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MATERNAL EMPLOYMENT DURING THE FIRST YEAR OF LIFE AS RELATED TO COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT IN SEVEN YEAR OLD CHILDREN

By:

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ABSTRACT

EFFECTS OF MATERNAL EMPLOYMENT DURING THE FIRST YEAR OF LIFE RELATED TO POSITIVE COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT IN SEVEN YEAR OLD CHILDREN

By

Andrea B. Smith

Previous research on maternal employment has often examined children's developmental outcomes by comparing children of employed to nonemployed women. The purpose of this study was to examine a group of seven year old Caucasian children whose mothers were all employed during their first year of life to determine what child behavior/development, maternal/familial or contextual characteristics were related to enhanced cognitive and/or socioemotional development. Assessment measures included PIAT Reading and Math measures, the Behavior Problems Index and the HOME Inventory. Stepwise multiple regressions showed that maternal and familial characteristics, particularly in the areas of sibling presence, family income level and mother's level of education, were most significantly related to children's cognitive development. Mother's level of self esteem and mother's age were found to be most significantly related to the total score on the Behavior Problem's Index. Family income level, presence of siblings and timing of the mother's return to work were found to be significantly related to the subscale scores on the BPI. Scores on the HOME Inventory were found to be significantly related to mother's age, presence of siblings and gender.

In loving tribute to my father, Carroll F. Bratt, who taught me always to believe in myself and to my mother, Marilyn R. Bratt who provided me with the skills and the instrumental assistance to achieve my dreams.

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CHAPTER 1

INTRODUCTION

Background of the Study

Labor force participation of mothers with young children continues to increase dramatically. In 1960, only 19% of mothers with children under 6 years of age were employed outside the home. By 1970 that number had risen to 34.5%. Today over half of the mothers with children under one year of age are employed in outside-the-home work (Brazelton, 1986; Easterbrooks and Goldberg, 1985; Eggebeen, 1988; Googins and Burden, 1987; Hoffman, 1988). The rate of maternal employment in families with preschool and schoolaged children is even higher, with recent projections showing that by 1995 more that 65% of young children will have employed mothers (Hofferth and Phillips, 1987). Clearly, this skyrocketing number of mothers of young children in the work force illustrates a trend that has become very much a part of today's society.

Researchers from family oriented fields have produced an outstanding amount of literature related to the effects of maternal employment upon the family, and in particular, upon the children in these families. Results are numerous and

varied, making the drawing of valid conclusions very difficult. Although several factors related to maternal employment generally are accepted as contributing negatively to children's development, little has been done to study the overall range of development of children whose mothers were employed during their first year of life in both the cognitive and the socioemotional domains.

Statement of the Problem

This study investigated the relationship of dimensions of maternal employment during the first year of life, sibling presence and child's gender to developmental status in both the cognitive and the socioemotional domains for children seven years of age whose mothers were employed during their first year of life.

Many studies in the maternal employment arena have examined the effects of employment on children's development by comparing children whose mothers were employed outside the home to children whose mothers were not employed outside the home. Some recent studies have looked only at children whose mothers were employed outside the home and examined the effects of early maternal employment within this group. Recognition of these findings lead to the development of

this study, which recognizes that early maternal employment does have an impact on children's development, and which assesses differential aspects of maternal employment on seven year old children's cognitive and socioemotional development.

Purpose of the Study

Discovering which factors most greatly influence the cognitive and socioemotional development of young children of employed mothers is important knowledge as increased numbers of women re-enter the work force following childbirth. It is commonly recognized that children's development is greatly affected by the quality of parenting they receive, but increased attention recently has been focused on other factors within the family's ecosystem which influences parents' behaviors, and subsequently, children's development. (Boger and Smith, 1986; Bronfenbrenner, 1979; Hannan and Luster, 1991). A staggering amount of literature exists on the subject of maternal employment, but until recently the focus seemed to be on whether working mothers positively or negatively affected their children's cognitive, social, physical, and/or emotional development (Alvarez, 1985; Baydar and Brooks-Gunn, 1991; Belsky and Rovine, 1988; Benn, 1986; Clarke-Stewart, 1988; Desai,

Chase-Lansdale and Michael, 1991; Goldberg and Easterbrooks, 1985; Hoffman, 1988). Other recent studies are focusing on work-family relationships and the impact of the timing of maternal employment on parental functioning, childrearing behaviors, and subsequent child development (Bolger et. al, 1989; Brendt, 1983; Luster, Rhoades and Haas, 1989; Manlove and Feagans, 1990; Moorehouse, 1991; Repetti, 1989; Wells, 1988). THE PURPOSE OF THIS STUDY IS TO IDENTIFY WHICH FACTORS ENHANCE COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT IN SEVEN YEAR OLD CAUCASIAN CHILDREN WHOSE MOTHERS WERE EMPLOYED DURING THEIR FIRST YEAR OF LIFE. This information would be valuable to families with young children, to prospective families contemplating post-birth employment options, to professionals working with children or families and to policy makers who make workplace decisions which often greatly influence families and children.

RESEARCH OBJECTIVES

The research objectives are as follows:

1. To analyze the cognitive and socioemotional developmental status of seven year old caucasian children of mothers who were employed during their first year of life.

2. To investigate the relationship between dimensions of maternal employment during the first year of life, sibling presence, child's gender and maternal and family characteristics to cognitive and socioemotional development in seven year old caucasian children.

3. To determine if dimensions of maternal employment during the first year of life, sibling presence, child's gender and maternal and family characteristics influence cognitive, as opposed to socioemotional, development.

Ecological Framework

An ecological approach is essential to any comprehensive study of the effects of maternal employment on children's development. In investigating why children respond in very different ways to very similar situations it is important to look at interactions between those children and their environments, both presently and in the past.

The Human Ecological approach is based on the premise that human beings interact with the total environment. Interaction between person and environment is reciprocal; individuals affect and are affected by not only their immediate surroundings but also by more distant

environments. Individual interpretation of the environment is emphasized in this approach. Beliefs and values greatly influence decision making. As stated in Paolucci, Hall and Axin (1977), " . . . how individuals react to a situation is the result of the way they perceive that situation and also results from their particular behavioral dispositions at a point in time."

Bubolz, Eicher and Sontag (1979) looked at interaction as a relationship of reciprocal influence among the system components of individuals and environments. They describe the ecological approach to family study as a focus on interrelationships between the family system or Human Environed Unit (HEU) and the natural (NE), human constructed (HCE) and human behavioral (HBE) environments which provide resources necessary for life. Components of these three environments influence family functioning and in turn are acted upon by the family system. The family is viewed as an adaptive system which is in a constant pattern of change in response to environmental conditions. Andrews, Bubolz and Paolucci (1980) summarize the family ecological approach as recognizing the dynamic nature of family systems, emphasizing the interdependence of human systems upon each other and their environment and viewing the family as an energy transformation system (p. 43). Utilization of a human ecological approach in this study recognizes the

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multiple factors which directly influence mothers who are employed outside the home and children's subsequent development. Bronfenbrenner's theory of the ecology of human development (1979) and Belsky's theory of family transaction and circular influences (1981) provide the theoretical framework for this study and are presented in chapter two.

Research Variables

The following sections will provide definitions of the major variables used in this study. Operational definitions will follow conceptional definitions. Figure 1 provides a summary of the dependent, independent and control variables. In this study, children were assessed at seven years of age.

THE **DEPENDENT VARIABLE** IS THE COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT OF SEVEN YEAR OLD CHILDREN OF MOTHERS EMPLOYED DURING THEIR FIRST YEAR OF LIFE. THIS WILL BE OPERATIONALIZED BY THE SCORE ON THE PIAT READING RECOGNITION ASSESSMENT, THE PIAT READING COMPREHENSION ASSESSMENT, THE PIAT MATH ASSESSMENT, THE TOTAL SCORE ON THE BEHAVIOR PROBLEMS INDEX, THE SCORES ON THE ANTISOCIAL, ANXIOUS/DEPRESSED, HEADSTRONG, HYPERACTIVE, DEPENDENT,AND

PEER CONFLICTS/WITHDRAWAL SUBSCALES OF THE BEHAVIOR PROBLEMS INDEX AND THE SCORE ON THE HOME INVENTORY.

THE **INDEPENDENT VARIABLES** ARE AMOUNT OF HOURS INITIALLY WORKED PER WEEK BY MOTHERS DURING THE FIRST YEAR OF THE CHILD'S LIFE, THE TIMING OF THE MOTHER'S RETURN TO WORK, TOTAL NUMBER OF HOURS WORKED BY MOTHERS DURING THE FIRST YEAR OF THE CHILD'S LIFE, THE PRESENCE OF SIBLINGS, MOTHER'S LEVEL OF SELF ESTEEM, MOTHER'S AGE AT TIME OF CHILD'S BIRTH, MOTHER'S LEVEL OF EDUCATION AT TIME OF CHILD'S BIRTH, MOTHER'S MARITAL STATUS AT TIME OF CHILD'S BIRTH, FAMILY INCOME LEVEL IN THE YEAR PRECEEDING THE CHILD'S BIRTH, AND CHILD'S GENDER.

THE **CONTROL VARIABLE** IS CHILD'S RACE, AS FOR PURPOSES OF THIS RESEARCH, ONLY CAUCASIAN CHILDREN WERE STUDIED.

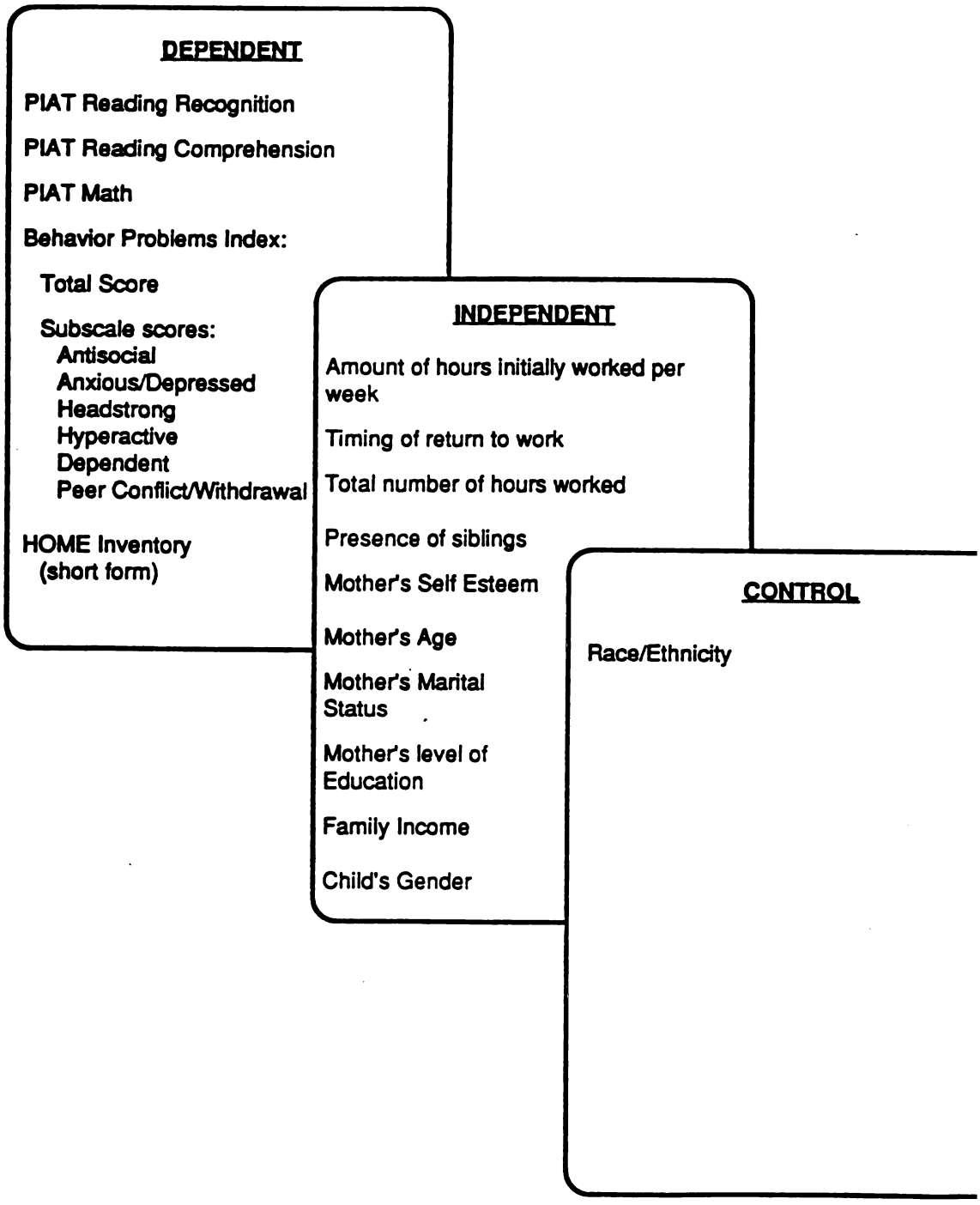

Figure 1.1
Summary of Variables Used in This Study

Conceptual and Operational Definitions

Dependent Variables

CHILD'S COGNITIVE DEVELOPMENT

Conceptually, this is defined as the intellectual level at which the child is functioning.

Operationally, this will be defined by the child's scores on the PIAT Reading Recognition Assessment, the PIAT Reading Comprehension Assessment and the PIAT Math Assessment.

CHILD'S SOCIOEMOTIONAL DEVELOPMENT

Conceptually, this is defined as the child's level of social and emotional development.

Operationally, this is defined as the child's total score on the Behavior Problems Index and the child's scores on the Antisocial, Anxious/Depressed, Headstrong, Hyperactive, Dependent and Peer Conflicts/Withdrawal subscales of the Behavior Problems Index.

HOME INVENTORY SCORE

Conceptually, this is defined as the extent to which a child's home setting provides an environment which enhances cognitive and socioemotional development.

Operationally, this will be defined by the child's score on the HOME Inventory (short form) during the 1988 assessment period.

Independent Variables

AMOUNT OF HOURS INITIALLY WORKED PER WEEK DURING THE FIRST YEAR OF THE CHILD'S LIFE

Conceptually, this is defined as whether the mother works parttime (less than 35 hours per week) or full time (more than 35 hours per week) during the quarter of the child's first year of life within which she initially returns to work.

Operationally, this will be defined as responses by the mothers to questions related to their employment histories.

TIMING OF MOTHER'S RETURN TO WORK DURING THE CHILD'S FIRST YEAR OF LIFE

Conceptually, this is defined as what point during the child's first year of life the mother returned to outside the home employment.

Operationally, this will be defined as responses by the mothers to questions related to their employment histories to determine during which quarter of the child's first year of life the mother's return to outside the home employment occurred.

TOTAL NUMBER OF HOURS WORKED BY THE MOTHER DURING THE CHILD'S FIRST YEAR OF LIFE

Conceptually, this is defined as the total number of hours the mother worked during the first year of the child's life.

Operationally, this will be defined as responses by the mothers to questions related to their employment histories.

PRESENCE OF SIBLINGS/BIRTH ORDER

Conceptually, this is defined as whether or not there are siblings present within the family system. A child is determined to be first born if there are no siblings present or not first born if there are siblings present.

Operationally, this will be defined by mothers' responses to questions related to the family system composition.

MOTHER'S LEVEL OF SELF ESTEEM

Conceptually, this is defined as the mother's self view and feelings of self worth.

Operationally, this will be defined by mother's responses to the question, "I am a person of worth", from the Rosenberg Self Esteem Scale during the 1980 evaluation period.

MOTHER'S AGE

Conceptually, this is defined as the mother's age in years during the child's first year of life, 1981.

Operationally, this will be defined as responses by the mothers to questions related to their age.

MARITAL STATUS

Conceptually, this is defined as whether the mother is married and living with her spouse at the time of the 1981 assessment.

Operationally, this will be defined as responses by mothers to questions related to their marital status and history.

MOTHER'S LEVEL OF EDUCATION

Conceptually, this is defined as the number of years of schooling the mother had completed at the time of the 1981 assessment.

Operationally, this will be defined as responses by the mothers to questions related to their highest grade completed at the time of the 1981 assessment.

FAMILY INCOME

Conceptually, this is defined as the total amount of money available to a family over a 12 month period.

Operationally, this will be defined by responses by mothers to questions in 1981 which report their total family income for the 1980 calendar year.

GENDER

Conceptually, this is defined as whether the child is male or female.

Operationally, this will be defined as responses by the tester/evaluator related to the child's gender. Male children will be analyzed separately from female children to determine if specific gender related differences are present.

Control Variables

RACE/ETHNICITY

Conceptually, this is defined as to what racial or ethnic group a child belongs.

Operationally, this will be defined as responses by mothers and/or testers related to the child's ethnicity. For purposes of this study, only caucasian children will be assessed.

Assumptions

1. The National Longitudinal Study of Youth (NLSY) data is gathered from large numbers of mothers and children and provides data gathered from a varied grouping of assessment measures. The NLSY demonstrates an extremely high retention rate (over 90% between 1978 and 1988). However, one should assume potential bias may exist related to the 10% attrition rate.

2. Over ninety percent (90%) of children surveyed received valid scores on the assessment measures utilized in conjunction with the NLSY. Therefore, it is assumed that these standardized measures provide accurate and valid information on seven year old children's development despite the fact that children from this study are not representative of the total population of seven year old children. It is also assumed that mothers have provided accurate and truthful answers to questions related to age, family structure, marital history, ethnicity, income level and employment history.

3. A final assumption is that maternal employment does have effects on children's development, particularly during the first twelve months of life. It also is assumed that maternal employment influences and mediates many of the interactions occurring within the family system.

Limitations

Some limitations are inherent in any research design. The main limitation of this study is that the NLSY data are not representative of all American children. There is not a full age spectrum of mothers, and younger children in this study are more likely to be born to mothers who are

Caucasian, more highly educated and older at the time of the child's birth. These factors all have been correlated with higher developmental outcomes. The unweighted population sample over-represents Black, Hispanic and economically disadvantaged Caucasian children. In addition, the unweighted data are not adjusted for attrition of mothers and children. The potential for bias linked to attrition may be a limiting factor in this study.

A second limitation concerns one of the assessment measures used within the confines of this research. The HOME Inventory is a short form of the original instrument. The measure used within the NLSY is a subset of the overall items which were selected by the Caldwell and Bradley (1984), the original authors of this measure. Although utilizing a short form instrument may be a necessary approach in a study of this magnitude, appropriate caution related to the abbreviated nature of this measure should be observed.

A third limitation is that only Caucasian children were chosen to be included in this particular study. Although this may be judged unfavorably, there were several reasons which lead to the decision to assess only Caucasian children. It is important to note that the social environments for Black, Caucasian and Hispanic children were

very different in terms of poverty status, mothers' education, marital status, and mothers' labor force attachment (Baydar and Brooks-Gunn, 1991). Additionally, the fact that child care arrangements tended to differ significantly by racial group was a strong influencing factor. Finally, the fact that mean cognitive ability scores differed greatly between ethnic groups lead to the decision that for purposes of this study it was best to focus on only one racial group. Caucasian children were selected for study due to the larger sample size of children whose mothers were employed during their first year of life presented by this particular population.

Fourth, it is recognized that choosing one age group (ie: 7 year olds) for study poses risks relating to generalizabilty of the data. It was decided that the purposes of this research could best be carried out by looking only at similar aged children, as opposed to a spread of ages of children, so that comparisons within the age group were consistent. Children born in 1981 (seven year olds at the time of the 1988 assessment) were chosen for several reasons. First, seven year olds have had the opportunity to acclimate to a full day school program and the corresponding changes in their day care situations which often occur. Six year old children, who are encountering full day school for the first time, may be unduly affected by these changes.

Conversely, children above the age of seven were determined to be less desirable for study as school becomes increasingly influential as children get older in age. Lastly, for purposes of this research, seven year old children provided adequate sample size in terms of numbers of children whose mothers had worked during their first year of life.

Finally, by seven years of age children are involved in a full day school program. Because the NLSY data do not extend into the school life realm of children's lives, it is impossible to control for the possible confounding effects of attending school. It is important to recognize that all children of this age are involved in school and that comparisons of children within the NLSY data set should not be unduly influenced by school participation.

CHAPTER II

REVIEW OF THE LITERATURE

Reasons for Mothers' Employment

One of the dominant trends for this period in our society will no doubt be the common presence of mothers of young children in the workforce. Reasons for these greatly increased numbers are complex and varied. World War II and the high level of social acceptance of women in the workplace during that time is regarded as a beginning point of this trend (Eggebeen, 1988; O'Connell and Bloom, 1987). The introduction of the contraceptive pill during the 1960's and women's ability to control childbearing is another important causal factor (O'Connell and Bloom, 1987). Economic conditions which necessitate two incomes to maintain a desirable standard of living (Hock, Gnezda and McBride, 1984; O'Connell and Bloom, 1987), increased numbers of single parent families (Googins and Burdin, 1988; Hock, Gnezda and McBride, 1984), increased numbers of traditionally female service-sector jobs (O'Connell and

Bloom, 1987), increased education and career options for women (Eggebeen, 1988; Hock, Gnezda and McBride, 1984), and women's growing desire for occupational success and prestige (Eggebeen, 1988; Hock, Gnezda and McBride, 1984, Pistrang, 1984) are other factors influencing this trend.

While financial need is often assumed to be the main reason mothers are employed outside-the-home, studies have shown that financial need alone does not adequately predict women's employment status, (Gordon and Kammeyer, 1980; Dowdall, 1974; Eggebeen, 1988; Molm, 1978; Smith-Lovin and Tickmeyer, 1978). Other characteristics related to the job itself are often highly predictive. For example, many studies have found that a woman's increased education is directly related to the likelihood of her being employed. The more education a woman has, the more likely she is to work outside-the-home (Eggebeen, 1988; Hock, Gnezda and McBride, 1984; Hoffman and Nye, 1974; McLaughlin, 1982). In addition, women with more education leave their jobs later during pregnancy and return to work more quickly following childbirth (McLaughlin, 1982). The type of job engaged in also influences women's work decisions, with women fulfilling professional, technical and managerial positions more likely to continue working (Weil, 1961).

This changing role of women raises questions about the nature of motherhood in our society. Young career women's decisions related to having a child are often filled with conflict. LeMaster's (1957) research reveals that women experienced in professional work reported "extensive or severe crisis" in adjusting to a first born baby. Oakley (1980) develops the notion that leaving the work force might be experienced as either a loss or a gain and that less positive motherhood experiences are associated with those viewing it as a loss. This view is consistent with findings by Hock, Gnezda and McBride (1984) who found that nonemployed mothers with high work involvement experienced less positive motherhood experiences and reported feeling more irritable, less important and more depressed. In contrast, nonemployed mothers with low work involvement reported a greater sense of contentment in staying home. Pistrang (1984) studied first time mothers' attitudes toward motherhood and work and found a pervasive belief in the importance of the maternal role. Nearly 80% of the mothers in her study felt that motherhood was the major way of fulfillment in a woman's life; however, 66% of these women planned, for various reasons to return to work prior to their infants' first birthdays. Morgan and Hock's (1984) research indicates that career orientation, defined in this study as the amount of expressed interest in a job or career, and career salience, which measured the importance

of a career or job, were highly predictive indicators of mothers' labor force participation. This finding is consistent with other studies highlighting these two variables as important predictors of mothers' employment status (Fogarty, Rapoport and Rapoport, 1979; Hock, 1978).

Other dominant factors influencing career decisions of young mothers include achievement needs (Arnott, 1972; Sobol, 1963) and husband's support for the wife's career choices. Easterbrooks and Goldberg (1985) report that husbands' attitudes about outside-the-home employment were usually consistent with wives' employment status. A majority of employed women (67%) and their husbands (74%) expressed the belief that the impact of maternal employment of the mother-child relationship was extremely positive. In contrast, most of the nonemployed mothers (63%) and their husbands (61%) reported believing that maternal employment impacted negatively on the mother-child relationship. A woman's degree of nurturance, described by Morgan and Hock (1984) as "the amount of investment in caring for others" is also a significant variable in determining women's outside-the-home employment status. Hock's research (1978) reports that mothers not employed outside-the-home had much higher levels of distrust of nonmaternal care than did employed mothers. Conversely, as shown by Bernard (1974), individual temperament differences in women causes some mothers to cope

less well with the daily care of a young child. These women may feel a need to "escape" from the demands of fulltime childcare, and choose paid employment as a means of doing so.

Another influencing variable relates to the mothers' perceived level of self esteem. Balancing the various roles of wife, mother, career woman, housekeeper, cook, and laundress may look like an overwhelming and impossible task to women without strong beliefs in their own self worth. Additionally, other researchers (Easterbrooks and Goldberg, 1985; Hock, 1980; Hock, Gnezda and McBride, 1984; Schubert et al., 1980) highlight the importance of congruence between mothers' actual and desired employment status and levels of self esteem. According to these studies, mothers feel good about themselves if they desire to be employed and are employed or if they desire to be at home and are at home. Low levels of self esteem result when incongruities between these states exist. Wells' research (1988) focused on levels of self esteem in middle class employed mothers. Women in her study answered questionnaires several times each day in response to randomly emitted beeper signals. Wells' findings show that women's levels of self esteem were higher when they were with adults than when they were with children. Additionally, women's levels of self esteem decreased the more time they spent in outside-the-home

employment. Wells feels that mothers' evaluations of their effectiveness at fulfilling both work and family roles has a strong effect on their personal self assessment and explains why the lowest levels of self esteem were found among women who worked fulltime during the periods of time that they spent with their children. This finding is particularly important when considered in relation to other studies relating maternal self esteem to parental functioning. Patterson's research (1980) found low maternal self esteem to be correlated with ineffective and coercive parent-child interactions. Small's (1988) research found that mothers with higher levels of self esteem engaged in positive parenting practices including providing children with greater opportunities for decision making, more friendly communication and a view of their children as more independent.

Overall Effects on Children's Development

Researchers studying the effects of maternal employment on children's development often describe contradictory findings; there are few areas where general agreement about the effects of maternal employment exists.

One of these areas concerns time allocation in families with working mothers. Researchers tend to agree that the heightened and often conflictual demands placed upon employed mothers directly influences the amount of time they are able to spend with their children. McHale and Huston's (1984) study aptly illustrates this trend. Their research indicates that mothers' extent of involvement with their infants is inversely correlated with the number of hours worked outside-the-home. They report that the more mothers worked outside-the-home, the less they engaged in childcare, leisure time or play activities with their child. Goldberg and Easterbrooks (1985) also describe this inverse relationship between the number of hours worked by the mother and the amount of time she spends with her child. However, research by Pederson, Zaslow and other colleagues (1982; 1985) reveals contrasting findings. Their studies observed infants and parents in the evenings when both parents were at home. Their findings indicate that, after returning home, employed mothers demonstrated higher rates of certain types of interactions than did nonemployed mothers. This finding is similar to that of Hill and Stafford (1979) who state that employed mothers of infants and children seem to "compensate" for their time away during the work day by spending more non-work time with their children. Manlove and Feagans' (1990) study reveals that children of employed mothers actively participate in this

compensation process , with the goal of spending more time with their parents. An analysis of infants' and toddlers' activities while in daycare showed that the children spent almost half of their day care hours asleep, thus enabling them to stay awake later in the evening and maximize the amount of time spent with their parents.

Other studies have found that fulltime maternal employment seems particularly beneficial for girls. Fulltime employed mothers with less than a high school education described their daughters, but not their sons, in positive terms. Nonemployed mothers displayed the opposite pattern. Bronfenbrenner, Alvarez and Henderson's (1984) study of part versus fulltime maternal employment found that the benefits to children associated with parttime employment could be extended to fulltime employment in the case of girls but not boys. Zaslow (1987) reports that children of employed mothers hold less stereotyped images of men and women and that this effect appears stronger for girls than for boys. In addition, a trend for employed mothers is to more greatly emphasize independence training in their children (Hoffman, 1989). Hoffman (1977) emphasizes that this emphasis on independence is greatly advantageous for girls who might receive more encouragement for dependent behavior in a family where the mother is not employed outside the home. Daughters of employed mothers are found to rate

higher on social adjustment, school performance and professional accomplishments (Hoffman, 1979, 1984, 1986).

Other areas showing relatively high consensus between researchers focuses on various resources within the family system which will interact to exert differential influences on each family. One of these factors concerns maternal age, particularly in relation to maternal age at time of first childbirth. Literature on adolescent mothers shows a strong tendency for young mothers to hold unrealistic expectations of child development (DeLissovoy, 1973) and to provide less supportive care as measured by the HOME Inventory (Dubow and Luster, 1990; Gottfried and Gottfried, 1984; Hannan and Luster, 1991; Luster and McAdoo, 1990; Yeates et al., 1983). In addition, young maternal age is generally associated with other factors which have been found to negatively influence children's development. These include increased risk of premature or low birthweight babies (Nye, 1976), decreased educational achievement (Furstenberg, 1976), decreased prospects for employment (Hayes, 1987) increased chances of living in poverty (Hayes, 1987) and increased chances of raising children as a single parent (Moore, 1989). In addition young mothers tend to have more children than do older mothers and to space them more closely together (Hayes, 1987). Children of young mothers have been shown to attain lower scores on measures of both cognitive (Brooks-

Gunn and Furstenberg, 1986) and socioemotional (Furstenberg et al., 1987) development. Other factors found to be related to children's developmental outcomes include maternal intelligence (Gottfried and Gottfried, 1984; Hannan and Luster, 1991), mother's level of education (Caldwell and Bradley, 1984; Laosa, 1980), mother's marital status (Belsky, 1981, 1984; Crockenberg, 1981; Crouter et al., 1987; Hannan and Luster, 1991), mother's level of self esteem (Patterson, 1980; Small, 1989; Wells, 1988) and family's level of income (Caldwell and Bradley, 1984; Dubow and Luster, 1990; Furstenberg et al., 1987; Hannan and Luster, 1991; Lazear and Michael, 1988; Luster and McAdoo, 1991; Werner, 1985;) The quality of the home environment has also been shown to be related to children's developmental outcomes. Bradley (1982) linked quality of the home environment to children's cognitive development. Hannan and Luster's (1991) study linked variables related to maternal, child, and contextual characteristics to quality of the home environment, finding that all three types of characteristics combined to impact upon the home environment. Most important factors within these three realms were maternal age at first birth, maternal intelligence, the presence of a spouse/partner, and the temperament of the child. Dubow and Luster's (1990) study of school aged children of adolescent mothers found that simultaneous exposure to several risk factors increased the

probability that academic or behavioral problems would occur. Risk factors proven to be most important were living in poverty, having many siblings and low levels of maternal self esteem.

Effects on Attachment

Many studies focusing on maternal employment utilize attachment theory as a base. Bowlby's (1969) attachment theory is grounded in the premise that attachment with a mother-figure is both an evolutionary survival mechanism and a basis for successful future relationships. Ainsworth, Bell, and Stayton (1974) describe how attachment behaviors are triggered in times of distress in order to re-establish proximity and contact with the mother-figure. These behaviors, best observed when the child is stressed in some way (ie: ill, fatigued, frightened) vary according to the child's age and the situation. Ainsworth's "Strange Situation" measure was designed to place the child in an increasingly stressful situation in order to assess the quality of attachment to the mother-figure. The assessment process classifies reunion behaviors exhibited by children after separation from their mothers. Securely attached children (Group B) use their mother as a secure base from which to explore. They seek close contact with the mother

and are comforted by her upon reunion. Group A babies, described as "insecure-avoidant", rarely cry during separation and exhibit avoidance and/or ignoring behaviors upon reunion. "Insecure resistant" children (Group C) are extremely distressed by the separation, yet refuse to be comforted by the mother upon reunion. They often seek close contact to the mother, yet avoid contact or interaction (Ainsworth et al., 1978). Research on middle class twelve month olds shows that approximately 70% are classified as secure (Group B), 18% as insecure avoidant (Group C) and 12% as insecure resistant (Group A) (Matas, Arend and Stroufe, 1978).

Utilization of the Ainsworth Strange Situation measure has produced conflicting results regarding the effects of nonmaternal care on children's attachments to their employed mothers. Some studies have found no difference between children cared for by their mothers at home and children receiving nonmaternal care (Caldwell et al., 1970; Chase-Lansdale, 1981; Doyle, 1975; Easterbrooks and Goldberg, 1985; Hock, 1980; Owens et al., 1984). Easterbrooks and Goldberg, for example, studied twenty month old toddlers and found no associations between maternal employment and the security of the infant-mother or the infant-father attachment. They conclude that their data suggests that " . . . young children and their parents are able to adapt

positively to a variety of lifestyles, including maternal employment." (p. 782).

Other studies have found differences between cared for at home and daycare children. Blehar's (1974) work with forty month old children revealed that 60% of daycare children exhibited resistant behavior, as compared to none in the control group of home care children. In addition, increased amounts of avoidant behavior was found in a group of thirty month old daycare children, when compared to a control group of children cared for at home. Belsky and Rovine (1988) studied first born infants of two parent families of working and middle class SES status at 3,9 and 12 months of age. They concluded that infants in fulltime daycare were most likely to be classified as having insecure attachments (47%). Thirty five (35%) percent of infants in parttime nonmaternal care were classified as insecurely attached, as compared to 21% who received 10-20 hours of nonmaternal care per week and 25% of those who received little or no infant daycare per week. In addition, their findings revealed the 50% of the boys receiving fulltime nonmaternal care were classified as insecurely attached, as compared to 29% of the boys receiving less than 35 hours per week of nonmaternal care. Boys receiving more than 20 hours of nonmaternal care per week were found more likely to be insecurely attached to both parents; 29% were classified as insecurely attached and

only 38% were described as being securely attached. Belsky and Rovine also report that mothers of insecure infants were more likely to describe them as "fussy/difficult". These mothers were described as being less sensitive and empathetic, and as rating their marriages as less positive than desired. Vaughn, Gove, and Egeland (1980) found differences in type of attachment related to maternal employment status. This study found that markedly more of the insecure attachments were classified as avoidant (Group A), particularly if the mother had returned to work prior to the infant's first birthday. As 65% of the insecurely adjusted babies were from single parent families, family structure must be recognized as a potentially confounding variable. However, Baydar and Brooks-Gunn (1991) found negative behavioral outcomes for 3 and 4 year old children whose mothers were employed during infancy. They delineated the second and third quarters (ie: between three and nine months of age) of the child's first year of life as the time when children are most vulnerable to the effects of maternal employment. They speculate that during the second and third quarters of the first year "children are forming representations of their parents vis-a-vis dimensions such as constancy, consistency and differentiation." (p. 942). Therefore, separation from the employed mother at this time may produce more detrimental effects than at earlier or

later ages (Bell, 1970; Decarie, 1965; Mahler, Pine and Bergman, 1975; Stern, 1977).

T. Berry Brazelton (1986) writes of his concerns for mothers returning to outside the home employment soon after their babies births. He advocates a minimum three month maternity leave, noting that most new parents find the first three months of life with a new baby to be extremely stressful. Brazelton describes the feelings of inadequacy and helplessness experienced by young mothers. He states: "If she must go back to work in the midst of this trying period, she is unlikely to develop the same sense of understanding and competence with regard to her baby as she might have if she had been able to stay and `see it out' . . . There is likely to be a significant difference in a mother's feelings of personal achievement and intimacy with her baby is she has had to leave this adjustment to another caregiver in order to return to work before the end of the three month transition." (p. 39). However, his ideas are strongly contradicted by Baydar and Brooks-Gunn's findings that before three months and after nine months of age is a more optimal time for the mother to return to the work force during the infant's first year of life.

Clarke-Stewart addresses the issue of insecure attachments among children of employed mothers, particularly boys, by

identifying several family factors which may influence attachment behavior. These factors include increased stress, lack of availability, psychological inaccessibility, and maternal insensitivity. Clarke-Stewart alludes to a type of "self-selection" process in which mothers who like babies stay at home and mothers who don't like babies and/or the daily care associated with them remain employed. In addition, she delineates that the increased emphasis on independence training typically valued by employed mothers would influence their infants to appear less securely attached on measures assessing this trait.

Father-Child Interactions

Numerous studies (Barnett and Baruch, 1986; Crouter et al., 1987; Lamb et al., 1985; Pleck, 1983; Russell, 1982; Zaslow et al., 1985) show that maternal employment status affects the ways in which fathers interact with their children. Fathers' participating in family work is often dependent on wive's employment status (Yogev and Brett, 1985) with unique needs arising as a functions of employment which direct the pattern of husbands' participation (Barnett and Baruch, 1986; Coverman, 1985; Pleck, 1983). Barnett and Baruch (1986) found the strongest predictors of paternal participation in dual earner families were the number of

hours worked by the wife and the wife's attitude toward the male role. Less positive effects of father participation result when the father has little choice about his level of participation (Lamb et al., 1985). Barnett and Baruch (1986) cite consistent evidence which exists to support the notion that the area which is most benefitted by father participation is the father-child relationship (Lamb et al., 1985; Russell, 1982) with the marital relationship bearing the costs of this involvement as partners struggle with problems which include fathers' resentment, mothers' self doubts, and disagreements about task performance (Hoffman, 1983; Keshet and Rosenthal, 1978; Lamb et al., 1985; Lein, 1979; Radin and Russell, 1983; Russell, 1982). Pleck's (1983) research suggests that fathers from dual earner families are more highly involved in child care than are single earner family fathers, particularly when children are very young. This finding is consistent with research done by Crouter et al. (1987) which reveals that dual earner family fathers engaged in significantly more activities with their children when compared to single earner family fathers, and that dual earner family fathers participated much more extensively in dyadic child care activities which occurred without the mother's presence. This finding is interesting in the light of studies which show that employed mothers' interactional patterns with young children greatly influenced fathers' level of involvement. In an attempt to

"compensate" for the hours apart from their children, employed mothers' interactions with their infants often left no room for father participation. Indeed, observations in dual and single earner families consistently showed lower rates of some interactional behavior among dual earner family fathers, which might cause some concerns about father-child relationships in these families. Crouter and McHale (1992) however, clarify these findings by suggesting that the highly dyadic nature of father-child activities which typically occurs in dual earner families compensates for the "crowding out" which may occur in triadic interactions. She concludes that dual earner family fathers often have more opportunities to interact with their infants than do single earner family fathers.

Studies on father-child attachment related to maternal employment present a somewhat confusing batch of results. Chase-Lansdale and Owens (1987) studied 12 month old infants and compared father-child attachment in dual and single earner families. Their findings revealed no differences in father-daughter attachments but did find increased levels of insecure father-son attachments. A follow-up study of 18 month old infants showed that this difference had disappeared. Belsky and Rovine's (1988) research found insecure father-son attachments at 12 months in dual earner families and insecure father-daughter attachments at 12

months in single earner families. Goldberg and Easterbrooks (1985) found no association between maternal employment and the security of the father-child attachment, although they did find that maternal employment tended to influence mothers and fathers differently. Employed mothers, when compared to nonemployed mothers, were more strict and displayed less warm attitudes. Fathers in dual earner families were "more aggravated" about their young children and displayed less sensitive behaviors with their children on a problem solving task assessment measure. No differences between single and dual earner family fathers exist in total amount of time spent with the child, causing the authors to raise the possibility that the content of father-child interactions in dual earner families differs from that in single earner families.

Other researchers have focused on the importance of marital status, particularly among adolescent mothers, related to children's development. In Hannan and Luster's (1991) study the contextual characteristic which was most significantly related to the quality of the home environment. Luster and Dubow (1990) also found that the presence of a male partner in the home was a significant predictor of home quality. It becomes extremely important to consider the effects related to the absence of a father in the home, given that teenagers are more likely than older mothers to raise their children

as single parents and that divorce rates and marital discord are high among those who do marry (Luster and Mittelstaedt, 1992).

Effects on Cognitive Development

Results of research on cognitive development in children of employed and nonemployed mothers is highly inconclusive (Caldwell et al., 1980; Doyle, 1975; Hock, 1980; Schacter, 1981; Stith and Davis, 1984; Siefel and Storey, 1985). Schacter (1981), for example, studied 70 children (mean age = 29.1 and 29.5 months for employed and nonemployed mothers, respectively) who attended the same nursery school two half days per week. Of these 70 children, 32 had employed mothers and 38 had unemployed mothers. Stanford Binet IQ test scores obtained at 29 months show that children of nonemployed mothers obtained higher scores than did children of employed mothers. Similarly Cohen's (1978) study of premature infants showed that children of employed mothers obtained significantly lower scores on both the Bayley Mental scales at 18 and 24 months and the Gesell assessment at 24 months. Cohen does point out, however, that other variables (including mother's marital status and infant's birth weight) may have unduly influenced these findings. Desai, Chase-Lansdale and Michael (1991) studied the effects of maternal employment of four year old children of employed

mothers who were participants in the National Longitudinal Study of Youth (NLSY). They found several background factors, including race/ethnicity, mother's verbal ability and sibling presence and spacing to closely influence the child's score on the Peabody Picture Vocabulary Test-Revised (PPVT-R). This measure assesses the vocabulary knowledge of children and also provides indications of mental age and IQ. Although the general trend was that maternal employment did not seem to either positively or negatively influence four year olds' cognitive development, there were findings which revealed that four year old boys from white, higher income families were adversely affected by maternal employment during the first year of life. Similarly, Baydar and Brooks-Gunn (1991), also studying four year old children whose employed mothers were participants in the NLSY study found that maternal employment during infancy, and in particular during the second and possibly third quarters of the first year of life, had significant negative effects on the cognitive development of these children. They also found a relationship between the amount of hours worked during the first year of life and subsequent cognitive development. Children whose mothers worked less that 10 hours per week were least affected; larger detrimental effects were found for children whose mothers had worked 10-20 hours per week than for those whose mothers had worked more than 20 hours per week. The authors speculate that children whose mothers

worked more hours on a weekly basis were probably placed more consistently in higher quality daycare environments. Types of childcare arrangements influenced the cognitive development of boys and children of poverty. Mother care and grandmother care were found to most positively influence cognitive development of poverty children. Boy children of employed mothers achieved higher cognitive scores when their nonmaternal care was provided by a grandmother or a relative other than the father. Father-care was associated with low cognitive scores for all the four year olds assessed. The authors speculate that fathers who provide the main care for young children may be unemployed and may have decreased self-esteem and emotional states which negatively influenced the type of care these fathers were able to provide. Although these authors felt that the effects of maternal care probably differed for various ethnic groups, this study was limited to the assessment of four year old white children. Vandell and Corasaniti's (1988) study of the long term effects of maternal employment on children's cognitive development found that 8 year old children whose mothers had been employed fulltime during their infancy had poorer work habits and lower grades. Boys whose mothers were employed fulltime during their first year of life also achieved lower scores on standardized tests measuring the intellectual abilities of eight year old children.

Conversely, other studies (Doyle, 1975; Clarke-Stewart and Fein, 1983; Zimmerman and Bernstein, 1983) found that children of employed mothers scored higher than those of unemployed mothers on various cognitive measures. Clarke-Stewart and Fein (1983) found that children between the ages of 18 months and 5 years of age who had been in daycare as infants scored higher on intelligence tests than those children who had not been exposed to infant daycare. However, the authors also describe how home-care children quickly catch up in terms of cognitive progress once they enter a school or daycare setting. Moorehouse's (1991) study of white six year old children's cognitive development produced some novel results. Utilizing children's grades and a teacher rating assessment of children's cognitive and social competence, Moorehouse found significant differences in children's cognitive achievement related to maternal employment status. Children whose mothers changed their employment status had lower scores than did children whose situations remained stable with their mothers at home. Mothers' shift to fulltime employment was directly related to the lowest scores in both cognitive and social competence. As lower outcomes in school were associated only when the mother changed to a fulltime employment status, Moorehouse concludes that there is no evidence of any overall negative effect of maternal employment on children's social or cognitive functioning. A unique

feature of Moorehouse's work was her focus on the notion of shared mother-child activities as a process which might mediate any effects associated with maternal employment. Her model views shared activities as a type of compensatory mechanism to mediate the stresses which are associated with certain employment situations (ie: changes in working hours). Her hypothesis, that changes in working conditions, particularly the stressful transition to fulltime employment magnifies the positive effects of frequent shared activities between mother and child and also emphasizes the negative effects of infrequent shared mother-child activities is consistent with results obtained in this study. Her ecological focus on family interactions as mediating forces sets the stage for future maternal employment research which emphasizes developmental processes in addition to final results.

Indirect Influences on Parenting

Many studies have focused on the indirect influence that work involvement has on parenting. Kohn's (1969) research looked at parental translation of values related to occupational position. Kohn's basic premise states that individuals' occupational positions influences their world view and defines which values they will encourage or

discourage through their childrearing practices. Kohn, in his survey of over 3,000 employed men, found that men employed in middle class positions emphasized independence and initiative in their children when compared to working class men who put a greater value on children's obedience and conformity. Additionally, occupational role tended to influence how fathers emphasized these valued qualities with their children. Middle class men more frequently used reasoning and withdrawal of love as discipline techniques, and often took children's intentions for misbehavior into account (ie: accidental misbehavior not punished as severely as deliberate misbehavior). Working class fathers were more likely to utilize physical punishment and not take into account children's intentions for misbehavior. Limitations of Kohn's study include it's father-only focus and the self-report technique for hypothetical situations which was utilized. In a similar vein, Luster, Rhoades and Haas (1989) used Kohn's basic premise in their study of 65 mother-infant pairs. Their research shows that social class can be tied to parents' values on conformity and self direction in their children. They describe childrearing beliefs as a "link" between parental values and parental behaviors. Parents placing value on self-direction, as opposed to conformity, in children were found to generally

have higher scores on the HOME assessment measure, which has been linked to higher cognitive outcomes in children (Bradley, 1982).

Mothers working inside and outside the home are subjected to differences in stresses which effect their lives and their emotional states. How mothers feel about their individual employment status influences the ways in which they interact with their children. Hock (1980) compared employed and unemployed mothers, with employed mothers being those who returned to work by three months postpartum. Mothers' attitudes about the effects of separation on the child influenced attachment behaviors. Infants of employed mothers who worried about separation effects displayed more negative reunion behaviors. Infants of separation-anxious nonemployed women demonstrated high amounts of proximity seeking behaviors, high degrees of distress in the testing strangers' presence and decreased interaction with the stranger. These results were replicated in additional research on employed mothers (Hock, 1984). Berndt (1983) found that employed mothers rate their lives as more stressful than homemaker mothers. Repetti (1989) studied the influence of stress in the workplace on parents' behaviors at home. Conclusions were drawn from the daily reports submitted by working parents, all employed as air traffic controllers. Stress at work tended to decrease both

positive and negative mood states. In addition, parents appeared to be more withdrawn and less emotionally expressive on a stressful work day. Repetti then separately analyzed 15 air traffic controllers who had children between the ages of 4 and 10 years of age. These parents, upon experiencing a negative social work environment , described less positive and more negative emotions when interacting with their children. Bolger et al.'s (1989) study of work stress and home behaviors found that husbands were more likely to argue with their wives after having had an argument at work. Wives did not manifest this behavior pattern however, and neither mothers or fathers reported increased arguments with their children after having had arguments at work. Crouter and McHale (1992) draw the conclusion that while parents may not argue with their children after particularly stressful work days, it is likely that the stresses may surface in alternate ways. They state " . . . parents may be too preoccupied to communicate effectively about the child's own experiences that day, too tired to effectively mediate children's sibling disputes or too self-absorbed to detect if their child is troubled about something." (p. 13).

Another area affected by employment status is the parent's perception of the child. A study by Bronfenbrenner, Alvarez, and Henderson (1984) showed that fulltime employed

mothers described their 3 year old sons less favorably than did unemployed or parttime employed mothers. In contrast, more favorable descriptions of daughters occurred the more hours the mothers worked. Education also appeared to be influential as mothers' descriptions of children of both sexes declined with decreased education and increased working hours. Fathers showed a similar trend, but not to as great a degree. Fathers' negative comments about the child were directly proportional to the amount of hours the mother worked.

Additional studies have focused on the influence mothers' employment has upon the marital relationship. Crouter et al.'s (1987) study of parents of young infants found that increased participation in child care by the husbands of employed women was directly related to reports of higher levels of marital conflict and lower levels of love. Zaslow et al. (1980) found that men with employed wives demonstrated less mutual gaze and smiling behaviors with their infants than did fathers with nonemployed wives. Additionally, they found a negative correlation between the number of hours the wife worked and the frequency with which fathers presented objects to and encouraged their infants. Fathers of employed women expressed less satisfaction with their wives' work status and felt they participated more in child care and housework than husbands of nonemployed wives.

Interestingly, observational data related to the amount of child care performed did not match these husbands' self assessments. A study by Googins and Burdin (1987) lends further support to this observation. These researchers found that fathers with employed wives spent approximately the same amount of time per week on child care tasks (13.98 hours) as fathers with nonemployed wives (13.54 hours). In addition, fathers with employed wives were found to spend less time per week (10.56 hours) on housework chores than fathers with nonemployed wives (12.02 hours). Employed mothers were found to spend many more hours on child and home care tasks when compared to their husbands (19.91 hours and 24.45 hours, respectively) contradicting these husbands' perceptions that they equally shared these responsibilities with their wives.

Incongruities between a mother's working status and parental beliefs about women working lead to heightened reports of negative affect in parent-child interactions (Stuckey, McGhee and Bell, 1982). MacDermid, Huston and McHale (1990) found that reports of marital conflict increased and levels of love decreased among spouses who held traditional sex role attitudes but who engaged in an egalitarian division of household and child care tasks. These findings are particularly interesting in the light of Belsky's (in press) writings which state that insecure mother-infant attachments

are more likely to occur in families with problematic marital relationships. Belsky's writings have consistently (1979; 1981; 1986; 1990) emphasized the importance of the marital relationship in influencing parenting behaviors. Belsky (1986) highlights the work of several other researchers whose studies support his premise that the marital relationship is the most important social support mechanism for new parents. Results of these studies include the findings that fathering behaviors were greatly influenced by positive marital relationships (Feldman, Nash and Aschenbrenner, 1982; Gibaun-Wallston and Wandersman, 1978), that mothers who frequently scolded their sons felt less warmth and affection from their husbands (Bandura and Walters, 1959) and that reliance on punishment, as opposed to induction or reasoning for disciple purposes, was related to high interspousal hostility (Dielman, Barton, Cattell, 1977; Kemper and Reichler, 1976). Belsky and Rovine's (1990) study of marital quality and the transition to parenthood focuses on the changes in the marital relationship which occur from pregnancy to three years postpartum. Their general finding, that marital quality declines modestly but predictably during the first three years of a child's life, is accompanied by an additional finding related to infant behavior and temperament. Mothers of three month old infants who felt a decrease in love and an increase in conflict and ambivalence within their

marriages described their babies as being more irregular in their eating and sleeping habits than did mothers of infants who felt that their marriages had improved. Although the authors put forth the idea that the daily care and unpredictability associated with this type of infant might lead to mothers' greater unhappiness and higher needs for spousal assistance, they also raise the idea that by as early as three months of age, these babies' unpredictable natures are emerging as a result of the conflicts within the marriage which may affect the quality of the care which the infant receives.

Social Support and Employment

The impact of social support and social networks on psychological and physical well being has received increasing attention in recent years. Numerous research studies support the conclusion that social support has important potential properties for physical and mental health in both normative and non-normative periods of the life cycle (Belsky and Rovine, 1984; Cobb and Kasal, 1977; Crinic et al., 1983; Crockenberg, 1981; Kasl and Berkman, 1981; Longfellow et al., 1979; Lopata, 1971; Pascoe and Earp, 1984; Reibstein, 1981; Wandersman et al., 1980). Pascoe and Earp's (1984) research on high risk parents

concludes that the provision of assistance with daily tasks and maternal emotional support facilitates parent-child interaction. Crinic et al.'s (1983) study compared the effects of stress and social support on mothers of both premature and fullterm babies. Although no differences were found between premature and fullterm groups of parents, the authors state that " . . . social support from various sources facilitates more positive child rearing attitudes as well as more positive behavioral interactions." (p. 216). Crockenberg (1981) assessed the influence of social support upon mother-infant attachment of 48 middle and working class parents. Four-hour home visits in which mothers' responsiveness to infants' distress were carried out when the babies were three months of age. At this time mothers were interviewed regarding sources of stress and support, particularly support received from the father, older children in the family and others such as friends, neighbors, relatives, and professionals. In this assessment, social support was defined as being affective and material assistance experienced by the mother in her parental role relative to stresses she perceived experiencing. At twelve months of age maternal-infant attachment was assessed by observing infants and mothers in the Ainsworth Strange Situation observational assessment measure. Results obtained lead Crockenberg to conclude that adequacy of maternal social support was "clearly and

consistently associated with the security of the infant-mother attachment." (p. 862). In addition, provision of social support had the greatest effects on "irritable" babies and their mothers, highlighting the heightened importance of support for families under particular stress. In this study, low social support was found to be correlated with high resistance, high avoidance and anxious attachment behaviors in infants.

Working mothers, however, often have little time and few opportunities to develop adequate social support networks. For them, the work setting may provide the most important environment for the exchange of advice, information and emotional support related to child rearing roles. Researchers are beginning to show increased interest in the effects of work-place relationships on parenting behaviors. For example, Repetti (1987) found that a supportive supervisor decreased depressive feelings among bank tellers experiencing stressful work conditions. Another study (Greenberger et al., 1992) which surveyed parents about sources of support within work environments found that co-worker support significantly decreased role strain for both married fathers and single employed mothers, although not for married employed mothers. In addition, less role strain was positively correlated with increased levels of workplace support . Clearly, the power of social support within the

workplace setting has great potential and is an area which needs future development and study.

Sibling Relationships

Ample literature exists to support the finding that children's familial positions influences the type of parental treatment received. Role expectations, maternal perceptions, maternal demands, emotional warmth, behavioral expectations and amount and type of interaction are all behaviors which researchers have tied to position in the family (Bossard and Boll, 1960; Deets, 1974; Gewirtz and Gewirtz, 1965; Hilton, 1967; Lasko, 1965). Studies indicate that later born children receive less maternal interaction and less direct influence (Cicirelli, 1976). In addition, several studies report that maternal behavior with first born children correlates with the quality of maternal behavior with later born children (Dunn and Kendrick, 1982; Howe, 1986; Stewart, Mobley, Van Tuyl and Salvador, 1987). Other studies (Brody et al., 1987; Bryant and Crockenberg, 1980; Daniels et al., 1985; Hetherington, 1988; McHale and Gamble, 1987) show a relationship between differential maternal behavior and conflictual sibling relationships. Stocker, Dunn and Plomen's (1989) study of sibling relationships was in agreement with these studies and also

attributed differences in sibling relationships to children's ages, temperaments, and variables within the family structure.

A number of studies (Belmont and Marolla, 1973; Black, 1981; Dubow and Luster, 1990; Furstenberg, Brooks-Gunn and Morgan, 1987; Hannan and Luster, 1991; Henderson, 1966; Kellagan and Macnamara, 1972; Rosenberg and Sutton-Smith, 1969) have shown that there is a negative relationship between family size and children's cognitive abilities. Different aspects of family size which influence cognitive ability include the number of siblings (Belmont and Marolla, 1973; Black, 1981; Desai, Chase-Lansdale and Michael, 1991) and spacing of children (Koch, 1954; Lindert, 1977; Zajonc and Marcus, 1975). Caution should be used when studying the effects of family size on children's cognitive development in that lower SES families typically have larger families than do higher SES families and SES status is directly related to children's cognitive development. Kellaghan and Macnamara (1972) studied Catholic families in Ireland. Their assumption was that large family size was valued by all families within that society and that the effects of SES status would be minimized. Within this population, the association between large family size and scores on cognitive measures of verbal reasoning were significant. Koch's (1954) research studied the effects of spacing of

children within the family and found that the effects of different amounts of spacing varied according to children's sex. Studying two child families, Koch found that small age gaps between children positively enhanced sex role development in girls, but that a larger age gap of 4-6 years was more optimal for boys. Rosenberg and Sutton-Smith (1969) studied the effects of age spacing within the family on children's cognitive development and reported that larger spacing between second born males and their older sibling decreased the negative effect on the second child's cognitive development. Sex of siblings was not related to cognitive development for boys, but was related to cognitive development for girls. Girls were found to have higher cognitive scores when the age spacing was smaller. Girls with sisters scored higher on cognitive measures than did girls without sisters, and the most positive situation for girls was to have a same sexed sibling close in age. The authors concluded that, in general, closer age spacing enhanced cognitive development for girls while larger age spacing was more beneficial in terms of cognitive development for boys. In addition, birth order also influenced cognitive development, with greater negative effects related to the presence of younger siblings than to the presence of older siblings (Mercy and Steelman, 1982). As increased numbers of siblings means decreased amounts of parental time and energy available to individual children,

it is reasonable to assume that the number of siblings present within the family environment is negatively related each child's development. This would appear to be especially true in family's where the mother's outside the home employment already stresses the amounts of parental attention available. The study by Desai, Chase-Lansdale and Michael (1991) found that the presence of other siblings did have a negative effect on the cognitive achievement scores of four year old children of employed mothers. Children from smaller families showed greater levels of cognitive achievement. The authors suggest that this may be related to socio-economic status as well, as higher SES families tend to have smaller families. Birth order was found to have a significant negative effect for girls, with short gaps in age spacing related to negative effects for boys. The authors conclude that the fewer familial resources available to children in larger families with employed mothers results in lower scores on cognitive assessment measures.

Bronfenbrenner's Theory of Human Development

Bronfenbrenner's (1979) ecological model provides a portion of the theoretical background for looking at the effects of maternal employment on young children's development. Based

on the premise that " . . . behavior evolves as a function of the interplay between person and environment" (p. 16) Bronfenbrenner uses the concept of nested circles to describe the surrounding environments which influence all developing individuals. The closest interactional setting, the family environment or microsystem, exerts the most powerful influence. The microsystem is contained within the next layer, or mesosystem. This level encompasses the interactions among the settings in which the individual participates and is thus " . . . a system of microsystems" (p. 25). At the next level, the exosystem is made up of a setting(s) which influences or is influenced by the developing person although he/she is not an active participant in that setting. At the final level, the macrosystem consists of the broad, cultural context which influences and defines what occurs in the lower order systems. Current belief systems and ideologies, as well as the historical perspective are influential at the macrosystem level.

Bronfenbrenner emphasizes that " . . . every ecological transition is both a consequence and an instigator of developmental processes." (p. 27). This view merges with Bronfenbrenner's model which assumes that an understanding of human development requires " . . . examination of multi-person systems of interaction not limited to a single

setting and must take into account aspects of the environment beyond the immediate situation containing the subject." (p. 21).

The ecological nature of this study is reflected in it's focus on the influence of numerous factors within employed mothers' environments which impact upon their interactions with their children. An adaptation of Bronfenbrenner's model, integrating variables used in this study, is shown in Figure 2. At the microlevel, a mother's decision to return to the workplace following a child's birth necessitates that the family adapt and develop alternative strategies to maintain effective functioning. The energy balance within the family changes drastically, and reallocation of resources, particularly in regard to time, must occur. Although her relationship with the work environment probably exerts the greatest consistent influence, working mothers also interface with a myriad of other influential environmental systems related to child care, home care, and family life. As children grow older and develop differing needs and as more children arrive, families continue the process of adapting by reallocating resources and developing strategies to balance energy input and output, thereby enhancing the family's daily functioning. Families' abilities to balance time and energy demands, implement effective decision making processes and adapt to stresses

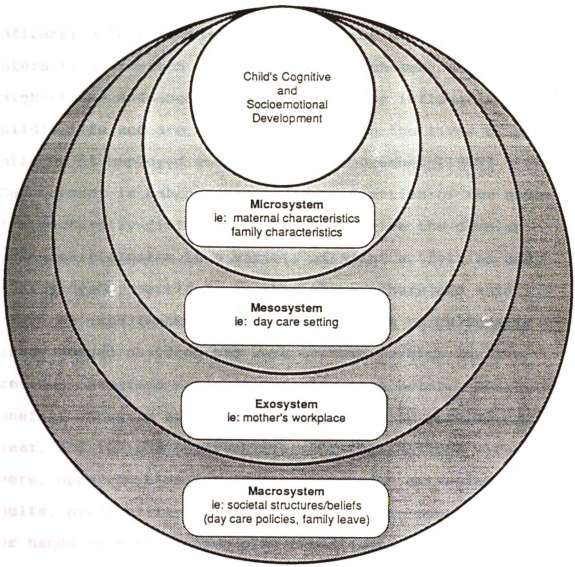

Figure 2.1
Integration of Bronfenbrenner's Ecological Model
With Study Variables

will greatly impact on how mothers, both employed and nonemployed, will interact with their children.

Influencing factors remain strong at the mesosystem level. Interactions in such arenas as school, church, day care, neighborhood and social groups are highly influential in any child's life and are more potently so in the lives of many children of employed mothers. Bronfenbrenner (1979) states: "Development is enhanced as a direct function of the number of structurally different settings in which the developing person participates in a variety of joint activities and primary dyads, particularly when these others are more mature or experienced." (p. 212). Studies on culturally disadvantaged children who were exposed to high quality preschool programs aptly illustrates this point. Short term benefits of early exposure to a high quality program are clear, and include opportunities for interactions with peers, opportunities for interactions with extra-familial adults, availability of outdoor play areas, opportunities for hands-on manipulative play experiences and exposure to a stable environment and reliable, dependable people. But even more outstanding are the long term effects associated with culturally disadvantaged children's participation in this type of preschool program. Evans (1985) studied low income, urban, predominately black high school seniors who had been exposed to three types of preschool experiences--

Distar, Conventional Head Start, and no preschool attendance. He found that males with no preschool experience scored lowest on measures assessing the quality of their school life, standardized tests, school records and self report measures focused on feelings about their preschool experience. He also found that involvement in a high quality preschool experience was a highly successful predictor of later school achievement, although he did not find any significant differences on later achievement between the types of preschool programs. The High Scope/Perry Preschool Program (Schweinhart, 1985) serviced black students in a very poor urban area. Annual assessments of involved students from 3-11 years of age, and then at ages 14, 15 and 19 looked at the areas of school success, social responsibility and socioeconomic success. Students involved in this preschool program, as compared to controls during elementary and high school demonstrated better grades, fewer retentions, and fewer absences. In the social responsibility arena, involved students were found to have fewer arrests, less juvenile and adult offenses and less teenage pregnancies. Socioeconomic success was indicated by this group's increased employment and earning levels and decreased dependence.

The type of setting in which the child is cared for also influences development. Cochran's (1977) and Golden et

al.'s (1978) research compared family day care, center based care and home care. Their findings revealed that different types of settings influenced children's development in various ways. Cochran (1977) found that opportunities for adult-child interactions and for exploration were greater for home care and family day care children than for center based care children. He felt that children were more drawn to adults in home and family day care environments and to the peer group in center based care environments. Golden et al. (1978) found family day care environments to be superior to center based care environments in terms of caregiver:child ratios, amounts of social interaction and individual attention available to children from caregivers, and amounts of positive stimulation from caregivers available to children during mealtimes. They found that center based care offered children advantages in terms of quantity of play materials, equipment, and available space. These researchers did not assess home care children in comparison to these two types of alternative care children.

Some research has found that young children of employed mothers are less compliant and more peer oriented (Hoffman, 1984; Rabinovich, Zaslow, Berman and Heyman, 1987). Bronfenbrenner (1979) concludes that group care for children promotes the emergence of egocentrism, aggression and antisocial behaviors. He also emphasizes (in press) the

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importance of the interactions between mesosystem settings by stating: "For successful childrearing, there must be consensus, connection and mutual accommodation between the different settings in which the child lives: home, day care center, school, workplace, peer group and neighborhood." (p. 49).

Exosystem influences differ among families with employed mothers when compared to families where the mother is not employed outside the home. Although children are not active participants in mothers' work settings, they are often greatly influenced by what occurs within that environment. Studies by Repetti (1989), Bolger (1989) and Berndt (1983) all show that stress within the workplace often greatly impacts on families. The structure of the work environment also affects the developing child. Many workplaces now offer such options as flex time, job sharing, maternity/paternity leave and personal days off of work to care for sick children. The implementation of these practices greatly influences how mothers structure their time and therefore their interactional opportunities with their children (Friedman, 1990; Goldberger et al., 1992). Bohen and Viveros-Long (1981) compared two workplace environments, one offering flex time scheduling and one not. Reduced stress related to the opportunity of utilizing flex time scheduling was most evident in workers who were single or married without children. Employed mothers with children

experienced no reductions in the stresses of home and care child typically associated with the employed mother role. The authors attribute this to the fact that the flex time scheduling available to these employees was not truly flexible enough to accommodate the various needs of employed mothers. They emphasize the need for creative scheduling which will enhance the quality of life of both, not just one, parent. The influence of the workplace on the child may also be in terms of how well his/her basic needs can be met. Parental salaries and the provision or nonprovision of health and dental care are areas which greatly affect the lives of all developing children.

A less tangible influence is in the area of value acquisitions and how parental beliefs which are associated with these values effect child rearing practices. Kohn's (1969, 1977) research reveals that occupational position influences what values are emphasized within the home setting. Luster, Rhoades and Haas (1989) followed Kohn's basic premise and determined that social class shapes parental values. This research also defines specific parental beliefs which acted as mediating influences between parental values and actual parenting behaviors.

Perhaps the greatest macrosystem level influences on families with employed mothers concern absent structures

within our society. The lack of a national policy advocating adequate maternity leave for mothers of new infants negatively effects many young families (Baydar and Brooks-Gunn, 1991; Been, 1986; Brazelton, 1986; Desai et al., 1991; Moorehouse, 1991). In addition, the absence of national day care policies places many children at risk for inadequate care and families at risk for high levels of stress as they wonder not only how well their child is being cared for but if that care will still be available on a continuing basis. The fact that these issues are becoming increasingly apparent in the public arena allows hope that changes, at both the macrosystem and lower levels, may soon occur which will allow the enhancement of family functioning and parenting practices.

Belsky's Theory of Circular Influence

Belsky's (1981) proposal that parental behavior influences and is influenced by the marital relationships and infant behaviors and development is an ideal framework for this study (see Figure 3, p. 67). An adaptation of his model (see Figure 4, p. 68) illustrates how work, family/maternal characteristics and child behavior and development are all interrelated. Figure 5 (p. 69) presents how variables used within this study relate to the adapted Belsky model.

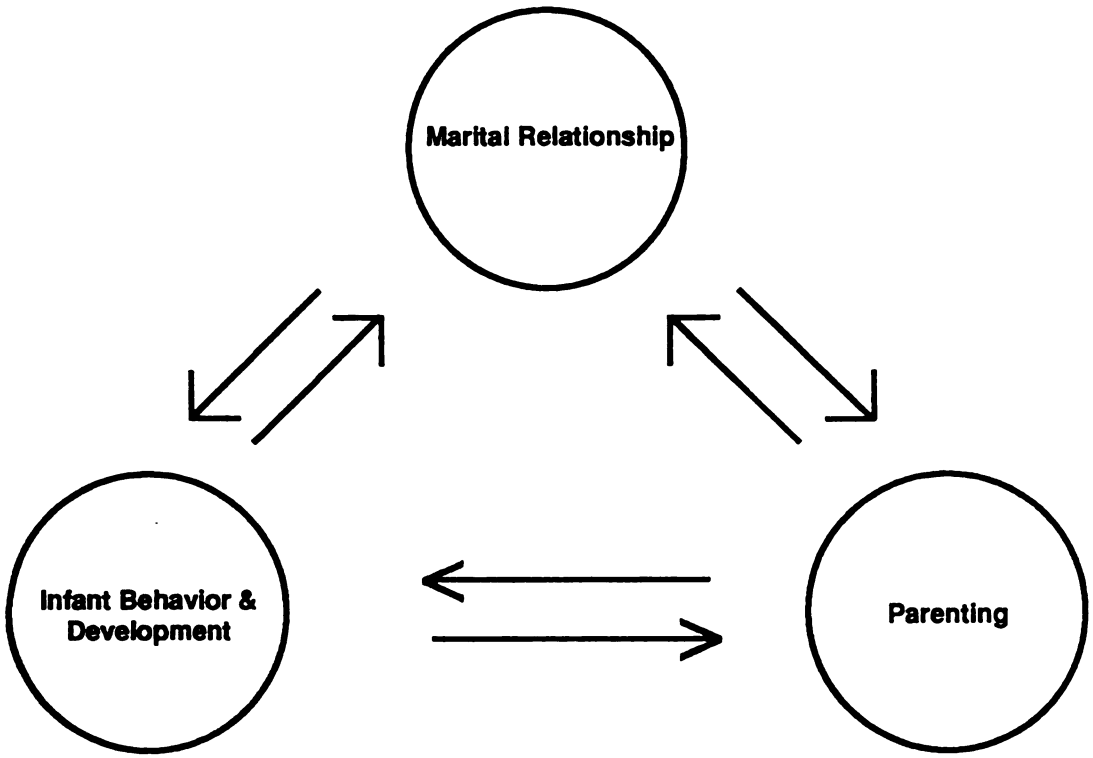

Figure 2.2
Belsky's Model of Circular Influences

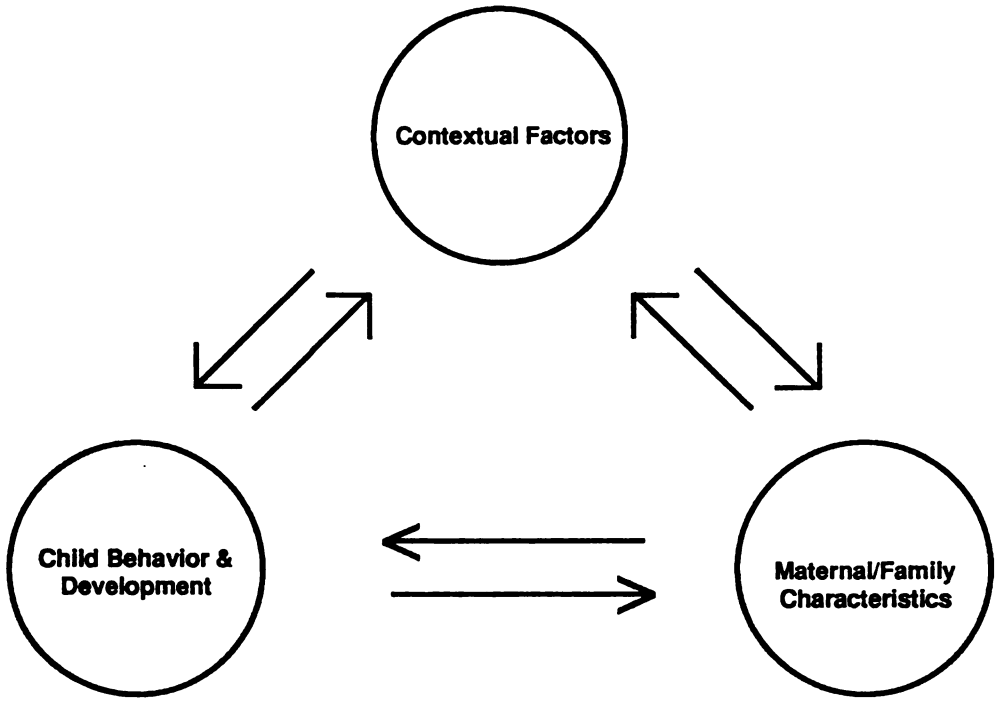

Figure 2.3
Adapted Model of Circular Influences

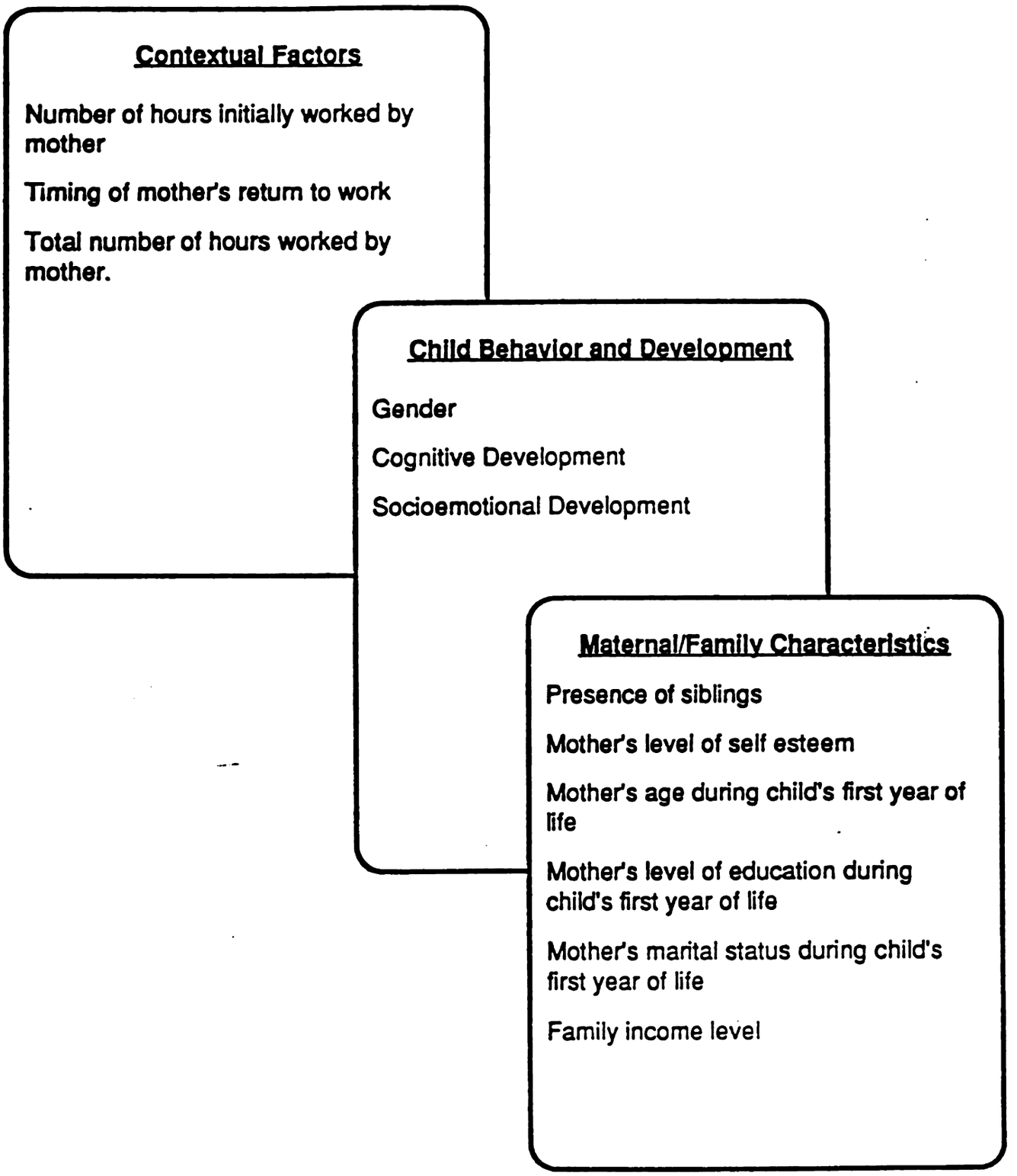

Figure 2.4
Variables as Related to Adapted Belsky Model

Belsky states that parenting behavior is influenced by individual characteristics which are, at least to some degree, the result of person's developmental histories. Researchers have found that certain parenting styles are more likely to promote optimal development. For example, utilization of an authoritative child rearing approach, as opposed to an authoritarian or permissive style, is more likely to produce qualities such as self reliance, independence, and initiative taking in children (Baumrind, 1967; 1971). With schoolage children, the use of induction or reasoning, consistent discipline and expression of warmth are positively related to children's levels of self esteem, internalized control, prosocial orientation and intellectual achievement (Belsky, p. 85). Other parental factors strongly influencing children's development include age of parent, emotional state, particularly in regard to depression, and incidents in parents' own personal histories related to mistreatment, separation and paternal involvement.

Children's characteristics, particularly temperament, have long been regarded as having an important effect on parental behaviors. An important point raised by Belsky comes from the work of Lerner and Lerner (1983) and Lerner (1989) and concerns how the "goodness of fit" between children and parents influences the interactional processes which occur.

These authors present "an integrated, multilevel concept of development" (Lerner, 1989, p. 17) which focuses on the dynamic interactions which occur between organisms and their environments. Recognition of individual differences, both within the person and his or her environment, is a central component of this model. Children, for example, as a consequence of their physical appearance and/or temperamental qualities stimulate different reactions in the adults with whom they interact. These reactions may be fed back to the children which increases the uniqueness of their environments and leads to further development. The physical or social components of particular settings also place demands upon the child. Children's behaviors which may be acceptable in one setting may be very unacceptable in a different setting. Problems within families, schools or other developmental environments influencing the child can result from the lack of "fit" between the child and a particular environment.

Belsky conceptualizes the influence of environmental factors as sources of stress and support and classifies them into three groups: marital relationship, social network, and work. These sources of stress and support can work to influence parenting both directly and indirectly, and both positively and negatively. In all three areas the effects are directly mediated by the personalities and developmental

histories of individual parents. These multiple determinants of parental functioning serve as a type of "buffering system", with lowest levels of parenting behaviors existing when all three types of factors combine to decrease parental functioning.

Conclusions

Research focusing on the effects of maternal employment on various indices of child development has produced highly conflicting results. It becomes evident that it is necessary to look at more than the outcome variables to assess how different familial characteristics and interactional processes influence these developmental outcomes. It is important to look at the various factors surrounding the issue of maternal employment " . . . to see in which ways and under what conditions it operates as a positive influence on child development and under what circumstances and conditions it operates as a negative influence." (Hoffman, 1979, p. 320).

CHAPTER III

METHODOLOGY AND HYPOTHESIZED RELATIONSHIPS

Research Questions

The objectives of this exploratory research will be met by addressing the following research questions.

1. Is there a relationship between the amount of hours initially worked by the mother during the child's first year of life and seven year old children's cognitive and/or socioemotional development?

2. Are there critical periods during the child's first year of life when mothers' return to outside the home employment has a greater influence on children's cognitive and/or socioemotional development?

3. What relationship does the total number of hours a mother works during her child's first year of life have to seven year old children's cognitive and/or socioemotional development?

4. Is there a relationship between the presence of siblings during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

5. Is there a relationship between mother's level of self esteem in the year prior to the child's birth and the seven year old child's cognitive and /or socioemotional development?

6. Is there a relationship between the mother's age at the time of the child's birth and the seven year old child's cognitive and/or socioemotional development?

7. Is there a relationship between the mother's marital status during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

8. Is there a relationship between the level of education attained by the mother during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

9. Is there a relationship between family income level in the year prior to the child's birth and the seven year old child's cognitive and/or socioemotional development?

10. Is there a relationship between the seven year old child's gender and his/her cognitive and/or socioemotional development?

11. What relationship do the amount of hours initially worked by the mother during the child's first year of life, the timing of the mother's return to work during the child's first year of life, the total number of hours worked by the mother during the first year of life, the presence of siblings, the mother's level of self esteem during the year prior to the child's birth, the mother's age at the time of the child's birth, the mother's level of education during the child's first year of life, the mother's marital status during the child's first year of life, family income level during the year prior to the child's birth and the child's gender have the score on the HOME Inventory?

12. Are there certain variables which are most strongly related to cognitive development in seven year old children whose mothers were employed during their first year of life?

13. Are there certain variables which are most strongly related to sociemotional development in seven year old children whose mothers were employed during their first year of life?

Research Hypotheses

In order to meet the objectives of this research the following hypotheses are proposed, as organized by the research questions.

1. Is there a relationship between the amount of hours initially worked by the mother during the child's first year of life and seven year old children's cognitive and/or socioemotional development?

Ho1: There will be no significant relationship between number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha1: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores the PIAT Reading Recognition Assessment measure.

Ho2: There will be no significant relationship between number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha2: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ho3: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Math Assessment measure.

Ha3: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Math Assessment Measure.

Ho4: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the total score of the Behavior Problems Index.

Ha4: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the total score of the Behavior Problems Index.

Ho5: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha5: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho6: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha6: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho7: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha7: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho8: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha8: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho9: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Dependent subscale of the Behavior Problems Index.

Ha9: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Dependent subscale of the Behavior Problems Index.

Ho10: There will be no significant relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha10: There is a negative relationship between the number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Baydar and Brooks-Gunn, 1992; Belsky and Rovine, 1988; Bronfenbrenner, Alvarez and Henderson, 1984; Bronfenbrenner and Crouter, 1982; Crouter and McHale, 1992; Goldberg and Easterbrooks, 1985; Gottfried, Gottfried, and Bathurst, 1988; McHale and Huston, 1984; Moorehouse, 1991; Owen and Cox, 1988; Vandell and Corasaniti, 1988; Vaughn, Gove and Egeland, 1980; Zaslow et al., 1980.

2. Are there critical periods during the child's first year of life when mothers' return to outside the home employment has a greater influence on children's cognitive and/or socioemotional development?

Ho11: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha11: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho12: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha12: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ho13: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the PIAT Math Assessment measure.

Ha13: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the PIAT Math Assessment measure.

Ho14: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's total scores on the Behavior Problems Index.

Ha14: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's total scores on the Behavior Problems Index.

Ho15: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha15: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho16: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha16: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the Anxious/ Depressed subscale of the Behavior Problems Index.

Ho17: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha17: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho18: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha18: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho19: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Dependent subscale of the Behavior Problems Index.

Ha19: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children scores on the Dependent subscale of the Behavior Problems Index.

Ho20: There will be no significant relationship related to crtical periods during the child's first year of life and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha20: There is a positive relationship between having the mother return to work when the child was less than three months or greater than nine months of age and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Bell, 1970; Baydar and Brooks-Gunn, 1991; Belsky and Rovine, 1988; Decarie, 1965; Desai, Chase-Lansdale and Michael, 1991; Mahler, Pine and Bergman, 1975; Stern, 1977; Vandell and Corasanti, 1988; Vaughn, Gove and Egeland, 1984.

3. What relationship does the total number of hours a mother works during her child's first year of life have to seven year old children's cognitive and/or socioemotional development?

Ho21: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Reading Assessment measure.

Ha21: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Reading Assesmment measure.

Ho22: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha22: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho23: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Math Assessment measure.

Ha23: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the PIAT Math Assessment measure.

Ho24: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's total scores on the Behavior Problems Index.

Ha24: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's total scores on the Behavior Problems Index.

Ho25: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha25: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho26: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha26: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho27: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha27: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho28: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha28: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho29: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha29: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho30: There will be no significant relationship related to the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha30: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal subscale of the Behavior Problems Index.

Supported by: Baydar and Brooks-Gunn, 1991; Belsky, 1988; Belsky and Rovine, 1988; Bronfenbrenner, 1979; Bronfenbrenner and Crouter, 1982; Clarke-Stewart and Fein, 1983; Chase-Lansdale and Owen, 1987; Schacter, 1981; Vandell and Corasaniti, 1988.

4. Is there a relationship between the presence of siblings during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

Ho31: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha31: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho32: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha32: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho33: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the PIAT Math Assessment measure.

Ha33: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the PIAT Math Assessment measure.

Ho34: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

Ha34: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's total scores on the Behavior Problems Index.

Ho35: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha35: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho36: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha36: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho37: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha37: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho38: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha38: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho39: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha39: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho40: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha40: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Belmont and Marolla, 1981; Black, 1981; Desai, Chase-Lansdale and Michael, 1991; Dubow and Luster, 1990; Hannan and Luster, 1990; Henderson, 1966; Kellaghan and Macnamara, 1972; Mercy and Steelman, 1982; Rosenberg and Sutton-Smith, 1969.

5. Is there a relationship between mother's level of self esteem during the year prior to the child's birth and the seven year old child's cognitive and /or socioemotional development?

Ho41: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha41: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho42: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha42: There is a positive relationship betweem mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho43: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ha43: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ho44: There will be no significant relationship related to mothers level of self esteem in the year prior to the child's birth and seven year old children's total score on the Behavior Problems Index.

Ha44: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's total scores on the Behavior Problems Index.

Ho45: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha45: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho46: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha46: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho47: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha47: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho48: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha48: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho49: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha49: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho50: There will be no significant relationship related to mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha50: There is a positive relationship between mother's level of self esteem in the year prior to the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Dubow and Luster, 1990; Easterbrooks and Goldberg, 1985; Hannan and Luster, 1991; Hock, 1980; Hock, Gnezda and McBride, 1984; Patterson, 1980; Schubert et al., 1980; Small, 1989; Wells, 1988; Werner, 1985.

6. Is there a relationship between the mother's age at the time of the child's birth and the seven year old child's cognitive and/or socioemotional development?

Ho51: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha51: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho52: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha52: There is a positive relationship betweem mother's age at the time of the child's birth and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho53: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ha53: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ho54: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's total score on the Behavior Problems Index.

Ha54: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's total scores on the Behavior Problems Index.

Ho55: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha55: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho56: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha56: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho57: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha57: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho58: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha58: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho59: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha59: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho60: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha60: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Brooks-Gunn and Furstenberg, 1987; Dubow and Luster, 1990; Furstenberg et al., 1987; Hannan and Luster, 1991; Luster and Mittelstaedt, 1992.

7. Is there a relationship between the mother's marital status during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

Ho61: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha61: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho62: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha62: There is a positive relationship betweem mother's married status at the time of the child's birth and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho63: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ha63: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ho64: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's total score on the Behavior Problems Index.

Ha64: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's total scores on the Behavior Problems Index.

Ho65: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha65: There is a positive relationship between mother's marital status at the time of the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho66: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha66: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho67: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha67: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho68: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha68: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho69: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha69: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho70: There will be no significant relationship related to mother's marital status at the time of the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha70: There is a positive relationship between mother's married status at the time of the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Belsky, 1981, 1984; Crockenberg, 1981; Crouter et al., 1981; Desai et al., 1991; Furstenberg et al., 1987; Goldberg and Easterbrooks, 1985; Hannan and Luster, 1991; Luster and McAdoo, 1991; Werner, 1987.

8. Is there a relationship between the level of education attained by the mother during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

Ho71: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha71: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho72: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha72: There is a positive relationship betweem mother's level of education at the time of the child's birth and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho73: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ha73: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ho74: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's total score on the Behavior Problems Index.

Ha74: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's total scores on the Behavior Problems Index.

Ho75: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha75: There is a positive relationship between mother's level of educational at the time of the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho76: There will be no significant relationship related to mother's level of educational at the time of the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha76: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho77: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha77: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho78: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha78: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho79: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha79: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho80: There will be no significant relationship related to mother's level of education at the time of the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha80: There is a positive relationship between mother's level of education at the time of the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Caldwell and Bradley, 1984; Furstenberg et al., 1987; Gottfried and Gottfried, 1984; Hannan and Luster, 1991; Laosa, 1980; Luster and McAdoo, 1991; Luster and Mittelstaedt, 1992.

9. Is there a relationship between family income level during the year prior to the child's birth and the seven year old child's cognitive and/or socioemotional development?

Ho81: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha81: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho82: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha82: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho83: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ha83: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the PIAT Math Assessment measure.

Ho84: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's total score on the Behavior Problems Index.

Ha84: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's total scores on the Behavior Problems Index.

Ho85: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha85: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho86: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha86: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho87: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha87: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho88: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha88: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho89: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha89: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho90: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha90: There is a positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Caldwell and Bradley, 1984; Dubow and Luster, 1990; Furstenberg et al., 1987; Hannan and Luster, 1991; Lazear and Michael, 1988; Werner, 1985.

10. Is there a relationship between the seven year old child's gender and his/her cognitive and/or socioemotional development?

Ho91: There will be no significant relationship related to child's gender and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ha91: There is a positive relationship between female gender and seven year old children's scores on the PIAT Reading Recognition Assessment measure.

Ho92: There will be no significant relationship related to child's gender and seven year old children's scores on the PIAT Reading Comprehension Assessment measure.

Ha92: There is a positive relationship between female gender and seven year old children's scores on the PIAT Reading Comprehension measure.

Ho93: There will be no significant relationship related to child's gender and seven year old children's scores on the PIAT Math Assessment measure.

Ha93: There is a positive relationship between female gender and seven year old children's scores on the PIAT Math Assessment measure.

Ho94: There will be no significant relationship related to child's gender and seven year old children's total score on the Behavior Problems Index.

Ha94: There is a positive relationship between female gender and seven year old children's total scores on the Behavior Problems Index.

Ho95: There will be no significant relationship related to child's gender and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ha95: There is a positive relationship between female gender and seven year old children's scores on the Antisocial subscale of the Behavior Problems Index.

Ho96: There will be no significant relationship related to child's gender and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ha96: There is a positive relationship between female gender and seven year old children's scores on the Anxious/Depressed subscale of the Behavior Problems Index.

Ho97: There will be no significant relationship related to child's gender and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ha97: There is a positive relationship between female gender and seven year old children's scores on the Headstrong subscale of the Behavior Problems Index.

Ho98: There will be no significant relationship related to child's gender and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ha98: There is a positive relationship between female gender and seven year old children's scores on the Hyperactive subscale of the Behavior Problems Index.

Ho99: There will be no significant relationship related to child's gender and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ha99: There is a positive relationship between female gender and seven year old children's scores on the Depressed subscale of the Behavior Problems Index.

Ho100: There will be no significant relationship related to child's gender and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Ha100: There is a positive relationship between female gender and seven year old children's scores on the Peer Conflicts/Withdrawal subscale of the Behavior Problems Index.

Supported by: Belsky and Rovine, 1988; Benn, 1986; Bronfenbrenner, Alvarez and Henderson, 1984; Chase-Lansdale and Owens, 1987; Hoffman, 1977; 1984; 1986 and 1989; Vandell and Corasaniti, 1988; Zaslow, 1987.

11. What relationship do the amount of hours initially worked by the mother during the child's first year of life, the timing of the mother's return to work during the child's first year of life, the total number of hours worked by the mother during the first year of life, the presence of siblings during the child's first year of life, the mother's level of self esteem during the year prior to the child's birth, the mother's age at the time of the child's birth, the mother's level of education during the child's first year of life, the mother's marital status during the child's first year of life, family income level during the year prior to the child's birth and the child's gender have the score on the HOME Inventory?

Ho101: There will be no significant relationship related to number of hours initially employed by mothers during the child's first year of life and seven year old children's scores on the HOME Assessment Measure.

Ha101: There is a negative relationship between number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ho102: There will be no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ha102: There is a positive relationship between having the mother return to work before three months or after nine months of age and seven year old children's scores on the HOME Assessment measure than will children whose mothers returned to work when they were between three and nine months of age.

Ho103: There will be no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ha103: There is a negative relationship between the total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ho104: There will be no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ha104: There is a negative relationship between presence of siblings in the home during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ho105: There will be no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the HOME Assessment measure.

Ha105: There is a positive relationship between mother's level of self esteem during the year prior to the child's birth and seven year old children' scores on the HOME Assessment measure.

Ho106: There will be no significant relationship related to mother's age at the time of the child's birth and seven year old children's scores on the HOME Assessment measure.

Ha106: There is a positive relationship between mother's age at the time of the child's birth and seven year old children's scores on the HOME Assessment measure.

Ho107: There will be no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ha107: There is a positive relationship between mother's married status during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ho108: There will be no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ha108: There is a positive relationship between mother's level of educaton during the child's first year of life and seven year old children's scores on the HOME Assessment measure.

Ho109: There will be no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the HOME Assessment measure.

Ha109: There is positive relationship between family's level of income during the year prior to the child's birth and seven year old children's scores on the HOME Assessment measure.

Ho110: There will be no significant relationship related to child's gender and seven year old children's scores on the HOME Assessment measure.

Ha110: There is a positive relationship between female gender and seven year old children's scores on the HOME Assessment measure.

Supported by: Bradley, 1982; Dubow and Luster, 1990; Gottfried and Gottfried, 1984; Hannan and Luster, 1991; Luster and McAdoo, 1991; Yeates et al., 1983.

12. Are there certain variables which are most strongly related to cognitive development in seven year old children whose mothers were employed during their first year of life?

Ho111: There will be no significant relationship related to any of the independent variables on cognitive development, as operationalized by seven year old children's scores on the PIAT Reading Recognition, Reading Comprehension and Math Assessment measures.

Ha111: The positive relationship between female gender and a negative relationship between total number of hours worked by the mother during the child's first year of life are most significantly related to cognitive development, as operationalized by seven year old children's scores on the PIAT Reading Recognition, Reading Comprehension and Math Assessment measures.

Supported by: Baydar and Brooks-Gunn, 1988; Cohen, 1978; Desai, Chase-Lansdale and Michael, 1991; Schacter, 1981; Vandell and Corasaniti, 1988.

13. Are there certain variables which are most strongly related to sociemotional development in seven year old children whose mothers were employed during their first year of life?

Ho112: There will be no significant relationship related to any of the independent variables on socioemotional development, as operationalized by seven year old children's total score on the Behavior Problems Index and the Antisocial, Anxious/Depressed, Headstrong, Hyperactive, Dependent, and Peer Conflicts/Withdrawal subscales of the Behavior Problems Index.

Ha112: The positive relationship between mother's level of self esteem in the year prior to the child's birth and the presence of siblings during the child's first year of life are most significantly related to socioemotional development, as operationalized by seven year old children's total score on the Behavior Problems Index and the Antisocial, Anxious/Depressed, Headstrong, Hyperactive, Dependent and Peer Conflicts/Withdrawal subscales of the Behavior Problems Index.

Supported by: Dubow and Luster, 1990.

Design of the Study

This exploratory research studied seven year old children whose mothers were employed during their first year of life to determine the relationship of factors within the family environment to the development of these children. The study involved a longitudinal panel design. The unit of analysis was seven year old Caucasian children whose mothers were employed during their first year of life. This secondary research utilized data from the National Longitudinal Study of Youth (NLSY) merged mother-child data set. This is a national sample initiated in 1979 when the approximately 6000 respondent mothers were between 14 and 21 years of age. Blacks, Hispanics and economically disadvantaged whites are over-represented in this sample. The original sample respondents were re-interviewed each year between 1979 and 1988 with a retention rate of approximately 90% Data collection/assessment of mothers and children occurred in a natural setting.

Comparison between groups of interest was accomplished utilizing a stepwise multiple regression process. These regressions were run to assess the strengths of the independent variables related to cognitive and socioemotional development in seven year old Caucasian children.

DECISION RULE

A chance probability that is less than or equal to .05 was required to reject the null hypotheses and to accept the research hypotheses.

Research Procedure

The seven year old children and their mothers who were employed during the children's first year of life who were studied in this research are participants in the National Longitudinal Study of Youth ((NLSY). As participants, the children have been assessed in 1986, 1988 and 1990 using various age appropriate assessment measures at these points in time. Data utilized in this study were from the 1988 collection point.

Various measures of family background are gathered through extensive interviews with the mothers. These family variables include mother's age, mother's age at time of first and later child births, marital status, family structure (including presence of siblings and their ages, particularly in relation to the seven year old child being assessed), family income, employment patterns of the mother and mother's educational background. Mother's level of self

esteem was determined through use of an the Rosenberg Self Esteem Scale. Only Caucasian children were assessed within this study, and girls were analyzed separately from boys to determine if gender related differences occurred.

Children who were seven years of age during 1988 were assessed utilizing multiple measures to measure child development within both the cognitive and socioemotional domains. In the cognitive area the Peabody Individual Achievement Test (PIAT) Reading Recognition, the PIAT Reading Comprehension and the PIAT Math assessment were utilized. Within the socioemotional domain, all children were assessed utilizing the Behavior Problems Index (BPI). The total score on this measure, along with the Antisocial, Anxious/Depressed, Headstrong, Hyperactive, Dependent and Peer Conflicts/Withdrawal subscale scores was utilized. A short form of the Home Observation for Measurement of the Environment (HOME) Inventory for elementary aged children (aged six years and above) was also administered. Table 3.1 illustrates the various assessment measures utilized in this study. The assessments were all conducted within the natural setting of the child's home.

TABLE 3.1

SUMMARY OF EVALUATIVE MEASURES

COGNITIVE MEASURES

PIAT Reading Recognition Assessment

PIAT Reading Comprehension Assessment

PIAT Math Assessment

SOCIOEMOTIONAL MEASURES

Behavior Problems Index--Total Score

Behavior Problems Index--Subscale Scores:

-Antisocial

-Anxious/Depressed

-Headstrong

-Hyperactive

-Dependent

-Peer Conflict/Withdrawal

HOME INVENTORY--Short Form

SAMPLE SELECTION

Subjects in this study were all participants in the National Longitudinal Study of Youth (NLSY). Initiated in 1979 with the purpose of studying contemporary youth making the transition to adulthood, the study's originators chose a sample which in 1979 consisted of youth aged 14-21 years and which over-represented Blacks, Hispanics, and economically disadvantaged whites. This is a multistage stratified random sample which was identified through random selection of counties, enumeration of districts-blocks, and followed by a screening of 75,000 homes. The large sample size (n = 11,406 in 1979) makes up two sample subsets, a nationally representative sample (n = 6,111) and a sample over-representing Blacks, Hispanics and economically disadvantaged whites (n = 5,828). Approximately fifty (50) percent (n = 5,828) of the original youth participating in the NLSY are women. By 1986, over half of these women (n = 3,053) were mothers. Children of these mothers numbered 5,236 at the time of the 1986 assessment, providing a unique opportunity for studying not only the longitudinal development of these children, but also for research on children within the same family systems. The majority of these children (96%-- n = 4,953) were assessed in 1986 and retention rates were extremely high (over 90%). The ages of the children at each of these three assessment points ranged from infancy to 15 years of age in 1986, to 17 years of age

in 1988 and to 19 years of age in 1990 (Chase-Lansdale et al., 1991). Children who were seven years of age at the time of 1988 data collection were studied within this research. These children did not constitute a nationally representative sample. Born in 1981, their mothers' mean age at time of childbirth was 21.4 years. Additionally (31.5%) of these mothers have completed less than twelve years of schooling. Additionally, these children are more likely to represent a minority ethnic group as 22.9% of them are of Hispanic heritage and 29.1 are of African American ethnicity (NLSY Child Assessment Data User's Guide, 1990).

The population studied within this research consisted of 102 seven year old Caucasian children whose mothers were employed during their first year of life. The children were more likely to be male (59.8%) and to be first born (68.6%). The mean age of the mother at the time of the child's birth was 20.64 years. Mothers' had an average of 11.42 years of education, were quite likely to be married during the child's first year of life (84.3%) and had a mean family income of $26,388 during the year prior to the child's birth (1980). Table 4.1 (p. 77) summarizes this demographic information.

Instrumentation

The **dependent variable, COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT**, was measured utilizing data collected during the 1988 NLSY data collection period. The following measures were utilized to assess seven year old caucasian children's development:

Peabody Individual Achievement Test: Reading Recognition

The PIAT Reading Recognition test (see Appendix A) was completed by all children over six years of age whose PPVT test age was 5 years or above. Initial entry point to this assessment measure was based on children's PIAT Math Score. Scoring procedures are identical to those described for the PIAT Math test. Three scores--an overall non-normed raw score, a normed percentile score, and a normed standard score--are obtained as results for this measure (NLSY Child Assessment Data User's Guide, 1990).

Peabody Individual Achievement Test: Reading Comprehension

Six to eight year old children whose PPVT age was 5 years or above and who achieved a minimum score of 19 on the PIAT Reading Recognition Assessment were administered the PIAT

Reading Comprehension Assessment (see Appendix B), with their entry point being determined by their reading recognition score. Those children scoring less than 19 on the Reading Recognition Measure were assigned their reading recognition score as their reading comprehension score. Basal, ceiling and non-normed raw scores were determined in the same manner utilized with the math and reading recognition measures. A basal score of 19 was assigned to those children for whom it was impossible to attain a basal score (NLSY Child Assessment Data User's Guide, 1990). Some of the younger children (aged 8 and below) received low raw scores on this measure and could not be assigned normed scores as their scores were out of the range of the national PIAT sample used in the norming process. This was noted by the assignment of a designated numeral on percentile and standard score variables (NLSY Data Users Guide, 1990, p. 15).

Peabody Individual Achievement Test: Math

The PIAT Math test (see Appendix C) was administered by having children initiate their answers to math related questions at an age-appropriate item. This assessment was administered to all children whose PPVT age was 5 years or above. Researchers are urged to use caution in regard to

this, as a child's PPVT age may differ from his/her actual chronological age. Basal scores were attained by the child's answering five consecutive questions correctly. Ceiling levels are attained when the child answers 5 of 7 items incorrectly. Raw scores are equivalent to the ceiling item less the number of incorrect responses between the basal and ceiling scores. Normalized percentile and standard scores are derived from the child's raw score on an age-specific basis (norming sample scores are mean = 100 and standard deviation = 15) (NLSY's Child Assessment Data User's Guide, 1990).

Behavior Problems Index

The Behavior Problems Index (BPI) was completed by all mothers whose children were aged 4 to 17 years at the time of assessment (see Appendix D). This measure was developed by Zill and Peterson with test items taken from the Child Behavior Checklist (Achenback and Eddelbrock, 1981) as well as other problem assessment measures (Chase-Lansdale, et al., 1991). This measure consists of 28 maternal report items falling into six subscales: antisocial, anxious-depressed, headstrong, hyperactive, immature dependency and peer conflict-social withdrawal. The final two of the 28 individual items are completed only for children who have

attended school. Although the internal consistency of the subscales is acceptable (rs range = .54 - .69), better reliability is associated with the total scale (.86) (Baydar and Brooks-Gunn, 1991; Baker and Mott, 1989; Chase-Lansdale et al., 1991). Higher scores on this assessment are associated with higher levels of behavioral problems. The BPI is also standardized separately according to child's sex (Chase-Lansdale et al., 1991; NLSY Child Assessment Data User's Guide, 1990). For this research both the total and the subscale scores are reported.

The Home Observation for Measurement of the Environment (HOME)-Short Form

The Home Observation for Measurement of the Environment (HOME) Short Form (see Appendix E) assessed the emotional support and cognitive stimulation available to children within their home settings. The HOME assessment has been found to be reliable over time and to be a good predictor of children's later cognitive development (Bradley, 1982). The NLSY utilized a shortened version of the original measure which was developed for this study by the original authors. The HOME (short form) is divided into four sections based on children's age. Six to eight year old children in this study were assessed using part three (for children aged 6 -

9 years). The total raw score of the HOME measure is a summation of the individual item scores. Two overall subscores in addition to several component scores in each of the main subgroups are available. The absence of appropriate national norms lead to the development of internally normed standard and percentile scores for both the overall HOME scores and the subgroup scores related to cognitive stimulation and emotional support (NLSY Child Assessment Data User's Guide, 1990).

In addition, the following measure was utilized to analyze maternal characteristics:

THE ROSENBERG SELF ESTEEM SCALE

Maternal self esteem was assessed through utilization of the Rosenberg's Feelings Checklist (Rosenberg, 1966). This ten item self-evaluative scale asks mothers to respond to items related to their self worth. Answers on the four point continuum range from strongly agree to strongly disagree. Reliability for the NLSY population on this measure is .81. As no overall self esteem score is provided, for the purposes of this research, maternal self esteem was assessed by analyzing the mothers' answers to one of the Rosenberg Scale statements: "I feel that I am a person of worth".

Additionally, as maternal self esteem was not measured in 1981, mothers' answers related to their feelings of self worth during the 1980 interview, which was the year prior to their child's birth, were utilized.

DATA ANALYSIS

Frequencies and descriptive statistics were calculated for each variable to describe the sample's characteristics. The descriptive statistics on the sample's characteristics included profiles of the children's ages in months, gender, birth order, mothers' ages at time of children's births and mothers' ages at the time of the 1988 assessments.

The comparative analysis consisted of the utilization of stepwise multiple regressions. The stepwise procedure enters independent variables one at a time, with the independent variable which explains the greatest amount of variance in the dependent variable being the first to be entered into the equation. The rest of the independent variables are entered into the equation in such a way that the variable which explains the greatest amount of variance not already explained by variables previously entered into the equation enters in at each step (Kratzer, 1991). The stepwise regression model is particularly effective in cases

such as this research where there are numerous independent variables. It demonstrates not only which independent variables are significantly related to each dependent variable, but also shows the relative importance of each significant independent variable. Correlation tables are included in the appendices of this research (see Appendix F).

Findings were considered to be significant when the coefficient was greater than zero by a chance probability that was less than or equal to .05. A chance probability of .05 was used to reject the null hypotheses.

CHAPTER IV

RESULTS

The primary goal of this research was to determine which factors were related to enhanced cognitive and socioemotional development in seven year old Caucasian children whose mothers were employed during their first year of life. Due to the large numbers of both independent and dependent variables, this chapter is organized in a way that will more clearly present the research findings. First, frequencies and descriptive statistics will be presented to show the distribution of the research sample. One of the variables, number of hours initially worked by the mother during the child's first year of life, is presented separately to further assist in clarification.

Each dependent variable will be presented and significant independent variables will be listed and discussed. Finally, the results will be organized and presented according to the research questions with the purpose of

accepting and rejecting the associated hypotheses. In addition, a table of correlations (see Appendix F) is included.

Table 4.1 reports descriptive statistics about the population studied in this research. As indicated, the sample size consisted of 102 seven year old children whose mothers were employed during their first year of life. At the time of the 1981 assessment, the point at which much of the data relating to their mothers were gathered, these children ranged in age from 0 to 11 months, with a mean age of 5.80 months. The rest of this descriptive data is self explanatory, but it is important to mention that a great majority (68 %) of the children in this study were first born, classified on the table with the numerical value of one. All children who were not first borns received the numerical value of two. Similarly, male children outnumbered female children in this study (61 males to 41 females). Males were classified as number one and females as number two. Table 4.2 presents demographic information related to the number of hours initially worked by mothers during the child's first year of life.

Table 4.1

Demographic Information on Mothers and Children Assessed in this Study

Variable	N	Mean	Std Dev	Mini-mum	Maxi-mum
Age of Child (Months) at 1981 Assessment	102	5.80	3.72	0	11
Total Hours Worked	102	666.70	544.99	.00	2100
Presence of Sib-lings (Birth Order) (1=1st born 2=other)	102		.47	1	2
M's Level of Self Esteem	102	1.49	.52	1	3
M's Age at Childbirth	102	20.64	2.16	16	24
M's Level of Education	102	11.42	1.67	8	17
M's Marital Status (1=single; never married 2=married 3=-other)	102		.39	1	3
Family Income Level	92	26388.	17629.	950	10000 1
Child's Gender (1=Male 2=Female)	102		.49	1	2

Table 4.2

Demographic Information on Number of Hours Initially Worked By Mothers During Child's First Year of Life

Variable	N	Mean	Stn Dev	Min.	Max
1st Quarter	102	63.69	120.65	0	700
2nd Quarter	102	169.08	212.15	0	910
3rd Quarter	102	188.77	191.01	0	585
4th Quarter	102	245.16	193.80	0	720

DEPENDENT VARIABLES-- MEASURES OF COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT

COGNITIVE MEASURES

PIAT Reading Recognition

Three independent variables, presence of siblings, family income level during the child's first year of life and total number of hours worked by the mother during the child's first year of life were found to be significantly related to the dependent variable of cognitive development as assessed by the PIAT Reading Recognition measure. As reported in Table 4.3, these three independent variables were found to

be strongly related to this measure (R2 = .211). Children who were first born and had no siblings during their first year of life were found to attain higher scores on this measure at seven years of age. Children whose family income was above the poverty level during their first year of life also scored higher on this measure as seven year olds. In addition, children whose mothers worked less than 600 hours during their first year of life attained higher reading recognition scores at seven years of age.

Table 4.3

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the PIAT Reading Recognition Assessment.

Variable	Beta	df	T-value	tprob.	R^2	fprob.
Presence of siblings	-.3244	1/85	-3.315	.0014	.09377	.0039
Family Income Level	.30440	2/84	3.074	.0029	.07268	.0005
Total Hours Worked	-.2159	3/83	-2.187	.0316	.0454	.0002

PIAT Reading Comprehension

Two independent variables, family income level during the first year of life and presence of siblings were found to be significantly related to the dependent variable of cognitive development as assessed by the PIAT Reading Comprehension measure (R2 = .146). Results related to the PIAT Reading Comprehension scores are presented in Table 4.4. There was a positive relationship between family income level during the year prior to the child's birth and seven year old children's scores on this measure. Similarly, children who were first borns and had no siblings during their first year of life also scored higher on this measure at age seven. It is important to note the similarities between significant independent variables on the two dependent measures related to reading achievement. Both reading recognition and reading comprehension scores were significantly related to the variables of family income during the first year of life presence of siblings during the first year of life. However, the two variables reversed in their importance on these two measures as birth order was more significantly related to reading readiness and family income was more significantly related to reading comprehension. In addition, a maternal employment variable, total number of hours worked by the mother during the child's first year of

life, was significantly related to reading readiness but not to reading comprehension.

Table 4.4

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the PIAT Reading Comprehension Assessment.

Variable	Beta	df	T-value	tprob.	R^2	fprob.
Family Income Level	.32381	1/82	3.138	.0024	.09021	.0055
Presence of siblings	-.2368	2/81	-2.295	.0243	.0554	.0017

PIAT Math

Mother's level of education during the child's first year of life was found to have a strongly significant relationship to the dependent variable of cognitive development as assessed by the PIAT Math measure (R2 = .130). Results related to the PIAT Math assessment measure are reported in Table 4.5. Children whose mothers had achieved higher levels of education during their first year of life scored higher on this math assessment measure at seven years of age.

Table 4.5

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the PIAT Math Assessment

Variable	Beta	df	T-value	tprob.	R^2	fprob.
M's Level of Education	.36145	1/85	3.574	.0006	.13064	.0006

SOCIOEMOTIONAL MEASURES

Behavior Problems Index--Total Score

Mother's level of self esteem and mother's age during the child's first year of life were related to the dependent variable cognitive development as assessed by the total score on the Behavior Problems Index. These two variables accounted for a significant portion of the variance on this measure (R2 = .137). Results related to the total score of the Behavior Problems Index are reported in Table 4.6. It is important to recognize that lower scores on this measure and all of the Behavior Problems Index subscale measures indicate fewer behavioral problems and are therefore

desirable. Children whose mothers had higher levels of self esteem in 1980, the year prior to their birth, achieved lower scores on this measure. In addition, children whose mothers were older during their first year of life also achieved lower scores on this measure.

Table 4.6

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to the Total Scores on the Behavior Problems Index

Variable	Beta	df	T-value	tprob.	R^2	fprob.
M's Self Esteem	.29997	1/81	2.876	.0052	.07687	.0112
M's Age	-.2467	2/80	-2.366	.0204	.06036	.0027

Behavior Problems Index--Antisocial Subscale

Family income level during the child's first year of life was significantly related to the dependent variable of socioemotional development as assessed by the Antisocial Subscale of the Behavior Problems Index (R2 = .047) is reported in Table 4.7. Children whose family incomes were higher during their first year of life scored lower on this

measure, indicating they had fewer behavioral problems in the antisocial domain.

Table 4.7

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to the Scores on the Antisocial Subscale of the Behavior Problems Index

Variable	Beta	df	T-value	tprob.	R^2	fprob.
Family Income Level	-.2190	1/82	-2.033	.0453	.04799	.0453

Behavior Problems Index--Anxious Subscale

Family income level during the child's first year of life and mother's level of self esteem in the year prior to the child's birth, were the two independent variables found to be significantly related to the dependent variable of socioemotional development as assessed by the Anxious Subscale of the Behavior Problems Index (R2 = .094). These results are reported in Table 4.8. Children whose family incomes were higher during their first year of life scored

lower on this measure, as did children whose mothers had higher levels of self esteem in the year prior to their birth.

TABLE 4.8

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the Anxious/Depressed Subscale of the Behavior Problems Index

Variable	Beta	df	T-value	tprob.	R^2	fprob.
Family Income Level	-.2280	1/83	-2.169	.0330	.04925	.0412
M's Self Esteem	-.2127	2/82	2.024	.0462	.04523	.0171

Behavior Problems Index--Headstrong Subscale

Mother's level of self esteem in the year prior to the child's birth and the timing of the mother's return to work during the child's first year of life were found to be significantly related to the dependent variable of socioemotional development as assessed by the Headstrong Subscale of the Behavior Problems Index (R2 = .111). Information pertaining to this measure is reported in Table

4.9. Children whose mothers had higher levels of self esteem in the year prior to their birth, as well as children whose mothers returned to work before they reached three months of age or after they reached nine months of age scored lower on this measure.

Table 4.9

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the Headstrong Subscale of the Behavior Problems Index

Variable	Beta	df	T-value	tprob.	R^2	fprob.
M's Self Esteem	.28267	1/82	2.664	.0093	.06044	.0242
Critical Periods	.22933	2/81	2.161	.0336	.05124	.0083

Behavior Problems Index--Hyperactive Subscale

Two independent variables, mother's level of self esteem in the year prior to the child's birth and mother's age at the time of the child' birth, were determined to have a strong significant relationship to the dependent variable of socioemotional development as assessed by the Hyperactive Subscale of the Behavior Problems Index (R2 = .170).

Results related to this measure are reported in Table 4.10. Children whose mothers had higher levels of self esteem in the year prior to their birth and children whose mothers were older at the time of their birth experienced fewer behavior problems in this area as evidenced by their lower scores on this measure.

Table 4.10

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the Hyperactive Subscale of the Behavior Problems Index

Variable	Beta	df	T-value	tprob.	R^2	fprob.
M's Self Esteem	.33439	1/84	3.326	.0013	.09254	.0044
M's Age	-.2815	2.83	-2.801	.0063	.07836	.0004

Behavior Problems Index--Dependent Subscale

Two independent variables, mother's age during the child's first year of life and the presence of siblings in the home during the child's first year of life, were found to have a significant relationship to the dependent variable of socioemotional development as assessed by the Dependent

Subscale of the Behavior Problems Index (R2 = .126). Results are reported in Table 4.11. Children whose mothers were older at the time of their birth scored lower on this measure, as did children who were first borns and had no siblings in the home during their first year of life.

Table 4.11

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the Dependent Subscale of the Behavior Problems Index

Variable	Beta	df	T-value	tprob.	R^2	fprob.
M's Age	-.3121	1/83	-2.930	.0044	.06101	.0227
Presence of Siblings	-.2638	2/82	2.477	.0153	.06537	.0039

Behavior Problems Index--Peer Conflict/Withdrawal Subscale

No independent variables used in this research proved to be significantly related to the dependent variable of socioemotional development as assessed by the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

One independent variable, level of family income, approached significance but was not a strong enough relationship to prove significant.

HOME Inventory

Three of the independent variables, mother's age during the child's first year of life, presence of siblings and child's gender, were found to be very strongly related to scores on the HOME Inventory (R2 = .234). Results are reported in Table 4.12. Children whose mothers were older during their first year of life came from homes which attained higher scores, indicating a more positively stimulating home environment. Similarly, children who were first borns and had no siblings in the home during their first year of life and children who were female also came from homes attaining higher HOME Inventory scores. Higher scores on the HOME Inventory have been linked to higher cognitive development (Dubow and Luster, 1990).

Table 4.12

Results of a Stepwise Multiple Regression Analysis Predicting the Relationship of Independent Variables to Scores on the HOME Inventory Score

Variable	Beta	df	T-value	tprob.	R^2	fprob.
M's Age	.45951	1/83	4.548	.0000	.13684	.0005
Presence of Siblings	-.2725	2/82	-2.704	.0083	.05565	.0002
Gender	.21216	3/81	2.146	.0340	.043	.0001

Table 4.13 summarizes the measures used to examine the dependent variables of cognitive and socioemotional development and lists the independent variables found to be related to each measure. Table 4.14 lists each dependent variable and the independent variables found to be related to each measure.

Table 4.13

Summarization of Measures of the Dependent Variables and Related Independent Variables

Reading Recognition	Reading Comprehension	Math	Total BPI	Antisocial	Anxious/ Depressed	Headstrong	Hyperactive	Dependent	HOME Inventory
Presence of Siblings (R^2=.09377	Family Income (R^2=.09021)	M's Level of Education (R^2= .13064)	M's Self Esteem (R^2=.07687)	Family Income Level (R^2=.04799	Family Income Level (R^2=.04925)	M's Self Esteem (R^2=.09254)	M's Self Esteem (R^2=.09254	M's Age at Childbirth (R^2=.06101)	M's Age at Childbirth (R^2=.13684)
Family Income Level (R^2=.07268)	Presence of Siblings (R^2=.0554)		M's Age at Childbirth (R^2=.06036)		M's Self Esteem (R^2=.04523)	Critical Periods (R^2=.05124)	M's Age at Childbirth (R^2=.07836)	Presence of Siblings (R^2=.06537)	Presence of Siblings (R^2=.05565)
Total Hours (R^2=.0454)									Gender (R^2=.0349)
Cum. R^2= .21185	Cum. R^2= .14575	Cum. R^2= .13064	Cum. R^2= .13723	Cum. R^2= .04799	Cum. R^2= .09448	Cum. R^2= .11168	Cum. R^2= .17090	Cum. R^2= .12638	Cum. R^2= .23592

Table 4.14

Summarization of Independent Variables Related to Study Measures

# of Hours Initially Worked	Critical Periods	Total Hours	Presence of Siblings	M's Self-Esteem	M's Age at Childbirth	M's Level of Education	Marital Status	Family Income Level	Gender
—	- Headstrong	- Reading Recognition	- Reading Recognition - Reading Comp. - Dependent - HOME	- Total BPI - Anxious/ Depressed - Headstrong - Hyperactive	- Total BPI - Hyperactive - Dependent - HOME	- Math	—	- Reading Recognition - Reading Comp. - Antisocial - Anxious/ Depressed	- HOME

RESEARCH QUESTIONS AND HYPOTHESES

The primary goal of this research was to study seven year old children whose mothers were employed during their first year of life to determine which factors enhanced cognitive and socioemotional development. The results are now presented as organized by the following research questions:

1. Is there a relationship between the amount of hours initially worked by the mother during the child's first year of life and seven year old children's cognitive and/or socioemotional development?

2. Are there critical periods during the child's first year of life when mothers' return to outside the home employment has a greater influence on children's cognitive and/or socioemotional development?

3. What relationship does the total number of hours a mother works during her child's first year of life have to seven year old children's cognitive and/or socioemotional development.

4. Is there a relationship between the presence of siblings during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

5. Is there a relationship between mother's level of self esteem in the year prior to the child's birth and the seven year old child's cognitive and /or socioemotional development?

6. Is there a relationship between the mother's age at the time of the child's birth and the seven year old child's cognitive and/or socioemotional development?

7. Is there a relationship between the mother's marital status during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

8. Is there a relationship between the level of education attained by the mother during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

9. Is there a relationship between family income level during the year prior to the child's birth and the seven year old child's cognitive and/or socioemotional development?

10. Is there a relationship between the seven year old child's gender and his/her cognitive and/or socioemotional development?

11. What relationship do the amount of hours initially worked by the mother during the child's first year of life, the timing of the mother's return to work during the child's first year of life, the total number of hours worked by the mother during the first year of life, the presence of siblings during the child's first year of life, the mother's level of self esteem during the year prior to the child's birth, the mother's age at the time of the child's birth, the mother's level of education during the child's first year of life, the mother's marital status during the child's first year of life, family income level during the year prior to the child's birth and the child's gender have the score on the HOME Inventory?

12. Are there certain variables which are most strongly related to cognitive development in seven year old children whose mothers were employed during their first year of life?

13. Are there certain variables which are most strongly related to sociemotional development in seven year old children whose mothers were employed during their first year of life?

The Relationship Between the Amount of Hours Initially Worked During the Child's First Year of Life and Cognitive and Socioemotional Development of Seven Year Old Children

This research question was developed to determine if differences would exist when comparing mothers who initially entered the workforce on a fulltime (over 35 hours per week) basis after childbirth and those who returned to outside the

home employment on a parttime (less than 35 hours per week) basis. Table 4.15 illustrates the breakdown between parttime and fulltime employment for this sample.

Table 4.15

Sample Characteristics Related to Parttime Versus Fulltime Employment Status During Child's First Year of Life (1981)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Percent
Parttime	1	59	57.8	57.8	57.8
Fulltime	2	43	42.2	42.2	100.0
	Total	102	100.0	100.0	

Valid Cases = 102
Missing Cases = 0

This question did not take into account when the return to work occurred; this researcher was only interested in determining if differences occurred based on initial full or part time employment status. Based on previous research findings, hypotheses were developed to reflect the belief that children whose mothers initially returned to work on a part time basis would have higher levels cognitive and socioemotional development at age seven than would children

whose mothers had initially returned to work on a fulltime basis. Utilization of stepwise multiple regressions failed to find this variable significantly related to either cognitive or socioemotional development as assessed by the measures in this research. Therefore, the following hypotheses are **supported**: Ho1, Ho2, Ho3, Ho4, Ho5, Ho6, Ho7, Ho8, Ho9 and Ho10. This support is based upon the following findings:

(H for 1): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 2): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 3): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's PIAT Math scores.

(H for 4): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Total Score.

(H for 5): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index-Antisocial Subscale scores.

(H for 6): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Anxious Subscale scores.

(H for 7): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Headstrong Subscale scores.

(H for 8): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Hyperactive Subscale scores.

(H for 9): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Dependent Subscale scores.

(H for 10): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Peer Conflict/Withdrawal Subscale scores.

The following hypotheses related to initial full and parttime employment are **rejected:** Ha1, Ha2, Ha3, Ha4, Ha5, Ha6, Ha7, Ha8, Ha9, Ha10. This rejection is based upon the following findings:

(H for 1): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 2): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 3): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's PIAT Math scores.

(H for 4): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Total Score.

(H for 5): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index-Antisocial Subscale scores.

(H for 6): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Anxious Subscale scores.

(H for 7): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Headstrong Subscale scores.

(H for 8): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Hyperactive Subscale scores.

(H for 9): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Dependent Subscale scores.

(H for 10): There was no significant relationship related to the number of hours initially worked by the mother during the child's first year of life and seven year old children's Behavior Problems Index Peer Conflict/Withdrawal Subscale scores.

The Relationship Between When the Mother Returns to Work During the Child's First Year of Life and Cognitive and Socioemotional Development in Seven Year Old Children

The purpose of this question was to determine if there are critical periods during the child's first year of life when mothers' return to outside the home employment is more optimal. The timing of the return to work for mothers in this sample is reported in Table 4.16.

Table 4.16

Sample Characteristics for Timing of Mother's Return to Work During the Child's First Year of Life (1981)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
Quarter 1 (0-13 weeks)	1	37	36.3	36.3	36.3
Quarter 2 (14-26 weeks)	2	22	21.6	21.6	57.8
Quarter 3 (27-39 weeks)	3	26	25.5	25.5	83.3
Quarter 4 (40-52 weeks)	4	17	16.7	16.7	100.0
Total		102	100.0	100.0	
Quarters 1 & 4	1	54	52.9	52.9	52.9
Quarters 2 & 3	2	48	47.1	47.1	100.0
Total		102	100.0	100.0	

Working Cases = 102
Missing Cases = 0

Mothers who returned in either the first or the fourth quarter of the child's first year of life were grouped together and compared to mothers who returned to work during the second or third quarter of that first year. It was thought that children whose mothers returned to work in either the first or the fourth quarter of the first year (ie: before the age of three months or after the age of nine months) would show more optimal development on cognitive and

socioemotional measures at seven years of age than did children whose mothers returned to work in the second or third quarters of the first year of life (ie: between three and nine months of age). This prediction did not hold true for any of the cognitive measures, but was significant on the Headstrong subscale of the Behavior Problems Index (R2 = .051). Table 4.9 (p. 87) reports information related to the Headstrong subscale. Children whose mothers returned to work prior to three months or after nine months of age showed lower scores on the Headstrong subscale, indicating fewer behavioral problems in this area.

Therefore, the following hypotheses related to critical periods for return to work during the child's first year of life are **accepted:** Ho11, Ho12, Ho13, Ho14, Ho15, Ho16, Ha17, Ho18, Ho19 and Ho20. This acceptance is based on the following findings:

(H for 11): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 12): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 13): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's PIAT Math scores.

(H for 14): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 15): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 16): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 17): There is a significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 18): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 19): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 20): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to critical periods for mothers' return to outside the home employment during the child's first year of life are **rejected:** Ha11, Ha12, Ha13, Ha14, Ha15, Ha16, Ho17, Ha18, Ha19 and Ha20. This rejection is based on the following findings:

(H for 11): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 12): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 13): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's PIAT Math scores.

(H for 14): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 15): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 16): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 17): There is a significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 18): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 19): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 20): There is no significant relationship related to critical periods during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between the Total Number of Hours Worked During the Child's First Year of Life and Cognitive and Socioemotional Development in Seven Year Old Children

This research question focused on the relationship between how much time the mother actually spent in outside the home

employment during the child's first year of life and seven year old children's cognitive and socioemotional development. The arrangement of the data made it impossible to completely track the mothers' employment histories throughout the child's first year of life, as mothers were asked to respond by about their employment activities on a quarterly basis. Therefore, mothers who worked the same total number of hours may have done so in very different ways. Some of the mothers initially worked very large amounts of hours upon their return to work, and then (for what is probably a multitude of reasons) cut back the amount of hours they were working. Some waited until late in the infant's first year of life to return to outside the home employment, but worked numerous hours per week once employment was resumed. Others maintained a consistent number of outside the home working hours throughout the infants first year of life. Therefore, it is acknowledged that the pattern and consistency leading up to this total accumulation of hours may have differed greatly. These differences are addressed by research questions 1 and 3. This question only sought to address the relationships between total number of hours worked during the first year of life and later cognitive and socioemotional development. Table 4.17 reports information related to the total number of hours worked by mothers during their child's first year of life.

Table 4.17

Sample Characteristics on Total Hours Worked by Mother During Child's First Year of Life (1981)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
Lowest-250 hrs.	1	30	29.4	29.4	29.4
251-500 hrs.	2	18	17.6	17.6	47.1
501-750 hrs.	3	14	13.7	13.7	60.8
751-1000 hrs.	4	15	14.7	14.7	75.5
1001-highest	5	25	24.5	24.5	100.0
	Total	102	100.0	100.0	

Working Cases = 102
Missing Cases = 0

Stepwise multiple regressions showed this variable to be moderately significant in its relationship to PIAT Reading Recognition scores (R2 = .040). Table 4.3 (p. 121) reports information related to the PIAT Reading Recognition Assessment.

Therefore, the following hypotheses related to the total number of hours worked during the child's first year of life are **accepted:** Ha21, Ho22, Ho23, Ho24, Ho25, Ho26, Ho27,

Ho28, Ho29 and Ho30. This acceptance is based on the following findings:

(H for 21): There is a significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 22): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 23): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's PIAT Math scores.

(H for 24): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 25): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 26): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 27): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 28): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 29): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 30): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to the total number of hours worked by the mother during the child's first year of life are **rejected:** Ho21, Ha22, Ha23, Ha24, Ha25, Ha26, Ha27, Ha28, Ha29 and Ha30. This rejection is based on the following findings:

(H for 21): There is a significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 22): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 23): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's PIAT Math scores.

(H for 24): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 25): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 26): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 27): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 28): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 29): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 30): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between the Presence of Siblings in the Home During the Child's First Year of Life and Seven Year Old Children's Cognitive and Socioemotional Development

The focus of this research question was on the relationship between having siblings in the home during the child's first year of life and seven year old children's cognitive and socioemotional development. It was hypothesized that being first born and having no siblings in the home during the first year of life would enhance the cognitive and socioemotional development of seven year old children.

Conversely, it was thought that being a second or later born and having siblings in the home during the first year of life would lead to less positive development in the cognitive and socioemotional domains. For purposes of this research, children were assessed as either being first born (no siblings) or later born (one or more siblings). As reported in Table 4.18, the majority of the children in this study (n=70; 68%) were first borns and had no siblings in the home during their first year of life.

Table 4.18

Sample Characteristics on Presence of Siblings During Child's First Year of Life (1981)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
First Borns	1	70	68.6	68.6	68.6
Other*	2	32	31.4	31.4	100.0
	Total	102	100.0	100.0	

*indicates other than first borns-
28 children had 1 sibling (27.5%)
3 children had 2 siblings (2.9%)
1 child had 4 siblings (1.0%)

This variable was significantly related to several of the measures used to assess both cognitive and socioemotional development within this research. In the cognitive domain, presence of siblings was found to be significantly related

to both the PIAT Reading Recognition (R2 = .093) and the PIAT Reading Comprehension (R2 = .090) measures (see Tables 4.3 and 4.4, pp. 121 and 123). In the socioemotional domain, presence of siblings was significantly related to the Dependent subscale of the Behavior Problems Index (r2 = .065). Information related to the Dependent subscale is reported in Table 4.11 (p. 130). Additionally, presence of siblings in the home during the first year of life was significantly related (R2 = .056) to higher scores on the HOME Inventory (see Table 4.12, p. 132). In all cases, children who were first born and had no siblings in the home during their first year of life scored more positively than did children who were second or later born and did have siblings in the home during their first year of life.

Therefore, the following hypotheses related to the presence of siblings in the home during the child's first year of life and seven year old children's cognitive and socioemotional development are **accepted**: Ha31, Ha32, Ho33, Ho34, Ho35, Ho36, Ho37, Ho38, Ha39 and Ho40. This acceptance is based on the following findings:

(H for 31): There is a significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 32): There is a significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 33): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's PIAT Math scores.

(H for 34): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 35): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 36): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 37): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 38): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 39): There is a significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 40): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to sibling presence in the home and seven year old children's cognitive and socioemotional development are **rejected:** Ho31, Ho32, Ha33,

Ha34, Ha35, Ha36, Ha37, Ha38, Ho39 and Ha40. This rejection is based on the following findings:

(H for 31): There is a significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 32): There is a significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 33): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's PIAT Math scores.

(H for 34): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 35): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 36): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 37): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 38): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 39): There is a significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 40): There is no significant relationship related to presence of siblings in the home during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between Mother's Level of Self Esteem and Seven Year Old Children's Cognitive and Socioemotional Development

Stepwise multiple regressions were done to determine the relationship between mother's level of self esteem and the seven year old child's cognitive and socioemotional development. This independent variable differs from other independent variables used in this study in that mother's level of self esteem was assessed only in 1980, and not during the year of the child's birth (1981) as were the other independent variables. Therefore, the mother's level of self esteem was determined for the year prior to her child's birth. Secondly, mother's level of self esteem was determined by analyzing the mothers' responses to one of the ten questions asked which related to self esteem: "I am a person of worth". This question was determined by this researcher to most fully describe how the mother felt about herself, as no total scores related to a self esteem measure were reported for 1980. Thirdly, the answers to this question were arranged in a Likert scale ranging from 1-4, with one being strongly agree and 4 equaling strongly disagree. An overwhelming majority (99%; n=100) of the

mothers utilized responses one or two; one person disagreed with the statement that they were a person of worth and one case is missing. No one strongly disagreed that they felt they were a person of worth. However, significant differences appeared between mothers who strongly agreed with the statement about their own worth and those who merely agreed with the statement despite the highly positive self view reported by all of these mothers. Table 4.19 presents these findings.

Table 4.19

Sample Characteristics on Mother's Level of Self Esteem During Year Prior to Child's Birth (1980)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
Strongly Agree	1	53	52.0	52.5	52.5
Agree	2	47	46.1	46.5	99.0
Disagree	3	1	1.0	1.0	100.0
Strongly Disagree	0	0	0	0	
Missing	-5	1	1.0	Missing	
Total		102	100.0	100.0	

Valid Cases=101
Missing Cases=1

Mother's level of self esteem was significantly related to four of the dependent variables assessing socioemotional development: Total Score on the Behavior Problems Index (R2 = .076) and the Anxious/Depressed (R2 = .094), Headstrong (R2 = .060) and Hyperactive (R2 = .092) subscales. It was not significantly related to any of the cognitive measures. Tables 4.6, 4.8, 4.9 and 4.10 (pp. 125, 127, 128 and 129) report this information.

Therefore, the following hypotheses related to mother's level of self esteem and seven year old children's cognitive and socioemotional development are **accepted:** Ho41, Ho42, Ho43, Ha44, Ho45, Ha46, Ha47, Ha48, Ho49 and Ho50. This acceptance is based on the following findings:

(H for 41): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's PIAT Reading Recognition scores.

(H for 42): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's PIAT Reading Comprehension scores.

(H for 43): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's PIAT Math scores.

(H for 44): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's total score on the Behavior Problems Index.

(H for 45): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 46): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 47): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 48): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 49): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 50): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to mother's level of self esteem and seven year old children's cognitive and socioemotional development are **rejected:** Ha41, Ha42, Ha43, Ho44, Ha45, Ho46, Ho47, Ho48, Ha49 and Ha50. This rejection is based on the following findings:

(H for 41): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's PIAT Reading Recognition scores.

(H for 42): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's PIAT Reading Comprehension scores.

(H for 43): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's PIAT Math scores.

(H for 44): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's total score on the Behavior Problems Index.

(H for 45): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 46): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 47): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 48): There is a significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 49): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 50): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship between Mother's Age During the Child's First Year of Life and Seven Year Old Children's Cognitive and Socioemotional Development

The age of the mother during the child's first year of life proved to be a significant variable, particularly in the socioemotional domain. Age of mother during the child's first year of life was significantly related to the total score on the Behavior Problems Index (R2 = .603), and to the Hyperactive (R2 = .078) and Dependent (R2 = .061). Subscales of the Behavior Problems Index. This information is reported in Tables 4.6 (p. 125), 4.10 (p. 129) and 4.11 (p. 130). Mother's age also was significantly related to scores on the HOME Inventory; information related to this measure is presented later in this chapter. It was hypothesized that seven year old children whose mothers were older at the time of their birth would do better on measures of cognitive and socioemotional development than would children whose mothers were younger when they were born. This proved to be true in several of the measures assessing socioemotional development, but was not significantly related to any measures assessing cognitive development. As indicated in Table 4.20, mothers in this study ranged in age from 16 to 24 years at the time of their child's birth.

Table 4.20

Sample Characteristics on Mother's Age at the Time of Child's Birth (1980)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
Age	16	3	2.9	2.9	2.9
	17	7	6.9	6.9	9.8
	18	9	8.8	8.8	18.6
	19	15	14.7	14.7	33.3
	20	11	10.8	10.8	44.1
	21	15	14.7	14.7	58.8
	22	14	13.7	13.7	72.5
	23	24	23.5	23.5	96.1
	24	4	3.9	3.9	100.0
	Total	102	100.0	100.0	
Valid Cases=102 Missing Cases=0		Mean=20.6			

Therefore, the following hypotheses related to mother's age and seven year old children's cognitive and socioemotional development are **accepted:** Ho51, Ho52,Ho53, Ha54, Ho55, Ho56, Ho57, Ha58, Ha59 and Ho60. This acceptance is based on the following findings:

(H for 51): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 52): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 53): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's PIAT Math scores.

(H for 54): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 55): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 56): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 57): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 58): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 59): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 60): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to mother's age and seven year old children's cognitive and socioemotional development are **rejected:** Ha51, Ha52, Ha53, Ho54, Ha55, Ha56, Ha57, Ho58, Ho59 and Ha60. This rejection is based on the following findings:

(H for 51): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 52): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 53): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's PIAT Math scores.

(H for 54): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 55): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 56): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 57): There is no significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 58): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 59): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 60): There is no significant relationship related to total number of hours worked by the mother during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between Mother's Level of Education and Seven Year Old Children's Cognitive and Socioemotional Development

Stepwise multiple regression analysis showed that mother's level of education during the child's first year of life was significantly related to one of the measures used to assess children's cognitive growth, the PIAT Math Assessment. Mother's level of education was the only variable showing a strong significant (R2 = .1306) relationship to this measure. Information on the PIAT Math Assessment is reported in Table 4.5. Mother's level of education was not found to be significantly related to any of the measures used to assess socioemotional development in this research. Table 4.21 reports information related to the educational levels of the mothers in this research. As indicated, a

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very high percentage (87.3; n=89) of these mothers had completed 12 years of schooling at the time of the child's birth.

Table 4.21

Sample Characteristics Related to Mother's Level of Education During Child's First Year of Life (1981)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
Years of Schooling	8	2	2.0	2.0	2.0
	9	14	13.7	13.7	15.7
	10	14	13.7	13.7	29.4
	11	11	10.8	10.8	40.2
	12	48	47.1	47.1	87.3
	13	5	4.9	4.9	92.2
	14	3	2.9	2.9	95.1
	15	2	2.0	2.0	97.1
	16	2	2.0	2.0	99.0
	17	1	1.0	1.0	100.0
	Total	102	100.0	100.0	
Valid Cases=102 Missing Cases=0		Mean=11.4			

The series of hypotheses about mother's level of education stated that seven year old children whose mothers had higher levels of education during their first year of life would score more positively on cognitive and socioemotional measures than would children whose mothers had lower levels of education during their first year of life. Therefore, the following hypotheses are **accepted:** Ho61, Ho62, Ha63, Ho64, Ho65, Ho66, Ho67, Ho68, Ho69 and Ho70. This acceptance is based on the following findings:

(H for 61): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 62): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 63): There is a significant relationship related to mother's level of education during the child's first year of life and seven year old children's PIAT Math scores.

(H for 64): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 65): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 66): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 67): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 68): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 69): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 70): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses about mother's level of education and seven year old children's cognitive and socioemotional development are **rejected**: Ha61, Ha62, Ho63, Ha64, Ha65, Ha66, Ha67, Ha68, Ha69 and Ha70. This rejection is based on the following findings:

(H for 61): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 62): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 63): There is a significant relationship related to mother's level of education during the child's first year of life and seven year old children's PIAT Math scores.

(H for 64): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 65): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 66): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 67): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 68): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 69): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 70): There is no significant relationship related to mother's level of education during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between Marital Status During the Child's First Year of Life and Seven Year Old Children's Cognitive and Socioemotional Development

This research question assessed what the mother's marital status was during the first year of the child's life to determine what relationship marital status had to seven year old children's cognitive and socioemotional development. For purposes of this research, mothers were considered to be either married or not married, with the later category including separated, divorced, widower or never married

mothers. Data were recoded into the two categories of married or not married for purposes of the stepwise multiple regression analysis. As indicated by Table 4.22, the majority (n=86; 84.3%) of the mothers in this study were married.

Table 4.22
Sample Characteristics Related to Mother's Marital Status During Child's First Year of Life (1981)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum Percent
Single/Nev. Married	1	11	10.8	10.8	10.8
Married, Spouse Present	2	86	84.3	84.3	95.1
Other (Separated, divorced, widowed)	3	5	4.9	4.9	100.0
	Total	102	100.0	100.0	
Valid Cases = 102 Missing Cases = 0					

Multiple stepwise regression analysis did not show mother's marital status during the child's first year of life to be significantly related to any of the measures assessing cognitive or socioemotional development. Hypotheses related to this variable assumed that seven year old children whose

mothers were married during their first year of life would score more positively on measures assessing cognitive and socioemotional development than would children whose mothers were not married during their first year of life. As the analysis showed no difference in development related to marital status the following hypotheses are **accepted:** Ho71, Ho72, Ho73, Ho74, Ho75, Ho76, Ho77, Ho78, Ho79 and Ho80. This acceptance is based on the following findings:

(H for 71): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 72): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 73): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's PIAT Math scores.

(H for 74): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 75): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 76): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 77): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 78): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 79): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 80): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to mother's marital status and children's cognitive and socioemotional development are **rejected:** Ha71, Ha72, Ha73, Ha74, Ha75, Ha76, Ha77, Ha78, Ha79 and Ha80. This rejection is based on the following findings:

(H for 71): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's PIAT Reading Recognition scores.

(H for 72): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's PIAT Reading Comprehension scores.

(H for 73): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's PIAT Math scores.

(H for 74): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's total score on the Behavior Problems Index.

(H for 75): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 76): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 77): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 78): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 79): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 80): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between Family's Level of Income During the Child's First Year of Life and Seven Year Old Children's Cognitive and Socioemotional Development

Stepwise multiple regression analysis showed that family's income level during the child's first year of life was significantly related to several of the dependent measures in both the cognitive and socioemotional domain. Table 4.23 presents information related to family's level of income. It was decided to list income related information in ten-percent intervals, as opposed to listing income levels for each of the 102 involved families. As indicated, family

income levels during 1980 (the year prior to the child's birth) ranged from a reported low of $950.00 to a high of $101,400.

Table 4.23

Sample Characteristics Related to Family's Income Level in the Year Prior to the Child's Birth (1980)

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
Total Net Income	6520	1	1.0	1.1	10.9
	11602	1	1.0	1.1	20.7
	15648	1	1.0	1.1	30.4
	19803	1	1.0	1.1	40.2
	24030	1	1.0	1.1	50.0
	29000	2	2.0	2.2	60.9
	32960	1	1.0	1.1	70.7
	38200	1	1.0	1.1	80.4
	49555	1	.100	1.1	90.2
	100001	1	1.0	1.1	100.0

Valid Cases=102 Mean= 26,388
Missing Cases=0

Hypotheses related to this variable were based on the premise that seven year old children whose family incomes were higher during their first year of life would score more positively on evaluative measures than would children whose family incomes were lower during their first year of life. Family's level of income was found to be significantly related to both the PIAT Reading Recognition (R2 = .085) and the Reading Comprehension (R2 = .090) assessment measures (see Tables 4.3 and 4.4, pp.121 and 123). Family's level of income was also significantly related to two of the measures assessing socioemotional development, the Antisocial (R2 = .0479) and the Anxious/Depressed Subscales (R2 = .049) of the Behavior Problems Index (see Tables 4.7 and 4.8, pp. 126-127).

The following hypotheses related to family income level are **accepted**: Ha81, Ha82, Ho83, Ho84, Ha85, Ha86, Ho87, Ho88, Ho89 and Ho90. This acceptance is based on the following findings:

(H for 81): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's PIAT Reading Recognition scores.

(H for 82): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's PIAT Reading Comprehension scores.

(H for 83): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's PIAT Math scores.

(H for 84): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's total score on the Behavior Problems Index.

(H for 85): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 86): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 87): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 88): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 89): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 90): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to family's level of income and seven year old children's cognitive and socioemotional development are **rejected:** Ho81, Ho82, Ha83, Ha84, Ho85, Ho86, Ha87, Ha88, Ha89 and Ha90. This rejection is based on the following findings:

(H for 81): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's PIAT Reading Recognition scores.

(H for 82): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's PIAT Reading Comprehension scores.

(H for 83): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's PIAT Math scores.

(H for 84): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's total score on the Behavior Problems Index.

(H for 85): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 86): There is a significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 87): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 88): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 89): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 90): There is no significant relationship related to family's level of income during the year prior to the child's birth and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between the Child's Gender and Cognitive and Socioemotional Development of the Seven Year Old Child

Stepwise multiple regression analysis failed to find the child's gender significantly related to any of the measures assessing cognitive or socioemotional development. Child's gender was found to be significantly related to scores on the HOME Inventory and is reported later in this chapter. Table 4.24 reports information related to the gender of the children in this study.

Table 4.24

Sample Characteristics of Child's Gender

Value Label	Value	Frequ.	Percent	Valid Percent	Cum. Perc.
Male	1	61	59.8	59.8	59.8
Female	2	41	40.2	40.2	100.0
	Total	102	100.0	100.0	

Valid Cases=102

Missing Cases=0

Hypotheses related to child's gender assumed that female children would score more positively than male children on the measures assessing cognitive and socioemotional development. Therefore, the following hypotheses are **accepted:** Ho91, Ho92, Ho93, Ho94, Ho95, Ho96, Ho97, Ho98, Ho99 and Ho100. This acceptance is based on the following findings:

(H for 91): There is no significant relationship related to the child's gender and seven year old children's PIAT Reading Recognition scores.

(H for 92): There is no significant relationship related to the child's gender and seven year old children's PIAT Reading Comprehension scores.

(H for 93): There is no significant relationship related to the child's gender and seven year old children's PIAT Math scores.

(H for 94): There is no significant relationship related to the child's gender and seven year old children's total score on the Behavior Problems Index.

(H for 95): There is no significant relationship related to the child's gender and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 96): There is no significant relationship related to the child's gender and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 97): There is no significant relationship related to the child's gender and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 98): There is no significant relationship related to the child's gender and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 99): There is no significant relationship related to the child's gender and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 100): There is no significant relationship related to the child's gender and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The following hypotheses related to child's gender and seven year old children's cognitive and socioemotional development are **rejected:** Ha91, Ha92, Ha93, Ha94, Ha95, Ha96, Ha97, Ha98, Ha99 and Ha100. This rejections is based on the following findings:

(H for 91): There is no significant relationship related to the child's gender and seven year old children's PIAT Reading Recognition scores.

(H for 92): There is no significant relationship related to the child's gender and seven year old children's PIAT Reading Comprehension scores.

(H for 93): There is no significant relationship related to the child's gender and seven year old children's PIAT Math scores.

(H for 94): There is no significant relationship related to the child's gender and seven year old children's total score on the Behavior Problems Index.

(H for 95): There is no significant relationship related to the child's gender and seven year old children's scores on the Antisocial Subscale of the Behavior Problems Index.

(H for 96): There is no significant relationship related to the child's gender and seven year old children's scores on the Anxious/Depressed Subscale of the Behavior Problems Index.

(H for 97): There is no significant relationship related to the child's gender and seven year old children's scores on the Headstrong Subscale of the Behavior Problems Index.

(H for 98): There is no significant relationship related to the child's gender and seven year old children's scores on the Hyperactive Subscale of the Behavior Problems Index.

(H for 99): There is no significant relationship related to the child's gender and seven year old children's scores on the Dependent Subscale of the Behavior Problems Index.

(H for 100): There is no significant relationship related to the child's gender and seven year old children's scores on the Peer Conflict/Withdrawal Subscale of the Behavior Problems Index.

The Relationship Between the Independent Variables and Scores on the HOME Inventory

Higher scores on the HOME Inventory have been linked to higher cognitive scores in children of various ages. The focus of this research question was to determine which independent variables were significantly related to higher scores on the HOME Inventory.

Utilization of stepwise multiple regression analysis revealed that three of the independent variables, mother's age at the time of the child's birth (R2 = .136), presence of siblings in the home during the child's first year of life (R2 = .055) and the child's gender (R2 = .043) were significantly related to the attainment of higher scores on the HOME Inventory. These three variables were found to be very strongly related to higher scores on the HOME Inventory (R2 = .2359). Information related to the HOME Inventory is presented in Table 4.12 (p. 132). Higher scores on this measure are associated with mothers who were older at the time of their child's birth, with having no siblings present

in the home during the first year of a child's life and with female children. Therefore, the following hypotheses related to scores on the HOME Inventory are **accepted:** Ho101, Ho102, Ho103, Ha104, Ho105, Ha106, Ho107, Ho108, Ho109 and Ha110. This acceptance is based on the following findings:

(H for 101): There is no significant relationship related to number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 102): There is no significant relationship related to critical periods during the first year of life and seven year old children's scores on the HOME Inventory.

(H for 103): There is no significant relationship related to total nuber of hours worked by the mother during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 104): There is a significant relationship related to presence of siblings during the first year of life and seven year old children's scores on the HOME Inventory.

(H for 105): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the HOME Inventory.

(H for 106): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 107): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 108): There is no significant relationship related to mother's level of education and seven year old children's scores on the HOME Inventory.

(H for 109): There is no significant relationship related to family income level during the year prior to the child's birth and seven year old children's scores on the HOME Inventory.

(H for 110): There is a significant relationship related to the child's gender and seven year old children's scores on the HOME Inventory.

The following hypotheses related to scores on the HOME Inventory are **rejected:** Ha101, Ha102, Ha103, Ho104, Ha105, Ho106, Ha107, Ha108, Ha109 and Ho110. This rejection is based on the following findings:

(H for 101): There is no significant relationship related to number of hours initially worked by the mother during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 102): There is no significant relationship related to critical periods during the first year of life and seven year old children's scores on the HOME Inventory.

(H for 103): There is no significant relationship related to total nuber of hours worked by the mother during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 104): There is a significant relationship related to presence of siblings during the first year of life and seven year old children's scores on the HOME Inventory.

(H for 105): There is no significant relationship related to mother's level of self esteem during the year prior to the child's birth and seven year old children's scores on the HOME Inventory.

(H for 106): There is a significant relationship related to mother's age during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 107): There is no significant relationship related to mother's marital status during the child's first year of life and seven year old children's scores on the HOME Inventory.

(H for 108): There is no significant relationship related to mother's level of education and seven year old children's scores on the HOME Inventory.

(H for 109): There is no significant relationship related to family income level during the year prior to the child's birth and seven year old children's scores on the HOME Inventory.

(H for 110): There is a significant relationship related to the child's gender and seven year old children's scores on the HOME Inventory.

The Relationship Between Independent Variables and Cognitive Development in Seven Year Old Children

This research question focused on determining which variables most optimally influenced the cognitive development of seven year old children whose mothers were employed during their first year of life. Cognitive development in this research was assessed by three measures, the PIAT Reading Recognition Assessment, the PIAT Reading Comprehension Assessment and the PIAT Math Assessment.

Stepwise multiple regression analysis showed that different independent variables influenced each of the different assessment measures. Reading measures showed a large degree of commonality as both were significantly related to both family income level and presence of siblings. Reading Recognition scores were additionally related to the total number of hours worked by the mother during the first year of the child's life. This variable was not related to

Reading Comprehension scores. Math assessment scores were significantly related to the mother's level of education, but not to the variables associated with the reading assessment measures. Table 4.25 presents this information.

Table 4.25

Summarization of Independent Variables Found to be Related to Cognitive Measures

PIAT Reading Recognition Assessment

Variable	R^2	Cum. R^2
Presence of Siblings	.09377	.09377
Family Income Level	.07268	.16645
Total Hours Worked	.0454	.21185

PIAT Reading Comprehension Assessment

Variable	R^2	Cum. R^2
Family Income Level	.09021	.09021
Presence of Siblings	.0554	.14561

PIAT Math Assessment

Variable	R^2	Cum. R^2
M's Level of Education	.13064	.13064

The null hypothesis for this research question was that there would be no difference in the significance of the relationship of any of the independent variables to seven year old children's cognitive development. The alternative hypothesis stated that there would be a difference in the significance of the relationship of some of the independent variables to seven year old children's cognitive development and that the amount of hours initially worked by the mother during the child's first year of life and the child's gender would be most significantly related to higher scores on cognitive assessment measures. Therefore, the following hypothesis is **partially supported:**

Ha11: There is a significant relationship related to the strength of some of the independent variables studied on seven year old children's cognitive development, as assessed by the PIAT Reading Recognition Assessment, the PIAT Reading Comprehension Assessment and the PIAT Math Assessment.

The variables which are most significantly related to higher scores on these measures are total number of hours worked by the mother during the child's first year of life, presence of siblings in the home, mother's level of education and family income level. The amount of hours initially worked and the child's gender were not significantly related to higher scores on cognitive measures.

The following hypothesis related to the differing influence of independent variables on seven year old children's cognitive development is **rejected:**

Ho111: There is no significant relationship related to the strength of some of the independent variables studied on seven year old children's cognitive developmentin, as assessed by the PIAT Reading Recognition Assessment, the PIAT Reading Comprehension Assessment and the PIAT Math Assessment.

The Relationship Between Independent Variables and Seven Year Old Children's Socioemotional Development

The focus of this research question was on determining what independent variables in this study were most significantly related to positive socioemotional development in seven year old children. Socioemotional development was assessed in this research by the total score on the Behavior Problems Index and by scores on the Antisocial, Anxious/Depressed, Headstrong, Hyperactive, Dependent and Peer Conflict/Withdrawal subscales of the Behavior Problems Index.

Utilization of stepwise multiple analysis procedures showed that different variables were significantly related to each of the different socioemotional measures. Independent variables associated with these measures are the timing of the mother's return to work during the child's first year of

life, the presence of siblings in the home, mother's level of self esteem, mother's age at time of child's birth and family income level. Table 4.26 reports information about the independent variables found to be related to socioemotional development.

Table 4.26

Summarization of Independent Variables Found to be Related to Socio-emotional Measures

Total Score - Behavior Problems Index

Variable	R^2	Cum. R^2
M's Self Esteem	.07687	.07687
M's Age	.06036	.13723

Antisocial Subscale - BPI

Variable	R^2	Cum. R^2
Family Income Level	.0453	.0453

Anxious/Depressed Subscale

Variable	R^2	Cum. R^2
Family Income Level	.04925	.04925
M's Self Esteem	.0462	.09448

Headstrong Subscale

Variable	R^2	Cum. R^2
M's Self Esteem	.06044	.06044
Critical Periods	.05124	.11168

Hyperactive Subscale

Variable	R^2	Cum. R^2
Dependent Subscale	.06101	.06101
Presence of Siblings	.06537	.12638

Dependent Subscale

Variable	R2	Cum. R2
M's Age	.06101	.06101
Presence of Siblings	.06537	.12638

The null hypotheses for this question stated that there would be no difference in the significance of the relationship of any of the independent variables to socioemotional development as assessed within this study. The alternative hypotheses states that there will be differences in the significance of various independent variables to socioemotional development, and that the presence of siblings in the home during the child's first year of life and mother's level of self esteem would be most significantly related. Self esteem did prove to be the independent variable most significantly related to the socioemotional development of seven year old children. It was found to be significantly related in four of the seven socioemotional measures utilized within this research. Presence of siblings was also found to be significantly related to one of the measures of socioemotional development, but was not as strong as a variable as originally hypothesized. Mother's age at time of child's birth, and family income level were significantly related to more of the socioemotional measures than was the presence of siblings. Therefore the following hypothesis is **partially supported:**

Ha112: There is a significant relationship related to the strength of some of the independent variables to seven year old children's socioemotional developme, as assessed by the total score on the Behavior Problems Index and by the scores on the Antisocial, Anxious/Depressed, Headstrong, Hyperactive, Dependent and Peer Conflict/Withdrawal Subscales of the Behavior Problems Index. Mother's level of self esteem in the year prior to the child's birth was found to be most significantly related to the various measures of socioemotional development. Presence of siblings was less significantly related to socioemotional development.

The following hypothesis related to socioemotional development in seven year old children is **rejected:**

Ho112: There is no significant relationship related to the strength of some of the independent variables to seven year old children's socioemotional development, as assessed by the total score on the Behavior Problems Index and by the scores on the Antisocial, Anxious/Depressed, Headstrong, Hyperactive, Dependent and Peer Conflict/Withdrawal Subscales of the Behavior Problems Index.

CHAPTER V

DISCUSSION

The complex nature of maternal employment, particularly during the early years of a child's life, necessitates the examination of a myriad of influencing factors at all levels of the ecosystem. Literature related to the study of maternal employment and it's effects on family members is abundant, but often provides contradictory and confusing results. Additionally, literature about the effects of maternal employment on children's development is traditionally written in a negative vein. Few researchers have looked at a population in which maternal employment is a given and then attempted to discover which factors within a family system enhance the development of children of working mothers.

This study was designed to look **only at children whose mothers were employed during their first year of life** to determine what factors are significantly related to positive development in both the cognitive and socioemotional domains. No attempt was made to compare children whose mothers were employed outside the home to children whose

mothers were not employed outside the home during the child's first year of life. Maternal employment during the first year of life was chosen as a time period for study as most researchers agree that the first twelve months of life is a critical period for development.

The theoretical framework of this study was derived from a human ecological perspective, most specifically put forth in theories by Bronfenbrenner (1979) and Belsky (1981). These models recognize the important interactional potential of all the levels of the environment and of persons within these environments. These theories provided the framework for seeking relationships between dimensions of maternal employment, personal characteristics of the mother and contextual characteristics and cognitive and socioemotional development of seven year old children.

This study was originally approached from the perspective that various dimensions of maternal employment would be significantly related to cognitive and socioemotional development of seven year old children whose mothers were employed during their first year of life. Although dimensions of maternal employment, particularly in relation to the timing of the mother's return to work during the child's first year of life and the total number of hours worked by the mother were found to be moderately related to

seven year old children's development, they were not the most significant variables of this research. As expected, maternal and familial characteristics were found to be more significantly related to the independent variables than were contextual characteristics in all of the analysis done within this research. The discussion about these independent variables is organized by the research questions.

1. Is there a relationship between the amount of hours initially worked by the mother during the child's first year of life and seven year old children's cognitive and/or socioemotional development?

Many researchers have looked at full versus part time employment and found relationships between full and/or parttime work and various developmental characteristics of children. This research explored relationships between cognitive and socioemotional development in seven year old children and the number of hours initially worked by the mother after the birth of her child. Only the hours worked within her first quarter (ie: three months) of her return to work were studied. Mothers in this study returned to work at various points during their children's first year of life and so all periods of time related to a child's first year of life were represented. Mothers were considered to be employed on a parttime basis if they worked 35 hours or less

per week. Fulltime status was defined as more than 35 hours per week. The timing of her return to work or the consistency of her full or parttime status was not examined in the context of this question.

No significant relationships with any of the dependent measures assessing cognitive or socioemotional development were found to exist. This was contrary to initial expectations of this research, as full versus parttime status has traditionally been strongly aligned with children's development in both cognitive and the socioemotional domains. This variable might have proven to be more significant if full or parttime status over a period of time had been examined. It is possible that initially full versus parttime work does not have that great of an impact on mothers who return to work during their child's first year of life. It is known that the return to work for many mothers is a stressful time as they attempt to juggle the many demands placed upon them. Parttime working mothers may initially feel the same stresses as do fulltime working mothers as they attempt to establish new patterns in their lives. The benefits to children associated with parttime, as opposed to fulltime, employment proposed within the literature many become more evident after the initial return to work period when families have established new ways of coping.

2. Are there critical periods during the child's first year of life when mothers' return to outside the home employment has a greater influence on children's cognitive and/or socioemotional development?

Recent research by Baydar and Brooks-Gunn (1991) on four year old children of employed mothers found periods during the child's first year of life when mother's return to work impacted more greatly upon the child. Children whose mothers had returned to work prior to three months or after nine months of age displayed more optimum cognitive and behavioral development than did children whose mothers had returned between three and nine months of age. The basis premise in this research was that this finding would be transferable to older children, and that seven year old children whose mothers returned to work during the first or fourth quarters of their first year of life would display better cognitive and behavioral development than would seven year olds whose mothers' return to work had occurred during the second or third quarters of their lives. Table 4.16 (p. 141) describes the timing of return to work for mothers in this study. This hypotheses was partially supported as there was a moderate relationship between timing of the mother's return to work and scores on the Headstrong Subscale of the Behavior Problems Index (see Table 4.9, p. 128). There was no relationship between the timing of the mother's return to work and scores on any of the cognitive measures.

Seven year old children whose mothers returned to work prior to three months or after nine months of age scored lower on the Headstrong subscale of the Behavior Problems Index, indicating less behavior problems within that area, than did children whose mothers returned to work during the second or third quarters (between the ages of three and nine months) of the first year of life. Infants whose mothers return to work during the first or fourth quarter of the first year of life are developmentally very different from infants whose mothers return during the second or third quarters. A baby whose mother is employed during the first three months of life develops a mental schema of his mother which includes periods of absence and return. Similarly, a baby whose mother delays her return to work until after nine months of age has established mental representations of his mother and is more able to tolerate her absence. Conversely, an infant between the ages of three to nine months is in the process of developing mental schemas of the mother and may be less able to tolerate separations from her at this point. (Baydar and Brooks-Gunn, 1991). Behavior problems in the headstrong area may arise from the child's image of inconsistencies in the maternal role due to absences at a critical developmental period.

Relationships between the timing of the mother's return to work and cognitive development in these seven year old

children were not found. It is possible that seven year old have had enough intervening experiences, particularly in relation to school, that the relationship between cognitive development and the timing of the mother's return to work is greatly diminished.

3. What relationship does the total number of hours a mother works during her child's first year of life have to seven year old children's cognitive and/or socioemotional development?

This research question focused on the impact of the total number of hours worked by mothers during the child's first year of life on seven year old children's cognitive and socioemotional development. It did not look at full versus parttime status or at what point during the first year of life the mother returned to work. Some mothers who returned to work early in the child's first year of life and consistently worked parttime did not accumulate as many total hours as did some mothers who returned later in the first year of life but who worked large amounts of hours. Additionally, this question did not take into account the consistency of the mother's employment after her initial return. Only the total number of working hours accumulated by the mother during the child's first year of life was assessed.

As indicated in Table 4.18 (p. 150), mothers' total hours ranged from a low of 4 to a high of 2,100 hours. It was proposed that seven year old children whose mothers worked less total hours during the child's first year of life would score more positively on cognitive and behavioral measures than would children whose mothers worked higher numbers of total hours. This prediction was partially supported. Seven year old children whose mothers worked less hours during their first year of life scored higher on the PIAT Reading Recognition Assessment (see Table 4.3, p. 121). There was no relationship between total number of hours worked by the mother and any of the behavioral measures in this study. It could be that seven year old children have developed other social networks (ie: friends, school, social activities) which have mitigated the early effects related to the total number of hours worked by the mother. Reading recognition scores, however, are significantly related to this variable at seven years of age.

An interesting finding was that Reading Recognition, but not Reading Comprehension, scores were related to the total number of hours worked by the mother during the child's first year of life. There is a direct negative relationship between higher numbers of hours worked and the amount of time the mother has available to spend with her infant. It is possible that reading recognition, as opposed to

comprehension, skills are more closely tied to frequent and consistent verbal interactions with a consistent caregiver during the early years of life when language acquisition occurs at a rapid rate.

4. Is there a relationship between the presence of siblings and the seven year old child's cognitive and/or socioemotional development?

The presence of siblings in the home during the child's first year of life proved to be a very significant variable in both the cognitive and the socioemotional areas. It was also significantly related to higher scores on the HOME Inventory. As shown by Table 4.18 (p. 150), 68.6% (n=70) of the seven year old children were first borns and therefore had no siblings in the home during their first year of life. The other 31.4% (n=32) of the seven year olds had siblings in the home during their first twelve months.

Presence of siblings was shown to be significantly related to both the Reading Recognition (R2 = .0937) and the Reading Comprehension (R2 = .0554) Assessments as reported in Tables 4.3 and 4.4 (pp. 121 and 123). It is interesting to note that presence of siblings is coupled with family income as a significant variable in both of these measures; in Reading Recognition sibling presence is slightly more significant than is family income level, and in Reading Comprehension

family income level is more significant than is presence of siblings. Since reading aloud to children is such an important prerequisite of later reading abilities, this finding raises some important questions. First, are firstborn children listened to, read to and helped more with early language skills than are later born children? Secondly, why does family income level (as opposed to mother's level of education or mother's age, for example) relate more significantly to reading skills in both of these areas?

Presence of siblings was also found to be significantly related to lower scores on the Dependent subscale of the Behavior Problems Index (R2 = .0653) indicating less behavior problems within this specific area. Maternal employment has been found by some researchers to encourage independence behaviors in children. Additionally, it would at first seem likely that families with more than one child where the mother is employed during the youngest child's first year of life would heartily encourage independence behaviors in their children. However, this does not seem to be the case. Perhaps infants with one or more siblings get less maternal attention from a mother who has returned to work and therefore more strongly feel the effects of her absence. Increasing dependent behaviors could be a means of soliciting and maintaining parental attention.

Additionally, employed mothers with young children in the home are often pressed for time. It is frequently much easier and quicker to do a task for a child than to take the time to teach the skill and allow the child to do the task independently. This practice could become more prevalent in homes with more than one young child, as the amount of time available to the second or third child during his or her early years is less than what was available to the firstborn child.

The presence of siblings in the home during the first year of life was also found to be significantly related to higher scores on the HOME Inventory and will be discussed later in this chapter.

5. Is there a relationship between mother's level of self esteem in the year prior to the child's birth and the seven year old child's cognitive and /or socioemotional development?

The mother's level of self esteem in the year prior to the child's birth proved to be a very significant variable in the socioemotional domain. Self esteem was defined in this study as the mother's response to the question "I am a person of worth", taken from the Rosenberg Self Esteem Scale. This Likert scale had four possible responses ranging from one (strongly agree) to four (strongly

disagree). As reported in Table 4.19 (p. 155), of the 102 respondents, 52% (n=53) answered number 1 (strongly agree) to this question and 46.1% (n=47) answered number 2 (agree). Only one mother answered number 3 (disagree) and none of the mothers surveyed answered number 4 (strongly disagree). Therefore, the level of self esteem of these mothers appears to be very high and the differences reported may be mainly the differences between mothers who "strongly agreed" and those who merely "agreed". The research hypotheses associated with self esteem predicted that seven year old children whose mothers had high levels of self esteem would score more positively on cognitive and socioemotional measures than would children whose mothers had low levels of self esteem. However, due to the responses to this question, "low self esteem" is actually the answer of "agree" to this question. Additionally, while all of the other maternal characteristic independent variables assess the mother during the year of the child's first year of life (1981), mother's level of self esteem is reported for the year prior to the child's birth (1980). Maternal self esteem was not assessed during 1981. Perhaps the large differences in children's socioemotional development could be tracked to a decrease in the self esteem related responses of those mothers answering less affirmatively after they were attempting to combine both employment and

parenthood. This was not possible due to the timing of the self esteem assessments.

Mother's level of self esteem in the year prior to the child's birth was strongly related to four of the socioemotional measures, total score on the Behavior Problems Index, and the Anxious, Headstrong and Hyperactive subscales of the Behavior Problems Index (see Tables 4.6, 4.8, 4.9 and 4.10, pp. 125, 127, 128 and 129). It was not significantly related to any of the cognitive measures utilized within this research. As reported in Tables 4.6, 4.9 and 4.10, mother's level of self esteem was the most significant variable on both the total score of the Behavior Problems Index and on the Headstrong and Hyperactive subscales (R2 = .076, .0604 and .0925, respectively). Mother's level of self esteem was the second most significant variable on the Anxious subscale (R2 = .046). In all instances, seven year old children scored lower on these measures, indicating less behavioral problems, when mother's level of self esteem was high. It is necessary to emphasize that responses to this question indicated that nearly all of the mothers responding to this question (98.1%; n=100) had quite high levels of self esteem, and yet differences in the seven year old children existed between those who "strongly agreed" and those who "agreed" to the statement about their worth. Findings may have been even

more pronounced in another sample in which mothers did not feel as positively about themselves. Additionally, it is important to recognize that this measure reflects the mother's attitude prior to the birth of her child, and that some differences may have occurred if self esteem had been measured during the child's first year of life when the mother had been attempting to juggle the responsibilities associated with new motherhood and employment. It remains evident, however, that mother's level of self esteem remains a significant factor in later childhood development, particularly in the socioemotional area.

6. Is there a relationship between the mother's age at the time of the child's birth and the seven year old child's cognitive and/or socioemotional development?

Mothers of the children in this study ranged in age from 16 to 24 years during 1981, the year of the child's birth (see Table 4.20, p. 160). Of the 102 respondents, 33% (n=34) are 19 years of age or less. This variable was very strongly related to three of the socioemotional measures used in this study and was also very significantly related to the HOME Inventory. Mother's age was not found to be significantly related to any of the cognitive measures in this study.

As reported in Tables 4.6, 4.10 and 4.11 (pp. 125, 129 and 130), mother's age is significantly related to the total

score on the Behavior Problems Index and the Hyperactive and Dependent subscales of the Behavior Problems Index. Much of the literature about teenage mothers links the mother's age to many other factors, including number of subsequent children, level of self esteem, level of education, family income level and marital status. Within this study, mother's age was very strongly associated with self esteem. Mother's age and mother's level of self esteem were the two variables found to be related to both the total score on the Behavior Problems Index and the Hyperactive subscale of the Behavior Problems Index. As reported in Table 4.6, maternal age (R2 = .060) and mother's level of self esteem (R2 = .0768) were the two variables found to be related to the total score on the Behavior Problems Index. Maternal age (R2 = .078) and mother's level of self esteem were also the only variables found to be significantly related to the Hyperactive subscale. Maternal age was also found to be significantly related to the Dependent subscale of the Behavior Problems Index (R2 = .065). In all instances, seven year old children whose mothers were older at the time of their birth scored lower on these behavioral scales, indicating less behavioral problems in these respective areas. The relationship of maternal age to scores on the HOME Inventory was also very significant and is discussed later in this chapter.

It is well documented that motherhood at a young age is significantly interrelated with many other factors which work to negatively influence children's development. This study is consistent with other research which documents that delaying childbearing past the adolescent years has positive developmental outcomes for children. Of particular interest in this study is the finding that maternal age was so closely linked to self esteem levels, and that these two factors were very significantly related to several of the socioemotional measures.

7. Is there a relationship between the mother's marital status during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

Mother's marital status is a variable commonly associated with the age of the mother; very young mothers tend to have less stable marriage relationships and are more likely to raise their children as single parents. In this study, marital status was not found to be significantly related to any of the cognitive or socioemotional measures. Additionally, it was also found to be unrelated to scores on the HOME Inventory.

This sample was fairly unique in that a relatively high percentage of these mothers were married during the child's

first year of life. As reported in Table 4.21 (p. 165), 84.3% (n=86) of these mothers reported being married during 1981. It is possible that the high number of married women influenced the results within this study. Marital status is often closely associated with other maternal variables such as age, education and self esteem and it should be noted that these variables were found to be significant, particularly in the socioemotional domain. The presence of a spouse in the home during the child's first year of life is a noteable factor. Researcher have noted (Belsky, 1981, 1984; Easterbrooks and Goldberg, 1985) the father's influence upon the mother and her subsequent mothering behaviors. Women who felt supported by their spouses in their dual roles as mothers and employed workers were more likely to have adjusted positively to these roles and to interact positively with their infants. Also, the mere presence of another adult in the home who could share some of the child and home care tasks during the first year of a child's life could have impacted positively on these mothers and therefore upon their children. It is also important to note that marital status was assessed only for the first year of the child's life, 1981, and mothers were not tracked to see whether their marital status had changed prior to the seven year old child's assessment in 1988. It is possible that more a stronger relationship related to this variable would have occurred if marital status had been assessed at

both periods of time and comparisons made between children whose mother's marital status had changed and those children whose mother's marital status remained stable during this seven year period.

8. Is there a relationship between the level of education attained by the mother during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

As reported in Table 4.22 (p. 169), maternal education levels for this sample varied from completion of 8 years of schooling to completion of 17 years of schooling. This wide range in education levels is consistent with the age range (16-24 years) of mothers in this sample. However, a relatively high percentage of these mothers (87.3%, n=89) had completed twelve years of schooling, particularly when it is noted that approximately one third (33%; n=34) were aged 19 years or less. Comparisons of the maternal age (Table 4.18, p. 150) and maternal level of education (Table 4.21, p. 165) tables reveals that most of the women who were old enough to complete high school had done so. Furthermore, 12.8% (n=13) had some college level education. The mother's level of education was assessed in 1981, the first year of the child's life.

Mother's level of education was found to be significantly related to seven year old children's scores on the PIAT Math Assessment. As reported in Table 4.5 (p. 124), this was the only variable found to be significantly related to math achievement (R2 - .1306). This is an interesting finding when the fact that a high percentage of these mothers have finished high school is reemphasized. It is possible that in a less educated sample, mother's level of education would be found account for a much larger portion of the variance. While it initially seems puzzling that mother's level of education is significantly related to math but not to reading assessments, it becomes more clear when it is recognized that much math education can be taught in the home on a very informal basis, beginning in the very early years of a child's life. The incorporation of math skills into daily household tasks provides many children with a strong basic understanding of various number concepts. It is highly possible that the more educated mothers regularly provided a variety of early learning experiences which allowed their children to gain the basic skills necessary for later math achievement.

9. Is there a relationship between family income level during the child's first year of life and the seven year old child's cognitive and/or socioemotional development?

As reported in Table 4.23 (p. 174), there were large differences in the family income levels of the families within this sample. Taken from mothers' reports of their incomes for 1980 (the year previous to the seven year old child's birth), income ranged from a reported low of $950.00 annually to a high of $101,400. The median family income was $24,030.

Family income level was found to be a significant variable for both the cognitive and socioemotional areas. In the cognitive domain, family income level was significantly related to scores on both the PIAT Reading Recognition (see Table 4.3, p. 121) and Comprehension (see Table 4.4, p. 123) measures. On both of these measures, family income level and presence of siblings were found to be significantly related, but varied in the strength of their relationships. On the Reading Recognition Assessment, presence of siblings was found to be more significant (R2 = .09) with family income level being the second most significant variable (R2 = .085). On the Reading Comprehension Assessment, family income level was found to be most significantly related (R2 =.09) with presence of siblings accounting for a lesser portion of the variance (R2 = .055). While the total of

number of hours worked by the mother during the child's first year of life was also found to be significantly related to Reading Recognition, it was not significantly related to Reading Comprehension. It is interesting that family income level is so closely related to sibling presence on both of the cognitive measures which assess reading skills. Seven year old children achieved higher scores on these measures when their family income levels were higher. Additionally, they also achieved higher scores when they were first born and had no siblings in the home during their first year of life. While it is possible that in some instances families with lower incomes might tend to have larger numbers of children due to the complexities of our social welfare system this did not appear to be the case in this sample. As reported in Table 4.16 (p. 141), 68.6% (n=70) of these children were first born and had no siblings. The great majority of the 31.4% (n=32) who were not first born had only one sibling (n=28). Three of the seven year old children had two siblings and one had four siblings during their first year of life.

Family income level was also found to be significantly related to two of the socioemotional measures utilized in this study, the Antisocial and the Anxious subscales of the Behavior Problems Index. As reported in Table 4.7 (p. 126), family income level was the only variable found to be

significantly related to the Antisocial subscale (R2 = .047). In addition, as reported in Table 4.8 (p. 127), family income level was found to be the most significantly related variable on the Anxious subscale (R2 = .049). Seven year old children achieved lower scores on these subscales, indicating less behavioral problems in these areas, when their family income level was higher during 1980, the year before their birth. It is possible that some of the families with lower incomes did not have sufficient money to provide their children with a variety of social experiences during their early years of life. This may have resulted in lower scores on both the Antisocial and Anxious subscales as these children resorted to inappropriate behaviors when confronted with confusing and unfamiliar situations. Additionally, the literature shows that family income level is often closely associated with many other familial variables, including mother's age, mother's level of education and mother's marital status. It is very possible that each of these other variables were not strong enough to emerge as significantly related to these measures, but exist as an influential part of these lower income families' makeup.

10. Is there a relationship between the seven year old child's gender and his/her cognitive and/or socioemotional development?

Recent research literature has often focused on the fact that maternal employment, particularly during the early years of a child's life, has different gender related effects. Boys appear to be more vulnerable than girls to suffer detrimental effects related to early maternal employment in both cognitive and socioemotional development. This variable, however, proved to be not significantly related to any of the cognitive or socioemotional measures used in this study. Child's gender was found to be related to scores on the HOME Inventory which is discussed later in this chapter.

The finding that child's gender was not significantly related to either cognitive or socioemotional development in this study was surprising, as some researchers (Belsky and Rovine, 1988; Benn, 1986; Bronfenbrenner, Alvarez and Henderson, 1984; Schacter, 1981; Vandell and Carasaniti, 1988) have found gender to be a very significant variable. Although some research does report long lasting effects of early maternal employment in later childhood (Corasaniti and Vandell, 1988), it is possible that by the age of seven years many of the gender related effects of early maternal employment seen in younger children have been reduced, due

to the increasing influence of other environmental factors (ie: school, friends, social activities, etc.). Another possible explanation is related to the income level of these families. Some of the literature focusing on gender related effects of early maternal employment (see, for example, Benn, 1986; Belsky and Rovine, 1989) show that these effects are most marked for boys from middle to upper middle class families. It could be that the income level of the families in this study was low enough that other variables were found to be stronger than child's gender for explaining differences in cognitive and socioemotional development.

11. What relationship do the amount of hours initially worked by the mother during the child's first year of life, the timing of the mother's return to work during the child's first year of life, the total number of hours worked by the mother during the first year of life, the presence of siblings, the mother's level of self esteem during the child's first year of life, the mother's age at the time of the child's birth, the mother's level of education during the child's first year of life, the mother's marital status during the child's first year of life, family income level during the first year of life and the child's gender have the score on the HOME Inventory?

The HOME Inventory, a widely used and respected measure, assesses the potential of the home environment for stimulating children's development. Higher scores on this measure indicate a higher developmental potential within the home. Questions focus on families' lifestyles (ie: "How often do you read stories to your child?"--"Do you or

someone in your family encourage your child to start and keep doing hobbies?"), rules (ie: "How often does your child make his own bed?"), discipline techniques (ie: "Sometimes kids mind pretty well and sometimes they don't. Sometimes they do things that make you feel good. How many times in the past week have you. . . had to spank your child? . . .grounded him or her? . . . taken away TV or other privileges? . . . sent child to his/her room . . ", etc.) and family composition and interaction (ie: "About how often does your child spend time with his/her father or father-figure?"--"How often does your child eat a meal with both mother and father or father-figure?").

Three of the variables in this study, mother's age at the time of the child's birth, presence of siblings during the child's first year of life and child's gender, were found to be significantly related to scores on the HOME Inventory. As reported in Table 4.12 (p. 132), these three variables were very strongly related to higher scores on this assessment (R2 = .235). Mother's age at the time of the child's birth (R2 = .1368) was a particularly powerful variable. Seven year old children whose mothers who were older during their first year of life came from homes which had higher scores on the HOME Inventory. The importance of maternal age related to the scores on the HOME Inventory may be reflected in other research findings which show that

young mothers are more likely to have less education, more likely to live in poverty, less likely to be married and are more likely to have subsequent children in a shorter period of time. Young mothers in this study were all employed during their child's first year of life, and added the complexities of juggling job and child care responsibilities to the other known factors about young mothers. It should come as no surprise that the youngest mothers in this study provided the least appropriate home environments as they attempted to cope with too many things during their child's first year of life. Although the majority of mothers in this study were married during the child's first year of life, tracking this variable over time within this sample may have shown large changes in the marital status of these mothers, particularly very young mothers. This change in marital status, coupled with the younger mothers decreased ages, lower educational status, increased probablility of having additional children in close succession and decreased family income levels may have accentuated the trend for the youngest mothers to provide less developmentally stimulating home environments.

Scores on the HOME Inventory were also significantly related to the family's level of income (R = .0556). Seven year old children from families with higher income levels during their first year of life had homes which scored higher on

the HOME Inventory. Table 4.23 (p. 174) reports information related to the income levels of the families in this study. It becomes more clear why families provided less appropriate environments when the complexities and challenges of raising children while living below the poverty level are considered, particularly when it is re-emphasized that mothers in these families were employed during the child's first year of life. These families may not have had the energy, let alone the knowledge, to provide a high quality home environment for their children.

Thirdly, scores on the HOME Inventory were significantly related to the child's gender. Girls were more likely to come from homes scoring higher on this measure than were boys. Some researchers focusing on gender related differences to early maternal employment have speculated that parents may treat their male offspring differently than their females. Our culture supports the image the boys should be "tough" or "little men" so to speak. This socialization begins at a very early age. It is possible that this idea of not pampering boys for fear of making them effeminate may transcend to the home environment. Employed mothers of girls may "compensate" for their time away by providing a very positive home environment. Employed mothers of boys, however, may do the opposite and justify

their behavior as a way of increasing the young boy's independence and "manliness".

Scores on the HOME Inventory were not found to be affected by any of the dimensions associated exclusively with maternal employment (ie: number of hours initially worked by the mother, timing of her return to work and total number of hours worked by the mother). This is not a particularly surprising finding in a population such as this. The fact that all mothers in this study were employed outside the home during the child's first year of life enhances the importance of maternal and familial characteristics in influencing the quality of the home environment. It is possible that dimensions specifically related to maternal employment would be more significantly related to the quality of the home environment when comparing seven year old children whose mothers were employed during their first year of life to seven year old children whose mothers were not employed during their first year of life.

As scores on the HOME Inventory have been linked to cognitive outcomes in children (See, for example, Dubow and Luster, 1990) it is important to recognize the significance of this finding. Additionally, as only Caucasian children were included in this sample, it should be recognized that ethnic differences which might have influenced HOME

Inventory scores were eliminated. These findings show that, among seven year old Caucasian children whose mothers were employed during their first year of life, those who come from families where the mother was older during their first year of life, where family income level was higher and who were female are significantly more likely to come from homes which have a greater potential for enhancing development.

12. Are there certain variables which are most strongly related to cognitive development in seven year old children whose mothers were employed during their first year of life?

13. Are there certain variables which are most strongly related to sociemotional development in seven year old children whose mothers were employed during their first year of life?

Many of the independent variables used within this study are often found to be interrelated. For example, mothers who are young are very often less well educated, have lower levels of self esteem, are less likely to be married and are more likely to live in poverty. Maternal employment is a complex topic for study, as it is nearly impossible to exclude the myriad of related family variables and maintain the validity of the study. While it is recognized that may of these independent variables are strongly related to one another, it is important to determine the relative strengths

of the relationships of these variables to cognitive and socioemotional development in young children. Therefore, the final two research questions focused on determining if there were differences in the variables which were significantly related to cognitive, as opposed to socioemotional development. Analysis of the independent variables found to be significantly related to the cognitive and socioemotional measures utilized within this study show that there are great differences among which variables are related to these types of development.

It was hypothesized that cognitive development would be most significantly related to the total number of hours worked by the mother during the child's first year of life and the child's gender. This hypothesis was partially true. The total number of hours worked by the mother was found to be significantly related to scores on the PIAT Reading Recognition Assessment, but this was not a particularly strong relationship (R2 = .40). Child's gender was not significantly related to cognitive development. The independent variables which did emerge as being significantly related to cognitive development were the presence of siblings during the child's first year of life and family income level. As reported in Tables 4.3 and 4.4 (pp. 121 and 123), these two variables were very significantly related to both of the reading assessments.

It is interesting to note that the PIAT Math Assessment was not related to either presence of siblings or family income level and instead was significantly related only to mother's level of education (see Table 4.5, p. 124). Table 4.24 (p. 178) summarizes the independent variables which are associated with the cognitive measures utilized in this research.

Socioemotional development was hypothesized to be most strongly related to the presence of siblings in the home during the child's first year of life and mother's level of self esteem. This hypothesis was also partially true. Although presence of siblings was significantly related to the Dependent subscale of the Behavior Problems Index (R2 = .065) it did not emerge as one of the variables most consistently associated with a relationship to socioemotional development. Mother's level of self esteem was consistently found to be related to socioemotional measures, as was mother's age during the child's first year of life. Both of these variables were found to be significantly related to several of the socioemotional measures used in this study, and were found to be the two variables which were significantly related to the total score on the Behavior Problems Index (R2 = .137). Family income level, significantly related to scores on the Antisocial and the Anxious Subscales of the Behavior

Problems Index, appeared also to be a fairly consistently related to socioemotional measures. A summary of the independent variables found to be related to the socioemotional measures utilized in this study is reported in Table 4.26 (p. 190).

That different independent variables were found to be related to cognitive and socioemotional development was not a particularly surprising finding when previous research studies are examined and when the differences associated with cognitive and socioemotional development are considered. The interesting finding was that several of the variables found within this research to be consistently related to cognitive or socioemotional development are somewhat different than those previously noted in other research studies. The age of the children in this study, as well as the fact that all of these children were of caucasian ethnicity, may have influenced these findings. However, it remains important to note what variables were related to development in these children as these findings can be generalized to other populations with a similar makeup.

CHAPTER V

SUMMARY AND CONCLUSIONS

IMPLICATIONS OF THIS RESEARCH

This research has produced some expected and some surprising results related to early maternal employment. Belsky's Theory of Circular Influence (p. 67) highlights the reciprocal influences of the marital relationship, parenting behaviors and infant behavior and development. For purposes of this study the model was adapted (p. 69) to examine the reciprocal influences of contextual factors (ie: dimensions of maternal employment), maternal and family characteristics (ie: mother's age at the time of the child's birth, family income level, etc.) and child behavior and development (ie: in both cognitive and socioemotional domains). Results from this study illustrate how closely interelated these factors can be. For this population, dimensions of maternal employment per se were not found to be as strongly related to seven year old children's cognitive and socioemotional development as were maternal and family characteristics.

However, there was some support in the cognitive domain for working fewer total hours during a child's first year of life, as evidenced by higher scores on the PIAT Reading Recognition Assessment by seven year old children whose mothers worked fewer total hours. Similarly, the idea of critical periods for mother's return to work during a child's first year of life was supported, as evidenced by the finding that seven year old children whose mothers returned to work during the first or fourth quarter of their first year of life scored lower on the Headstrong subscale of the Behavior Problems Index, indicating more positive development in this area, than did children whose mothers returned to work during the second or third quarter of their first year of life. However, dimensions of maternal employment were not found to have particularly strong relationships with as many of the independent variables as did maternal and family characteristics.

Relationships were found between many of the maternal and familial characteristics and dependent variables in this study. In the cognitive domain, the mother's level of education, the presence of siblings in the home during a child's first year of life, family income level and total hours worked by the mother during the child's first year of life were found to be related with one or more of the cognitive measures utilized in this study. In the

socioemotional area, mother's level of self esteem, mother's age during the child's first year of life, family income level, presence of siblings and timing of the mother's return to work were found to be related with one or more of the socioemotional assessment measures. Higher scores on the HOME Inventory were related to mother's age during the child's first year of life, family income level and child's gender. It is interesting to note that presence of siblings in the home during the child's first year of life is the only independent variable found to be related to cognitive, socioemotional and HOME Inventory assessment scores. Table 5.1 summarizes the factors found to be most predictive of children's later cognitive and socioemotional development when when maternal employment occurred during their first year of life.

Table 5.1

Factors Most Predictive of Cognitive and Socioemotional Development in Seven Year Old Children Whose Mothers Were Employed During Their First Year of Life

Cognitive Development:	Family Income Level
	Presence of Siblings
	Mother's Level of Education
	Total Hours Worked by Mother
Socioemotional Development:	Mother's Level of Self Esteem
	Mother's Age at Childbirth
	Family Income Level
	Presence of Siblings
	Critical Periods/Work Return

The results of this research indicate that early maternal employment does not necessarily have a negative impact on children's development. Many of the children in this study, all of whom came from families in which the mothers returned to work sometime during these children's first year of life, were doing very well at seven years of age. However, it is also clear that maternal and familial characteristics are

very strongly related to enhancing these children's developmental status. Children whose mothers had a higher level of education were more likely to do better in math. Those children who were first born, whose family income levels were higher and whose mothers worked fewer total hours during their first year of life were more likely to succeed in reading. Those whose mothers had high levels of self esteem and were older were more likely overall to display fewer behavioral problems. Finally, those children whose mothers were older, whose families had higher income levels and who were female were more likely to come from better home environments. Working mothers, particularly those who return to work early in their children's lives, face enormous challenges and obstacles. Complexities within the family system become magnified and appear to have significant negative effects on children's cognitive and socioemotional development.

Mothers who return to outside the home employment soon after the birth of a child are becoming an overwhelming majority within our society. What becomes important, then, is to insure that these family systems are able to function in ways which enhance children's cognitive and socioemotional development. The second theroy defining this study's conceptual framework, Bronfenbrenner's Theroy of Human Development (p. 60), is readily applicable here. Findings

from this research cannot easily be translated into ideas and programs suited for the microsystem or mesosystem level. These findings can, however, be translated into programs which work at both exosystem and macrosystem levels. This research illustrates the strong positive relationship between mother's age and level of education and children's development at seven years of age. Programs and education aimed at getting mothers to delay childbearing until after the teenage years will become increasingly important as ever greater numbers of young mothers follow the trend to return to outside the home employment early in their children's lives. Mothers will need increased maturity and educational opportunities if they are to cope effectively with the many demands associated with combining outside the home employment and motherhood.

The development of programs aimed at recognizing the challenges associated with and increasing the status of working mothers within occupational settings is another example of applying these research findings at the exo- or macrosystem level. Mother's level of self esteem was found to be a very crucial variable in this study, not only in that it was related to several of the socioemotional measures, but also that significant differences in children's development existed between children whose mothers self view was very positive and those whose self

view was merely "okay". Our society does little to decrease the burden placed on working mothers, and it is often impossible for them to effectively juggle the load of demands they must meet. Making childcare readily available and easy to access would do wonders for the self esteem of mothers who constantly worry about the quality and/or the consistent availability of care they are providing for their child. Working mothers of young children should be helped to recognize that they are doing a tremendous job in many arenas. Additionally, mothers of young children should not be penalized within the workplace merely because they play other roles outside of the work environment. Any efforts which would result in raising the level of mothers' self esteem from "good" to "excellent" could have tremendously positive effects on their offspring.

Thirdly, the relationship of family income level to several of the cognitive and socioemotional measures utilized in this study should not be overlooked. Inequalities related to income level extend far into our society and include such areas as schools, neighborhoods, housing conditions and job opportunities. Macrosystem changes which would decrease various realities associated with income differences would enhance the cognitive and socioemotional development of all children, and particularly so the very young children of working mothers.

Limitations

This research was limited by three major factors: sample, timing of assessment measures and tracking of children. This sample is of a sufficient number (n=102) to obtain valid and reliable results, but aspects of this population's makeup limits the generalizability of the findings. All of the children in this study were Caucasian, the majority were first borns, the majority of their mothers were married, and their mothers were more highly educated than average. These factors limit the extent to which the research findings can be applied to other populations.

Secondly, the study was hampered somewhat by what assessment measures were utilized and when the assessments of mothers and children were carried out. For example, self esteem of mothers was assessed in 1980 and 1987, but not in 1981, which was the year in which the other assessments utilized in this research were obtained. It would have been beneficial for this study if assessments of mothers' self esteem levels had been done each year, so that researchers could determine if changes in self esteem occurred in correlation with certain parenthood events.

Lastly, this study is limited by the fact that a great deal of time lapsed between the 1981 assessment of these children's families and the 1988 assessment of the children themselves. This study did not track these children during that period of time, and it is recognized that these children's lives may have been very different from each other during that seven year period in terms of experiences, opportunities and exposure to various circumstances. However, all of these children share the experience of having a mother who was employed during their first year of life, and it is this similarity, and not the many differences, that was focused upon in this study.

Suggestions for Future Research

Replications of this study using children whose mothers were employed during their first year of life at different age points would be very beneficial. Comparisons of cognitive and/or socioemotional development between different aged children would yield valuable information for enhancing the development of children of employed mothers. Similarly, replication of this study using different ethnic groups would also yield beneficial results.

Mother's level of self esteem was an extremely powerful variable in this study, particularly when it is recognized that none of these mothers had what would be described as "poor" self esteem. Mother's self esteem was assessed only prior to her child's birth in this study, and additional studies tracking mothers' levels of self esteem over time would be useful to determine if the experience of combining employment and motherhood changes self esteem levels.

The presence of siblings in the home during the child's first year of life proved to be another particularly significant independent variable, related to cognitive, socioemotional and HOME assessment scores. Mothers of young children who plan to return to outside the home employment early in their children's lives might benefit from an increased understanding of children's developmental needs and from information showing that later born children may need extra time, attention and stimulation from parents if their development is to be optimized.

Conclusions

The primary contribution of this study is the identification and presentation of several factors which are related to enhancing the cognitive and socioemotional development of

children whose mothers were employed during their first year of life. Enhanced cognitive development was significantly related to the family's level of income, presence of siblings in the home during the first year of life, mother's level of education and total number of hours worked by the mother during the child's first year of life. Socioemotional development was significantly related to mother's level of self esteem, mother's age at time of childbirth, family income level, presence of siblings in the home during the child's first year of life and critical periods for mother's return to work. HOME Assessment scores were significantly related to the mother's age at the time of childbirth, the presence of siblings in the home during the child's first year of life and the child's gender.

Maternal employment, particularly among mothers with very young children, is an increasing reality in our society today. It is important that both professionals in family related fields and parents of young children be aware of the factors which have the potential to enhance the development of young children of employed mothers so that the associated realities can be optimized.

APPENDIX A

APPENDIX A

PIAT Reading Recognition

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

YES..... 1 12/
NO...(SKIP TO SECTION 10, CS-59).. 0

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

This section measures (CHILD)'s abilitiy 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 (INCLUDES INSTRUCTIONS TO CHILD)

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

YES.....(SKIP TO B)..... 1 13/
NO.....(GO TO A)..... 0

A. PRACTICE EXERCISES FOR CHILDREN NOT YET IN 1ST GRADE.

(1) TURN TO "INTRODUCTION TO READING RECOGNITION SUBTEST" (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 PRACTICE A.)

(2) FOLLOW TEXT IN EASEL FOR PRACTICE EXERCISES (A-E).

B. CHILDREN IN 1ST GRADE OR HIGHER NEED NO PRACTICE. 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.

STEP FIVE: TURN BACK TO Q.86C, CS-49. RECORD TOTAL MATH 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-49, Q.86C.) | | | 14-15/
------->| | |
BOX A

CS-52

DECK 23

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

COUNT BACK 5 TO ESTABLISH BASAL ONLY IF STARTING Q# IS WRONG - JUMP BACK 5 ITEMS.

INTERVIEWER: BE SURE TO CODE EVERY ANSWER.

PLATE #	ITEM #	ANSWER	CODE ONE... CORRECT	WRONG		PLATE #	ITEM #	ANSWER	CODE ONE... CORRECT	WRONG	
	1.	(1)	1	2	16/		23.	(wagon)	1	2	38/
	2.	(2)	1	2	17/		24.	(fishing)	1	2	39/
	3.	(1)	1	2	18/		25.	(brook)	1	2	40/
	4.	(4)	1	2	19/		26.	(gloves)	1	2	41/
	5.	(3)	1	2	20/		27.	(smile)	1	2	42/
	6.	(2)	1	2	21/		28.	(colt)	1	2	43/
	7.	(1)	1	2	22/		29.	(round)	1	2	44/
	8.	(2)	1	2	23/	(17)	30.	(blaze)	1	2	45/
	9.	(4)	1	2	24/		31.	(feather)	1	2	46/
	10.	(B b)	1	2	25/		32.	(flour)	1	2	47/
	11.	(A a)	1	2	26/		33.	(igloo)	1	2	48/
	12.	(O)	1	2	27/		34.	(liquid)	1	2	49/
	13.	(S)	1	2	28/		35.	(purse)	1	2	50/
	14.	(N)	1	2	29/		36.	(dangerous)	1	2	51/
(15)	15.	(c)	1	2	30/		37.	(lodge)	1	2	52/
	16.	(i)	1	2	31/		38.	(stylish)	1	2	53/
	17.	(d)	1	2	32/		39.	(accident)	1	2	54/
	18.	(m)	1	2	33/		40.	(ruin)	1	2	55/
(16)	19.	(run)	1	2	34/		41.	(exercise)	1	2	56/
	20.	(play)	1	2	35/		42.	(pigeon)	1	2	57/
	21.	(jump)	1	2	36/		43.	(moisture)	1	2	58/
	22.	(kitten)	1	2	37/		44.	(artificial)	1	2	59/

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

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

CS-53

DECKS 23-24

COUNT BACK 5 TO ESTABLISH BASAL

ONLY IF STARTING Q# IS WRONG - JUMP BACK 5 ITEMS.

INTERVIEWER: BE SURE TO CODE EVERY ANSWER.

PLATE #	ITEM #	ANSWER	CODE ONE... CORRECT	WRONG		PLATE #	ITEM #	ANSWER	CODE ONE... CORRECT	WRONG	
										BEGIN DECK 24	
	45.	(anchor)	1	2	60/		65.	(diminutive)	1	2	12/
(18)	46.	(elegant)	1	2	61/		66.	(ensign)	1	2	13/
	47.	(gaudy)	1	2	62/		67.	(dilapidated)	1	2	14/
	48.	(treacherous)	1	2	63/		68.	(bureaucrat)	1	2	15/
	49.	(yacht)	1	2	64/		69.	(adulation)	1	2	16/
	50.	(guerilla)	1	2	65/		70.	(exorbitantly)	1	2	17/
	51.	(boisterous)	1	2	66/		71.	(epoch)	1	2	18/
	52.	(isthmus)	1	2	67/		72.	(aesthetic)	1	2	19/
	53.	(anticipation)	1	2	68/		73.	(deluge)	1	2	20/
	54.	(vertebrates)	1	2	69/		74.	(didactic)	1	2	21/
	55.	(contemplate)	1	2	70/		75.	(titular)	1	2	22/
	56.	(heroine)	1	2	71/		76.	(credulity)	1	2	23/
	57.	(unparalleled)	1	2	72/		77.	(judiciable)	1	2	24/
	58.	(inaccessible)	1	2	73/	(20)	78.	(nihilism)	1	2	25/
	59.	(colleague)	1	2	74/		79.	(pharyngeal)	1	2	26/
	60.	(medieval)	1	2	75/		80.	(pterodactyl)	1	2	27/
	61.	(pinnacle)	1	2	76/		81.	(macrocosm)	1	2	28/
(19)	62.	(picturesque)	1	2	77/		82.	(chimerical)	1	2	29/
	63.	(adjacent)	1	2	78/		83.	(disaccharide)	1	2	30/
	64.	(navigable)	1	2	79/		84.	(apophthegm)	1	2	31/

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

85. INTERVIEWER: A. DID YOU GET A BASAL? ARE THERE FIVE (5) CONSECUTIVE CORRECT RESPONSES AT THE BEGINNING?

YES..... 1 32/
NO...(GO BACK AND GET THE BASAL)..... 0

B. DID YOU GET A CEILING? ARE THE LAST FIVE (5) CONSECUTIVE RESPONSES INCORRECT?

YES..... 1 33/
NO...(GO BACK AND GET THE CEILING)... 0

86. INTERVIEWER: COMPUTE SCORE:

A. ENTER HIGHEST CEILING Q#: |__|__| 34-35/
(LAST ITEM WRONG)

B. ENTER TOTAL # OF ERRORS BETWEEN BASAL AND CEILING: |__|__| 36-37/

C. SUBTRACT 'B' FROM 'A': |__|__| = SCORE 38-39/

D. IS CHILD'S SCORE IN 'C' 15 OR HIGHER?

YES.....(GO TO STEP SIX)..... 1 40/
NO.....(SKIP TO Q.87, CS-58).... 0

APPENDIX B

APPENDIX B

PIAT Reading Comprehension

[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 (INCLUDES INSTRUCTIONS TO CHILD).

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

YES...(SKIP TO B)..... 1 41/
NO....(GO TO A)..... 0

A. PRACTICE EXERCISES FOR CHILDREN NOT YET IN 1ST GRADE.

(1) TURN TO "INTRODUCTION TO READING COMPREHENSION SUBTEST" (IN PIAT VOLUME II). 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.

B. CHILDREN IN 1ST GRADE OR HIGHER NEED NO PRACTICE EXERCISES. TURN TO "INTRODUCTION TO THE READING COMPREHENSION SUBTEST," IN PIAT 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.86C, CS-54 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-54, Q.86C.) ------->| | | | 42-43/
BOX B

IF SCORE IN 'BOX B' IS LESS THAN 15, SKIP TO Q.87, CS-58.

CS-56

DECKS 24-25

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

COUNT BACK 5 TO ESTABLISH BASAL

ONLY IF STARTING Q# IS WRONG - JUMP BACK 5 ITEMS.

INTERVIEWER: BE SURE TO CODE EVERY ANSWER.

PLATE #	ANSWER	RECORD RESPONSE	CODE ONE... CORRECT	WRONG		PLATE #	ANSWER	RECORD RESPONSE	CODE ONE... CORRECT	WRONG	
19.	(3)	( )	44/ 1	2	45/	42.	(3)	( )	22/ 1	2	23/
20.	(1)	( )	46/ 1	2	47/	43.	(1)	( )	24/ 1	2	25/
21.	(2)	( )	48/ 1	2	49/	44.	(4)	( )	26/ 1	2	27/
22.	(3)	( )	50/ 1	2	51/	45.	(2)	( )	28/ 1	2	29/
23.	(2)	( )	52/ 1	2	53/	46.	(3)	( )	30/ 1	2	31/
24.	(3)	( )	54/ 1	2	55/	47.	(1)	( )	32/ 1	2	33/
25.	(1)	( )	56/ 1	2	57/	48.	(1)	( )	34/ 1	2	35/
26.	(1)	( )	58/ 1	2	59/	49.	(2)	( )	36/ 1	2	37/
27.	(2)	( )	60/ 1	2	61/	50.	(3)	( )	38/ 1	2	39/
28.	(3)	( )	62/ 1	2	63/	51.	(2)	( )	40/ 1	2	41/
29.	(2)	( )	64/ 1	2	65/	52.	(4)	( )	42/ 1	2	43/
30.	(1)	( )	66/ 1	2	67/	53.	(3)	( )	44/ 1	2	45/
31.	(3)	( )	68/ 1	2	69/	54.	(4)	( )	46/ 1	2	47/
32.	(4)	( )	70/ 1	2	71/	55.	(2)	( )	48/ 1	2	49/
33.	(2)	( )	72/ 1	2	73/	56.	(4)	( )	50/ 1	2	51/
34.	(4)	( )	74/ 1	2	75/	57.	(2)	( )	52/ 1	2	53/
35.	(3)	( )	76/ 1	2	77/	58.	(4)	( )	54/ 1	2	55/
36.	(4)	( )	78/ 1	2	79/	59.	(3)	( )	56/ 1	2	57/
			BEGIN DECK 25								
37.	(1)	( )	12/ 1	2	13/	60.	(2)	( )	58/ 1	2	59/
38.	(2)	( )	14/ 1	2	15/	61.	(3)	( )	60/ 1	2	61/
39.	(3)	( )	16/ 1	2	17/	62.	(2)	( )	62/ 1	2	63/
40.	(1)	( )	18/ 1	2	19/	63.	(4)	( )	64/ 1	2	65/
41.	(3)	( )	20/ 1	2	21/	64.	(3)	( )	66/ 1	2	67/

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

CS-57

DECKS 25-26

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

COUNT BACK 5 TO ESTABLISH BASAL ONLY IF STARTING Q# IS WRONG - JUMP BACK 5 ITEMS.

PLATE #	ANSWER	RECORD RESPONSE	CODE ONE... CORRECT	WRONG		PLATE #	ANSWER	RECORD RESPONSE	CODE ONE... CORRECT	WRONG	
65.	(4)	( )	68/ 1	2	69/	75.	(1)	( )	22/ 1	2	23/
66.	(1)	( )	70/ 1	2	71/	76.	(2)	( )	24/ 1	2	25/
67.	(2)	( )	72/ 1	2	73/	77.	(3)	( )	26/ 1	2	27/
68.	(1)	( )	74/ 1	2	75/	78.	(4)	( )	28/ 1	2	29/
69.	(4)	( )	76/ 1	2	77/	79.	(2)	( )	30/ 1	2	31/
			BEGIN DECK 26								
70.	(2)	( )	12/ 1	2	13/	80.	(3)	( )	32/ 1	2	33/
71.	(1)	( )	14/ 1	2	15/	81.	(3)	( )	34/ 1	2	35/
72.	(1)	( )	16/ 1	2	17/	82.	(1)	( )	36/ 1	2	37/
73.	(4)	( )	18/ 1	2	19/	83.	(2)	( )	38/ 1	2	39/
74.	(4)	( )	20/ 1	2	21/	84.	(1)	( )	40/ 1	2	41/

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

---

85. INTERVIEWER: A. DID YOU GET A BASAL? ARE THERE FIVE (5) CONSECUTIVE CORRECT RESPONSES AT THE BEGINNING?

YES..... 1 42/
NO...(GO BACK AND GET THE BASAL).... 0

B. DID YOU GET A CEILING? ARE THE LAST FIVE (5) RESPONSES INCORRECT?

YES..... 1 43/
NO..(GO BACK AND GET THE CEILING)... 0

86. INTERVIEWER: COMPUTE SCORE:

A. ENTER HIGHEST CEILING Q#: (LAST ITEM WRONG) |__|__| 44-45/

B. ENTER TOTAL # OF ERRORS BETWEEN BASAL AND CEILING: |__|__| 46-47/

C. SUBTRACT 'B' FROM 'A': |__|__| = SCORE 48-49/

INTERVIEWER REMARKS:

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

YES.....(ANSWER A)..... 1 50/
NO.....(GO TO Q.88)..... 0

A. IF PRESENT,	CODE # PERSONS		EFFECT ON CHILD'S PERFORMANCE: SEEMED TO BE HARMFUL	NONE OBSERVABLE	SEEMED TO IMPROVE	
MOTHER	|____|	51/	1	2	3	52/
FATHER	|____|	53/	1	2	3	54/
OTHER ADULTS	|__|__|	55-56/	1	2	3	57/
CHILDREN	|__|__|	58-59/	1	2	3	60/

88. CODE CHILD'S ENERGY LEVEL DURING SECTION.

Low (tired)..... 1
Medium..... 2 61/
High..... 3

89. WAS THIS SECTION TERMINATED PREMATURELY?

YES.....(ASK A)..... 1 62/
NO....(GO TO SECTION 10, CS-59).... 0

A. REASON FOR PREMATURE TERMINATION OF THIS SECTION. (CODE ALL THAT APPLY.)

PARENT/GUARDIAN TERMINATED/REFUSED..... 01 63-64/
CHILD WOULD NOT RESPOND..... 02 65-66/
MAJOR INTERRUPTION CAUSED TERMINATION... 03 67-68/
CHILD COULD NOT UNDERSTAND TASK..... 04 69-70/
CHILD HAD LANGUAGE PROBLEM..... 05 71-72/
CHILD'S EMOTIONAL CONDITION..... 06 73-74/
CHILD'S PHYSICAL CONDITION..... 07 75-76/
OTHER (SPECIFY)_____
_____ 08 77-78/

APPENDIX C

APPENDIX C

PIAT Math

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

YES..... 1 69/
NO...(SKIP TO SECTION 10, CS-59)... 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 (INCLUDES INSTRUCTIONS TO CHILD).

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

YES.....(SKIP TO B)..... 1 70/
NO.....(GO TO A)..... 0

A. PRACTICE EXERCISES FOR CHILDREN NOT YET IN 1ST GRADE.

(1) 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.

B. CHILDREN IN 1ST GRADE OR HIGHER NEED NO PRACTICE EXERCISES. 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.

STEP FIVE: CHECK GRADE ON CHILD FACE SHEET (ITEM 5). CODE CHILD'S STARTING Q#, TURN TO APPROPRIATE EASEL PAGE AND PROCEED.

KINDERGARTEN OR LESS....(GO TO Q.1, CS-48)..... 00
1ST GRADE.....(GO TO Q.15, CS-48)..... 01
2ND GRADE.....(GO TO Q.25, CS-48)..... 02
3RD GRADE.....(GO TO Q.30, CS-48)..... 03
4TH GRADE.....(GO TO Q.35, CS-48)..... 04 71-72/
5TH GRADE.....(GO TO Q.40, CS-48)..... 05
6TH GRADE.....(GO TO Q.45, CS-48)..... 06
7TH GRADE.....(GO TO Q.50, CS-48)..... 07
8TH GRADE.....(GO TO Q.54, CS-49)..... 08
9TH GRADE.....(GO TO Q.58, CS-49)..... 09
10TH GRADE.....(SKIP TO Q.60, CS-49)..... 10
11TH GRADE.....(SKIP TO Q.62, CS-49)..... 11
12TH GRADE.....(SKIP TO Q.64, CS-49)..... 12

CS-48

DECKS 19-21

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

COUNT BACK 5 TO ESTABLISH BASAL

ONLY IF STARTING Q# IS WRONG - JUMP BACK TO NEXT LOWER GRADE.

GRADE		ANSWER	RECORD RESPONSE	(CODE ONE) CORRECT	WRONG	
(K)	1.	(4)	( )	73/ 1	2	74/
	2.	(2)	( )	75/ 1	2	76/
			BEGIN DECK 20			
	3.	(3)	( )	12/ 1	2	13/
	4.	(1)	( )	14/ 1	2	15/
	5.	(4)	( )	16/ 1	2	17/
	6.	(3)	( )	18/ 1	2	19/
	7.	(3)	( )	20/ 1	2	21/
	8.	(1)	( )	22/ 1	2	23/
	9.	(4)	( )	24/ 1	2	25/
	10.	(4)	( )	26/ 1	2	27/
	11.	(1)	( )	28/ 1	2	29/
	12.	(3)	( )	30/ 1	2	31/
	13.	(4)	( )	32/ 1	2	33/
	14.	(2)	( )	34/ 1	2	35/
(1st)	15.	(4)	( )	36/ 1	2	37/
	16.	(3)	( )	38/ 1	2	39/
	17.	(1)	( )	40/ 1	2	41/
	18.	(3)	( )	42/ 1	2	43/
	19.	(2)	( )	44/ 1	2	45/
	20.	(3)	( )	46/ 1	2	47/
	21.	(2)	( )	48/ 1	2	49/
	22.	(1)	( )	50/ 1	2	51/
	23.	(2)	( )	52/ 1	2	53/
	24.	(2)	( )	54/ 1	2	55/
(2nd)	25.	(1)	( )	56/ 1	2	57/
	26.	(4)	( )	58/ 1	2	59/
	27.	(3)	( )	60/ 1	2	61/
	28.	(1)	( )	62/ 1	2	63/
	29.	(3)	( )	64/ 1	2	65/
(3rd)	30.	(2)	( )	66/ 1	2	67/
	31.	(2)	( )	68/ 1	2	69/
	32.	(4)	( )	70/ 1	2	71/
	33.	(4)	( )	72/ 1	2	73/
	34.	(2)	( )	74/ 1	2	75/
(4th)	35.	(3)	( )	76/ 1	2	77/
					BEGIN DECK 21	
	36.	(1)	( )	12/ 1	2	13/
	37.	(2)	( )	14/ 1	2	15/
	38.	(3)	( )	16/ 1	2	17/
	39.	(1)	( )	18/ 1	2	19/
(5th)	40.	(3)	( )	20/ 1	2	21/
	41.	(4)	( )	22/ 1	2	23/
	42.	(4)	( )	24/ 1	2	25/
	43.	(1)	( )	26/ 1	2	27/
	44.	(3)	( )	28/ 1	2	29/
(6th)	45.	(4)	( )	30/ 1	2	31/
	46.	(2)	( )	32/ 1	2	33/
	47.	(1)	( )	34/ 1	2	35/
	48.	(1)	( )	36/ 1	2	37/
	49.	(3)	( )	38/ 1	2	39/
(7th)	50.	(3)	( )	40/ 1	2	41/
	51.	(2)	( )	42/ 1	2	43/
	52.	(4)	( )	44/ 1	2	45/

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

CS-49 DECKS 21-22

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

COUNT BACK 5 TO ESTABLISH BASAL ONLY IF STARTING Q# IS WRONG - JUMP BACK TO NEXT LOWER GRADE.

GRADE	ANSWER	RECORD RESPONSE	(CODE ONE) CORRECT	WRONG	GRADE	ANSWER	RECORD RESPONSE	(CODE ONE) CORRECT	WRONG
							BEGIN DECK 22		
	53. (4)	( )	46/ 1	2 47/		69. (1)	( )	12/ 1	2 13/
8th	54. (4)	( )	48/ 1	2 49/		70. (1)	( )	14/ 1	2 15/
	55. (2)	( )	50/ 1	2 51/		71. (2)	( )	16/ 1	2 17/
	56. (3)	( )	52/ 1	2 53/		72. (1)	( )	18/ 1	2 19/
	57. (1)	( )	54/ 1	2 55/		73. (1)	( )	20/ 1	2 21/
9th	58. (2)	( )	56/ 1	2 57/		74. (3)	( )	22/ 1	2 23/
	59. (2)	( )	58/ 1	2 59/		75. (3)	( )	24/ 1	2 25/
10th	60. (1)	( )	60/ 1	2 61/		76. (4)	( )	26/ 1	2 27/
	61. (3)	( )	62/ 1	2 63/		77. (3)	( )	28/ 1	2 29/
11th	62. (1)	( )	64/ 1	2 65/		78. (2)	( )	30/ 1	2 31/
	63. (4)	( )	66/ 1	2 67/		79. (3)	( )	32/ 1	2 33/
12th	64. (3)	( )	68/ 1	2 69/		80. (4)	( )	34/ 1	2 35/
	65. (2)	( )	70/ 1	2 71/		81. (2)	( )	36/ 1	2 37/
	66. (2)	( )	72/ 1	2 73/		82. (1)	( )	38/ 1	2 39/
	67. (4)	( )	74/ 1	2 75/		83. (2)	( )	40/ 1	2 41/
	68. (4)	( )	76/ 1	2 77/		84. (2)	( )	42/ 1	2 43/

85. INTERVIEWER: A. DID YOU GET A BASAL? ARE THERE FIVE (5) CONSECUTIVE CORRECT RESPONSES AT THE BEGINNING?

YES..... 1 44/
NO...(GO BACK AND GET THE BASAL).... 0

B. DID YOU GET A CEILING? ARE THE LAST FIVE (5) CONSECUTIVE RESPONSES INCORRECT?

YES..... 1 45/
NO...(GO BACK AND GET THE CEILING... 0

86. INTERVIEWER: COMPUTE SCORE:

A. ENTER CEILING Q#: (LAST ITEM WRONG) |__|__| 46-47/

B. ENTER TOTAL # OF ERRORS BETWEEN BASAL AND CEILING: |__|__| 48-49/

C. SUBTRACT 'B' FROM 'A': |__|__| = SCORE 50-51/

CS-50 DECK 22

INTERVIEWER REMARKS:

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

YES.....(ANSWER A)..... 1 52/
NO.....(GO TO Q.88)..... 0

A. IF PRESENT,	CODE # PERSONS		EFFECT ON CHILD'S PERFORMANCE: SEEMED TO BE HARMFUL	NONE OBSERVABLE	SEEMED TO IMPROVE	
MOTHER	|____|	53/	1	2	3	54/
FATHER	|____|	55/	1	2	3	56/
OTHER ADULTS	|__|_|	57-58/	1	2	3	59/
CHILDREN	|__|_|	60-61/	1	2	3	62/

88. CODE CHILD'S ENERGY LEVEL DURING SECTION.

Low (tired)..... 1
Medium..... 2 63/
High..... 3

89. WAS THIS SECTION TERMINATED PREMATURELY?

YES.....(ASK A)..... 1 64/
NO....(GO TO SECTION 9, CS-51).... 0

A. REASON FOR PREMATURE TERMINATION OF THIS SECTION. (CODE ALL THAT APPLY.)

PARENT/GUARDIAN TERMINATED/REFUSED..... 01 65-66/
CHILD WOULD NOT RESPOND..... 02 67-68/
MAJOR INTERRUPTION CAUSED TERMINATION... 03 69-70/
CHILD COULD NOT UNDERSTAND TASK..... 04 71-72/
CHILD HAD LANGUAGE PROBLEM..... 05 73-74/
CHILD'S EMOTIONAL CONDITION..... 06 75-76/
CHILD'S PHYSICAL CONDITION..... 07 77-78/
OTHER (SPECIFY)_____
_____ 08 79-80/

APPENDIX D

APPENDIX D

Behavior Problems Index

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

Please turn to next page

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 77/
Sometimes true..... 2
Not true..... 3

---

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

(CIRCLE ONE)

Often true..... 1 78/
Sometimes true..... 2
Not true..... 3

Please turn to next page

8. He/She is easily confused, seems to be in a fog.

(CIRCLE ONE)

Often true..... 1 12/
Sometimes true..... 2
Not true..... 3

---

9. He/She bullies or is cruel or mean to others.

(CIRCLE ONE)

Often true..... 1 13/
Sometimes true..... 2
Not true..... 3

---

10. He/She is disobedient at home.

(CIRCLE ONE)

Often true..... 1 14/
Sometimes true..... 2
Not true..... 3

---

11. He/She does not seem to feel sorry after he/she misbehaves.

(CIRCLE ONE)

Often true..... 1 15/
Sometimes true..... 2
Not true..... 3

---

12. He/She has trouble getting along with other children.

(CIRCLE ONE)

Often true..... 1 16/
Sometimes true..... 2
Not true..... 3

Please turn to next page

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

(CIRCLE ONE)

Often true..... 1 17/
Sometimes 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

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

(CIRCLE ONE)

Often true..... 1 22/

Sometimes true..... 2

Not true..... 3

---

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)

Often true..... 1 24/

Sometimes true..... 2

Not true..... 3

---

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

(CIRCLE ONE)

Often true..... 1 25/

Sometimes true..... 2

Not true..... 3

---

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

(CIRCLE ONE)

Often true..... 1 26/

Sometimes true..... 2

Not true..... 3

Please turn to next page

23. He/She clings to adults.

(CIRCLE ONE)

Often true..... 1 27/
Sometimes true..... 2
Not true..... 3

---

24. He/She cries too much.

(CIRCLE ONE)

Often true..... 1 28/
Sometimes true..... 2
Not true..... 3

---

25. He/She demands a lot of attention.

(CIRCLE ONE)

Often true..... 1 29/
Sometimes true..... 2
Not true..... 3

---

26. He/She is too dependent on others.

(CIRCLE ONE)

Often true..... 1 30/
Sometimes true..... 2
Not true..... 3

Please turn to next page

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.

(CIRCLE 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

Please turn to next page

APPENDIX E

APPENDIX E

HOME Inventory (Short Form)

PART C: FOR CHILDREN WHO ARE AT LEAST 6 YEARS, BUT LESS THAN 10 YEARS OLD

For _____ who has had his/her 6th birthday but has
CHILD'S NAME not had his/ her 10th birthday.

INSTRUCTIONS TO MOTHER/GUARDIAN:

We are interested in your family's lifestyle and rules.

Some questions you answer with a YES or NO or other word or phrase. Please circle the number that goes with the answer you choose.

Other questions have boxes for you to write in an answer.

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

1. About how many books does your child have?

(CIRCLE ONE)

None..... 1 37/

1 or 2..... 2

3 to 9..... 3

10 or more..... 4

---

2. About how often did/do you read stories to your child?

(CIRCLE ONE)

Never..... 1 38/

Several times a year..... 2

Several times a month..... 3

Once a week..... 4

At least 3 times a week..... 5

Every day..... 6

Please turn to next page

3. How often is your child expected to do each of the following? (CIRCLE ONE NUMBER FOR EACH QUESTION.)

	Almost Never	Less than 1/2 the time	1/2 the time	More than 1/2 the time	Almost Always
a. Make his/her own bed?	1	2	3	4	5
b. Clean his/her own room?	1	2	3	4	5
c. Clean up after spills?	1	2	3	4	5
d. Bathe himself/ herself?	1	2	3	4	5
e. Pick up after himself/herself?	1	2	3	4	5
	Almost Never	Less than 1/2 the time	1/2 the time	More than 1/2 the time	Almost Always

---

4. Is there a musical instrument (for example, piano, drum, guitar, etc.) that your child can use here at home?

Yes..... 1

No..... 0

Please turn to next page

5. Does your family get a daily newspaper?

Yes..... 1 45/

No..... 0

---

6. About how often does your child read for enjoyment?

(CIRCLE ONE)

Every day..... 1 46/

Several times a week..... 2

Several times a month..... 3

Several times a year..... 4

Never..... 5

---

7. Do you or someone in the family encourage your child to start and keep doing hobbies?

Yes..... 1 47/

No..... 0

---

8. Does your child get special lessons or belong to any organization that encourages activities such as sports, music, art, dance, drama, etc.?

Yes..... 1 48/

No..... 0

---

9. How often has any family member taken or arranged to take your child to any type of museum (children's, scientific, art, historical, etc.) <u>within the past year</u>?

(CIRCLE ONE)

Never..... 1 49/

Once or twice..... 2

Several times..... 3

About once a month..... 4

About once a week or more often... 5

Please turn to next page

MS-16 DECK 02

10. How often has a family member taken or arranged to take your child to any type of musical or theatrical performance within the past year?

(CIRCLE ONE)

Never	1	50/
Once or twice	2	
Several times	3	
About once a month or more	4	
About once a week or more	5	

---

11. About how often does your whole family get together with relatives or friends?

(CIRCLE ONE)

Once a year or less	1	51/
A few times a year	2	
Once a month	3	
Two or three times a month	4	
About once a week or more	5	

Please turn to next page

MS-17 DECK 03

12. Does your child ever see his or her father or father-figure?

YES..... 1 52/

NO.....(SKIP TO NEXT PAGE)..... 0 ----------->

IF YES: About how often does your child spend time with his/her father or father-figure?

(CIRCLE ONE)

Once a day or more often..... 1 53/

At least 4 times a week..... 2

About once a week..... 3

About once a month..... 4

A few times a year or less..... 5

IF YES: About how often does your child spend time with his/her father or father-figure in outdoor activities?

(CIRCLE ONE)

Once a day or more often..... 1 54/

At least 4 times a week..... 2

About once a week..... 3

About once a month..... 4

A few times a year or less..... 5

Don't know..... 6

IF YES: How often does your child eat a meal with both mother and father or father-figure?

(CIRCLE ONE)

More than once a day..... 1 55/

Once a day..... 2

Several times a week..... 3

About once a week..... 4

About once a month..... 5

Never..... 6

IF YES: When your family watches TV together, do you or your child's father or father-figure discuss TV programs with him/her?

Yes..... 1 56/

No..... 0

Do not have a TV..... 2

Please turn to next page

13. Sometimes children get so angry at their parents that they say things like "I hate you" or swear in a temper tantrum. Please check which actions you would take if this happened.

(CIRCLE ALL THAT APPLY)

Grounding	01	57-58/
Spanking	02	59-60/
Talk with child	03	61-62/
Give him or her household chore	04	63-64/
Ignore it	05	65-66/
Send to room for more than 1 hour	06	67-68/
Take away his/her allowance	07	69-70/
Take away TV or other privileges	08	71-72/
Other (SPECIFY) _____	09	73-74/

---

14. If your child brought home a report card with grades lower than expected, how likely would you be to ...

BEGIN DECK 04

(CIRCLE ONE NUMBER FOR EACH QUESTION)

	VERY LIKELY				NOT AT ALL LIKELY	
a. contact his or her teacher or principal?	1	2	3	4	5	12/
b. lecture the child?	1	2	3	4	5	13/
c. keep a closer eye on child's activities?	1	2	3	4	5	14/
d. punish the child?	1	2	3	4	5	15/
e. talk with the child?	1	2	3	4	5	16/
f. wait and see if child improves grades on his/her own?	1	2	3	4	5	17/
g. tell child to spend more time on schoolwork?	1	2	3	4	5	18/
h. spend more time helping child with schoolwork?	1	2	3	4	5	19/

Please turn to next page

MS-19 DECK 04

15. Sometimes kids mind pretty well and sometimes they don't. Sometimes they do things that make you feel good. How many times in the past week have you ...

		# TIMES IN PAST WEEK	
a.	had to spank your child?	|__|__|	20-21/
b.	grounded him/her?	|__|__|	22-23/
c.	taken away TV or other privileges?	|__|__|	24-25/
d.	sent child to his/her room?	|__|__|	26-27/
e.	taken away his/her allowance?	|__|__|	28-29/
f.	shown child physical affection (kiss, hug, stroke hair, etc.)?	|__|__|	30-31/
g.	praised child for doing something worthwhile?	|__|__|	32-33/
h.	told another adult (spouse, friend, co-worker, visitor, relative) something positive about child?	|__|__|	34-35/

MOTHER/GUARDIAN:

(1) If your child has not had his/her 7th birthday, go to SECTION 2, PART C, page MS-37.

(2) If your child is at least age 7 years or older, go to SECTION 4, page MS-61.

APPENDIX F

APPENDIX F

Correlation Matrix

Correlations:	D0005400	D0005800	D0270200	D0277400	D0279100	D0280800
D0005400	1.0000	.1352	.0668	.0599	.0377	-.0251
	(0)	(102)	(102)	(102)	(102)	(102)
	P= .	P= .088	P= .252	P= .275	P= .353	P= .401
D0005800	.1352	1.0000	-.1132	.1945	.0923	-.0810
	(102)	(0)	(102)	(102)	(102)	(102)
	P= .088	P= .	P= .129	P= .025	P= .178	P= .209
D0270200	.0668	-.1132	1.0000	-.6227	-.7040	-.4448
	(102)	(102)	(0)	(102)	(102)	(102)
	P= .252	P= .129	P= .	P= .000	P= .000	P= .000
D0277400	.0599	.1945	-.6227	1.0000	.6787	.2895
	(102)	(102)	(102)	(0)	(102)	(102)
	P= .275	P= .025	P= .000	P= .	P= .000	P= .002
D0279100	.0377	.0923	-.7040	.6787	1.0000	.5442
	(102)	(102)	(102)	(102)	(0)	(102)
	P= .353	P= .178	P= .000	P= .000	P= .	P= .000
D0280800	-.0251	-.0810	-.4448	.2895	.5442	1.0000
	(102)	(102)	(102)	(102)	(102)	(0)
	P= .401	P= .209	P= .000	P= .002	P= .000	P= .
D0282500	.0359	-.0652	-.1163	.0962	.2112	.6666
	(102)	(102)	(102)	(102)	(102)	(102)
	P= .360	P= .258	P= .122	P= .168	P= .017	P= .000
D0790800	.1349	-.0959	-.0807	-.0419	.1458	.0344
	(99)	(99)	(99)	(99)	(99)	(99)
	P= .092	P= .173	P= .214	P= .340	P= .075	P= .368
D0796500	.1633	.0610	-.0212	-.0169	.0398	-.0036
	(97)	(97)	(97)	(97)	(97)	(97)
	P= .055	P= .276	P= .418	P= .435	P= .349	P= .486
D0796600	.0693	.0372	.0534	-.0072	-.0273	-.1004
	(98)	(98)	(98)	(98)	(98)	(98)
	P= .249	P= .358	P= .301	P= .472	P= .395	P= .163
D0796700	.1250	-.0690	-.0628	.0302	.0791	.0248
	(100)	(100)	(100)	(100)	(100)	(100)
	P= .108	P= .247	P= .268	P= .383	P= .217	P= .403
D0796800	.0874	-.0854	-.0622	-.0803	-.0414	.0768
	(99)	(99)	(99)	(99)	(99)	(99)
	P= .195	P= .200	P= .270	P= .215	P= .342	P= .225
D0796900	-.0186	.1105	.0774	-.0519	-.0011	.0203
	(101)	(101)	(101)	(101)	(101)	(101)
	P= .427	P= .136	P= .221	P= .303	P= .496	P= .420
D0797000	.1908	.1612	-.0856	.0764	.0866	-.0466
	(100)	(100)	(100)	(100)	(100)	(100)
	P= .029	P= .055	P= .198	P= .225	P= .196	P= .322
D0797100	.0159	.0010	-.0278	-.0465	-.0291	-.0830
	(101)	(101)	(101)	(101)	(101)	(101)
	P= .437	P= .496	P= .391	P= .322	P= .386	P= .205

Correlations:	D0005400	D0005800	D0270200	D0277400	D0279100	D0280800
D0799600	.0443	.0016	-.1431	-.0430	.1204	.1207
	(101)	(101)	(101)	(101)	(101)	(101)
	P= .330	P= .494	P= .077	P= .335	P= .115	P= .115
D0799900	.1693	-.1401	.1639	-.1709	-.1481	-.1563
	(101)	(101)	(101)	(101)	(101)	(101)
	P= .045	P= .081	P= .051	P= .044	P= .070	P= .059
D0800200	.1433	-.1050	.0598	-.0961	-.0552	-.1106
	(98)	(98)	(98)	(98)	(98)	(98)
	P= .080	P= .152	P= .279	P= .173	P= .295	P= .139
R0618600	.1742	.2634	-.1491	.1966	.0889	.0421
	(102)	(102)	(102)	(102)	(102)	(102)
	P= .040	P= .004	P= .067	P= .024	P= .187	P= .337
R0618900	-.0875	-.0950	.0192	-.0171	.0102	.0753
	(102)	(102)	(102)	(102)	(102)	(102)
	P= .191	P= .171	P= .424	P= .432	P= .459	P= .226
R2349100	.1011	.1424	-.1334	.0733	.1275	.1547
	(101)	(101)	(101)	(101)	(101)	(101)
	P= .157	P= .078	P= .092	P= .233	P= .102	P= .061
R0619010	-.1221	.2516	-.1178	.1286	.1654	.0645
	(102)	(102)	(102)	(102)	(102)	(102)
	P= .111	P= .005	P= .119	P= .099	P= .048	P= .260
R2870200	.0185	.0432	-.1478	.0202	.1184	.1440
	(92)	(92)	(92)	(92)	(92)	(92)
	P= .431	P= .341	P= .080	P= .424	P= .130	P= .085
GROUP	.0856	-.0992	.9764	-.5853	-.7034	-.4584
	(102)	(102)	(102)	(102)	(102)	(102)
	P= .196	P= .161	P= .000	P= .000	P= .000	P= .000
GROUPX	.0283	-.0025	.2580	-.5001	-.3538	.1120
	(102)	(102)	(102)	(102)	(102)	(102)
	P= .389	P= .490	P= .004	P= .000	P= .000	P= .131
TOTHOURS	.0319	.0274	-.6092	.6212	.8054	.8634
	(102)	(102)	(102)	(102)	(102)	(102)
	P= .375	P= .392	P= .000	P= .000	P= .000	P= .000

Correlations:	D0282500	D0790800	D0796500	D0796600	D0796700	D0796800
D0005400	.0359	.1349	.1633	.0693	.1250	.0874
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .360	P= .092	P= .055	P= .249	P= .108	P= .195
D0005800	-.0652	-.0959	.0610	.0372	-.0690	-.0854
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .258	P= .173	P= .276	P= .358	P= .247	P= .200
D0270200	-.1163	-.0807	-.0212	.0534	-.0628	-.0622
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .122	P= .214	P= .418	P= .301	P= .268	P= .270
D0277400	.0962	-.0419	-.0169	-.0072	.0302	-.0803
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .168	P= .340	P= .435	P= .472	P= .383	P= .215

Correlations:	D0282500	D0790800	D0796500	D0796600	D0796700	D0796800
D0279100	.2112	.1458	.0398	-.0273	.0791	-.0414
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .017	P= .075	P= .349	P= .395	P= .217	P= .342
D0280800	.6666	.0344	-.0036	-.1004	.0248	.0768
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .000	P= .368	P= .486	P= .163	P= .403	P= .225
D0282500	1.0000	-.0428	.0174	.0167	.0559	.0482
	(0)	(99)	(97)	(98)	(100)	(99)
	P= .	P= .337	P= .433	P= .435	P= .290	P= .318
D0790800	-.0428	1.0000	-.3275	-.3440	-.1548	-.2319
	(99)	(0)	(95)	(96)	(98)	(97)
	P= .337	P= .	P= .001	P= .000	P= .064	P= .011
D0796500	.0174	-.3275	1.0000	.6738	.7145	.7857
	(97)	(95)	(0)	(97)	(97)	(97)
	P= .433	P= .001	P= .	P= .000	P= .000	P= .000
D0796600	.0167	-.3440	.6738	1.0000	.3846	.4820
	(98)	(96)	(97)	(0)	(98)	(97)
	P= .435	P= .000	P= .000	P= .	P= .000	P= .000
D0796700	.0559	-.1548	.7145	.3846	1.0000	.4975
	(100)	(98)	(97)	(98)	(0)	(99)
	P= .290	P= .064	P= .000	P= .000	P= .	P= .000
D0796800	.0482	-.2319	.7857	.4820	.4975	1.0000
	(99)	(97)	(97)	(97)	(99)	(0)
	P= .318	P= .011	P= .000	P= .000	P= .000	P= .
D0796900	-.0168	-.2476	.7213	.3701	.3849	.4926
	(101)	(99)	(97)	(98)	(100)	(99)
	P= .434	P= .007	P= .000	P= .000	P= .000	P= .000
D0797000	-.0654	-.2957	.6254	.2202	.3241	.4547
	(100)	(98)	(97)	(98)	(100)	(99)
	P= .259	P= .002	P= .000	P= .015	P= .001	P= .000
D0797100	-.1010	-.2710	.6934	.4167	.4328	.4879
	(101)	(99)	(97)	(98)	(100)	(99)
	P= .157	P= .003	P= .000	P= .000	P= .000	P= .000
D0799600	.0739	.4028	-.1351	-.0337	.0792	-.0952
	(101)	(99)	(96)	(97)	(99)	(98)
	P= .231	P= .000	P= .095	P= .371	P= .218	P= .175
D0799900	-.0452	.4821	-.3306	-.1589	-.0550	-.2833
	(101)	(99)	(96)	(97)	(99)	(98)
	P= .327	P= .000	P= .001	P= .060	P= .294	P= .002
D0800200	-.0441	.4777	-.3511	-.1628	-.2122	-.3426
	(98)	(96)	(93)	(94)	(96)	(95)
	P= .333	P= .000	P= .000	P= .059	P= .019	P= .000
R0618600	.0445	.1557	.0186	-.0660	.0381	.0252
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .328	P= .062	P= .428	P= .259	P= .353	P= .402

Correlations:	D0282500	D0790800	D0796500	D0796600	D0796700	D0796800
R0618900	.1041	.3239	-.1632	-.0194	.0511	-.0814
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .149	P= .001	P= .055	P= .425	P= .307	P= .212
R2349100	.0845	-.2283	.3195	.1959	.2042	.2891
	(101)	(99)	(96)	(97)	(99)	(98)
	P= .201	P= .012	P= .001	P= .027	P= .021	P= .002
R0619010	-.0097	.3370	-.2125	-.1077	-.1332	-.1107
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .461	P= .000	P= .018	P= .145	P= .093	P= .138
R2870200	.1412	.3476	-.2374	-.2535	-.2248	-.1065
	(92)	(89)	(88)	(89)	(90)	(89)
	P= .090	P= .000	P= .013	P= .008	P= .017	P= .160
GROUP	-.1421	-.1291	-.0213	.0599	-.0533	-.0679
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .077	P= .101	P= .418	P= .279	P= .299	P= .252
GROUPX	.1092	-.0264	.1046	.0585	-.0337	.1184
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .137	P= .398	P= .154	P= .283	P= .370	P= .122
TOTHOURS	.6927	.0443	.0168	-.0419	.0668	.0113
	(102)	(99)	(97)	(98)	(100)	(99)
	P= .000	P= .332	P= .435	P= .341	P= .255	P= .456

Correlations:	D0796900	D0797000	D0797100	D0799600	D0799900	D0800200
D0005400	-.0186	.1908	.0159	.0443	.1693	.1433
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .427	P= .029	P= .437	P= .330	P= .045	P= .080
D0005800	.1105	.1612	.0010	.0016	-.1401	-.1050
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .136	P= .055	P= .496	P= .494	P= .081	P= .152
D0270200	.0774	-.0856	-.0278	-.1431	.1639	.0598
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .221	P= .198	P= .391	P= .077	P= .051	P= .279
D0277400	-.0519	.0764	-.0465	-.0430	-.1709	-.0961
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .303	P= .225	P= .322	P= .335	P= .044	P= .173
D0279100	-.0011	.0866	-.0291	.1204	-.1481	-.0552
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .496	P= .196	P= .386	P= .115	P= .070	P= .295
D0280800	.0203	-.0466	-.0830	.1207	-.1563	-.1106
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .420	P= .322	P= .205	P= .115	P= .059	P= .139
D0282500	-.0168	-.0654	-.1010	.0739	-.0452	-.0441
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .434	P= .259	P= .157	P= .231	P= .327	P= .333
D0790800	-.2476	-.2957	-.2710	.4028	.4821	.4777
	(99)	(98)	(99)	(99)	(99)	(96)
	P= .007	P= .002	P= .003	P= .000	P= .000	P= .000

Correlations:	D0796900	D0797000	D0797100	D0799600	D0799900	D0800200
D0796500	.7213	.6254	.6934	-.1351	-.3306	-.3511
	(97)	(97)	(97)	(96)	(96)	(93)
	P= .000	P= .000	P= .000	P= .095	P= .001	P= .000
D0796600	.3701	.2202	.4167	-.0337	-.1589	-.1628
	(98)	(98)	(98)	(97)	(97)	(94)
	P= .000	P= .015	P= .000	P= .371	P= .060	P= .059
D0796700	.3849	.3241	.4328	.0792	-.0550	-.2122
	(100)	(100)	(100)	(99)	(99)	(96)
	P= .000	P= .001	P= .000	P= .218	P= .294	P= .019
D0796800	.4926	.4547	.4879	-.0952	-.2833	-.3426
	(99)	(99)	(99)	(98)	(98)	(95)
	P= .000	P= .000	P= .000	P= .175	P= .002	P= .000
D0796900	1.0000	.3669	.4667	-.2215	-.3620	-.3196
	(0)	(100)	(101)	(100)	(100)	(97)
	P= .	P= .000	P= .000	P= .013	P= .000	P= .001
D0797000	.3669	1.0000	.4402	-.2343	-.3266	-.3275
	(100)	(0)	(100)	(99)	(99)	(96)
	P= .000	P= .	P= .000	P= .010	P= .000	P= .001
D0797100	.4667	.4402	1.0000	.0312	-.2267	-.1903
	(101)	(100)	(0)	(100)	(100)	(97)
	P= .000	P= .000	P= .	P= .379	P= .012	P= .031
D0799600	-.2215	-.2343	.0312	1.0000	.4837	.4818
	(100)	(99)	(100)	(0)	(101)	(98)
	P= .013	P= .010	P= .379	P= .	P= .000	P= .000
D0799900	-.3620	-.3266	-.2267	.4837	1.0000	.8287
	(100)	(99)	(100)	(101)	(0)	(98)
	P= .000	P= .000	P= .012	P= .000	P= .	P= .000
D0800200	-.3196	-.3275	-.1903	.4818	.8287	1.0000
	(97)	(96)	(97)	(98)	(98)	(0)
	P= .001	P= .001	P= .031	P= .000	P= .000	P= .
R0618600	.0547	.0462	-.1060	-.0225	-.0063	-.0172
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .293	P= .324	P= .146	P= .412	P= .475	P= .433
R0618900	-.2223	-.2155	-.0781	.3366	.2871	.1916
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .013	P= .016	P= .219	P= .000	P= .002	P= .029
R2349100	.3212	.2216	.0975	.0102	-.1580	-.1834
	(100)	(99)	(100)	(101)	(101)	(98)
	P= .001	P= .014	P= .167	P= .460	P= .057	P= .035
R0619010	-.2128	-.2286	-.0531	.2962	.0958	.0655
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .016	P= .011	P= .299	P= .001	P= .170	P= .261
R2870200	-.1503	-.0875	-.1654	.2489	.1943	.2682
	(91)	(90)	(91)	(91)	(91)	(88)
	P= .078	P= .206	P= .059	P= .009	P= .032	P= .006

Correlations:	D0796900	D0797000	D0797100	D0799600	D0799900	D0800200
GROUP	.0530	-.0644	-.0227	-.1712	.1377	.0315
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .299	P= .262	P= .411	P= .043	P= .085	P= .379
GROUPX	.0941	.0671	-.0104	-.0334	-.0077	.0269
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .175	P= .254	P= .459	P= .370	P= .470	P= .396
TOTHOURS	-.0108	.0101	-.0867	.1070	-.1679	-.0982
	(101)	(100)	(101)	(101)	(101)	(98)
	P= .457	P= .460	P= .194	P= .143	P= .047	P= .168

Correlations:	R0618600	R0618900	R2349100	R0619010	R2870200	GROUP
D0005400	.1742	-.0875	.1011	-.1221	.0185	.0856
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .040	P= .191	P= .157	P= .111	P= .431	P= .196
D0005800	.2634	-.0950	.1424	.2516	.0432	-.0992
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .004	P= .171	P= .078	P= .005	P= .341	P= .161
D0270200	-.1491	.0192	-.1334	-.1178	-.1478	.9764
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .067	P= .424	P= .092	P= .119	P= .080	P= .000
D0277400	.1966	-.0171	.0733	.1286	.0202	-.5853
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .024	P= .432	P= .233	P= .099	P= .424	P= .000
D0279100	.0889	.0102	.1275	.1654	.1184	-.7034
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .187	P= .459	P= .102	P= .048	P= .130	P= .000
D0280800	.0421	.0753	.1547	.0645	.1440	-.4584
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .337	P= .226	P= .061	P= .260	P= .085	P= .000
D0282500	.0445	.1041	.0845	-.0097	.1412	-.1421
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .328	P= .149	P= .201	P= .461	P= .090	P= .077
D0790800	.1557	.3239	-.2283	.3370	.3476	-.1291
	(99)	(99)	(99)	(99)	(89)	(99)
	P= .062	P= .001	P= .012	P= .000	P= .000	P= .101
D0796500	.0186	-.1632	.3195	-.2125	-.2374	-.0213
	(97)	(97)	(96)	(97)	(88)	(97)
	P= .428	P= .055	P= .001	P= .018	P= .013	P= .418
D0796600	-.0660	-.0194	.1959	-.1077	-.2535	.0599
	(98)	(98)	(97)	(98)	(89)	(98)
	P= .259	P= .425	P= .027	P= .145	P= .008	P= .279
D0796700	.0381	.0511	.2042	-.1332	-.2248	-.0533
	(100)	(100)	(99)	(100)	(90)	(100)
	P= .353	P= .307	P= .021	P= .093	P= .017	P= .299
D0796800	.0252	-.0814	.2891	-.1107	-.1065	-.0679
	(99)	(99)	(98)	(99)	(89)	(99)
	P= .402	P= .212	P= .002	P= .138	P= .160	P= .252

Correlations:	R0618600	R0618900	R2349100	R0619010	R2870200	GROUP
D0796900	.0547	-.2223	.3212	-.2128	-.1503	.0530
	(101)	(101)	(100)	(101)	(91)	(101)
	P= .293	P= .013	P= .001	P= .016	P= .078	P= .299
D0797000	.0462	-.2155	.2216	-.2286	-.0875	-.0644
	(100)	(100)	(99)	(100)	(90)	(100)
	P= .324	P= .016	P= .014	P= .011	P= .206	P= .262
D0797100	-.1060	-.0781	.0975	-.0531	-.1654	-.0227
	(101)	(101)	(100)	(101)	(91)	(101)
	P= .146	P= .219	P= .167	P= .299	P= .059	P= .411
D0799600	-.0225	.3366	.0102	.2962	.2489	-.1712
	(101)	(101)	(101)	(101)	(91)	(101)
	P= .412	P= .000	P= .460	P= .001	P= .009	P= .043
D0799900	-.0063	.2871	-.1580	.0958	.1943	.1377
	(101)	(101)	(101)	(101)	(91)	(101)
	P= .475	P= .002	P= .057	P= .170	P= .032	P= .085
D0800200	-.0172	.1916	-.1834	.0655	.2682	.0315
	(98)	(98)	(98)	(98)	(88).	(98)
	P= .433	P= .029	P= .035	P= .261	P= .006	P= .379
R0618600	1.0000	.1432	.0926	.3006	.1584	-.1498
	(0)	(102)	(101)	(102)	(92)	(102)
	P= .	P= .075	P= .179	P= .001	P= .066	P= .066
R0618900	.1432	1.0000	-.0499	.5684	.3498	-.0037
	(102)	(0)	(101)	(102)	(92)	(102)
	P= .075	P= .	P= .310	P= .000	P= .000	P= .485
R2349100	.0926	-.0499	1.0000	.0437	-.0166	-.1314
	(101)	(101)	(0)	(101)	(91)	(101)
	P= .179	P= .310	P= .	P= .332	P= .438	P= .095
R0619010	.3006	.5684	.0437	1.0000	.3799	-.1259
	(102)	(102)	(101)	(0)	(92)	(102)
	P= .001	P= .000	P= .332	P= .	P= .000	P= .104
R2870200	.1584	.3498	-.0166	.3799	1.0000	-.1457
	(92)	(92)	(91)	(92)	(0)	(92)
	P= .066	P= .000	P= .438	P= .000	P= .	P= .083
GROUP	-.1498	-.0037	-.1314	-.1259	-.1457	1.0000
	(102)	(102)	(101)	(102)	(92)	(0)
	P= .066	P= .485	P= .095	P= .104	P= .083	P= .
GROUPX	-.1593	-.1443	-.2019	-.2977	-.0281	.2684
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .055	P= .074	P= .021	P= .001	P= .395	P= .003
TOTHOURS	.1087	.0636	.1516	.1120	.1505	-.6146
	(102)	(102)	(101)	(102)	(92)	(102)
	P= .138	P= .263	P= .065	P= .131	P= .076	P= .000

Correlations:	GROUPX	TOTHOURS
D0005400	.0283	.0319
	(102)	(102)
	P= .389	P= .375

Correlations:	GROUPX	TOTHOURS
D0005800	-.0025	.0274
	(102)	(102)
	P= .490	P= .392
D0270200	.2580	-.6092
	(102)	(102)
	P= .004	P= .000
D0277400	-.5001	.6212
	(102)	(102)
	P= .000	P= .000
D0279100	-.3538	.8054
	(102)	(102)
	P= .000	P= .000
D0280800	.1120	.8634
	(102)	(102)
	P= .131	P= .000
D0282500	.1092	.6927
	(102)	(102)
	P= .137	P= .000
D0790800	-.0264	.0443
	(99)	(99)
	P= .398	P= .332
D0796500	.1046	.0168
	(97)	(97)
	P= .154	P= .435
D0796600	.0585	-.0419
	(98)	(98)
	P= .283	P= .341
D0796700	-.0337	.0668
	(100)	(100)
	P= .370	P= .255
D0796800	.1184	.0113
	(99)	(99)
	P= .122	P= .456
D0796900	.0941	-.0108
	(101)	(101)
	P= .175	P= .457
D0797000	.0671	.0101
	(100)	(100)
	P= .254	P= .460
D0797100	-.0104	-.0867
	(101)	(101)
	P= .459	P= .194
D0799600	-.0334	.1070
	(101)	(101)
	P= .370	P= .143

Correlations:	GROUPX	TOTHOURS
D0799900	-.0077	-.1679
	(101)	(101)
	P= .470	P= .047
D0800200	.0269	-.0982
	(98)	(98)
	P= .396	P= .168
R0618600	-.1593	.1087
	(102)	(102)
	P= .055	P= .138
R0618900	-.1443	.0636
	(102)	(102)
	P= .074	P= .263
R2349100	-.2019	.1516
	(101)	(101)
	P= .021	P= .065
R0619010	-.2977	.1120
	(102)	(102)
	P= .001	P= .131
R2870200	-.0281	.1505
	(92)	(92)
	P= .395	P= .076
GROUP	.2684	-.6146
	(102)	(102)
	P= .003	P= .000
GROUPX	1.0000	-.1704
	(0)	(102)
	P= .	P= .043
TOTHOURS	-.1704	1.0000
	(102)	(0)
	P= .043	P= .

DESCRIPTION OF VARIABLES:

D0005400	"SEX OF CHILD
D0005800	"BIRTH ORDER OF CHILD
D0270200	"# WKS AF BIRTH CHILD MTHR BEGAN EMP
D0277400	"HR WRKD JOB IN 1ST QRT AF BRTH CHLD
D0279100	"HR WRKD JOB IN 2ND QRT AF BRTH CHLD
D0280800	"HR WRKD JOB IN 3RD QRT AF BRTH CHLD
D0282500	"HR WRKD JOB IN 4TH QRT AF BRTH CHLD
D0790800	"HI PART C (6-9.11): TOTAL RAW SCORE
D0796500	"BEH PROBS IND: TOTAL STAND SCORE-SAME
D0796600	"BEH PROBS IND: ANTISOCIAL STAND SCORE
D0796700	"BEH PROBS IND: ANXIOUS/DEPRESSED STAND
D0796800	"BEH PROBS IND: HEADSTRONG STAND SCORE
D0796900	"BEH PROBS IND: HYPERACTIVE STAND SCORE
D0797000	"BEH PROBS IND: DEPENDENT STAND SCORE
D0797100	"BEH PROBS IND: PEER CONFLICTS/WITHDRAWN
D0799600	"PIAT MATH: TOTAL STAND SCORE
D0799900	"PIAT: TOTAL STAND SCORE
D0800200	"PIAT COMP: TOTAL STAND SCORE
R0618600	"MARITAL STATUS (COLLAPSED) 81

DESCRIPTION OF VARIABLES (CONTINUED):

R0618900	"HIGHEST GRADE COMPLETED AS OF 05/01/81 "
R2349100	"SELF-ESTEEM- I AM A PERSON OF WORTH "
R0619010	"AGE OF R AT INTERVIEW DATE "
R2870200	"TOTAL NET FAM INC PAST CALENDAR YEAR "
TOTHOURS	"TOTAL NUMBER OF HOURS WORKED FIRST YEAR "

APPENDIX G

APPENDIX G

UCRIHS Approval

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

March 12, 1993

TO: Andrea Smith
60 East 28th St.
Holland, MI 49423

RE: **IRB #:** 93-099
TITLE: MATERNAL EMPLOYMENT DURING THE FIRST YEAR OF LIFE AS RELATED TO COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT IN SEVEN YEAR OLD CHILDREN
CATEGORY: 1-B, 1-C
REVISION REQUESTED: N/A
APPROVAL DATE: March 11, 1993

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project including any revision listed above.

UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must seek updated certification. Request for renewed approval must be accompanied by all four of the following mandatory assurances.

1. The human subjects protocol is the same as in previous studies.
2. There have been no ill effects suffered by the subjects due to their participation in the study.
3. There have been no complaints by the subjects or their representatives related to their participation in the study.
4. There has not been a change in the research environment nor new information which would indicate greater risk to human subjects than that assumed when the protocol was initially reviewed and approved.

There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. Investigators must notify UCRIHS promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

If we can be of any future help, please do not hesitate to contact us at (517) 355-2180 or FAX (517) 336-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:pjm

cc: Dr. Robert Boger

BIBLIOGRAPHY

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