET A BASAL? ARE THERE FIVE (5) CONSECUTIVE CORRECT RESPONSES AT THE BEGINNING?</li> <li>YES</li></ul>	IF CHILD REACHES ITEM #1 WITHOUT GETTING 5 OF 5 CORRECT, ITEM #1 IS BASAL!	55-56/
		YES1 NO(GO BACK AND GET THE CEILING)0	L	57-58/
128

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8

86. <u>INTERVIEWER</u>: COMPUTE SCORE:

P	. RECORD FINAL	BASAL.				59-60/
E	. ENTER CEILING	GQ# (LAST ITEM WR	iong).		II	61-62/
c	. ENTER TOTAL	OF ERRORS BETWEE	n basal and	CEILING.		63-64/
E	). SUBIRACT 'C'	FROM 'B'.			= sa	ORE 65-66/
INTERVI	EWER REMARKS:				BEG	IN DECK 37
87. WA Se	s anyone else pr ction?	RESENT, IN THE ROO	M DURING THE	ADMINISTRATI	ON OF THIS	
	YES	5	R A)	1		11-12/
	NO	(GO TO Ç	2.88)	0		
P	. <u>IF PRESENT</u> ,	CODE # PERSONS	EFFECT ON SEEMED TO BE HARMFUL	CHILD'SPERFOR NONE OBSERVABLE	MANCE SEEMED TO IMPROVE	
	MOTHER	13-14/	1	2	3	15-16/
	FATHER	17-18/	1	2	3	19–20/
	OTHER ADULITS	21-22/	1	2	3	23-24,
	CHILDREN	25-26/	1	2	3	27-28,
		Low (tired) Medium High			1 2 3	<b>29</b> –30,
89. V	VAS THIS SECTION	TERMINATED PREMAT	IURELY?			
		YES	(ASK A)		1	31-32
		NO (GO TO SI	ECTION 9, CS	-55)	0	
l	A. REASON FOR P (CODE ALL TH	REMATURE TERMINAT. AT APPLY.)	ION OF THIS :	SECTION.		
		PARENT/GUARDIAN	TERMINATED/	REFUSED	01	33-34,
		CHILD WOULD NOT	RESPOND	• • • • • • • • • • • • •	02	35-36,
		MAJOR INTERRUPT	ION CAUSED T	ERMINATION	03	37-38,
		CHILD COULD NOT	UNDERSTAND	TASK	04	39-40,
		CHILD HAD LANGU	AGE PROBLEM.	••••	05	41-42,
		CHILD'S EMOTION	AL CONDITION	•••••	06	43-44,
		CHILD'S PHYSICA	L CONDITION.	• • • • • • • • • • • • •	07	45-46,
		OTHER (SPECIFY)				
					08	47-48,

49-50/

SECTION 9: PLAT READING

AGES: PPVT AGE 5 YEARS AND OLDER

#### PART A: READING RECOGNITION

STEP ONE: CHECK CHILD FACE SHEET (ITEM 4). IS CHILD'S <u>PPVT</u> AGE 5 YRS OR OLDER?

YES..... 1 NO... (SKIP TO SECTION 10, CS-63).. 0

[STEP TWO: IF NEEDED, READ TO MOTHER/GUARDIAN.]

This section measures (CHILD)'s ability to recognize letters and words. The questions begin at a basic level and proceed to a higher level of skill. No one is expected to answer all the questions.

[STEP THREE: IF NEEDED SEE Q X Q.]

STEP FOUR: PRACTICE EXERCISES.

A. CHECK CHILD FACE SHEET (ITEM 5). IS CHILD IN 1ST GRADE OR HIGHER?

YES..... (SKIP TO C)..... 1 NO..... (GO TO B)..... 0

- B. PRACTICE FOR CHILDREN NOT YET IN 1ST GRADE.
  - (1) TURN TO "INIRODUCTION TO READING RECOGNITION SUBJECT" (IN PIAT VOLUME I). READ:

Now I am going to give you some problems in reading. First, let's look at some more practice ones to show you what these are like. (TURN TO EXERCISE A.)

- (2) FOLLOW TEXT IN EASEL FOR PRACTICE EXERCISES (A-E). THEN GO TO STEP FIVE.
- C. NO PRACTICE FOR CHILDREN IN 1ST GRADE OR HIGHER. TURN TO "INTRODUCTION TO READING RECOGNITION SUBTEST" (PIAT VOLUME 1) READ:

Now we are going to do some reading. Again, let's skip over some of the very easy ones and start here. GO TO STEP FIVE.

129

STEP FIVE: TURN BACK TO Q.86D, CS-54. RECORD SCORE IN BOX A BELOW. SKIP TO STARTING Q# (SEE BOX A), TURN TO APPROPRIATE EASEL PAGE AND PROCEED.

(STARTING Q# FROM SECTION 8, CS-54, Q.86D.)---->

51-52/

BOX A

53-54/

BASAL = 5 OF 5 CORRECT CEILING = 5 OF 5 WRONG

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IF STARTING Q. IS WRONG, JUMP BACK 5 UNTIL CHILD ANSWERS CORRECTLY.
****THEN TEST FORWARD****
IF CHILD CAN'T GET 5 IN A ROW CORRECT,

# **INTERVIEWER:** BE SURE TO CIRCLE EVERY ITEM ADMINISTERED. BE SURE TO CODE <u>EVERY</u> ANSWER.

		CTDCT F	CODE ONE	5	-			CODE ONE				
# 	#	ANSWER	CORRECT	WRON	G	PLATE #	/ ITEM #	ANSWER	CORRECT	WRONG	;	
1	1.	(1)	1	2	55-56/		23.	(wagon)	1	2	43-44/	
2	2.	(2)	1	2	57-58/		24.	(fishing)	1	2	45-46/	
3	3.	(1)	1	2	59-60/		25.	(brook)	1	2	47-48/	
4	4.	(4)	1	2	61-62/		26.	(gloves)	1	2	49-50/	
5	5.	(3)	1	2	63-64/		27.	(smile)	1	2	51-52/	
6	6.	(2)	1	2 SECTN	65-66/		28.	(colt)	1	2	53-54/	
7	7.	(1)	1	2	11-12/	TOT ACTES	29.	(round)	1	2	55-56/	
8	8.	(2)	1	2	13-14/	17>	30.	(blaze)	1	2	57-58/	
9	9.	(4)	1	2	15-16/		31.	(feather)	1	2	59-60/	
10	10.	(B b)	1	2	17-18/		32.	(flour)	1	2	61-62/	
11	11.	(A a)	1	2	19-20/		33.	(igl∞)	1	2	63-64/	
12	12.	(0)	1	2	21-22/		34.	(liquid)	1	2	65-66/	
13	13.	(S)	1	2	23-24/		35.	(purse)	1	BEGIN 2	DECK 39 11-12/	
14 DI MTE	14.	(N)	1	2	25-26/		36.	(dangerous)	1	2	13-14/	
15>	15.	(C)	1	2	27-28/		37.	(lodge)	1	2	15-16/	
	16.	(i)	1	2	<b>29-</b> 30/		38.	(stylish)	1	2	17-18/	
	17.	(d)	l	2	31-32/		39.	(accident)	1	2	19-20/	
DT MOR	18.	(m)	1	2	33-34/		40.	(ruin)	1	2	21-22/	
16>	19.	(run)	1	2	35-36/		41.	(exercise)	1	2	23-24/	
	20.	(play)	1	2	37-38/		42.	(pigeon)	1	2	25-26/	
	21.	(jump)	1	2	39-40/		43.	(moisture)	1	2	27-28/	
	22.	(kitten)	1	2	41-42/		44.	(artificial	) 1	2	29-30/	
		INTER	WIEWER:	IF YO	U CODED g	5 IN A R	ow wro	NG, SKIP TO	Q.85.			

130

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131

BASAL = 5 OF 5 CORRECT CEILING = 5 OF 5 WRONG IF STARTING Q. IS WRONG, JUMP BACK 5 UNTIL CHILD ANSWERS CORRECTLY. \*\*\*\*\*THEN TEST FORWARD\*\*\*\*\* IF CHILD CAN'T GET 5 IN A ROW CORRECT, WORK BACK, ITEM BY ITEM TO GET BASAL.

INTERVIEWER: CIRCLE EACH ITEM GIVEN. CODE EVERY ANSWER.

		<u>(</u>	DODE ONE			PLATE/ITEM C	, TDOI F	CODE ONE			
۹LATE; ∦ د	#	ANSWER (	CORRECT WRONG			PLATE, #	/ITEM #	ANSWER	CORRECT	WRON	Э СК <u>40</u>
DI MORT	45.	(anchor)	1	2	31-32/		65.	(diminutive)	1	2	11-12/
18>	46.	(elegant)	1	2	33-34/		66.	(ensign)	1	2	13-14/
	47.	(gaudy)	1	2	35-36/		67.	(dilapidated	) 1	2	15-16/
	48.	(treacherous	5) 1	2	37-38/		68.	(bureaucrat)	1	2	17-18/
	49.	(yacht)	1	2	39-40/		69.	(adulation)	1	2	19-20/
	50.	(guerilla)	1	2	41-42/		70.	(exorbitantl	y) 1	2	21-22/
	51.	(boisterous)	1	2	43-44/		71.	(epoch)	1	2	23-24/
	52.	(isthmus)	1	2	45-46/		72.	(aesthetic)	1	2	25-26/
	53.	(anticipatio	on) 1	2	47-48/		73.	(deluge)	1	2	27-28/
	54.	(vertebrates	s) 1	2	49-50/		74.	(didactic)	1	2	29-30/
	55.	(contemplate	∍) 1	2	51-52/		75.	(titular)	1	2	31-32/
	56.	(heroine)	1	2	53-54/		76.	(credulity)	1	2	33-34/
	57.	(unparallele	æd) 1	2	55-56/	DI እጥፍ	77.	(judiciable)	1	2	35-36/
	58.	(inaccessib)	le) 1	2	57-58/	20>	78.	(nihilism)	1	2	37-38/
	59.	$(\infty)$	1	2	59-60/		79.	(pharyngeal)	1	2	39-40/
	60.	(medieval)	1	2	61-62/		80.	(pterodacty)	) 1	2	41-42/
PLATE	61.	(pinnacle)	1	2	63-64/		81.	(macrocosm)	1	2	43-44/
19>	62.	(picturesque	≥) 1	2	65-66/		82.	(chimerical)	1	2	45-46/
	63.	(adjacent)	1	2	67-68/		83.	(disaccharid	e) 1	2	47-48/
	64.	(navigable)	1	2	69-70/		84.	(apophthegm)	1	2	49-50/

INTERVIEWER: IF YOU CODED 5 IN A ROW WRONG, SKIP TO Q.85.

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# DECKS 40-41

	85.	INTERVIEWER	<u>}</u> : A. ₿.	DID YOU GET A BASAL? CONSECUTIVE <u>CORRECT</u> I YES NO (GO BACK AN DID YOU GET A CEILING CONSECUTIVE RESPONSE	ARE THERE <u>FIVE</u> (5) RESPONSES AT THE BEGIN ND GET THE BASAL) G? ARE THE LAST <u>FIVE</u> S <u>INCORRECT</u> ?	NING? . 1 . 0 (5)	IF CHILD REACHES ITTEM # 1 WITHOUT 51-52/ 5 OF 5 CORRECT, ITTEM # 1 IS BASAL!
				YES		. 1	53-54/
	86.	WAS THIS SEC	CTION I	TERMINATED PREMATURELY	? SK A)	. 1	55-56/
				NO (GO TO SEC	TION 10, CS-63)	. 0	,
9		A. REASON (CODE )	FOR PR	REMATURE TERMINATION O IT APPLY.)	F THIS SECTION.		
				PARENI/GUARDIAN TE	RMINATED/REFUSED	01	57-58/
				CHILD WOULD NOT RE	SPOND	02	59-60/
				MAJOR INTERRUPTION	CAUSED TERMINATION	03	61-62/
	-			CHILD COULD NOT UN	DERSTAND TASK	04	63-64/
				CHILD HAD LANGUAGE	PROBLEM	05	<b>65-</b> 66/
				CHILD'S EMOTIONAL	CONDITION	06	67-68/
				CHILD'S PHYSICAL C OTHER (SPECIFY)	ONDITION	07 -	<b>69-</b> 70/
						_ 08	71-72/
	87.	INTERVIEWE	<u>R</u> : 001	IPUTE SCORE:			BEGIN DECK 41
		Α.	ENIER	FINAL BASAL.	ll		11-12/
		в.	ENTER (LAST )	HIGHEST CEILING Q# TTEM WRONG).	II		13-14/
		с.	ENTER BASAL	TOTAL # OF ERRORS BEI AND CEILING.	WEEN		15-16/
		D.	SUBI	RACT 'C' FROM 'B'.	= SO	ORE	17-18/
		Ε.	IS CH	ILD'S SCORE IN BOX 'D'	15 OR HIGHER?		
				YES (GO TO	STEP SIX)	1	

NO..... (SKIP TO Q.87, CS-62)..... 0

**19-2**0/

[STEP SIX: IF NEEDED, READ TO MOTHER/GUARDIAN.]

This section measures (CHILD)'s ability to understand what (he/she) reads. The questions begin at a very basic skill level and go to a very high skill level. No one is expected to answer all the questions.

(STEP SEVEN: IF NEEDED, SEE Q X Q.]

- STEP EIGHT: PRACTICE EXERCISES.
  - A. CHECK CHILD FACE SHEET (ITEM 5). IS CHILD IN 1ST GRADE OR HIGHER GRADE?

YES... (SKIP TO C)..... 1 NO.... (GO TO B)..... 0 21-22/

- B. PRACTICE FOR CHILDREN NOT YET IN 1ST GRADE.
  - (1) TURN TO "INTRODUCTION TO READING COMPREHENSION SUBTEST" (IN PLAT VOLUME II) AND READ:

Now I want to find out how well you understand and remember what you read. Let us practice again a little so you will know what I want you to do. (GO TO PRACTICE A.)

- (2) FOLLOW TEXT IN EASEL FOR PRACTICE EXERCISES.
- C. NO PRACTICE FOR CHILDREN IN 1ST GRADE OR HIGHER. TURN TO "INTRODUCTION TO THE READING COMPREHENSION SUBJEST," IN PLAT VOLUME II AND READ:

Now I want to find out how well you can understand and remember what you read. But, first, let me explain what you are to do. I am going to show you a page. It will have only a sentence printed on it. Read this sentence silently (PAUSE) to yourself (PAUSE) just once. When you have finished, look up at me. Then I will show you the next page which will have four pictures on it. You are to (show me/point to/tell me the number of) the picture that best describes what you have read. Be sure to remember what you have read, once, and then look up at me.

STEP NINE: RECORD SCORE FROM Q.87D, CS-58 IN BOX B BELOW. SKIP TO STARTING Q# (SEE BOX B BELOW), TURN TO APPROPRIATE EASEL PAGE AND PROCEED IF RAW SCORE = 15 OR HIGHER.

(STARTING Q# FROM PART A, CS-58, Q.87D.)

23-24/

BOX B

9

BASAL = 5 OF 5 CORRECT CEILING = 5 OF 5 WRONG

IF STARTING Q. IS WRONG, JUMP BACK 5 UNTIL CHILD ANSWERS CORRECTLY. \*\*\*\*\*THEN TEST FORWARD\*\*\*\*\* IF CHILD CAN'T GET 5 IN A ROW CORRECT, WORK BACK, ITEM BY ITEM TO GET BASAL.

# INTERVIEWER: BE SURE TO CODE EVERY ANSWER.

		CODE ONE								CODE ONE					
PLATE #	ANSWER	RECOR	rd DNSE	COF	RRECT	WRO	DNG	PLAT #	e Answer	RECORI	) NSE	CORRECT	WRON	NG	
19.	(3)	(	) 25-	26/	1	2	27-28/	42.	(3)	(	) 59	-60/ 1	2	61-62/	
20.	(1)	(	) 29-	30/	1	2	31-32/	43.	(1)	(	) 63	-64/ 1	2	65-66/	
21.	(2)	(	) 33-	34/	1	2	35-36/	44.	(4)	(	) 67	-68/ 1	2	<b>69-</b> 70/	
22.	(3)	(	) 37-	38/	1	2	39-40/	45.	(2)	(	)11	k 43 -12/ 1	2	13-14/	
23.	(2)	(	)41-	42/	1	2	43-44/	46.	(3)	(	) 15	-16/ 1	2	17-18/	
24.	(3)	(	) 45-	46/	1	2	47-48/	47.	(1)	(	) 19	-20/ 1	2	21-22/	
25.	(1)	(	) 49-	50/	1	2	51-52/	48.	(1)	(	) 23	-24/ 1	2	25-26/	
26.	(1)	(	) 53–	54/	1	2	55-56/	49.	(2)	(	)27	-28/ 1	2	<b>29-</b> 30/	
27.	(2)	(	) 57-	58/	1	2	59-60/	50.	(3)	(	) 31	-32/ 1	2	33-34/	
28.	(3)	(	)61-	62/	1	2	63-64/	51.	(2)	(	) 35	-36/ 1	2	37-38/	
29.	(2)		) 65-	66/	1	2	67-68/	52.	(4)	(	) 39	-40/ 1	2	41-42/	
30.	(1)	(	)11-	12/	1	2	13-14/	53.	(3)	(	) 43	-44/ 1	2	45-46/	
31.	(3)	(	) 15-	16/	1	2	17-18/	54.	(4)	(	) 47	-48/ 1	2	49-50/	
32.	(4)	(	) 19–	20/	1	2	21-22/	55.	(2)	(	) 51	-52/ 1	2	53-54/	
33.	(2)	(	)23-	24/	1	2	25-26/	56.	(4)	(	) 55	-56/ 1	2	57-58/	
34.	(4)	(	) 27-	28/	1	2	29-30/	57.	(2)	(	) 59	-60/ 1	2	61-62/	
35.	(3)	(	)31-	32/	1	2	33-34/	58.	(4)	(	)63	-64/ 1	2	65-66/	
36.	(4)	(	) 35-	36/	1	2	37-38/	59.	(3)	(	)11	K 44 12/ 1	2	13-14/	
37.	(1)	(	) 39-	40/	1	2	41-42/	60.	(2)	(	) 15	-16/ 1	2	17-18/	
38.	(2)	(	)43-	44/	1	2	45-46/	61.	(3)	(	)19	-20/ 1	2	<b>21-</b> 22/	
39.	(3)	(	) 47-	48/	1	2	49-50/	62.	(2)	(	) 23	-24/ 1	2	25-26/	
40.	(1)	(	) 51-	52/	1	2	53-54/	63.	(4)	(	) 27	-28/ 1	2	<b>29-</b> 30/	
41.	(3)	(	) 55-	56/	1	2	57-58/	64.	(3)	(	) 31	-32/ 1	2	33-34/	

INTERVIEWER: IF YOU CODED 5 IN A ROW WRONG, GO TO Q 85.

								135				•	г	
				$\infty$	DE ONE							$\underline{\infty}$	DE ONE	
PLATE #	e Answer	RECO RESP	rd Onse	CO1	RECT	WRON	G	PLATT #	e Answer	RECO RESP	rd Onse	$\infty$	RRECT	WRONG
65.	(4)	(	) 35-:	36/	1	2	37-38/	75.	(1)	(	) 19-	20/	1	2 21-22/
66.	(1)	(	) 39-	40/	1	2	41-42/	76.	(2)	(	)23-	24/	1	2 25-26/
67.	(2)	(	)43-	44/	1	2	45-46/	77.	(3)	(	) 27-	28/	1	2 29-30/
68.	(1)	(	) 47-	48/	1	2	49-50/	78.	(4)	(	)31-	32/	1	2 33-34/
69.	(4)	(	)51-	52/	1	2	53-54/	79.	(2)	(	) 35-	·36/	1	2 37-38/
70.	(2)	(	) 55-	56/	1	2	57-58/	80.	(3)	(	) 39-	40/	1	2 41-42/
71.	(1)	(	) 59-	60/	1	2	61-62/	81.	(3)	(	) 43-	44/	1	2 45-46/
72.	(1)	(	)63- אייזית ו	64/	1	2	65-66/	82.	(1)	(	) 47-	48/	1	2 49-50/
73.	(4)	(	)11-	12/	1	2	13-14/	83.	(2)	(	)51-	-52/	1	2 53-54/
74.	(4)	(	) 15-	16/	1	2	17-18/	84.	(1)	(	) 55-	-56/	1	2 57-58/
5. ]	INIERVI	<u>EWER</u> :	а. В.		D YOU NSECUI I D YOU	GET / TIVE ( /ES /0 GET /	A BASAL? CORRECT R (GO BACK )	ARE T ESPONS AND GE ? ARE	HERE <u>FI</u> ES AT T T THE E T THE LA	<u>VE</u> (5 HE BE  WASAL) ST FI	) GINNI 	ING? 1 0 5)		59-60/
				RE	SPONSI ! !	es <u>in</u> Kes 10(1	<u>CORRECT</u> ? 30 BACK A	ND GET	THE CE	ILING	···· ;)	1 0		61-62/
5. <u>n</u>	VIERVIE	WER:	COME	UIE	SCORI	E:								
	Α.	RECO	ORD FI	NAL	BASAI	Շ.					ا			63-64/
	в.	ENIT	ER HIG	HES	T CEI	LING	Q# (LAST	ITEM W	RONG).					65-66/
	с.	ENT	er toi	TAL	# OF 1	ERROR	s beiween	BASAL	, and ce		;.			67-68/
	D.	SUB	FACT	'C'	FROM	'B':							,	= SCORE 69-70/

:

# INTERVIEWER REMARKS:

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87. WAS ANYONE ELSE PRESENT, IN THE ROOM DURING THE ADMINISTRATION OF THIS SECTION?

YES (ANSWER A)	1	11-12/
NO (GO TO Q.88)	0	

				EFFECT ON CHILD'S PERFORMANCE								
Α.	IF PRESENT,	CODE # PER	<u>sons</u>	SEEMED I BE HARMFUL	O NONE OBSERVABLE	SEEMED TO IMPROVE						
	MOTHER		13-14/	1	2	3	15-16/					
	FATHER		17-18/	1	2	3	19-20/					
	OTHER ADULITS		21-22/	1	2	3	23-24/					
	CHILDREN		25-26/	1	2	3	27-28/					

88. CODE CHILD'S ENERGY LEVEL DURING SECTION.

Low (tired)	1	
Medium	2	29-30/
High	3	

89. WAS THIS SECTION TERMINATED PREMATURELY?

YES	(ASK A)		1	31-32/
NO (GO TO	SECTION 10,	CS-63)	0	

A. REASON FOR PREMATURE TERMINATION OF THIS SECTION. (CODE <u>ALL</u> THAT APPLY.)

	08	47-48/
OTHER (SPECIFY)		
CHILD'S PHYSICAL CONDITION	07	45-46/
CHILD'S EMOTIONAL CONDITION	06	43-44/
CHILD HAD LANGUAGE PROBLEM	05	41-42/
CHILD COULD NOT UNDERSTAND TASK	04	39-40/
MAJOR INTERRUPTION CAUSED TERMINATION	03	37-38/
CHILD WOULD NOT RESPOND	02	35-36/
PARENT/GUARDIAN TERMINATED/REFUSED	01	33-34/

APPENDIX B (Tables)

# 137 Table 13

Multiple Regression Analyses: Predictors of the Quality of the Home Environment (HOME 1990)

Predictor	Overall Sample (n = 566)	African-Americ (n = 341)	an Caucasian (n = 225)
Variables	U	nstandardized Be	tas
Intelligence	.14	.01	.06
Self-Esteem (1980	) 3.37	4.59	3.70
Age at First Birt	h 14.02	9.80	10.24
Maternal Delinque	ncy -3.67	3.62	-10.06
Self-Esteem (1987	) 1.36	54	3.45
Education	-8.07	3.88	-1.59
Global Happiness	40.56	75.61	3.81
Marital Communication	5.99	-17.79	27.21
Marital Discord	16	-1.42	3.80
Family Income	.00	.00	.00
Number of Childre	n -8.43	-12.40	4.36
R-Square	.24	.20	.21
F	11.87***	5.40***	4.08***

		Tab	le 1	4				
Zero-Order	Correlatio	ns:	The	Relation	s b	etwee	en th	he
Predictor	Variables	and	the	Quality	of	the	Home	;
	Enviro	onme	nt(1	986)				

		HOME Scores (1	986)
Predictor Variables	Overall Sample (n = 566)	African-American (n = 341)	Caucasian (n = 225)
Intelligence	.40***	.25***	.36***
Self-Esteem (19	80) .20***	.22***	•26***
Age at First Bi	rth .24***	.15**	.24***
Maternal Delinquency	01	.05	13*
* p <.05 ** p	<.01 *** p <	.001	· · · · · · · · · · · · · · · · · · ·

Table 15 Zero-Order Correlations: The Relations between the Predictor Variables and the Quality of the Home Environment(1988)

		HOME Scores (19	88)
Predictor - Variables	Overall Sample (n = 566)	African-American (n = 341)	Caucasian $(n = 225)$
Intelligence	.37***	.23***	.28***
Self-Esteem (198	0) .22***	•23***	.31***
Age at First Bir	th .20***	.13**	.16*
Maternal Delinquency	03	00	13*
Self-Esteem (198	7) .24***	.21**	.32***

\* p <.05 \*\* p <.01 \*\*\* p <.001

	Table 16	
	Multiple Regression Analyses: Predictors	
of	the Quality of the Home Environment (HOME 1986)	

Predictor	Overall Sample (n = 566)	African-American (n = 341)	Caucasian (n = 225)
variables	В	в	В
Intelligence	.34***	.17**	.29***
Self-Esteem (1	L980) .08+	.14*	.11
Age at First H	Birth .13**	.10+	.11
Maternal Delinquency	.00	.05	10
R-square	.18	.09	.17
F	26.46***	7.16	9.66***

<u>Note</u>: Betas (B) presented are standardized betas. + p <.10 \* p <.05 \*\* p <.01 \*\*\* p <.001

		Table	17		
Multiple	Regress	ion Ar	nalyses: P	redictors	;
of the Quality	v of the	Home	Environme	nt (HOME	1988)

Predictor	Overall Sample (n = 566)	African-American (n = 341)	Caucasian (n = 225)
variabies	В	В	В
Intelligence	.29***	.14*	.16*
Self-Esteem (2	1980) .07	.11+	.14+
Age at First I	Birth .09*	.08	.04
Maternal Delinquency	03	.00	08
Self-Esteem (3	1987) .10+	.09	.19*
R-Square	.16	.09	.16
F	18.50***	5.41***	7.18***

Note: Betas (B) presented are standardized betas. + p <.10 \* p <.05 \*\* p <.01 \*\*\* p <.001

	PIAT	HLW				MITION	UNSTANDW	DIZED BET	IS(B)	Ē	MICH			TISTIN	
				2					Dion of	5			E		
Predictor Variables	Overall Sample (n≕566)	African- American (n=341)	Cauca- sian (n=225)	Overal Semple (n=566)	African- American (n=341)	Sauca- sian (7-235)	Overall Sample (n=566)	African- American (n=341)	Sanca- sian (7255)	Overall Semple (n=566)	African- American (n=341)	Range Stan	Overall Sample (n=566)	African- American (n=341)	
Intel I igence	8	8	ю.	8	શ્રં	શ્રં	8	ē	શ્રં	ē	8	ē	8	8	8
Sel f-Esteem (1880)	8. -	8	90 '	01	8	8	¥.	หฺ	କ୍ଷ	8.	<u>୫</u> . -	8. '	ลุ	31	89. i
Ageat First Birth	.41	.51	- 16	ઝ	\$ġ.	ଞ୍	8	ĸ	8 <u>i</u>	8.	.31	83. '	8.	.61	8.
Maternal Del inquency	ଞ	କ୍ଷ	8.	21	ลฺ	8.	8.	t	ଞ	બ્રં	ti	ક્ષ	8	89. '	ଞ
<b>Sel f-Esteem</b> (1887)	.21	.41	8	នុ		61.	8.	12.	89. '	44	46	89. '	21	21	8
Education	.24	.45	.57	.46	છું	82.	છું	8.	.51	81.	<b>60</b>	.47	8.	.17	ક્ષ
Global Happiness	-2.30	<b>.</b> 3.81	-1.47	-1.50	-2.46	8	8.	8.	ક્ષં	-2.46 -	3.02	2.37	3.14	-2.72	3.16 16
Marital Communication	۲. ۲	1.08	<del>8</del> .	ଞ	1.16	8 <u>9</u>	В	8	1.12	1.10	1.82	8.	1.41	2.00	1.06
Marital Discord	8	-1.08	96 -	8	8	- 10	<b>5</b>	8	61	89 '	8.	21	27	27	- 15
Family Income	8	8	8.	8	8	8	8	8	8.	8.	8.	8	8. '	8.	8
Number of Children	-1.13	-1.20	ъ. Т	-1.85	-1.40	-2.78	-1.88	-1.84	7°3	8.	.67	.0	.61	8.	2
Homa(1990)	<u>6</u>	-1.31	ષ્ઠં	8	<b>10</b> .	શું	.0	8	ଞ	01	8	8.	8.	8	8
				_											

Multiple Regression Analysis: Predictors of the Children's Outcomes

TABLE 18

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