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The development and evaluation of a scale to measure maternal self-esteem.

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THE DEVELOPMENT AND EVALUATION OF A SCALE TO MEASURE MATERNAL SELF-ESTEEM

A Thesis Presented

By

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CHAPTER I

INTRODUCTION

Developmental research in the last ten years has documented the importance of early mother-infant interaction for later child development (Brazelton, 1973; Thoman, 1975; Clarke-Stewart, 1973; Ainsworth Bell & Slayton, 1974). The quality of the early mother-infant interaction has been found to correlate with later social and cognitive development (Yarrow, Rubenstein, & Pederson, & Jankowski, 1972; Elardo, Bradley, & Caldwell, 1975).

Recently, methods have been developed which assess the quality of the infant's early animate and inanimate environment (Yarrow et al., 1972), the early interaction between parents and infants (Thoman, 1975) and maternal perceptions of her newborn (Broussard & Hartner, 1971). However, little is currently known about the role of maternal self-perceptions and maternal feelings of competence in the early development of the mother-infant relationship.

The goals of the present study are to investigate maternal self-esteem during the first post-partum month to assess how individual characteristics of the infant, maternal characteristics, and other life circumstances relate to maternal self-esteem. The objective is to demonstrate that even within the context of "normal" newborns and their mothers, individual differences exist in maternal self-esteem which are related to individual differences in maternal experiences and newborn characteristics.

In order to test this hypothesis, a questionnaire was designed to specifically measure maternal self-esteem and its reliability and validity were assessed. Maternal self-esteem in this study refers to a mother's feelings of competence and acceptance of herself as a mother. Additionally, a number of question-naires, assessment measures, and observations were conducted to assess those factors which relate to and may affect maternal self-esteem.

In the following introduction, I will: (1) review the clinical literature concerning the importance of maternal self-esteem to child development and maternal adaptation; (2) identify those factors which are hypothesized to comprise maternal self-esteem; (3) discuss the composition of the maternal self-esteem questionnaire, and (4) discuss those factors which are expected to relate to and modify maternal self-esteem.

Maternal Adaptation and Maternal Self-Esteem

To assess the influence of early mother-infant interaction on later child development, one must first consider the processes involved in adapting to the role of motherhood. Although there has recently been a plethora of research concerning the role of the mother in her child's development (Schaffer, 1977; Stern, 1977), there has been relatively little empirical investigation concerning how a woman adapts to her new role as "mother" and how a mother copes with problems concerning this adaptation period. Most of the theories concerning the psychological issues of pregnancy and mothering have been derived from clinical theories (Bibring, 1959). According to these theories,

motherhood is viewed as a developmental process whereby a woman must continually adjust to and adapt to each new stage in the mothering process, including preg-nancy, birth and child rearing (Bibring, 1959). The way in which a mother will adapt to these new roles is determined by many factors, including her past experiences with her own parents, her family support and relationship with the baby's father, societal expectations, her physical health and her intellectual abilities to name a few (Kennell, Trause, & Klaus, 1975).

For some women, the role of motherhood is seen as a "maturational crisis" which involves a dramatic upheaval of psychological processes (Bibring, 1959). Bibring found that such a crisis can result when the new demands of the motherhood role force a woman to give up former integral needs and ways of living, and accept new goals and behaviors for which she is not yet prepared. Brazelton (1976) reported that primiparous mothers frequently have feelings of resistance to becoming parents, which often lead to fears of inadequacy in facing their new roles of readjustment to new life styles and emotional demands with a new infant. He conducted prenatal psychoanalytical interviews with normal healthy primiparous women and found high levels of anxiety, suggesting great pathology. Results of the interviews left him feeling worried about these women and their capacity to adapt to the role of motherhood. Yet when seen again after delivery, it was found that this anxiety had "become a force for reorganization, for readjustment to an important new role" (Brazelton, 1976). To quote Brazelton:

> "...the shakeup in pregnancy as readying the circuit for new attachments; as preparation for the many choices which she must be ready to make in a very

> short, critical period; as a method of freeing her circuits for a kind of sensitivity to the infant and his individual requirements which might not have been easily or otherwise available from her earlier adjustment. Thus, this very emotional turmoil of pregnancy and of the neonatal period can be seen as a positive force for the mother's healthy adjustment and for the possibility of providing a more individualizing, flexible environment for the infant" (Brazelton, 1974).

Other research and clinical psychologists have expressed agreement with these findings see for example, Shereshefsky & Yarrow, 1973; Brody, 1956; Mahler, Pine, & Bergman, 1975).

While pregnancy is thus recognized as a time of normal anxiety and "psychological turmoil," a mother's ability to adapt to her role as "mother" and deal with this developmental crisis will affect her attitude toward her infant. Many mother's experience a feeling of euphoria after delivering their baby, and if the baby is healthy, they quickly adjust to their new role, and feel confident in this new role. However, this is not always the case.

> "In a number of cases, reorganization of the psychic equilibrium has not yet taken place when the woman is confronted with the reality of the newborn and the further demands this places on her. These disturbances in the earliest attitudes of the mother to the newborn baby may lead to the establishment of a vicious cycle in the form of mutually induced negative reactions of frustration and rejection between the mother and the child, and finally result in the well-known chronic malformation in this relationship (Bibring, 1959).

As Cohler, Weiss, and Grunebaum (1970) have indicated, the mother's manner of dealing with this developmental crisis will not only affect her attitude towards her infant, but will also affect the child's development and the mother's continued development.

There are many events occurring during and immediately following pregnancy which can have a profound effect on the expectations of motherhood and the mother's feelings of self-esteem. Winnicott (1971), in his analysis of the significance of early mother-infant interactions, has emphasized the importance of a mother feeling secure in her own ability in order to provide security and physical and emotional nurturance for her infant.

It is clear then that the process of adaptation to motherhood requires a special period of adjustment. It is hypothesized in the context of this study, that it is through maternal self-esteem that the effects of a host of factors affecting maternal adaptation are mediated and that maternal self-esteem is the psychological final common pathway for those factors. It also appears that there are specific feelings which comprise maternal self-esteem which are unique to this period of adaptation and which differ from those factors which comprise a person's feelings of general self-esteem (Epstein, 1979c).

Factors Comprising Maternal Adaptation and Feelings of Self-Esteem

General self-esteem has been found to be a relatively enduring characteristic, while more specific self-evaluations of behavior are often more transitory and related to specific situations and conditions (Coopersmith, 1967). "Self-esteem may vary across different areas of experience and role-defining conditions" (Coopersmith, 1967). So, for

example, a woman could rate herself as being high in self-esteem concerning her perception of herself as a student, but at the same time rate herself as being low in self-esteem concerning her perception as a mother (or athlete or career person).

As Epstein (1979b) has stated, "The overall findings indicate that self-esteem is both unified and differentiated, and has wide ramifications for general functioning."

It has been found that specific evaluations of self-esteem are more transitory and related to specific situations. Epstein (1979b) conducted a study in which he examined common antecedents and correlates of changes in self-esteem of college students. Stimulus situations which were found to frequently precede increases in self-esteem were successes in difficult undertakings, the development of love relationships, new social roles, and situations forcing them to assume greater autonomy and responsibility. The birth of a healthy newborn baby frequently subsumes all of these stimulus situations and thus it would seem that many women may experience increases in self-esteem following delivery of a healthy baby.

On the other hand, stimulus events which were found to frequently precede decreases in self-esteem included exposure to a new environment, demonstration of inadequacy, immoral behavior, being negatively evaluated, being rejected by a loved one, death of a loved one, disturbed love relationship, loss of group affiliation, and introspective negative self-assessment. The experience of delivering a baby and adapting to the role of mother could also create such stimulus events,

and thus it is equally likely that this experience could cause negative changes in a mother's self-esteem. In summary, the experience of becoming a mother and caring for a newborn is a significant and dramatic change in one's life, and as such is likely to have an affect on one's self-esteem as a mother in either a negative or a positive direction.

While the importance of maternal self-esteem has been espoused by many psychologists, obstetricians, pediatricians and nurses, to date there exists no comprehensive tool for assessing maternal self-esteem. The first task of this proposed study was to devise such an instrument. In order to do this, variables which might possibly comprise maternal self-esteem had to be identified. Leifer (1977), Shereshefsky and Yarrows (1973), Greenberg and Hurley (1971), Blau, Slaff, Easton, Welkowitz, Spingain, & Cohen, (1963), Schaefer and Bell (1958), and Cohler et al. (1970) have all provided in depth accounts of the feelings and attitudes of mothers toward pregnancy and motherhood. Their descriptions of maternal feelings and attitudes are based on years of observation, clinical interviews with mothers and data from questionnaires designed to identify and assess the critical factors comprising maternal adjustment toward motherhood. Based on this literature, a number of dimensions of maternal attitudes and feelings have been identified by the present author which are predicted to be related to maternal self-esteem. All of these dimensions, besides having good face validity as components of maternal feelings of competence, have been found by many researchers to be related to successful adaptation to motherhood, as well as to infant development. These

factors are: (1) maternal caretaking ability; (2) general ability as a mother; (3) acceptance of the baby; (4) expected relationship with the baby; (5) complications during labor and delivery; (6) parental influence, and (7) body image and maternal health. These seven factors will now be explored in more depth.

Caretaking ability. Leifer (1977) found that a mother's beliefs about her adequacy were tied to such events as ability to nurse successfully and calm her baby. During pregnancy and immediately following delivery, a mother typically must make a decision as to whether or not to breast-feed her baby. In making this decision, a mother must consider her own needs, fears, and ability to meet the demands of her baby. For some mothers the choice is a very easy one, particularly when she receives paternal and/or familial support for her decision. However, for other mothers who choose to breast-feed but fail to be able to continue or for mothers who feel pressured to breast-feed against their own desire, this experience can lead to feelings of failure and inadequacy in the mothering role (Coopersmith, 1967; Brazelton, 1976). Also, Seashore, Leifer, Barnett, & Leiderman (1973) devised a paired comparison questionnaire which was used to assess maternal self-confidence. On this questionniare, mothers were asked to compare themselves to five other possible caretakers (father, grandmother, experienced mother, pediatric nurse, and doctor). Comparisons were made on six caretaking tasks, three of which were classified as instrumental and the other three social. The three instrumental tasks were feeding the baby, bathing the baby, and diapering the baby. The

three social caretaking tasks were showing affection to the baby, holding and calming the baby, and understanding what the baby needs. Seashore et al. (1973) found that these two measures, social and instrumental caretaking tasks correlated very highly ($r = .80$). Additionally, Schaefer and Bell (1958) have suggested that mothers who were more irritable with their infants were less confident in their mothering ability. Greenberg (1979) found that mothers of handicapped infants who had very low self-esteem also felt as though they may be potentially dangerous or harmful to their infant. They reported not trusting their own parenting capacities.

General ability as a mother. Schaefer and Bell (1958) have data which suggest that a mother's enjoyment and pleasure in caregiving is related to how confident a mother is in her over-all ability to care for her child. A mother's over-all ability to care for her child differs from one's caretaking ability in that it comprises feelings concerning more general competence in assuming and fulfilling the responsibilities of being a mother, such as being there when needed, teaching one's child all that he/she will need to learn, and assuming the responsibilities of being a loving and caring parent. Additionally, they found that a mother's acceptance or rejection of her role as a mother and her feelings about sacrificing personal time and activities were strongly related to maternal expectations of her abilities. Blau et al. (1963) suggested that a mother's perception of her ability to provide unique contributions to her infant's development and to teach her infant important new tasks, is related to her feelings of competence.

Additionally, as was referred to earlier, mothers normally experience some anxiety and apprehension concerning all the responsibility which they must assume as mothers of newborn infants. But as Bibring (1959) and Brazelton (1976) have suggested, the mother's ability to cope with these feelings and adjust to this new developmental crisis is strongly related to how she feels about her ability to care for her infant. Thus, maternal feelings of anxiety, depression and emotional preparedness for mothering appear to be factors comprising maternal self-esteem. It is expected that these self-appraisals are basic to mothers' beliefs about their general competence.

Acceptance of the baby. During pregnancy, an expectant mother evaluates her capacities to be a mother. This generally includes visualizing what the baby will look like, what the sex of the infant will be, and whether or not the baby will develop normally. Brazelton (1973) has suggested that the mother's ability to adjust her expectations and fantasies of the baby she expected to her infant is important if the mother is to adapt positively to her new role and to her infant. It is expected that the mother's acceptance of and happiness with the characteristics of her infant will influence her feelings of competence as a mother. Greenberg (1979) found that mothers whose expectations of the "wished-for" infant were not realized, had very low self-esteem. Mothers who viewed their infant as a negative extension of themselves also had low self-esteem. Additionally, Berger (1952) found that expressed acceptance of self is positively correlated with

expressed acceptance of others. It may be that mothers who have negative feelings towards themselves will also express negative feelings toward their infant.

Expected relationship with baby. Another aspect of maternal adaptation which is thought to comprise a mother's feelings of competence is her expected relationship with her baby. Benedick (1949) suggests that "the capacity of the mother to receive from the child, her ability to be consciously gratified by the exchange and to use this gratification unconsciously in her emotional maturation is the specific quality and function of motherliness." He goes on to suggest that a mother who finds fulfillment and gratification in interacting with her infant and developing a close and mutual relationship with her infant, will then develop more confidence in her mothering ability and fulfillment in her role as a mother. Greenberg (1979) based on clinical interviews found that parental self-esteem was not only related to the mental image of the "wished-for-infant", referred to above, but was also closely tied to the parental "wished-for" relationship with the infant. Additionally, Greenberg found that mothers who devalued themselves or their infants also had very low self-esteem.

Feelings during pregnancy, labor, and delivery. Research which has assessed the influence of a mother's initial desire to have an infant on her later ability to adapt to her mothering role, has reported conflicting results. A study mentioned earlier by Bibring (1959) and a more recent study by Davids (1968) indicate that mothers who initially did not want to get pregnant later frequently had

disturbed relationships with their infants. However, Seashore et al. (1973) tested the relationship between self-confidence and mothers' initial desire to have an infant and reported no significant relationship. The subjects in the Seashore et al. study were all from middle-class intact families, so that social and economic problems concerning unplanned pregnancies of a single mother were not encountered.

It has been reported that mothers who have experienced very difficult labor or who have required large amounts of anesthesia and sedation, often experience a lag in the development of "mothering" attitudes (Blake, 1954). Benedek (1949) found that many mothers reacted to very long and difficult labor with depressive symptoms which produce withdrawal from the child. Others become rejecting toward the baby and perceive the child as the person responsible for the unacceptable feelings within them.

More recently Grunebaum, Weiss, Cohler, Harman, & Gallant (1975) have found that complications during delivery such as breech presentation, the need for high forceps and anoxia produce maternal feelings of guilt and inadequacy. In the past few years, researchers have also begun investigating the ramifications of Caesarean Section delivery on both infant development and maternal adaptation. Although various methods have been used to assess maternal adaptation following a Caesarean Section delivery, the findings indicate that there is a high incidence of maternal depression, anxiety, and negative feelings toward pregnancy following a Caesarean Section, particularly an unexpected Caesarean Section Delivery (Grossman, 1980; Field & Widmayer, 1980; Pederson, Zaslow, Cain, & Anderson, 1980).

Deutsch (1945) and Brody (1956) have discussed at length the process whereby the mother's "instinctive forces" and maternal feelings in response to her infant pull her out of this blue period and allow her to develop a positive relationship with her infant. However, as the above research indicates, this is not always the case and the mechanisms which the mother uses to overcome this depression are not clearly understood.

Parental acceptance. Another variable which has been found to contribute to one's feelings of competence and self-esteem are feelings of parental acceptance and love (Rosenberg, 1979). Benedek (1949) emphasized the effect of childhood events and experiences such as one's own mother-child relationship and the woman's identification with her own mother, on subsequent mothering. Davids (1968) found that mothers who had not yet resolved their negative attitudes toward childrearing later had frequent problems in their relationships with their own children. Ricks (1981) found that mothers of securely attached infants evaluated their relationship with their parents as significantly more accepting and supportive than mothers of unsecurely attached infants. Additionally, Ricks found that mothers of securely attached infants had significantly higher self-esteem than mothers of insecurely attached infants. However, no correlation between parental acceptance and self-esteem was mentioned in this study.

Psychoanalytically oriented research (Blau et al., 1962; Mahler et al., 1975) has indicated that in preparing for the experience of motherhood, women frequently reflect back on their experiences with

their mothers and evaluate their ability as mothers in relation to their own parents. Given this heightened awareness of a mother's relationship with her mother, it is quite possible that this affects her perception of her own ability to be a good mother.

Body image and health after delivery. Body Image has been found to be closely linked to one's feelings of self-esteem (Rosenberg, 1979). In a factor analysis of his Self-Report Inventory, Epstein (1979a) found that Physical Appearance was a relatively pure measure of self-esteem. Satisfaction with physical appearance correlated very strongly with General Self-Esteem. Satisfaction with body functioning as defined by resistance to illness or by physical ability was not strongly related to General Self-Esteem in the college student population of the Epstein study. However, it is expected that as women go through such dramatic changes in physical appearance as well as bodily functioning, during and after their pregnancy, it is quite likely that these bodily changes will affect her self-concept. Additionally, Blau et al. (1963) found that two factors which were related to maternal adaptation were a feeling of looking well before and after pregnancy and a lack of concern about one's post-natal figure.

In summary, based on the above discussion, seven primary components of maternal self-esteem were identified. These seven primary components included: (1) caretaking ability (i.e., caring for the physical and social needs of the infant); (2) a general factor of ability and preparedness for the mothering role; (3) acceptance of the baby; (4) expected relationship with the baby; (5) feelings concerning

pregnancy, labor and delivery; (6) parental influence, and (7) body image and health after delivery. The first four of these primary components (i.e., caretaking ability, general ability as a mother, acceptance of the baby and expected relationship with the baby) are very closely related to each other and expected to correlate highly with each other. However, it is expected that they each measure a distinct component of maternal self-esteem.

Development of the Maternal Self-Report Inventory

With these seven primary conceptual dimensions identified, a large number of self-report items were written for each dimension aimed at revealing how a mother rated her own feelings concerning each of the dimensions. These questions were then all included in a self-report inventory on maternal self-esteem entitled the Maternal Self-Report Inventory (MSI).

In designing the MSI, several issues were considered. Previous research on mother-infant relationships investigated the attitudes of parents toward their children. Negative parental attitudes were assumed to cause social and cognitive problems for their children in later childhood. A number of scales were developed for the purpose of assessing parental attitudes (Schaefer & Bell, 1958; Cohler et al., 1970; Levinson & Huffman, 1955). Parental "attitude" scales assess attitudes toward childrearing, such as appropriate vs. inappropriate control of childhood aggression, acceptance vs. denial of emotional complexity in childrearing (Cohler et al., 1970), attitudes toward

dependency/independency, punishment, communication with children (Schaefer & Bell, 1958).

Although these measures may be valid indicators of how a parent feels his/her children should be raised, the scales have not been predictive of later child behavior. One reason for the inability of these scales to predict later child behavior is that the scales cover too broad an age range and do not account for the developmental capacities of the child, which will determine to some degree relevant parenting attitudes and behaviors (Cohler et al., 1970). The other more salient reason is that these scales do not take into consideration how a child's individual characteristics can alter caretaking practices. While a parent may espouse one set of attitudes toward childcare, their actual behavior and responses to two different children may vary greatly.

Another problem with parental attitude scales is that they ask a parent to rate statements concerning what parents should and should not do (i.e., "If a child has upset feelings, it is best to leave him alone and not make it look serious" (Schaefer & Bell, 1958)). This format has two problems: (1) that particular method of childrearing may be appropriate for one child in the family, but not for another, but the parent can only agree or disagree in general practice, and (2) the questionnaires do not directly ask the parent how she/he feels about the statement (i.e., I think...), and so is susceptible to having parents respond with answers which they think are approved childrearing attitudes.

In designing a scale to assess maternal self-esteem, questions concerning appropriate vs. inappropriate methods of child-rearing were not included. It was hypothesized that how a mother feels about herself, her baby, and her ability to care for this baby, will be more important features in assessing maternal competence.

All items are written in the first person and mothers were requested to indicate on a Likert scale how accurately each statement described how they felt by circling the answer which best expressed the degree to which the statement was true for her. Some of the items on the scale were modified versions of items from questionnaires concerning Child Rearing Attitudes (Schaefer & Bell, 1958), Maternal Attitudes Toward Pregnancy (Blau et al., 1963), The Maternal Personality Inventory (Greenberg & Hurley, 1971) and a structured interview designed to assess maternal adaptation (Barnard & Gortner, 1977). A total number of 100 questions are included in the Maternal Self-Report Inventory. Items from the seven dimensions were randomly intermixed throughout the scale. Additionally, an equal number of positive and negative items were written for each dimension and randomly dispersed throughout the questionnaire in order to avoid response sets. (See Appendix B for full scale version of the MSI.)

On the Caretaking Dimension of the MSI, questions were included to assess the possible conflicts concerning the decision to breast feed, ability in various caretaking tasks such as bathing and diapering, ability to show affection to the baby and to hold and to calm the baby. Questions were also included under this dimension concerning how irritable a mother expected she would feel in response

to a crying baby. For the dimension of General Ability As A Mother, questions were devised that measure more global feelings of maternal competence. The dimension of Acceptance of Baby is comprised by questions designed to measure the mother's pleasure with the sex and appearance of her infant and her confidence that her infant will grow and develop normally. In order to measure a mother's expectation of her relationship with her infant, both her ability to develop a loving relationship with the baby, and expectations about the baby loving her, questions were devised and included in the Expected Relationship with the Baby Dimension. Questions concerning maternal attitudes toward pregnancy, labor and delivery were devised to tap these feelings and see how they contribute to maternal self-esteem under the dimension of Complications During Pregnancy, Labor, and Delivery. In order to assess a mother's feelings of parental acceptance, questions were designed as part of the MSI. Finally, to assess the dimension of Body Image and Health After Delivery, questions were written to measure feelings about post-natal appearance, health and energy. Appendix A presents the seven dimensions and questions devised for each dimension.

Evaluation of Validity of MSI

In order to assess the validity of the Maternal Self-Report Inventory it will be necessary to evaluate both the concurrent and the construct validity of the scale. A scale can be said to have concurrent validity in the extent to which it correlates with another concurrently obtained criterion also purporting to measure self-esteem. The construct validity of a scale can be demonstrated by examining the

correlations between the scale and those independent variables which are theoretically expected to correlate with maternal self-esteem. The bases for the evaluation of concurrent and construct validity will be presented next.

Concurrent validity of the MSI. In order to assess how maternal self-esteem relates to general self-esteem, the MSI questionnaire was combined with questions from Self-Report Inventory developed by Epstein and O'Brien (1976). This scale was designed for use in previous research and has been demonstrated to have a high degree of construct validity (Epstein, 1976).

Thus, in the proposed study, mothers will be assessed according to their general level of self-esteem using a shortened version of the Epstein-O'Brien Self-Report Inventory (1976), as well as being assessed on their level of maternal self-esteem or perception of what type of mother they are or will be, using the Maternal Self-Report Inventory. In order to assess the concurrent validity of the Maternal Self-Report Inventory, the correlations between the Epstein-O'Brien Self-Report Inventory and the MSI will be investigated. Additionally, observer ratings of maternal self-esteem will be correlated with MSI scores to assess the concurrent validity of the scale.

Some mention should be made in defense of the use of a self-report measure to assess maternal self-esteem. Self-report measures, in general, have been criticized for being poor predictors of objective behavior measured in laboratory situations (Mischel, 1968). Epstein (1979c) has pointed out that in many of the studies which found

low correlations between self-report measures and laboratory measures, it was the laboratory measures which were unreliable, not the self-report measures. He points out that self-report measures have been found to correlate highly with repeated samples of observations of the behavior being measured (Epstein, 1979c). Coopersmith (1967) reports that self-attitudes are usually (90% of the time) integrated and directly related to behavior, and only rarely (10% of the time) represent defensive attitudes. Of primary interest in this study is how a mother evaluates her own self-worth, and not how she is evaluated according to other's criteria of satisfaction, competence, or ability. As Coopersmith (1967) has pointed out, "self-evaluation is a judgemental process in which an individual examines his performance, capacities, and attributes according to his personal standards and values, and arrives at a decision of his own worthiness."

Construct validity of the MSI. The construct validity of the scale will be demonstrated by: (1) examining the internal validity of the scale; (2) the homogeneity of the construct of maternal self-esteem, and (3) examining the relationship between MSI scores and variables which would be expected to correlate with maternal self-esteem.

There are many factors which may affect a mother's feelings of competence including maternal experiences, infant characteristics and other life circumstances. After an extensive review of the literature concerning maternal adaptation and infant development, a number of variables were identified which are hypothesized to be related to maternal self-esteem. In the following section, those variables

which are expected to relate to Maternal Self-Esteem will be discussed.

The health and physical appearance of the infant. Researchers (Rose, Boggs, & Alderstein, 1960; Kennell & Rolnick, 1960) have found that even relatively mild and very temporary illnesses (which separate the mother and infant following delivery) have long lasting effects on the mother's behavior which can disturb the mother-infant interaction. Typical reactions reported in such cases include feelings of emotional emptiness, anger, anxiety and "post-partum blues" (Blake, 1954). Often these feelings drain mothers of their energies needed for caretaking and developing a relationship with the infant.

One particular health complication frequently encountered is a feeding problem during the newborn period. As was mentioned earlier, problems encountered with breast feeding have been found to be related to maternal feelings of failure and incompetence (Coopersmith, 1967; Brazelton, 1976). So, besides assessing maternal feelings concerning feeding methods on the MSI, problems encountered concerning feeding will be recorded and the relationship of such problems with the MSI examined. It is hypothesized that mothers who encounter feeding problems with their infants will have lower Maternal Self-Esteem than mothers who do not encounter infant feeding problems.

There have been many studies, based on clinical observations and interviews, which have reported feelings of anxiety, guilt, incompetence, and failure experienced by mothers after delivering an infant prematurely (Mason, 1963; Klaus & Kennell, 1976; Caplan, Mason, & Kaplan, 1965; Kaplan & Mason, 1969; Prugh, 1953). "The birth of a

premature infant is a severe blow to the mother's self-esteem, mothering capabilities, and feminine role. It is conceived of as a loss of body part, an insult to her bodily integrity, and a sign of inner inferiority" (Klaus & Kennell, 1976).

These feelings of inadequacy and failure are reportedly even more dramatic when an infant is born with a congenital anomaly or a chronic disease (Greenberg, 1979). Mothers are reported to perceive the infant as representing "the defective or bad part of the self" (Greenberg, 1979). Often mothers of a premature or handicapped infant are unable to care for the baby, which heightens feelings of failure and causes the mothers to withdraw even more from their infants. This often results in the development of abberant relationships between mother and infant, which only reinforces the mother's feelings of failure and inadequacy, and often can lead to cases of maternal deprivation and child abuse or neglect (Klaus & Kennell, 1976).

Analysis of this problem of maternal guilt, anxiety and inadequacy and consequent disturbed mother-child relationship has relied strongly on the psychoanalytical concept of narcissism (Greenberg, 1979; Klaus & Kennell, 1976). "Narcissism is the investment of love and interest in the self-image, the body and its contents. Although this form of love is centripetal, directed towards the self, other currents of love are centrifugal, directed towards people and the external world. This is object love" (Klaus & Kennell, 1976).

Bibring, Dwyer, Huntington, & Valenstein, (1961) in an attempt to further understand the relationship between a mother and her premature infant, developed a theory of narcissistic injury. Such an injury

causes lowered self-esteem and difficulty accepting and adapting to the birth of an infant born prematurely. However, it is the hypothesis of this author, that feelings of failure and continued feelings of lowered self-esteem need not necessarily be explained solely by this theory. Rather, despite this possible initial narcissistic injury, the development of maternal self-esteem will largely depend on the mother's success in interacting and caring for her infant. In general, the more competent infant will facilitate caretaking decisions and provide more feedback cues and rewards for the mother. An infant who is behaviorally less competent is more difficult to care for and creates more problems for the caretaker. It is thus expected that as the premature infant matures and becomes more responsive to the mother's caretaking, the mother's feelings of competence and self-esteem will in turn increase.

Although this analysis was not specifically stated in the above mentioned studies (Bibring et al.,1961; Greenberg, 1979; Klaus & Kennell, 1976), analysis of the cases presented clearly indicated that the restoration of a positive mother-infant relationship and positive maternal self-concept only began after the mother became more proficient at understanding her baby's cues and needs and was able to satisfy those needs. Such experiences will reinforce a mother's feeling of competence in her mothering capacity and further reinforce the infant's competence at communicating with his/her mother.

Handicaps which most seriously and obviously interfered with the infant's ability to provide the necessary cues to elicit maternal responses (such as cleft palate and lip, and cataracts) interfered most negatively with a mother's feelings of competence. Intervention

which focused on teaching parenting skills, helping parents to focus on positive qualities of their infant's behavior and sharing their concerns with others appeared to be most successful in restoring maternal confidence and a positive relationship between mother and infant (Blake et al., 1975).

Research concerning infants diagnosed as "failure-to-thrive" further supports the hypothesis that a mother's ability to successfully adapt to her "mothering" role is influenced by the health and behavior of her infant (who is in turn influenced by his mother's own feelings of competence). Researchers of this problem frequently report mothers of failure-to-thrive infants lacking in self-esteem and additionally being unable to assess their infants' needs and their own worth to their infants (Barbaro, 1968; Leonard, Rhymes, & Solnit, 1966; Coleman & Provence, 1957; Fischhoff, 1975). All of the above mentioned studies were conducted retrospective to the infant's diagnosis, and assessment of maternal adaption relied on clinical impression. Statements concerning cause and effect can not be made from such studies. However, it is apparent that the infant's health, physical appearance, and weight contribute to a mother's ability to adapt to her newborn and develop a feeling of competence in her "mothering" role.

Separation of mother and infant. Another factor which has been demonstrated to disrupt the early relationship between a mother and her infant is prolonged separation during the first weeks following birth (Barnett, Leiderman, Grobstein, & Klaus, 1970; Liefer, Leiderman,

Barnett, & Williams, 1972). Seashore et al., (1973) in a more empirically controlled study, investigated the effects of separation on the self-confidence of mothers of premature infants. They hypothesized that mothers who were permitted early con-tact with their infants would have more self-confidence in their mothering ability than mothers who were denied early contact.

To date, this study is the only one in which maternal self-confidence was assessed through the use of a measurement tool as opposed to assessed through clinical impressions. Seashore et al. (1973) constructed a paired comparison questionnaire in which a mother had to compare herself and five other possible caretakers. Mothers were also rated on their level of self-confidence during interviews. One group of mothers was denied physical interaction with their premature infants, while the other group, the contact group, was allowed to care for their premature infants in the hospital nursery during the first weeks following birth. By controlling for prematurity, Seashore et al. (1973) were trying to focus solely on the effect of separation on self-confidence, rather than the experience of delivering a premature baby, birth weight and the physical condition of the baby.

Mothers in the separation group demonstrated significantly lower self-confidence (fewer choices of self) for primiparous mothers but not for multiparous mothers. However, disregarding parity, mothers who were initially low in self-confidence and were in the separation group, were more likely to maintain low self-confidence than mothers

in the contact group. However, even for multiparous mothers, separation had a negative effect on those who were initially low in self-confidence.

In analyzing their results, Seashore et al. emphasize the importance of early contact in order to assist a mother, who may be initially uncertain of her ability to fulfill her "mothering" role, in developing and strengthening her maternal feelings. A mother who has previously cared for an infant of her own is more secure in her mothering ability and can use this past experience to bolster her self-confidence. However, a primiparous mother may feel more biologically and socially incompetent. Their study also demonstrated that initial feelings of incompetence and inadequacy alone cannot account for later low self-confidence.

Although this study indicated the importance of early interaction between mother and infant in aiding mothers who are at risk for developing attachment and interaction problems, the major limitation of the study is that it did not take into account the effect the infant's behavior actually had on altering a mother's self-confidence. A more valid analysis of this relationship must consider the effect of the type and quality of contact between mother and infant on the mother's self-confidence and the infant's development. If a mother's contact with her infant is typically disconcerting (i.e., the mother is unable to soothe an irritable infant) then the experience is likely to become negatively reinforced as the mother receives negative feedback on her ability to care for her infant. As Sroufe and Waters (1977) have clearly demonstrated with older infants, it is the quality

of the reciprocal interaction between mother and infant which is of importance for social development, not the frequency. This is an hypothesis which this proposed study plans to test. Additionally, this study plans to examine the effect of even brief separations on a mother's feelings of competence. It is hypothesized that even brief separations will have a negative effect on maternal self-esteem.

Newborn characteristics--their effect on mother-infant interaction and self-esteem. In recent years, the model of the infant's social and cognitive world has undergone important changes as research has revealed that infants have sophisticated cognitive and sensory capacities and play an active role in structuring and adapting to the environment. Research concerning mother-infant interaction no longer focuses solely on the effects of maternal attitudes and caretaking on the infant, but focuses on the role of the infant in affecting the interaction, and how maternal characteristics and infant characteristics affect each other (Sameroff, 1976; Bell, 1971).

Previous research has found that infant characteristics such as sex (Moss, 1967), age (Lewis, 1972b), birth order (Thoman, Turner, Leiderman, & Barnett, 1970) and gestational age (Field, 1977) affect the mother-infant interaction. In regard to infant sex, Seashore et al. (1973) found that infant sex did not predict maternal self-confidence. However, all of the infants in Seashore et al.'s study were premature and it is possible that this infant health risk may have obscured the effect of infant sex. The literature concerning the effect of newborn sex on mother-infant relationships has found differences in how mothers interact with male infants vs. female infants. For example, mothers

tend to verbalize more to female infants and spend more time holding male infants (Moss, 1967). Additionally, Lewis (1972a) reports that the first characteristic of the infant attended to by parents, is the infant's sex, even more so than physical health. In the present study, the sex of the infant will be assessed in relation to maternal self-esteem, but no significant differences are expected to be found.

The competent infant has been defined by Goldberg (1977) as one who can elicit responses from the environment, provide "readable" cues of his/her needs, and respond contingently to his/her environment. More specifically, Goldberg (1977) states "A competent infant is one who sucks and roots efficiently, alerts to stimulation, selects what he or she will or will not respond to, modulates states of arousal and cries loudly when uncomfortable."

Recent research has demonstrated that habituation patterns, newborn alertness, cuddliness, irritability, activity levels and responsiveness to stimulation effect the mother-infant interaction (Brazelton, 1974; Goldberg, 1977; Field, 1977). These behaviors serve to elicit caretaking responses from the mothers. Variations of these behaviors, either within the same infant over time or between different infants, will effect the interactive behavior of the mother (Brazelton et al., 1975). For example, newborns differ in their capacity to receive and shut-out various stimuli. They also differ in their ability to demonstrate responsive behavior which will elicit attachment behavior from the mother. This research then supports the shift

in focus from only studying the effects of stable individual differences (such as sex, birth order), to investigating the effects of the infant's social competence on the mother-infant interaction.

In 1973, Brazelton developed the Neonatal Behavioral Assessment Scale (NBAS), designed to evaluate newborn neurological maturity and behavioral responsiveness. The four major clusters of behavior measured by the exam are interactive capacities, motoric capacities, organizational capacities, and physiological responses to stress (Tronick & Brazelton, 1975). This exam is the most widely used scale for assessing newborn behavior and development. It has been used for a number of different purposes including: (1) with normal full term infants to predict "easy" or "difficult" to care for babies; (2) to identify premature infants who have suffered neurological insults from those who have not (Sostek, Quinn, & Davitt, 1979); (3) to assess the effect of medication, given mothers during delivery, on the infant's behavior (Tronick, Wise, Als, Adamson, Scanlon, & Brazelton, 1976); (4) to study disturbed interactions of mothers with high risk infants (Brown, 1975), and (5) to assess the behavior of infants born addicted to heroin (Strauss, 1975). In these studies, the NBAS has been used as a predictor of the infant's competence in eliciting caregiving from his/her environment.

Osofsky and Danzger (1974) conducted a study concerned with investigating the relationships between neonatal styles, as assessed by the NBAS, and the early mother-infant relationship as assessed by an observation during feeding. They observed 51 non-white mothers and their 3 day old infants and found: (1) consistencies in infant states

and behavioral styles during the individual exams and in the interaction situations, and (2) consistencies in infant styles and patterns of behavior with mother's styles and patterns of behavior. Infants who were alert and responsive to social stimulation during the NBAS, were also alert and responsive to maternal stimulation and tended to have mothers who were attentive and responsive to their needs. They concluded that styles of mother-infant interaction are established very early, during the first few days, and newborns do contribute to the patterning and style of mother-infant interaction. However, the direction of influence (i.e., infant influencing maternal style or maternal style influencing infant behavior) can not be determined from these results.

Interactive deficits among infants who appear physically normal, but who have suffered neurological damage, have predicted later interaction disturbances. Prechtl and Beintema (1964) found such infants elicited frustration, anger, and rejection from their parents even before the infants were diagnosed with neurological problems. This finding lends support for the hypothesis that impairment of the infant's normal eliciting and feedback mechanisms alters the mother's behavior and affect.

To further test this hypothesis, Field (1980) assessed mother-infant interaction with two groups of infants at risk: (1) the premature group who had interactive deficits as assessed by the Brazelton Exam but were not separated from their parents, and (2) the premature group who had interactive deficits as assessed by the Brazelton Exam but were separated (from 4 to 8 weeks) from their parents during

hospitalization. Interactive deficits included a lack of responsiveness to social stimuli, lack of cuddliness, being difficult to console, and either hypertonicity or hypotonicity. Infant interactive deficits predicted to disturbed mother-infant interactions for both groups. Such disturbed interactions were typified by overactive and intrusive behaviors on the mother's part, fussing and squirming behavior on the infant's part, and mutual gaze aversion during feeding. Field (1980) discussed the circular process going on whereby "the infant's inattentiveness seems to evoke overactivity on the part of the parents which is counterproductive, in as much as it elicits more of the same inattentiveness."

Premature infants have been found to be generally less socially competent at birth and for the first few months following delivery (Lester, Emory, Hoffman, & Eitzman, 1976). Specifically, they demonstrate poorer motor development, less responsiveness to stimulation and are less alert as measured by the NBAS (Leiderman et al., 1973; Lester et al., 1976; Brown & Bakeman, 1978). Divitto and Goldberg (1980) found significant differences in both neonatal behavior and mother-infant interaction during feeding, among infants who had medical problems associated with prematurity and those who did not. They found that the fewer the medical problems the baby had, the more apt the baby was to be alert and socially responsive. Consequently, infants with fewer medical problems had significantly better interactions with their mothers during feeding observations. In addition, infants who were alert and responsive to stimulation during the

Brazelton exam were also more likely to be alert and to look at their parents during feeding, which thus facilitated caretaking.

This study clearly documented the effect of newborn behavior on the development of the mother-infant interaction. Divitto and Goldberg further hypothesized that as the newborn's medical problems increased, maternal self-confidence would decrease as the sick newborn is less capable of providing experiences which will enhance maternal self-confidence. No measures of self-confidence were taken or reported and so this hypothesis still needs to be further verified with empirical data. However, the model proposed by Goldberg, that good mother-infant interactions will be facilitated by high levels of maternal self-confidence and infant social competence, and tested by this proposed study.

Another group of infants who have been found to have significantly different behaviors and interactions with their parents are infants diagnosed as small-for-gestational-age (SGA). These are infants who are born full-term, but malnourished while in utero which causes interuterine growth retardation.

These infants, on more gross measures, typically appear normal, are cared for in regular nurseries, and go home from the hospital with their mother. The most distinguishing physical differences are their thinness, wrinkled skin and wide-eyed expressions. Als, Tronick, Adamson, & Brazelton (1976) demonstrated the behavioral deficits typical of these infants as assessed by the BNAS. Generally, these infants demonstrate poor motor tone, jerky movement, a lack of

responsiveness to stimulation, poor alertness, were not cuddly, and were difficult to console once aroused.

> "He gives the overall impression of stress when handled and his facial expression when brought to an alert state signal strain, discomfort and exhaustion. He wants to be left alone.... One feels that he is overwhelmed by the environment and if put down after even a brief interaction session he looks exhausted, and in fact is too exhausted to go to sleep."

During the newborn period parents commented about their difficulties in caring for these "undemanding" infants but no data was collected concerning mother-infant interactions or maternal attitude. Tt follow-up visits six weeks to nine months later, mothers were interviewed, and eight of the ten mothers reported having difficulties dealing with their babies who were reported to be easily overstimulated, unpredictable and highly reactive (as assessed by the Carey Infant Temperament Scale). Further research is needed with more precise measures of maternal responses, mother-infant interaction and a larger group of infants. However, the study suggests that the small-for-gestational-age infants, who seem to "want to be left alone," may create feelings of insecurity and inadequacy which again becomes cyclical as this increases the tension inherent in the interaction.

These studies have clearly demonstrate that infant responsiveness and clarity of signaling have an effect on the quality of the mother's interaction with her infant. In addition, these studies demonstrate that mother-infant interaction is a reciprocal process, whereby the behavior of one partner effects the other's response in a transactional manner. Brazelton (1976) further explains this reciprocal process in the following way:

order to provide a measure of how a mother viewed her infant's interactive abilities following one month of interaction. It is hypothesized that like the NBAS, the MABI Exam will correlate with Maternal Self-Esteem.

Demographic variables. The individual characteristics and behaviors of the infant and the mother have been demonstrated to effect the developing mother-infant relationship as well as later child development. However, when assessing ths developing relationship, not only must both infant's and mother's behavior and physical health, maternal feelings of competence, and perceptions of her baby be considered, but other life circumstances must also be considered. These life circumstances include demographic variables such as socio-economic status (SES), educational status, religion, race, and occupation.

SES has been identified by many researchers to effect maternal health and newborn medical status (Sameroff, 1976). Poor maternal health and impaired newborn medical status have in turn been found to adversely effect later child development (Sameroff & Chandler, 1975; Sameroff & Zax, 1976). In addition, Rutter and Quinton (1977) found that maternal depression, marital problems, and mild psychiatric disorders were much more frequent among low SES mothers.

Although studies which have examined the effect of SES on general self-esteem have generally found that higher SES is related to higher self-esteem, the differences between groups are not as large or predictive as one might expect. While persons with low income are most likely to report lower self-esteem, studies have shown that

> "When an infant attends to and becomes intensely involved with a familiar adult, the infant attends to the adult with a cyclic pattern of attention, withdrawal and recovery that resembles a homeostatic curve. A mother or father who is sensitive to the baby's needs reflects this self-regulatory mechanism and regulates her or his affective and cognitive information to the infant's requirements. An insensitive parent overloads the neonate, and their interaction becomes stressed."

When the infant's behavior and level of competence fit the mother's needs and expectations, the interaction thus becomes mutually rewarding. With mutually rewarding interactions, it is proposed that mothers will gain competence in their role, and thus gain confidence in themselves as mothers. In the proposed study, individual differences in infant's behavior and social competence will be assessed with the NBAS in order to evaluate the ability of the baby to precipitate positive interactions and high maternal self-esteem. It is hypothesized that the more competent infant will facilitate caretaking decisions, provide more feedback cues and rewards for the mother, and increase her feelings of self-worth. The infant who is less competent will be more difficult to care for and will not provide the necessary reinforcement and feedback, thus lowering maternal self-esteem.

In addition to using the NBAS to assess infant behaviors, Field, Dempsey, Hallock, & Shuman (1978) developed an abridged version of the NBAS which mother's administer to their own infant, referred to as the Mother's Assessment of the Behavior of Her Infant (MABI). Field found that mother's assessments were highly correlated with those of more objective testers. In the present study, the MABI Exam was used in

generally an equal number of low income people report high self-esteem as low self-esteem (Healy, 1969). The studies on the effects of self-esteem have found that different social classes aspire to different ideals of self (Rosenberg, 1965), but none have reported differences in reference to maternal competence. One of the key factors may be success experiences in what one values and one's treatment in their own interpersonal environment. Therefore, it appears that many people define success not in terms of some external, abstract standard, but in more direct terms of their daily personal relationships.

> "...the psychological bases of esteem are more dependent on close, personal relationships and the immediate environment than upon material benefits or prestige rankings in the community at large. In effect, they (these studies) suggest that the definition of success is a matter of personal interpretation rather than a direct and immediate consequence of one's social class" p. 86, Healy (1969).

Based on these findings, it is hypothesized in the following study that while there may be a correlation between SES and maternal self-esteem, it will not be as large as the correlation between more personal and proximal variables such as family support.

Other demographic variables which have been studied in relation to self-esteem include age, religion, parental education, race, and occupation. No previous studies have suggested that maternal self-esteem would differ as a function of maternal age. While older women have been found to have more negative attitudes toward pregnancy (Westbrook, 1978), these negative attitudes are typically resolved shortly after the birth of the child. Additionally, as older women

are often multiparous mothers, it is not expected that maternal age would correlate with Maternal Self-Esteem.

Concerning religion, the self-esteem literature has not indicated any significant differences in self-esteem reported by members of different religious affiliations (McDonald & Gynther, 1963; Hill, 1957; Rosenberg, 1965). It is not expected that religious affiliation would significantly correlate with Maternal Self-Esteem.

Concerning race, which is highly correlated with SES, no clear or definite pattern of relationships between race and self-esteem has been identified (Rosenberg, 1965; Hill, 1957; Healy, 1969). However, race has been found to be related to general self-esteem in many studies (Coopersmith, 1967). As no research has previously examined the relationship of race specifically to maternal self-esteem, this relationship will be examined, but no hypothesis made concerning the relationship.

Occupation and other job related variables have not been found to be strongly related to general self-esteem (Lefkowitz, 1967). However, one of the occupation categories which was included on the occupation scale was that of mother and homemaker. As Epstein (1979c) has found that specific evaluations of self-esteem have been related to specific areas of experience and success, it is possible that mothers who identify their occupation as full-time homemakers, may have higher maternal self-esteem than mothers who identify themselves as having other careers.

The other demographic variable to be measured was maternal education. Although educational achievement has been found to show some

relationship to general self-esteem (Rosenberg, 1965; Coopersmith, 1967), this relationship is not as strong as one might expect. However, maternal education has been found to be related to mother-infant interaction on a teaching task (Barnard & Gortner, 1977), maternal modes of stimulation and childrearing techniques (Yarrow & Jankowski, 1972). Spietz and Eyres (1977) found that mothers with more schooling gave more positive feedback to their infants, encouraged independence and were more verbal with their children. Based on these findings, it is hypothesized that mothers with more education may feel more confident in their competence as mothers. In order to assess the effect of these and other demographic variables and control for them in the analysis, questions concerning race, religion, age, parental education, and total family income will be included in an interview questionnaire used during the one month follow-up visit.

Family support. Although many psychologists writing about maternal adaptation have addressed the importance of familial support in helping the mother to adjust to her new role as mother, there has been relatively little research demonstrating how a mother's family support system effects her adjustment. Cohen (1966) has found that any significant stress experienced by a mother, either during or immediately following delivery, can affect a mother's adaptation. He suggests that events such as moving, infidelity, death of a friend or relative, which cause a mother to feel insecure and unsupported, can lower her self-confidence and may also disrupt the mother-infant relationship and the mother's perception of her infant. Mason (1963) found familial support was one of the factors which predicted positive maternal

attitudes for mothers of premature infants. Even for mothers of normal healthy infants, the demands of motherhood represent only a portion of a mother's time. Other demands of readjustment and daily living are generally still present. The support a mother receives in coping with these demands is likely to influence her self-confidence and should be evaluated when assessing maternal self-esteem.

The important role that the father plays in infant development has just recently been recognized in child development research (Pederson, 1975; Lamb, 1977). Research and common sense indicate the necessity of examining the father's role in providing emotional and caretaking support for mothers and infants (Pederson, 1975). Clinical findings (Cohen, 1966) have suggested that the lack of paternal support or infidelity, during or immediately after pregnancy, will lower a mother's feelings of self-esteem, cause her to worry about either the health of the baby or herself, and predict later attachment problems.

Herzog (1980) has suggested that some mothers, particularly mothers of high-risk infants, require more nurturing from their husbands for the first month or so after delivery, than at any other time in their relationship. "To be a mother one must have a mother, perhaps not only in one's personal past experience, but also in one's personal present" (Herzog, 1980).

Herzog has reported clinical findings concerning the importance of paternal support for facilitating mother-infant attachment among "high risk" couples. He identified the following two major ways in which the father's participation interfered with maternal attachment:

(1) the father competed with the mother for the care and nurturing of the newborn and, (2) the father withdrew from both mother and infant and was not involved in the care of the infant. In both cases, fathers were unable to provide the increased nurturance and support required for their wives who had just given birth to a high risk infant.

Barnard and Gortner (1977) assessed the quantity and quality of paternal support as reported by mothers in the last trimester of pregnancy through the baby's first 12 months of life. Of particular relevance are their findings that mothers who reported negative feelings toward themselves and their infants at one month, also reported significantly less paternal involvement, either through caretaking or emotional support.

In addition to assessing paternal support, researchers have also examined the role of family support in the absence of a father. Aug and Bright (1970) compared the effect of family support systems on young wed and unwed mothers. The results of the study suggested that the attitudes toward mothering and their infants, of single mothers who had support from other family members and relatives, did not significantly differ from married mothers. However, those single mothers who did not have support from other family members of relatives indicated more negative attitudes toward their infants and themselves. In a more recent study, Feiring and Taylor (1978) found that maternal perceptions of a high amount of positive support received from the "secondary parent" (father, grandmother, aunt, etc.) correlated with the high ratings of maternal involvement with her infant, as well as positive mother-infant interactions. In this study a scale was

developed to assess "socio-emotional support" from the "secondary parent," which included measures of resourcefulness, cooperativeness, respect vs. disrespect, supportiveness, acceptance and critical vs. praising attitudes. The findings from this study suggest that marital status alone is less predictive of positive feelings toward mothering, than is family support. In the present study it is therefore hypothesized that while marital status will most likely correlate with Maternal Self-Esteem, it will be less significant a correlate than Family Support. In the present study, it is hypothesized that Family Support will be significantly related to Maternal Self-Esteem.

Mother-infant interaction. All of the research cited thus far has emphasized the importance of the early mother-infant interaction for normal child development. Synchrony, reciprocity, and mutual regulation of behavior have been found to be the necessary components for a successful interaction (Brazelton et al., 1975). Research which has begun to look more closely at the nature and structure of the interaction has revealed that both the characteristics of the mother and the infant contribute to "an ongoing process of mutual modification of behavior" (Thoman, 1975). The contingent responsiveness of the mother to the infant's cues leads to the development of a sense of competence and effectiveness for the infant in communicating his/her intent and being able to regulate his/her behavior. This sense of competence contributes to the child's ability to have an effect on his/her invironment and consequently to the development of mastery of

the object world and participation in the interpersonal-social world (Stern, 1974).

Thus, research supports a transactional theory of infant development which stresses the changing nature of both the environment and the infant, and the active role which the child plays in organizing and structuring his world (Sameroff, 1976). I have already discussed at length variations in infant behavior and how these variatons effect mother-infant interaction. In addition I have discussed how the mother also brings a host of already existing attitudes and behavior patterns to her interaction with her infant. Individual differences in development thus have to do with constitutional variables of both the infant and mother, the interaction between the two, and the ability of both to adjust to each other. Therefore, in order to assess and predict the development of the infant, a model which examines the transactions between the infant and environment is necessary. These transactions involve: (1) the ability of the infant to emit cues concerning his/her needs; (2) the sensitivity and responsivity of the mother to respond to the infant's cues; (3) the responsiveness of the infant to the mother's intervention, and (4) the context that surrounds mother and infant and contains the host of factors that elicit 1, 2, and 3.

A number of different methods have recently been developed for assessing mother-infant interaction including feeding observations (Osofsky & Danzger, 1974; Bakeman & Brown, 1977), face-to-face interactions (Tronick, 1977), "still face" face-to-face interaction (Tronick, 1975), and play situations (Stern, 1974) to name a few.

However, very few methods of assessment of mother-infant interaction have been reported for measuring interaction as early as one month. For the purpose of directly assessing mother-infant interaction in the present study, a teaching task and rating scale developed by Spietz and Eyres (1977) was chosen. This rating scale provides a method for directly assessing mother-infant interaction including maternal behaviors, infant behaviors, and the reciprocal interactions between the two.

The decision to use the teaching task situation to assess interaction was based on both practical and theoretical considerations. Concerning the practical reasons, pilot testing of both interaction in teaching task and a feeding situation (Spietz & Eyres, 1977) revealed a number of problems with the feeding situation. At one month of age the infant's feeding schedule frequently was quite variable which thus made it difficult to schedule home visits so as to be able to observe feeding interactions. This often required that the observers visit for up to 6 hours in order to observe a feeding, and the time restraints of the observers in some cases, prohibited this. In addition, subjects in the proposed study are going to include both mothers who are breast feeding and mothers who are bottle-feeding. In the pilot testing, the observers did encounter more difficulty in accurately assessing infant behaviors for those babies who were breast-feeding and inter-observer reliability differed for the two groups. Although video-taping feeding interactions has been used in previous studies (Bakeman & Brown, 1977) to rate

behavior during feeding and solve reliability problems, video equipment was not be available for the present study and thus inter-observer reliability was expected to be problematic. In addition, other researchers (Waters, 1977) have argued that the feeding situations involves a highly structured situation which imposes natural restraints on the dyad and thus does not reflect the full repertoire of either maternal or infant behaviors. Although important information can be gained through assessing interaction in the feeding context, the structure of the activity may serve to obscure more subtle cues of communication and competence.

Stern (1974) has used observations during free-play mother-infant interaction to investigate the nature and development of normal and abnormal communication between mothers and their infants. Such unstructured "broad band" assessment (Waters, 1977) have much to offer in terms of being able to assess the widest range of variables. However, again there is a paucity of information concerning one month old infants in such interactions. In addition, this method of studying interactions typically involves taking samples of behavior for many hours and even days, which in turn requires many observers, time and resources. In order to overcome some of these problems and to develop an assessment measure which would be practical for use in clinical settings, Spietz and Eyres (1977) developed the rating scale for assessing interaction during a teaching task.

The advantages of using this scale for the proposed study are that: (1) the observations are based on discrete behaviors and an interaction which has a clearly definable beginning and end; (2) the

teaching task allowed for flexibility as to the timing of observations and required less time to observe than an entire feeding; (3) the teaching situation focuses on maternal style of stimulating her infant as well as on infant responsiveness; (4) the scale assesses maternal affect, comfort, and sensitivity which it is hypothesized will correlate positively with maternal self-esteem; (5) because the task is not as structured a task as feeding, it allows for observation of more subtle behaviors and individual differences, and (6) because the task is not as natural or routine as a feeding interaction, it involves a more stressful situation which researchers have also found tends to reveal more subtle differences in behavior. These last two advantages have been recently supported by research by Brazelton et al. (1975), Tronick (1977) and Waters (1974).

Brazelton et al. (1975) hypothesizes that interactions which lack the

> "supporting constraints of functional tasks, occur at a faster rate and in shorter time units...will more subtly predict and reflect a failure in appropriate communicative capabilities of either or both partners. This is especially true during infancy when the infant's physiological and psychological needs are great because of his immaturity. Unless they are met his already fragile at-risk physiological and psychological balance is threatened. Ergo, this requires that a mother be flexible and give up her own needs to meet his. She can then become able to shape to his individuality by giving up something of her own" (p. 11).

In addition, Waters (1974) and Tronick (1975) contend that stressful structures are most useful for identifying individual differences as they force the individual to draw on all of his abilities in order to adjust to, and compensate for the stressful situation.

Although more empirical evidence is needed to validate these hypotheses, such situations do appear to provide an opportunity for a closer examination of both the infant's and the mother's coping and adaptive abilities.

In developing the conceptual dimensions to be measured by the scale, Spietz and Eyres (1977) drew largely from research concerning interactive patterns by described Kaye (1977) and Lee (1975). Kaye found that during the first few months, it was the role of the mother to imitate the turn-taking and make temporal adjustments to keep in synchrony with the infant during interactions. He sees the natural rhythms, patterns and cycles of the infant as being built-in structures, and by behaving contingently, the caretaker can give these structures a function and meaning. Kaye found individual differences in sensitivity, quickness of response and consistency of responsiveness with some indications that the smoother the reciprocity, the greater the attention paid to the mother. He also found that the infant's cues and signals continued to change during the first 3 months, and some mothers were more sensitive and responsive to these changes than others.

Lee (1975), who applies a cognitive perspective to interpersonal development, conducted a study which sought to identify the process through which infants acquire information about the social world. He found that the structures and schemes that influence the development of cognitive skills are founded in early interactions between the infant and his/her mother. Again, he points out that the development of social and cognitive competence is dependent upon contingent

responses from the infant's caretakers and environment, such as, 'If I do this, she'll do that.' Only then can the infant go on to develop "strategies" to use in initiating, prolonging, and ending interactions.

Based on this research as well as other research by Bee, Van Egersen, Streissguth, Nyman and Leckie (1969) and Brophy (1970) concerning maternal teaching styles with older children, Spietz and Eyres devised the scale in order to assess 5 major aspects of interactive behavior: (1) affect, including the mother's comfort and the infant's pleasure or displeasure in the situation; (2) responsiveness, including the use of contingent feedback to the mother; (3) maternal teaching style including her sensitivity to the infant's cues, her timing and types of strategies used to engage the infant (i.e., modeling, physical guidance or forcing); (4) maternal management of both the infant and materials (i.e., positioning, freedom to explore, safety), and (5) initial state of the infant when the mother begins teaching her infant the task. As Spietz and Eyres (1977) state, "The general purpose is to observe how the mother structures the learning situation, how the infant responds, and the type of feedback the mother provides." Besides using the scale as a vehicle for assessing present mother-infant interaction in a clinical setting, Spietz and Eyres are collaborating in a comprehensive longitudinal study in which they are using the scale to explore how early interactions in the teaching situation are related to later developmental outcomes.

In this situation, the mother is given standardized instructions asking her to help her infant learn two tasks in any way which she thinks will be helpful. The tasks are adapted from the Bayley scales with the first task appropriate at the infant's age plus .5 months (the easy one) and the second task is 1.5 to 2.5 months in advance of the infant's age level (the hard one). Some of the ratings are based on frequency counts while others are based on qualitative assessments with specific examples of qualitatively different behaviors provided for different developmental ages.

The results of the Spietz and Eyres study which was part of a comprehensive longitudinal study including 200 mothers and infants from a homogeneous non-risk, middle-class population from Seattle, aged 1 month through 12 months (Barnard & Gortner, 1977), provided reliability and validity data in support of the scale. Inter-observer reliability data was generally around 65-70% across various ages for the 5 major clusters. For the 1 month old infants, inter-observer reliability ranged from 60% to 84% with an average of 74%. More reliability data concerning both short-term stability and long-term stability is needed however.

Concerning the validity of the scale, Spietz and Eyres found that mothers with higher education gave more positive feedback, more contingent feedback and were more sensitive to their infant's needs and cues than mothers with less education. This finding is consistently supported by studies of pre-school children and their mother's teaching style (Bee et al., 1969; Caldwell, 1967). This study also indicated that mothers who were more sensitive and responsive to their

infants had infants who were more involved in the task and elicited more contingent feedback and positive messages from their mothers. This data is in agreement with data from other studies (Thoman, 1975; Field, 1980), and supports the transactional model of interaction. Differences were found in both maternal and infant behavior between the "easy" and "hard" task with the hard task revealing more individual differences.

Contributing to the content validity of the scale was the finding that there was a significant positive correlation between high maternal scores on the teaching task and high scores on the Caldwell Home Stimulation Inventory. Further support for the construct validity of the scale has been demonstrated with a more heterogeneous population which included both healthy and at risk mothers and infants (Disbrow Doers, & Caulfield, 1977). Disbrow et al. employed the scale in an extensive study of child abuse and found a highly significant negative relationship between maternal sensitivity and responsiveness and child abuse, as well as a significant positive correlationship between irritable and noncompliant infant behavior and child abuse. These findings suggest that the teaching scales are measuring important aspects of interaction, particularly on the role of the mother.

In summary, the scale demonstrated good construct and content validity. The scale revealed changes in infant and maternal behaviors as well a interactive behaviors over time as the infants developed. Although the scale revealed inconsistency between individuals over time, there was a significant relationship between mother and infant behavior at each age assessed. These findings are consistent with

other developmental research concerning the discontinuity of development (Sameroff, 1976) and support the transactional model of assessing mother-infant interaction. As Spietz and Eyres state "This all suggests to us that during the first year mothers and babies experience times of 'going apart' in their interactions and their 'coming together' again."

Besides providing a means for assessing maternal-infant interaction, it is hypothesized that the ratings of maternal affect, comfort and sensitivity will be related to measures of maternal self-esteem. Specifically it is hypothesized that mothers with low levels of maternal self-esteem will be less facilitative and demonstrate less contingent positive feedback to their infants. Although these behavioral measures of competence are not expected to be identical to measures of self-esteem, it is hypothesized that maternal competence will contribute to a mother's feeling of self-worth. It should be noted that not all people evaluate their self-worth on the basis of competence and mastery, but rather are more concerned with being lovable, moral and self-sacrificing (Rosenberg, 1979). However, previous research has indicated that the more effective the mother is in her mothering ability, the more self-confident she will be, and the more willing she will be to continue interacting with her infant. On the other hand, when a mother is ineffective, she tends to become less confident in her feelings of competence as a mother and the interaction is no longer reinforcing (Sameroff, 1976). The proposed study attempts to demonstrate empirical support for this theory.

Caesarean section. As was discussed earlier, many researchers have recently reported that following a Caesarean Section delivery, many mothers experience significantly more feelings of depression, anxiety and negative feelings toward pregnancy and motherhood (Pederson et al., 1980; Grossman, 1980; Field & Widmayer, 1980). Klaus and Kennell (1976) have suggested that the temporary separation of mother and infant following a Caesarean Section may lead to a delayed attachment between the mother and infant. Field and Widmayer (1980) found that after 2-3 days following delivery, Caesarean Section mothers showed less positive attitudes and more anxieties toward labor and delivery. Pederson et al. (1980) found that Caesarean Section mothers reported feeling more apprehensive about their infant's well-being and worried about their ability to assume normal caretaking responsibilities. Additionally, Grossman (1980) found that caesarean section mothers experienced significantly more medical complications, anxiety and post-partum depression following delivery, than did women who delivered vaginally. However, all of the above studies also found that by four months these negative attitudes and feelings of depression had subsided. They attributed the increase in positive feelings largely to the increased caretaking and emotional support from the baby's father. Therefore, in the present study it is hypothesized that shortly after delivery, Caesarean Section mothers will have significantly lower maternal self-esteem than mothers who delivered vaginally.

Another similar variable which is hypothesized will correlate with Maternal Self-Esteem is Maternal Health following delivery. Based on the literature concerning Caesarean Delivery, as well as the literature

concerning maternal feelings of inadequacy following a difficult and complicated delivery (Grunebaum et al., 1975), it is hypothesized that mothers who experience health complications during and following their pregnancy will have lower self-esteem than mothers who do not develop health complications. So, in addition to assessing feelings toward pregnancy, labor and delivery as part of the MSI, it is hypothesized that reported maternal medical complications (from the medical records) will correlate with MSI scores.

Parity. Much of the clinical and obstetrical literature concerned with maternal adaptation to childbearing and childrearing has focused on the psychological problems of primiparous mothers. Bibring (1959) and Shereshefsky and Yarrow (1973) have reported that primiparous mothers experience more difficulties in labor and delivery and often experience more difficulties in adjusting to their role as a mother. Others (Gordon, 1967) have reported that primiparous mothers tend to be happier and more positive about the birth of their first child than are multiparous mothers. Westbrook (1978) reviewed the literature concerning the differences in attitudes and adaptation of primiparous vs. multiparous mothers. She concluded that many conflicting findings had been reported and no conclusive statements could be made. However, in a study of 200 women which she conducted, Westbrook found that while multiparous women did tend to have more negative attitudes toward childbearing, there was no difference in maternal warmth expressed toward the infant or the level of anxiety reported by the mothers.

To date, only one study has been conducted which specifically examined the self-confidence of primiparous vs. multiparous mothers. Seashore et al. (1973) found that multiparous mothers of premature infants had greater self-confidence than did primiparous mothers, regardless of whether or not they were separated from their premature infant. They suggested that a mother who has experience in caring for an infant of her own would be less susceptible to doubt about her biological competence as a mother. Additionally, Seashore et al. (1973) found that the separation experience had little effect on multiparous mother's self-confidence, but did significantly lower the self-confidence of primiparous mothers. These findings are consistent with findings from the self-esteem literature which have found that previous success in a difficult endeavor have led to more positive self-evaluations (Epstein, 1979c).

Thus, it is hypothesized that multiparous mothers will have higher maternal self-esteem than primiparous mothers. However, by one month following delivery, it is expected that the successful experience of interacting with one's infant will have given primiparous mothers increased self-confidence. Therefore, it is hypothesized that by one month, the maternal self-esteem of primiparous and multiparous mothers will not differ significantly.

Maternal perception and maternal self-esteem. It is another hypothesis of this study that how the mother experiences her infant and child will influence her feelings of maternal competence as well as the mother-child interaction and the child's development.

A study by Broussard and Hartner (1971) lends support to this hypothesis. In a longitudinal study of over 300 mothers and infants, maternal perceptions of their own infants at one month were significantly correlated with attitudes of negative feelings toward childrearing as measured by Schaefer's Postnatal Research Inventory (1958). Mothers who rated their infants as being below average and bothersome also expressed negative attitudes toward childrearing. In this study, mothers were asked to rate their infants' feeding, sleeping, crying, elimination, vomiting and regularity of behavior as compared to the average infant, at 3 days after birth and again at one month of age using the Neonatal Perception Inventory (Broussard & Hartner, 1971). Mothers were asked questions such as "How much trouble do you think the average baby has in feeding?" and then "How much trouble has your baby had feeding?" Independent clinical assessments were made four and one-half years later. Broussard found that evaluations made at birth were not related to later outcome. However, ratings made at one month were significantly correlated with psychological, social and academic functioning at 4 years. Those children whose mothers rated their infants as less than average and expressed negative attitudes toward childrearing at one month, were experiencing significantly more psychological problems than those children whose parents rated them more positively and had more positive attitudes toward childrearing. Broussard and Hartner (1971) concluded that the way a mother interacts with her infant would be modified by her perception of her infant's appearance and behavior, which in turn would effect the infant's behavior and development. They proposed that

problematic mother-infant interactions can occur when the infant's behavior does not "match" the mother's perception of what a baby ought to be like. The Neonatal Perception Inventory provides a measure of what the mother thinks a baby ought to be like, her perceptions of her own baby, and any discrepancies between them. However, no assessments were made of infant behavior during the newborn period and so it is not possible to know how and to what degree the infant contributed to their mother's negative perceptions.

A more recent study by Barnard and Gortner (1977) lends some clarity to this issue. Barnard and Gortner (1977) conducted an extensive study examining the contribution of infant characteristics, maternal perceptions, maternal feelings toward motherhood, and family support on the development of the infant and corresponding mother-infant interaction over the first 42 months of life.

Barnard and Gortner found that mothers who had negative attitudes toward childrearing and negative feelings about their family role at one month, perceived their infants negatively, irrespective of the baby's behavior as measured by the Brazelton Neonatal Behavioral Assessment Scale at one month. However, these same mothers also rated their infants as having difficult temperaments. Although Barnard suggests that the negative temperament ratings might be more of a statement about the mother's disposition than the baby's, the present author suggests that what might have led to these negative perceptions was a mismatch between the mother's needs and expectations, and the infant's behavior and demands.

In summary, the above mentioned studies indicate that a mother's perception of her infant does appear to contribute to her attitudes towards herself and vice versa. Thus, rather than expecting a direct relationship between maternal self-esteem and childrearing attitudes, the more salient and relevant factor which would be expected to relate to a mother's feelings of competence is her percepton of her infant. As the mother's perception of her infant appears to influence her attitudes toward childrearing and her interaction with her infant, Broussard and Hartner's Neonatal Perception Inventory will be given to the mothers one month after her baby is born, and the relationship to the MSI investigated. It is hypothesized that mothers who perceive their infants as being less than average will have lower maternal self-esteem than those mothers who rate their infants as being average or better than average.

Infant temperament. Another infant characteristic which has been found to modify mother-infant interaction is infant temperament. Infant temperament refers to the baby's individual style and pattern of reacting to the environment. Thomas, Chess, Birch, and Hertzog (1963) identified nine categories of behaviors which were found to be relatively stable during the first two years which included: (1) activity level; (2) approach or withdrawal from new stimuli; (3) intensity of reaction; (4) response threshold; (5) mood; (6) distractibility; (7) attention span; (8) rhythmicity, and (9) adaptability.

Thomas, Chess and Birch (1968) investigated the interplay of these infant characteristics and parental responses. Three basic patterns of organization of infant temperament were derived which included "easy," "difficult," and "slow to warm-up temperaments." Each category is composed of clusters of discrete behaviors. For example, the "difficult" child exhibits irregularity, withdrawal from new situations, perseverence, negative mood, intense reactions and non-adaptability. The significance of Thomas et al.'s (1968) finding is that infant temperament alone did not predict later adjustment, but together with parental reactions to infant temperament, defined as the "goodness of fit," did predict to later adjustment. For example, an infant with a difficult temperament, whose parents feel frustrated or insecure in reaction to the infant's behavior, is more likely to develop later behavior problems than the difficult infant whose parents are patient or whose temperament matches their infant's temperament.

Carey (1970) developed a questionnaire for assessing these dimensions of temperament for infants in the four through 8 month age range. But until recently, no scale was available for assessing infant temperament earlier than four months. Recently, Rothbart (1979) developed the Infant Behavior Questionnaire which also assesses infant temperament and has been standardized for infants aged one month through 9 months. This scale assesses 5 categories of behaviors including: (1) activity level; (2) smiling and laughter (mood); (3) distress and latency to approach intense or novel stimuli; (4) distress in response to limitations; (5) soothability, and (6) attention span. Although the

scale is very new and more research is needed (and forthcoming) concerning the predictive value of the scale, the scale does have good face validity and correlates highly with the Carey Infant Temperament Scale when assessing infants 3 months of age through 9 months. The scale will be used in the present study to assess infant temperament at one month. The correlation between the NBAS and infant temperament will be assessed and correlations between infant temperament and maternal self-esteem evaluated. It is hypothesized that an infant who has a difficult temperament (i.e., difficult to soothe, frequent negative moods, high activity and experience frequent distress in response to limitations and approaching new stimuli) will be less competent in interacting with his/her mother. This will in turn affect his/her mother's feelings of competence and adequacy in taking care of her infant. If a mother has difficulty eliciting smiling or quieting a crying baby, her feelings of maternal competence will be lower than a mother whose baby is easy to console and readily smiles.

Summary

In summary, in the proposed study a questionnaire to assess maternal self-esteem was developed. Then a study was conducted in order to evaluate the validity and reliability of this instrument for assessing maternal self-esteem by collecting data on a number of variables during the newborn period and again at one month after delivery. A number of factors were identified a priori to be related to maternal self-esteem and the relationship between these variables and maternal

self-esteem was assessed in order to demonstrate the validity of the Maternal Self-Report Inventory.

C H A P T E R I I

METHOD

Subjects

Thirty normal, term infants and their mothers were recruited from the newborn nurseries at the Baystate Medical Center in Springfield, Massachusetts. A research assistant who was blind to the purposes of the study recruited the infants and mothers and did not communicate any of the demographic or health variables to the principle investigator. A stratified random sampling procedure was used in order to assure selection of a heterogeneous sample. This procedure involves complete random sampling within each of a number of strata, such that all strata are represented equally in the sample, whether or not they are represented equally in the population. The only variable which was used as a selection variable in this study was gestational age. This variable was used as a selection variable because previous research (Field, 1980) has indicated that infants of various gestational ages demonstrate a wide range of behavioral and medical complications. Thus, stratifying the variable gestational age was done in order to ensure variability of other factors including infant health and behavior. For the purposes of the present study it was specifically decided not to include sick infants in the study despite the fact that this would trunkate the data. Sick infants who were not discharged home from the hospital with their mother were excluded from the study. It was decided that the Maternal Self-Report Questionnaire might be an additional stress

on these mothers and therefore the MSR should first be used and evaluated with a normal, relatively healthy and unstressed population. This sampling procedure was thus ensures that a wide range of "normal" mothers and infants were represented in the sample, but it has the effect of severely limting the variability of the data. It is thus biased against finding significant relationships.

Infants ranging from 38 to 45 weeks gestational age, who were discharged home from the hospital along with their mother, were included in the study. Infants with transitory minor complications, such as elevated biliruben levels, transient tachypnea, feeding problems, low apgar scores, infection and minor anomilies were included in the study as long as they were discharged home at the same time as their mothers. This criteria was also necessary in order not to confound the impact of other variables on maternal self-esteem with the impact of separation from the infant on maternal self-esteem. As a first study, it was necessary to demonstrate that even within the context of "normal" mothers and infants who have not experienced the dramatic effects of separation, that there are differences in maternal self-esteem which are related to differences in newborn characteristics.

The sample population included 7 infants of gestational ages between 38 and 39 weeks, 8 infants of 40 weeks, 7 infants of 41 weeks gestation, and 8 infants who were classified as postmature, with gestational ages between 42 and 45 weeks gestational age. Gestational age in most cases was determined by the mother's report of the data of her last menstrual period. However, when the mother was uncertain of her due date or when there was a discrepancy greater than one week

between the physician's assessment of gestational age using the Dubowitz Infant Maturity Exam (Dubowitz, Dubowitz, & Goldberg, 1970) and the mother's assessment, the physician's assessment of gestational age was used. The sample consisted of 13 males and 17 females, equally distributed along gestational age. Initially, there were 18 males and 18 females, but 5 male infants and 1 female infant and their mothers dropped out of the study following discharge from the hospital. The final sample consisted of 3 infants who were assessed as being small-for-gestational age and eight infants assessed as being postmature according to gestational age (greater than 42 weeks).

As was previously mentioned, no selection strategies were used concerning demographic variables, obstetric variables, or any other variables related to maternal status. The maternal obstetric and demographic information was collected during the course of the study, and the analysis of this information is reported in Chapter III.

See Appendix D for characteristics of those mothers and infants who discontinued participation in the study.

Assessment Methods

Newborn behavior. All infants were examined using the Brazelton Neonatal Behavioral Assessment Scale (Brazelton, 1973).

The Brazelton Examination assesses the newborn's neurological intactness on 20 reflexes and the newborn's interactive behavior on 26 items. The interactive behaviors assessed include the infant's need for and use of stimulation, alertness, consolability, irritability, cuddliness, motor maturity, and ability to organize states. These

interactive behaviors are summarized by four a priori scoring dimensions labeled interactive processes, motoric processes, organizational processes-state control, and organizational processes, physiological response to stress (Adamson, Als, Tronick, & Brazelton, 1975). Each dimension is scored such that high scores reflect poor performance and low scores reflect optimal performance. In the present study, the scores from the four dimensions were totaled to produce a summary score. Again, low summary scores reflected more optimal performance and high summary scores, poor performance.

Mother's assessment of the behavior of her infant. In addition, the Brazelton Exam has been simplified and abbreviated, with the neurological reflex items eliminated, in order to be used by mothers to assess their own babies (Field et al., 1978). This abbreviated form, referred to as the Mother's Assessment of the Behavior of her Infant (MABI), was used in order to have a measure of how mothers perceive their infant's behavior. No mother was given any training on the assessment, but rather they were simply shown the assessment form prior to discharge from the hospital, and given the following standard explanation and instructions: "The following questions are similar to the questions we ask when we observe your baby. Because a mother knows her baby better than anyone else, we would like you to give us your impressions of your baby by circling your answers to these questions. They will help us understand newborn babies and how they behave in different situations. In order to answer these questions you might want to watch your baby for awhile and try playing some of the games with him or her.

For example, in order to answer question number 9, we ask you to shake a rattle to the side of your baby's face to see if he turns to look at the rattle. We have discovered that newborn babies can do lots of interesting things which you will probably discover in your baby too."

Infant health. Each infant was assessed using the Parmelee Postnatal Complications Scale (PCS) which assesses the infant's postnatal course including 12 possible risk factors such as respiratory distress, hyperbilirubinemia, metabolic and temperature disturbances and congenital anomilies. This information was obtained from each infant's medical record as well as maternal reports. The total number of medical complications was used as the index of infants health, with high scores reflecting increased risk to the infant's health.

Infant temperament. The Infant Behavior Questionnaire (Rothbart, 1978) was used to assess infant temperament. The scale consists of the following six dimensions: Activity Level (17 items), Smiling and Laughter (15 items), Distress and Latency to Approach Intense or Novel Stimuli (16 items), Distress to Limitations (20 items), Soothability (10 items), and Duration of Orientation (11 items). Each item is rated by the mother on a 1 to 7 scale, and if the item does not pertain to behavior which the infant has engaged in, the mother can answer the item by circling "Does Not Apply" (See Appendix E).

Instructions for the questionnaire were provided on the front page of the questionnaire and instruct mothers to respond to the items on the basis of the infant's specific behavior during the past week. On the dimension of Activity Level, a high score indicated a highly

active, squirming infant. On the dimension of Smiling and Laughter, a high score indicated a high frequency of smiling and laughing behavior. On the dimension of Distress and Latency to Approach Intense or Novel Stimuli, a high score indicated an infant who is easily distressed and slow to approach novel stimuli. On the Distress to Limitations dimension, a high score indicated an infant who is easily distressed while being fed, confined in a position or while waiting for maternal attention. For the dimension of Soothability, a high score reflected an infant who is easy to sooth and responds to many different soothing techniques. On the final dimension of Duration of Orienting, a high score reflected an infant who was very alert and engaged in long periods of orienting.

Maternal perception of her infant. In order to assess the mother's perception of her infant, the Neonatal Perception Inventory (Broussard, 1971) was used. This inventory consists of two derived scores, the first being the discrepancy score and the second being the bothersome score. To derive the discrepancy score, the inventory asks the mother to first rate the average baby on six measures of behavior on a 1 to 5 scale, and then these ratings are summed. Then the mother is asked to rate her baby on the same six measures and 1 to 5 rating scale. Low scores are considered optimal. The discrepancy between the "average baby score" and the "your baby score" constitutes the NPI Discrepancy Score. A mother is considered to have a positive perception of her baby if she perceives her baby to be better than the average baby and thus has a positive score. A mother who perceives her own baby to be the

same as or worse than the average baby is considered to have a negative perception of her infant. The other score, the Bothersome Score, is derived by summing the number of bothersome behaviors which the mother perceives her infant to have, and the degree of difficulty the mother perceives with the problem behavior. A high bothersome score reflects a more "bothersome" infant. A copy of the NPI is provided in Appendix F.

Maternal self-esteem. Maternal Self-Esteem was assessed using the Maternal Self-Report Inventory as described in Chapter I. The scale consists of the following seven dimensions: Caretaking Ability (26 items), General Ability as a Mother (25 items), Acceptance of Baby (9 items), Expected Relationship with the Baby (10 items), Complications During Labor and Delivery (15 items), Parental Acceptance (6 items), and Body Image and Health after Delivery (9 items). Each item is rated by the mother on a one to five scale. The total number of questions on this Likert Scale was 100 and are listed according to each dimension in Appendix A.

Instructions for the questionnaire were provided on the front page of the questionnaire and instruct mothers to indicate how accurately each statement describes how she feels.

Because of the great number of items included in the Maternal Self-Report Inventory (MSI), it was desirable to use a shortened version of the Epstein-O'Brien Self-Report Inventory (SRI) to concurrently assess general self-esteem. This was accomplished by selecting half of the items used on the SRI and randomly intermixing them with the items from the MSI. This was done in order to: (1) avoid response sets, and

(2) provide a more diversified sets in hopes of maintaining the subjects' interest. As with the MSI items, an equal number of positive and negative items were selected from the SRI and randomly dispersed. An equal number (5) of items from each subscale on the SRI was selected, except for the subscale concerning Body Image, which included 9 items, three from each of the subscales comprising Body Functioning and Appearance. See Appendix C for items from the Epstein-O'Brien Self-Report Inventory.

On the full scale version of the SRI, each item was matched with a similar item in order to assess internal consistency. As these item pairs did demonstrate high correlations between each other, for each subscale only one of the items from the matched item pairs was included in the shortened version of the scale. This method of item selection assured greater reliability of the shortened version of the scale. Additionally, half of the items from the original subscale assessing Defensiveness were included in the shortened version of the scale in order to assess the degree of social desirability associated with the scale. As mentioned above, these, as well as all other items from the shortened version of the SRI were intermixed with items on the MSI. However, for purposes of data analysis, items from the MSI and SRI will be analyzed separately.

Family support. Based on the findings of studies cited, a questionnaire was designed to assess the amount of emotional and caretaking support provided for the mother by the family. These questions were designed in order to assess the effect of paternal and family support

on maternal self-esteem. Specifically, the questionnaire includes questions concerning the father or secondary caretaker's involvement in caretaking activities, participation in decision making (Barnard & Gortner, 1977) and the mother's satisfaction with her relationship with the baby's father. The items on the Family Support Questionnaire were written in the first person and mothers were requested to indicate on a Likert Scale how accurately each statement described how she felt by circling the answer which best expressed the degree to which the statement was true for her.

As was done with the items from the Self-Report Inventory (Epstein & O'Brien, 1976), the 16 items from the Family Support Questionnaire were intermixed with the questions from the Maternal Self-Report Inventory in order to provide a more heterogeneous scale. See Appendix G for a list of items on the Family Support Inventory.

Assessment of home visit. A home interview questionnaire was devised in order to obtain various information which was not included in the other maternal questionnaires, and which was not overtly observable or available from medical records. This included such information as demographic variables, present concerns and feelings about taking care of the infant, infant and maternal health problems, the infant's sleeping and eating habits, the mother's developmental expectations and a description of the mother's typical day. Many of the interview items were obtained from the home interview format used by Barnard and Gortner (1977), whose questionnaire was designed for the purpose of obtaining information from mothers which would be useful in

identifying risk factors and predicting which families were at risk for later developmental and/or environmental problems. One question of particular interest asked the mother how she felt about taking care of her infant after being home for one month. Responses were open-ended and rated by the investigator on a 1 to 3 scale, ranging from negative responses (1) to positive responses (3). Another question of interest was also an open-ended question regarding any concerns the mother presently had about her infant, herself or her family. The responses were ranked on a 0 to 8 scale in order of severity of concerns (See Appendix H for a copy of the home interview questionnaire).

Clinical rating of maternal self-esteem. The author and a research assistant, who were both unaware of the results of the MSI, each independently rated the mothers on the degree of maternal self-esteem which was demonstrated. For the purposes of clarity and objectivity, maternal self-esteem in this case was defined as the confidence and self-assurance in one's mothering ability which was demonstrated and projected either by verbal statements and/or actions made by the mother during the home visit. Verbal statements were recorded by both investigators on a recording sheet by recording the number of positive (+) and negative (-) statements. Examples of positive statements included such remarks as "I love taking care of my baby and don't even miss work," "I just love caring for my baby," and "Everything about it feels great." Examples of negative statements included such remarks as "I'm too tired and feel depressed," "I feel lost without my work," "I resent all the time it takes," "I really get shook up when I can't stop her

from crying," "I don't know what to do" and "I felt really bad when he got the diaper rash, I know it was my fault."

Maternal behavior during the home visit was also noted and recorded. Examples of such behavior included how relaxed the mother appeared when handling the baby, the mother's apparent enjoyment in playing with, diapering, feeding and/or holding the baby, and how the mother handled her infant when he/she was crying. Immediately following the home visit, both the author and the research assistant examined this recorded information and then rated each mother independently on a 1 to 3 scale, with 1 being low self-esteem and 3 being high self-esteem.

Inter-rater reliability ranged from .86 to .92 with a mean reliability of .90.

Mother-infant interaction assessment. A teaching task, designed by Spietz and Eyres (1978) was used to assess maternal and infant behavior in an interactive situation. In this assessment the mother is asked to teach her infant two tasks, an easy and a hard task. The easy task for the one month old infants was adapted from the Bayley Scales of Infant Development and involved teaching the infant to turn to look at a small shielded flash-light, and follow the light as it is moved through several excursions from left to right. The "hard" task, also adapted from the Bayley Scales of Infant Development, involved teaching the infant to follow a red ring for a least 30 degrees to each side. Mothers were not given any instructions as to how to engage their infant in the tasks and if they asked, they were told to do what they

felt would work best for their baby. The two tasks were presented in succession but the length of time spent on each task was determined by the mother and recorded by the investigator. The following standard instructions were given to each mother by the investigator:

"I have two tasks I would like you to help your baby to learn. You may position you baby in any way that you like and take as much time as you wish. Just let me know when you are finished with the first task and then I will take a few notes and give you the second task."

Following the second task, reinforcement was given and mothers were reassured that the second task was a difficult one and in advance of the infant's age. At the end of each task, the author and research assistant both rated the maternal and infant behaviors using the manual and scoring sheet which was designed by Spietz and Eyres (1978). As was previously noted, the principle investigator and research assistant pilot tested a few infants in order to clarify the scale items and obtain inter-rater reliability at a minimum of 80%. Throughout most of the home observations, dual observations were made in order to check on inter-rater reliability. Inter-rater reliability across both teaching tasks ranged from .65 to .90, with a mean of .81. For the purposes of data analysis, the ratings of the principle investigator were used.

Scores on these tasks consisted of a total maternal score, referred to as the Maternal Disbrow Score, with higher scores reflecting more positive and optimal maternal behaviors, and an Infant Disbrow Score,

with lower scores reflecting more attentive and responsive infant behaviors. In addition, specific dimensions of the Maternal Disbrow Score were analyzed including Maternal Sensitivity and Techniques. Maternal Sensitivity scores reflect "the degree to which the mother appears tuned into her infant's communication and task performance, and the frequency with which she responds to the infant's various cues, whether potent or subtle, during the task" (Spietz & Eyres, 1978). Techniques scores reflect the success of various techniques such as infant positioning, task handling and timing used by the mother to teach her infant the task. For both of these variables, a high score reflects more positive and optimal maternal behaviors.

Procedure

The research assistant who performed the screening and subject selection, reported to the principle investigator the names of potential subjects for the study. The principle investigator then contacted each infant's mother and discussed with her the nature and purpose of the study. If the mother wished to participate in the study, written consent from her was obtained.

Time 1. On day two or three prior to discharge from the hospital, each infant was examined using the Brazelton Neonatal Behavioral Assessment Scale. All examinations were conducted at mid-point between feeding times. All examinations were conducted by the author who is a trained examiner and who was unaware of the mother's responses to any of the questionnaires. In order to assure that the examiner remained

reliable throughout the course of the study, inter-rater reliability scores with another trained examiner were obtained twice during the course of the study. Inter-rater reliability was greater than or equal to 90% absolute agreement at both of these times. The Parmelee Postnatal Complications Scale was used to assess infant health status prior to discharge from the hospital. Additionally, prior to discharge from the hospital, each mother was asked to complete the Maternal Self-Report Inventory, including the items from the Family Support Scale and the Epstein-O'Brien Self-Report Inventory. Mothers were given the questionnaire prior to the administration of the Brazelton Exam. At this point in the study, only minimal feedback was given to the mothers concerning their baby's performance on the exam so as not to bias their perception of their infant. However, on a few occasions, an infant demonstrated worrisome behavior on the Brazelton Exam and the author consulted with the Chief Neonatologist at the hospital and the infant's pediatrician to alert them to the problem.

Time 2. Prior to the one month home visit, the mothers were sent 4 questionnaires which they were asked to complete and return within one week or to give to the author at the time of the home visit. All mothers were given an addressed, stamped envelope with which to return the questionnaires. The four questionnaires included the Infant Behavior Questionnaire, the NPI, the MABI, and the Maternal Self-Report Inventory, including the Family Support items and the Self-Report Inventory items. The same version of the MSI was administered at

Time 1 and Time 2. Mothers were given the chance to read the assessment form, and if they had any questions, the investigator was available to answer them and make certain that the mothers understood the nature of the questionnaires. The investigator also called each mother to be sure that she received the questionnaires and to make arrangements for the one month home visit. During the home visit, made approximately one month after delivery, the Brazelton Neonatal Behavioral Assessment Scale was used to assess newborn behavior. The Postnatal Complication Scale was again used at this time to assess infant health status. Clinical ratings of maternal self-esteem were also made at this time. The home interview was conducted by either the author or the research assistant who was trained by the author in conducting the interview.

The Teaching Task, designed by Spietz and Eyres (1978) was administered to each mother and infant pair during the home visits, in order to assess mother-infant interaction variables. The investigator introduced the task to the mother following the Brazelton Exam, while the infant was awake, alert and apparently content. However, if the infant appeared distressed following the Brazelton Exam, the investigator waited until the infant was consoled and in an appropriate state of alertness before introducing the task. On a few occasions, the tasks were interspersed with the maternal interview.

Mothers were aware that they would be required to complete a number of questionnaires and participate in a number of specified activities throughout the course of the study. All mothers were assured of complete confidentiality concerning all the information obtained during the study as well as anonymity. At any point during the study, if any

mother requested or appeared to require support services or counseling, the author was available to consult with the mother and make the appropriate referral. This occurred in four cases, two of which involved getting mothers involved with support groups for new mothers, one involved a social service referral, and the other involved referral for psychological services and mental health counseling.

After completion of all infant behavioral tests and maternal questionnaires, the author provided each mother with a description of the results of the infant developmental exams.

CHAPTER III

RESULTS

Demographic Information

Maternal data. The demographic information for the 30 mothers participating in the study is presented in Table 1. These mothers had a wide range of ages, occupations and incomes. The sample was limited as concerns race and religion, with the majority of the mothers being white and identifying themselves as Catholic. Although the majority of the mothers had completed 12 years of school or less, a large percentage had attended at least one year of college. A large majority of the mothers in this study were married and living with the father of their baby.

Paternal data. The demographic information for the fathers of the infants in this study is presented in Table 2. As can be seen from this table, the fathers represented a wide range of ages, educational experience and occupations. As with the maternal race representation, the majority of the fathers were reported to be white. Information concerning paternal religious affiliation was not obtained.

Maternal obstetrical history. The obstetrical information for the mothers in the study is presented in Table 3. Mother's prenatal and obstetrical complications were assessed using the Obstetrical Complications Scale (OCS) designed by Lipman and Parmelee, (1978). The majority of the mothers delivered vaginally although a large number

TABLE 1

MATERNAL DEMOGRAPHIC INFORMATION

Maternal Age		
Mean	S.D.	Range
24.2	4.65	17-33 years

	N	%
Religious Affiliation		
Catholic	21	70
Protestant	9	30
Jewish	0	0
Race		
White	25	83.3
Black	3	10.0
Puerto Rican	2	6.7
Occupation		
Housewife	11	36.7
Clerical	6	20.0
Semi-Skilled, unskilled or student	7	23.3
Skilled	2	6.7
Sales, Managerial, or Professional	4	13.3

TABLE 1 - Continued

	N	%
Education		
12 years or less	19	63.3
1 year of college or more	11	36.7
Marital Status		
Married	25	83.3
Separated	1	3.3
Single, living with baby's father	1	3.3
Single, not living with baby's father	3	10.0
Family Income		
0 - $5,000	3	10.0
5 - $10,000	8	26.7
10 - $15,000	3	10.0
15 - $20,000	7	23.3
20 - $25,000	4	13.3

TABLE 2

PATERNAL DEMOGRAPHIC INFORMATION

Paternal Age		
Mean	S.D.	Range
27.6	6.62	17-44 years

	N	%
Race		
White	24	80.0
Black	5	16.7
Puerto Rican	1	3.3
Occupation		
Unemployed	3	10.0
Student	2	6.7
Unskilled or semi-skilled	9	30.0
Skilled	2	6.7
Non-civilian	1	3.3
Clerical	3	10.0
Sales	3	10.0
Manager	4	13.3
Professional	3	10.0

TABLE 2 - Continued

	N	%
Education		
12 years or less	15	50.0
1 year of college or more	15	50.0

TABLE 3

MATERNAL OBSTETRICAL HISTORY

	N	%
Parity		
Primiparous	18	60.0
Multiparous	12	40.0
Type of Delivery		
Vaginal	20	66.7
Repeat Caesarean Section	2	6.7
Emergency Caesarean Section	8	26.7

Obstetrical Complications		
Mean	S.D.	Range
4.5	2.9	1-10

of mothers delivered either via emergency or repeat caesarian section. The sample of mothers in this study represented a relatively healthy sample of mothers. Complications ranged from mild toxemia during pregnancy to complications during labor and delivery, such as the use of forceps, breech presentation and nuchal cord.

Infant health data. Infant health complications at both Time 1 and Time 2 are reported in Table 4. As can be seen from this table, at Time 1, the health status of the infants in this study ranged from no medical complications, to one or two minor complications such as elevated biliruben levels, transitory feeding problems, to more major complications such as transitory respiratory distress and congenital anomalies. In three cases intensive care treatment was required for one or two days. However, all infants in the study were healthy enough to be discharged home with their mothers. Given the limited range of the health problems encountered by these infants and thus the trunkation of the data, the effects of infant health on maternal self-esteem are highly significant.

Concerning feeding methods, 46.7% of the infants in the study were breast fed, 43.3% were bottle fed, and 10% were both breast and bottle fed.

At Time 2, as can be seen from the table, mothers reported fewer health complications with their infants. At this time, health complications ranged from minor colds, diaper rash, and feeding problems and in a few cases more serious problems such as collick and weight loss.

TABLE 4

INFANT HEALTH DATA

Infant Health Complications at Time 1		
Mean	S.D.	Range
1.3	1.5	0-4

Infant Health Complications at Time 2		
Mean	S.D.	Range
.77	.04	0-3

Maternal Self-Report Inventory

Descriptive data. Summary scores from the Maternal Self-Report Inventory (MSI) at Time 1 and Time 2 are presented in Tables 5 and 6 respectively. Raw scores were computed for each subscale and distributions for the seven subscales, as well as the total scores, were obtained.

Tables 7 and 8 present the summary scores from the shortened version of the Epstein-O'Brien Self-Esteem Scale. Again, raw scores were computed for each subscale and mean scores, the number of items in each subscale, range of scores, and standard deviations are presented.

Validity Analysis

This study was based on certain theoretical premises coupled with an assumption concerning the construct validity of the MSI. Positive findings from this study offer support simultaneously for the construct validity of the instrument and the theory behind the study. Specifically, this involves the examination of expected and predicted correlations between independent variables and the MSI. This validity data, as well as face validity information, will be presented next.

Face validity. Although content validity cannot be substituted by face validity, the face validity of the inventory adds to the content validity and general acceptability of the scale. Face validity for the MSI was demonstrated prior to administering the inventory to mothers in the study. Ten mothers and five psychologists were each given individual questions on a separate index card and asked to

TABLE 5

SUMMARY DATA FROM MSI AT TIME 1

MSI - Time 1	Raw Score Means	Standard Deviations	Range	Number of Items
Caretaking Ability	110.83	9.30	90 - 127	26
General Ability as a Mother	111.40	9.93	77 - 125	25
Acceptance of Baby	41.97	5.07	28 - 50	10
Relationship with Baby	38.87	3.18	31 - 45	9
Body Image and Health after Delivery	35.83	6.39	21 - 45	9
Parental Influence	27.67	2.89	19 - 30	6
Pregnancy, Labor and Delivery	60.63	9.51	36 - 73	15
Total MSI Score	427.20	36.91	322 - 481	100

TABLE 6

SUMMARY DATA FROM MSI AT TIME 2

MSI - Time 1	Raw Score Means	Standard Deviations	Range	Number of Items
Caretaking Ability	113.23	8.61	93 - 128	26
General Ability as a Mother	112.83	10.92	80 - 124	25
Acceptance of Baby	43.27	4.86	28 - 50	10
Relationship with Baby	39.30	3.39	31 - 45	9
Body Image and Health after Delivery	36.40	5.76	22 - 45	9
Parental Influence	27.67	2.83	16 - 30	6
Pregnancy, Labor and Delivery	62.03	9.84	34 - 75	15
Total MSI Score	434.73	37.44	346 - 481	100

TABLE 7

SUMMARY DATA FROM SRI AT TIME 1

SRI - Time 1	Raw Score Means	Standard Deviations	Range	Number of Items
General Self-Esteem	22.40	2.57	17 - 25	5
Power Over Self	20.53	3.06	13 - 25	5
Power Over Others	18.30	3.23	12 - 25	5
Likeability	19.37	2.76	15 - 25	5
Competence	20.17	3.23	15 - 25	5
Morality	21.43	2.42	14 - 25	5
Body Image and Health	36.40	5.26	22 - 45	9
Total SRI Score	192.97	17.75	143 - 221	

TABLE 8

SUMMARY DATA FROM SRI AT TIME 2

SRI - Time 2	Raw Score Means	Standard Deviations	Range	Number of Items
General Self-Esteem	22.73	2.42	17 - 25	5
Power Over Self	20.60	3.39	11 - 25	5
Power Over Others	19.13	2.22	10 - 24	5
Likeability	19.83	2.84	12 - 24	5
Competence	20.87	2.54	14 - 25	5
Morality	21.17	2.07	16 - 25	5
Body Image and Health	36.67	5.28	24 - 45	9
Defensiveness	34.03	6.03	21 - 43	10
Total SRI Score	195.03	18.54	153 - 229	49

sort the questions into categories which seemed psychologically homogeneous and then to label each category. The majority of the questions were sorted according to the seven components determined a priori by the author and category labels closely matched those assigned by the author. A few of the items presented to these subjects were consistently rejected by many of the subjects for either not matching any of the categories or not having face validity with the rest of the scale. Subsequently, these items were discarded from the inventory prior to using the scale in the present study.

Concurrent validity.

Correlation between MSI and SRI. A new test can be said to have concurrent validity to the extent that it correlates with another concurrently obtained criterion. For the purposes of assessing the concurrent validity of the MSI, one of the criterion used was a shortened version of the Self-Report Inventory (SRI) developed by Epstein and O'Brien (1976). Using the full scale inventory, Epstein (1976) has reported split half reliability coefficients for the subscales of the SRI ranging from .64 for Body Health to .86 for General Self-Esteem and Physical Appearance, and a split-half reliability coefficient for the total scale of .95.

High correlations between the MSI and the SRI were found at the first and second administrations of the questionnaires. At Time 1, a correlation of .74 ($p < .001$) was found between the MSI total score and the SRI total score. At Time 2, a correlation of .76 ($p < .001$) was found between the MSI and the SRI. Furthermore, all of the MSI

subscales significantly correlated with the SRI total score. As can be seen in Table 9 , at Time 1, the correlations ranged from .44 ($p = .007$) for Parental Influence to .75 ($p = .001$) for General Ability As A Mother. Table 10 presents the correlations from the MSI subscales and the SRI total score at Time 2. All the correlations are relatively high (greater than .35) for what is typically obtained for validity coefficients (Epstein, 1979c). Additionally, all correlations are in the expected direction. At Time 2, all subscale correlations were significant at $p \leqq .02$ and ranged from .37 ($p = .02$) for Parental Influence to .70 ($p = .001$) for General Ability As A Mother. The Parental Influence subscale had the least number of items in the scale, so the finding that the correlation was lower than the other subscales was not surprising. However, although all of the subscales of the MSI significantly correlated with the total score of the SRI at Times 1 and 2, these correlations are not high enough to suggest that the two scales are indeed measuring the same factors. Given that both scales were combined when administered to mothers and thus shared the same measurement technique, and time and setting of administration, it appears that the variance in the MSI not explained by the SRI is due to the unique aspects of the MSI which are not assessed by the SRI.

Additionally, the correlations between the subscales of the SRI and the total scores on the MSI were examined in order to further evaluate the concurrent validity of the MSI. Table 11 presents the correlations from the SRI subscales and the MSI total score at Time 1. All correlations were significant at $p \leqq .02$, except for the subscale Power Over Others, which had a correlation of .18, $p = .166$. The

TABLE 9

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN MSI SUBSCALES AND SRI TOTAL SCORES - TIME 1

MSI Subscales	SRI Total Scores
Caretaking Ability	.62***
General Ability as a Mother	.75***
Acceptance of Baby	.44***
Expected Relationship with Baby	.64***
Body Image and Health After Delivery	.54***
Parental Influence	.44***
Pregnancy, Labor and Delivery	.53***

*p < .10
**p < .05
***p < .01

TABLE 10

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN MSI SUBSCALES AND SRI TOTAL SCORES - TIME 2

MSI Subscales	SRI Total Scores
Caretaking Ability	.69***
General Ability as a Mother	.70***
Acceptance of Baby	.58***
Expected Relationship with Baby	.59***
Body Image and Health After Delivery	.41***
Parental Influence	.37**
Pregnancy, Labor and Delivery	.67***

*p < .10
**p < .05
***p < .01

TABLE 11

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SRI SUBSCALES AND MSI TOTAL SCORES - TIME 1

SRI Subscales	MSI Total Scores
General Self-Esteem	.60***
Power Over Self	.34**
Power Over Others	.18
Likability	.71***
Competence	.56***
Morality	.49***
Body Image and Health	.60***

*p < .10
**p < .05
***p < .01

subscale with the highest correlation with the MSI total score was Likeability which had a correlation coefficient of .70 ($p < .001$) at Time 1. Table 12 presents the correlations from the SRI subscales and the MSI total score at Time 2. Again, most correlations were significant at $p \leq .02$ except for the subscales Power Over Others, $r = .25$ ($p = .092$), and Morality, $r = .15$ ($p = .214$). At Time 2, the subscale with the highest correlation with MSI total score was Competence, which had a high correlation coefficient of .75 ($p < .001$). Epstein (1979) found that the subscales Competence and Likeability had the highest correlation with his measure of General Self-Esteem.

Additionally, certain subscales from the MSI were logically expected to correlate with certain subscales from the SRI, while other subscales from these inventories were not expected to correlate. Tables 13 and 14 present the intercorrelations between the subscales from Time 1 and Time 2 respectively. One would logically expect the subscale from the MSI, Body Image and Health After Delivery, to have correlated significantly with the subscale Body Image, Health and Appearance from the SRI. The correlation coefficient between the two subscales at Time 1 was .53 ($p = .001$), which was substantially higher than other correlations between these subscales and other subscales. Another example of two subscales which one would expect would correlate highly are the Expected Relationship with the Baby subscale from the MSI and the Likeability subscale from the SRI. The correlations coefficient between the two subscales at Time 1 was .53 ($p = .001$) which was significant, and at Time 2, was .62 ($p = .001$). Additionally, one would expect that as a mother spent more time with

TABLE 12

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SRI SUBSCALES AND MSI TOTAL SCORES - TIME 2

SRI Subscales	MSI Total Scores
General Self-Esteem	.64***
Power Over Self	.44***
Power Over Others	.25*
Likability	.61***
Competence	.75***
Morality	.15
Body Image and Health	.61***

*p < .10
**p < .05
***p < .01

TABLE 13

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SUBSCALES OF THE MSI AND SUBSCALES OF THE SRI, TIME 1

	SRI Subscales						
MSI Subscales	General Self-Esteem	Power Over Self	Power Over Others	Likability	Competence	Morality	Body Image and Health
Caretaking Ability	.49***	.35**	.20	.60***	.36**	.39**	.48***
General Ability as a Mother	.63***	.29*	.33**	.66***	.69***	.54***	.60***
Acceptance of Baby	.33**	.10	.03	.47***	.21	.26*	.46***
Expected Relationship with Baby	.69***	.49***	.05	.53***	.47***	.60***	.42***
Body Image and Health after Delivery	.50***	.27*	.21	.59***	.43***	.49***	.53***
Parental Influence	.31**	.10	-.01	.45***	.29*	.17	.30**
Pregnancy, Labor and Delivery	.35**	.24*	.01	.50***	.44***	.24*	.40**

*p < .10, **p < .05, ***p < .01

TABLE 14

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SUBSCALES OF THE MSI AND SUBSCALES OF THE SRI, TIME 2

	SRI Subscales						
MSI Subscales	General Self-Esteem	Power Over Self	Power Over Others	Likability	Competence	Morality	Body Image and Health
Caretaking Ability	.59***	.37**	.27*	.56***	.63***	.30**	.49***
General Ability as a Mother	.56***	.45***	.29*	.54***	.77***	.09	.52***
Acceptance of Baby	.58**	.25*	.06	.52***	.48***	.17	.60***
Expected Relationship with Baby	.65***	.38**	.06	.62***	.56***	.25*	.59***
Body Image and Health after Delivery	.35**	.21	.26*	.35**	.41***	.23	.37**
Parental Influence	.12	.23	.04	.09	.44***	-.19	.26*
Pregnancy, Labor and Delivery	.53***	.41***	.17	.54***	.66***	-.05	.53***

*p < .10, **p < .05, ***p < .01

her infant, she would become more competent in caring for the baby, and that this would reflect in the correlation between the Caretaking Ability subscale and the Competence subscale of the SRI. The correlation between these two subscales at Time 1 was .36 ($p = .03$), and by Time 2, the correlation had increased significantly to .63 ($p = .001$). As can be been from examining these intercorrelations, the General Ability as a Mother subscale from the MSI, and the General Self-Esteem subscale from the SRI correlate significantly with all subscales at Time 1. At Time 2, General Self-Esteem correlated significantly with all subscales from the MSI except for Parental Influence. General Ability as a Mother correlated significantly with all subscales from the SRI, except for Morality and Power Over Others.

Examination of these intercorrelations, both at Time 1 and Time 2, revealed that in general the three dimensions from the SRI which correlated the least with the MSI were Power Over Others, Morality, and Power Over Self. Additionally, the one dimension of the MSI which in general was not strongly related to the subscales of the SRI was Parental Influence.

Correlation between MSI and clinical ratings of maternal self-esteem. The other method for assessing the concurrent validity of the MSI was to assess the correlation between the MSI and clinical ratings of maternal self-esteem, in order to demonstrate the relationship between different methods purporting to measure the same construct. The correlation between the clinical ratings of maternal self-esteem and MSI scores was .35 with $p = .02$. Table 15 presents the distribution of clinical ratings of maternal self-esteem. The correlation

TABLE 15

DISTRIBUTION OF AND CORRELATIONS WITH CLINICAL RATING

	Clinical Rating of Maternal Self-Esteem
MSI	.35**
SRI	.33**

	N	%
High Clinical Rating	12	40.0
Medium Clinical Rating	12	40.0
Low Clinical Rating	6	20.0

*p < .10
**p < .05
***p < .01

between these two measures is sufficiently high to lend support to the validity of the MSI as a measure for assessing maternal self-esteem.

Construct validity. In order to further demonstrate the validity of the MSI scale, data pertaining to the construct validity of the test must be presented. The construct validity of the scale can be demonstrated by examiming each of the following: 1) the internal validity of the scale; 2) the homogeneity of the construct being measured, and; 3) the correlations between MSE scores and those independent variables which were logically and/or theoretically expected to correlate with maternal self-esteem, as well as the correlations between MSI scores and those independent variables which logically and/or theoretically were not expected to correlate with maternal self-esteem.

Internal validity. The first process in the validity analyses involved assessing the internal validity of the scale in order to ascertain what variables, other than the construct in question, may be determining the observed response. This process involved assessing the degree of defensiveness associated with responses to the questionnaires. A more detailed and sophisticated assessment of internal validity via the use of factor analysis and item analyses was not conducted for the purposes of the present study but will be needed for further usage of the scale in order to determine how many basic processes can be postulated to account for response variance on the instrument as a whole (Cronbach & Meehl, 1955).

In order to determine the degree of defensiveness which may have been influencing scores from the MSI and the SRI, ten of the items

from the Epstein-O'Brien Self-Report Inventory were intermixed with items from both questionnaires. An equal number of positive and negative items were included. For the purposes of this study, defensiveness was defined as "a stereotypical response which reflects what is socially acceptable or valued, rather than individual differences on the construct" (Wells & Marwell, 1976). The correlations between the two self-esteem measures (the MSI and SRI) and Defensiveness are presented in Table 16 , which includes correlations from Time 1 and Time 2. As can be seen from the table, at Time 1 the correlations between both self-esteem measures and Defensiveness were moderate, although significant. The correlation between Defensiveness and the MSI ($r = .39$, $p = .02$) was slightly lower than the correlation between Defensiveness and the SRI ($r = .43$, $p = .001$). The correlations between the individual subscales of the MSI and the Defensiveness measure were generally low and ranged from $r = -.05$ ($p = .39$) for Body Image and Health After Delivery to .57 ($p = .001$) for the Parental Influence subscale. It appears from these correlations presented in Table 16 that generally most of the subscales on the MSI were not highly influenced by social desirability factors and the one subscale which did appear to be highly influenced by social desirability was the Parental Influence subscale. Wells and Marwell (1976) have presented summary correlations between various measures of defensiveness and self-esteem scores and report that correlations typically are about .40, indicating that at Time 1, the influence of social desirability upon the MSI and SRI was still typical for most studies.

TABLE 16

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN MSI SUBSCALES, SRI SUBSCALES, AND DEFENSIVENESS AT TIME 1 AND TIME 2

MSI Subscales	Defensiveness Time 1	Defensiveness Time 2
Caretaking Ability	.37**	.46***
General Ability as a Mother	.28*	.44***
Acceptance of Baby	.31**	.35**
Expected Relationship with Baby	.27*	.18
Body Image and Health	-.05	.13
Parental Influence	.57***	.54***
Pregnancy, Labor and Delivery	.47***	.55***
SRI Subscales		
General Self-Esteem	.26*	.28*
Power Over Self	.14	.37**
Power Over Others	-.04	.29*
Likability	.36**	.16
Competence	.16	.35**
Morality	.18	.23
Body Image and Health	.003	.34**

*p < .10
**p < .05
***p < .01

At Time 2, the correlations between both self-esteem measures increased and were moderately high correlations, although the MSI correlation was significantly less than the SRI correlation ($r = .50$, and $r = .68$ respectively). The correlations between the individual subscales of the MSI and Defensiveness measure ranged from $r = .18$ ($p = .17$) for Body Image and Health After Delivery to .55 ($p = .001$) for Feelings Concerning Pregnancy, Labor and Delivery. Of interest is the finding that Body Image was consistently the factor least affected by Defensiveness. This was also true with the subscale Body Image and Appearance from the SRI, where only a negligible correlation existed with Defensiveness.

Homogeneity of the scale. As concerns the second construct validity analysis, the MSI subscale-total score correlations were all significant at the $p < .001$ level, and ranged from $r = .64$ for Body Image and Health After Delivery to $r = .89$ for General Ability As A Mother at Time 1, and $r = .60$ for Body Image and Health After Delivery to .92 for General Ability as A Mother at Time 2. See Table 17.

Correlation between the MSI and other independent variables. The third condition needed to support the construct validity of the MSI was a set of logical and theoretically expected correlations between the MSI and other relevant independent variables. Table 18 presents the correlations between the demographic variables and the MSI as well as the SRI at Time 1. As can be seen from the table, there were no significant ($p \leq .05$) correlations between any of the demographic variables

TABLE 17

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN SUBSCALES ON THE MSI AND MSI TOTAL SCORES AT TIME 1 AND TIME 2

MSI Subscales	MSI Total Score Time 1	MSI Total Score Time 2
Caretaking Ability	.88***	.85***
General Ability as a Mother	.89***	.92***
Acceptance of Baby	.73***	.78***
Expected Relationship with Baby	.71***	.79***
Body Image and Health	.64***	.60***
Parental Influence	.67***	.60***
Pregnancy, Labor and Delivery	.84***	.86***

*p < .10
**p < .05
***p < .01

TABLE 18

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN DEMOGRAPHIC VARIABLES AND THE MSI AND SRI AT TIME 1

Demographic Variables	MSI	SRI
Mother's Age	.23	.07
Mother's Religion	-.01	-.04
Mother's Race	-.20	-.01
Mother's Occupation	-.21	-.01
Mother's Education	-.10	.07
Family Income	.27*	.12
Marital Status	-.23	-.07
Father's Age	.27*	.04
Father's Race	-.08	.06
Father's Occupation	.01	.14
Father's Education	.03	-.03

*p < .10
**p < .05
***p < .01

and either the MSI or the SRI. This was not surprising and based on theoretical expectations and past findings had been predicted. However, it should be noted that a number of the demographic variables, including mother's religion, mother's race, and marital status had very restricted ranges with subsequently reduced covariances and smaller correlations. Additionally, the distribution of scores on these variables did not represent the normal distribution in the population, and this factor can significantly affect the size of the correlation coefficient. Although not significant, two of the variables had correlations which approached significance, including family income ($r = .27$, $p = .08$) and marital status ($r = .22$, $p < .11$). Both of these correlations are in the correct direction as would be expected. At Time 1, family income did tend to influence Maternal Self-esteem in that mother's with higher family incomes tended to have higher maternal self-esteem. However, as can be seen from Tables 18 and 19 , family income did not correlate with the MSI at Time 2, and did not correlate with the SRI at Time 1 or Time 2. As will be seen, family emotional and physical support was far more significantly correlated with both measures of self-esteem than was family income.

As concerns marital status, despite the restricted variability, there was a correlation in the expected direction between marital status and the MSI, at Time 1 ($r = -.23$, $p = .11$) but not with the SRI ($r = -.07$, $p = .36$). At Time 1, married mothers tended to have higher maternal self-esteem than did non-married mothers. However, as can be seen from Table 19, at Time 2 there was no significant correlation

TABLE 19

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN DEMOGRAPHIC VARIABLES AND THE MSI AND SRI AT TIME 2

Demographic Variables	MSI	SRI
Mother's Age	.02	-.05
Mother's Religion	.08	-.03
Mother's Race	-.10	.08
Mother's Occupation	-.14	.12
Mother's Education	-.23	-.10
Family Income	.02	-.01
Marital Status	-.07	-.07
Father's Age	.08	-.02
Father's Race	.02	.11
Father's Occupation	.03	.30
Father's Education	-.09	-.05

*p < .10
**p < .05
***p < .01

between marital status and the MSI ($r = .02$, $p = .47$) or marital status and the SRI ($r = -.01$, $p = .48$).

Table 19 presents the correlations between these demographic variables and the MSI and SRI at Time 2. As can be seen from the table, none of the correlations approached significance at Time 2.

A number of independent variables were hypothesized a priori to correlate specifically with maternal self-esteem. At Time 1, it was hypothesized that the following variables which would demonstrate strong relationships with the MSI; the health of the infant, behavioral responsiveness of the baby, family support, type of delivery and parity, maternal health factors and maternal separation from the infant. Table 20 presents the Pearson Product Moment correlation coefficients between all of the above variables with the MSI and SRI at Time 1.

As had been expected, there was a highly significant negative correlation between the infant's health status and MSI scores, $r = -.52$, ($p = .002$). Mothers of healthy infants had higher maternal self-esteem, while mothers of unhealthy infants had significantly lower self-esteem.

There was also a significant negative relationship between maternal health status at Time 1 and MSI scores, suggesting that mothers who encountered more health problems during their pregnancy, labor and delivery, had lower self-esteem than did mothers who had fewer complications. However, type of delivery, as measured by whether or not the mother had a vaginal delivery, repeat caesarean section or emergency caesarean section did not signficantly correlate with MSI scores, although the negative correlation coefficient of -.20 suggests a relationship in the direction expected. Mothers who delivered via caesarean

section had lower self-esteem scores than did mothers who delivered vaginally. Because there were only 3 mothers who delivered via repeat caesarean section, the mothers who delivered via emergency and repeat caesarean section were pooled and a student t-test was conducted to compare the means of these two groups. The one-tailed probability resulting from the t-test was .14 which was not significant, but again in the direction expected in that mothers who delivered via caesarean section had lower self-esteem than did mothers who delivered vaginally.

A student t-test was conducted to assess whether multiparous mothers had higher self-esteem than primiparous mothers. Although the difference between the two means was not statistically significant ($p = .12$) the relationship between parity and maternal self-esteem was in the logical and expected direction based on findings from previous research. Multiparous mothers had higher scores on the MSI than did primiparous mothers which lends further support to the construct validity of the MSI scale. Additionally, no correlation was found between the SRI and parity, which would not be expected.

Based on data from previous research, it was also expected that emotional, as well as physical, support from the baby's father and the mother's immediate family would affect maternal self-esteem. The relationship found between the family support measure and the MSI was very strong and in the expected direction. A correlation coefficient of .65 ($p = .001$) was found between the MSI and family support which is consistent with the literature on the importance of family support on self-esteem, particularly maternal self-esteem (Coopersmith, 1969; Fiering & Taylor, 1978).

The last variable which was expected to correlate with Maternal Self-Esteem at Time 1 was Maternal Separation from the Infant, which despite the small n (n = 3) had a correlation coefficient of -.43 (p = .008) with MSI scores. Mothers who were separated from their infant had significantly lower MSI scores than mothers who were not separated. However, as this measure of separation was confounded by both maternal health factors and infant health factors, the findings are only suggestive of an interaction at this time.

The one variable which was predicted to significantly correlate with maternal self-esteem but which did not, was the behavioral responsiveness and competence of the infant as measured by the Brazelton Neonatal Behavioral Scale. Virtually no correlation was found between scores from the Brazelton Exam total score or four a priori dimensions and the MSI, r = .04 (p = .42) for the total score correlation.

Of particular interest was the unexpected finding that there was a significant correlation between infant sex and maternal self-esteem. A student t-test was conducted in order to examine the difference between the mean MSI scores for mothers of female babies as compared to the mean MSI scores for mothers of male babies. A significant difference between mean scores was found, $p < .05$, indicating that mothers of male infants have higher maternal self-esteem than do mothers of female infants.

At Time 2, it was a priori hypothesized that a number of variables would relate to maternal self-esteem including the infants' health and behavioral responsiveness at one month, family support at one month after delivery, maternal perception of her infant and maternal-infant

interaction at one month, the Mother's Assessment of the Behavior of Her Infant (MABI), the baby's temperament, problems concerning feeding the baby, and maternal concerns expressed during the home interview. Table 21 presents the Pearson Product Moment Correlation coefficients for all the above variables with MSI and SRI scores at Time 2.

The most significant correlation between the above variables and MSI scores was the correlation between Family Support and the MSI, $r = .79$ ($p < .001$).

The correlation between infant health status and MSI scores was not significant at Time 2, although still in the direction expected. Mothers whose infants had more health complications following discharge from the hospital, had lower MSI scores than did mothers whose infants did not have health complications, $r = -.19$ ($p = .16$). It should be noted that there were fewer infants with health problems at Time 2 than Time 1, and thus less variability of the measure and less of a chance of finding a significant correlation. However, of interest is the finding that there was a significant correlation between the infant health measure at Time 1 (2-3 days of age) and the MSI scores at Time 2, $r = -.41$, $p < .01$.

Similar to the findings related to infant health, the correlation between maternal health complications and MSI scores was less at Time 2 than at Time 1, although this correlation was also in the direction expected. Mothers who had more health complications following delivery had lower MSI scores at Time 2, $r = -.15$ ($p = .212$). Again, there were fewer mothers with health problems at Time 2 than at Time 1, and

thus less variability of the measure and less of a chance of finding a significant correlation.

Again, contrary to what was expected, the behavioral responsiveness and social competence of the infant was not significantly correlated with MSI scores, $r = -.08$ ($p = .34$). Although the correlation with the Brazelton Exam was very small, it was in the direction expected. The lower the total score, the more optimal the infant's performance, so a negative correlation indicated that there was some tendency for mothers of infants who were more responsive and behaviorally well organized to have higher self-esteem. The one dimension of the Brazelton Exam which showed the greatest correlation with MSI scores was the Orientation Dimension. This measures the infants' quality of orienting behavior and degree of alertness. This correlation of $-.21$ ($p = .13$) indicated that mothers of highly alert and attentive infants tended to have higher maternal self-esteem. This was predicted and does lend some support to the original hypothesis.

It had also been hypothesized that the MABI Exam would correlate with the MSI. However, this did not prove to be the case, as only a very small correlation coefficient of $-.03$ ($p = .43$) was found.

Significant correlations were found between MSI scores and Maternal Perception of her Infant variables at one month. Using the Broussard Neonatal Perception Inventory, two scores were derived. The first was the discrepancy score, indicating a positive to negative perception of one's infant, and the second was the bothersome behaviors which the mother perceives the child to have (i.e. Chapter II and Appendix F for further explanation of these derived scores). The

discrepancy score had a correlation coefficient of -.36 ($p = .03$) with the MSI, indicating that women who had higher self-esteem as measured by the MSI, perceived their infants more positively than did mothers with lower scores. Additionally, mothers who perceived their infants as being more bothersome, had lower MSI scores than did mothers who did not perceive their infants as being bothersome.

Infant temperament, as measured by the six dimensions of the Rothbart Scale, did not significantly correlate with MSI scores.

Another variable which was logically expected to correlate with MSI scores was the variable representing feeding problems encountered during the first month. Feeding problems were based on maternal report and rated by the investigator on a 1 to 6 scale, one indicating no problems and six indicating a feeding problem which had not been resolved despite intervention. Mothers whose infants had feeding problems had significantly lower MSI scores than did mothers whose infants did not have feeding problems ($r = -.35$, $p = .03$).

As another method for assessing the construct validity of the scale, two questions from the home interview questionnaire were compared to MSI scores. The first question asked the mother how she felt about taking care of her baby after being home for one month. The correlation coefficient was non-significant but positive ($r = .25$, $p < .09$) indicating that mothers with higher maternal self-esteem also felt more positive about caring for their infant than did mothers with lower maternal self-esteem. The second question was also an open-ended question regarding any concerns the mother presently had about her infant, herself or family. A significant negative correlation of

-.30 ($p = .05$) was found indicating that mothers with greater self-esteem had fewer concerns than did mothers with low self-esteem.

Finally, it was proposed that mothers with high maternal self-esteem would be expected to behave in a positive manner when interacting with their infant, thus reflecting their feelings of confidence. The Disbrow score which is derived from the Mother-Infant Teaching Task was used as the criterion with which to compare MSI scores. As was discussed earlier, a high maternal Disbrow score reflects positive maternal behavior. A significant positive correlation ($r = .33$, $p < .05$) was found between maternal behavior during Teaching Task 1 (the easy task) and MSI scores, indicating that mothers with high maternal self-esteem interacted more positively and more competently with their infants during the teaching task. The correlation between MSI scores and Disbrow scores from the second task (the hard task), was not significant ($p = .11$), but still in the expected direction. Additionally, Maternal Sensitivity during the teaching task was compared to MSI scores. It was expected that Maternal Sensitivity scores would correlate positively with MSI scores. A significant positive correlation was found for the easy task, but not for the hard task, although this correlation of .22 was also in the expected direction.

Correlations between the SRI and other independent variables. As can be seen from Table 20, at Time 1, the SRI was significantly correlated with Family Support and Maternal Health. Although significant, both of these correlations were smaller than the correlations with the MSI at Time 1. While the SRI correlated significantly with these two

measures, the MSI was significantly correlated with five of the variables which were hypothesized would be related to maternal self-esteem. Additionally, the majority of the independent variables had higher correlations with the MSI than with the SRI. This finding lends further support to the validity of the MSI at Time 1 as a measure of maternal self-esteem and indicates that although these two scales are highly correlated they are not measuring the same factors. At Time 1, the MSI appears to be a better measure of maternal self-esteem than the SRI.

At Time 2, as can be seen in Table 21, the SRI was significantly correlated with Family Support at Time 2, Maternal Perception using the Bothersome Score, Maternal Health at Time 2 and Maternal Concerns. All of these variables except for Maternal Health were also significantly correlated with the MSI. While the SRI was significantly correlated with these four variables, the MSI was significantly correlated with eight of the variables which were hypothesized would be related to maternal self-esteem. Additionally again, the majority of the independent variables had higher correlations with the MSI than with the SRI. This finding lends further support to the validity of the MSI at Time 2 as a measure of maternal self-esteem. Again, although these scales are highly correlated they do not appear to be measuring the same factor and the MSI appears to be a better measure of maternal self-esteem than is the SRI.

TABLE 20

PEARSON PRODUCT-MOMENT CORRELATIONS, STUDENT'S +, AND PROBABILITY LEVELS BETWEEN A PRIORI DEFINED INDEPENDENT VARIABLES AND THE MSI AND SRI AT TIME 1

Independent Variables	MSI - 1	SRI
Infant Health Status	-.52***	-.30*
Brazelton Total Score	.04	.02
Brazelton Dimension I-- Interactive Processes	.15	.15
Brazelton Dimension II-- Motoric Processes	.03	.03
Brazelton Dimension III-- State Control	-.10	-.22
Brazelton Dimension IV-- Response to Stress	.05	.12
Family Support	.69***	.43***
Caesarean Section	t=1.07	t=.44
Parity	t=-1.21	t=.14
Mother's Health	-.38**	-.32**
Maternal Separation	-.43***	-.14
Infant Sex	t=2.19**	t=.90

*p < .10
**p < .05
***p < .01

TABLE 21

PEARSON PRODUCT-MOMENT CORRELATIONS AND PROBABILITY LEVELS FOR A PRIORI DEFINED INDEPENDENT VARIABLES AND THE MSI AND SRI AT TIME 2

Independent Variables	MSI - 2	SRI
Infant Health Status - Time 1	-.41***	-.46***
Infant Health Status - Time 2	-.19	-.29*
Brazelton Total Score - Time 2	-.08	-.10
Brazelton Dimension I-- Interactive Processes	-.21	-.23
Brazelton Dimension II-- Motoric Processes	-.05	-.04
Brazelton Dimension III-- State Control	-.03	-.03
Brazelton Dimension IV-- Response to Stress	.18	.09
Family Support	.79***	.64***
Maternal Perception-- Discrepancy Score	-.36**	-.14
Maternal Perception-- Bothersome Score	-.36**	-.45***
Mother's Brazelton Exam	-.03	-.23
Infant Temperament	.05	.10
Feeding Problems	-.35**	-.27*

TABLE 21 - Continued

Independent Variables	MSI - 2	SRI
Maternal Health	-.15	-.43
Maternal Concerns	-.30**	-.32**
Maternal Attitude	.27*	.29*
Maternal Disbrow Score	.33**	.19
Maternal Sensitivity	.38**	.28*

*p < .10
**p < .05
***p < .01

Test-Retest Reliability

The construct measured by the MSI appears to have very good stability over time as indicated by the four week Test-Retest Pearson Product Moment Reliability Coefficient of .85. See Table 22. Examination of mean scores from Time 1 to Time 2 indicates that on the average, Maternal Self-Esteem increased by approximately 7 points over this period of time. Further analysis of the correlation between MSI scores at Time 1 and Time 2 via a scatter diagram reveals a normal distribution of scores around the regression line.

TABLE 22

TEST-RETEST RELIABILITY COEFFICIENTS OF THE MSI AND SRI OVER A 4-WEEK PERIOD

Scale	Reliability Coefficient
MSI	r = .85***
SRI	r = .81***

***p < .001

C H A P T E R I V

DISCUSSION

Validity Analysis

Concurrent validity: Relationship between the MSI and SRI. Concerning the concurrent validity of the MSI, the high correlations between the individual subscales, as well as the correlations of the total MSI scores with the Epstein-O'Brien SRI, indicate that the MSI is measuring a similar component of self-esteem. And yet, the correlations are not so high as to suggest that the scales are equivalent. Additionally, the findings that the MSI was more significantly related to more of the variables which were hypothesized would be related to maternal self-esteem than was the SRI also indicates that although highly related, the MSI and SRI are not measuring the same factors. The high correlations of SRI subscales with MSI total scores lend further support to the concurrent validity of the scale. In fact, the finding that "Competence" and "Likability" were most highly correlated with the MSI total score is what one would logically expect since these dimensions are very important aspects of how a mother feels about herself and her ability to care for and be loved by her infant. On the other hand, "Morality" is one aspect of general self-esteem which is not as important or relevant to maternal self-esteem. Thus, the lower correlation between this subscale and the MSI at Time 2, was not unexpected.

However, the finding that Power-Over-Self and Power-Over-Others did not significantly correlate with many of the subscales from the MSI is not clearly understood. It appears that particularly Power-Over-Others is not related to specific aspects of maternal self-esteem such as the Perception of the Baby, Expected Relationship with the Baby, Parental Influence and Feelings concerning Pregnancy, Labor and Delivery. It is possible that some of the unshared variance between the MSI and the SRI is due to the finding that these two dimensions, although related to general self-esteem are not highly related to maternal self-esteem.

Further support for the concurrent validity of the scale was demonstrated by the high correlations between certain subscales from the MSI and SRI. These scales purported to be measuring similar dimensions and were logically expected to correlate. A lack of correlation between other subscales from these two measures which were not expected to correlate further lends support for the validity of the scale. The one subscale on the MSI which did not correlate highly with the General Self-Esteem measure on the SRI or other subscales from the SRI was the Parental Influence subscale. This subscale specifically measures a mother's feelings about her parents acceptance and approval of her as a person and particularly as a mother. It was surprising that this subscale did not correlate more highly with the SRI, as previous literature (Deutsch, 1945; Ricks, 1981) has reported that during pregnancy and after delivery, mothers often evaluate their ability as mothers in relation to their own experience with their parents. Thus, it had been expected that this rekindled relationship

with one's parents would affect a mother's perception of her own ability to be a "good" mother. The lack of correlation between the Parental Influence measure and General Self-Esteem may have been due to the small number of items (6) on this subscale.

Other explanations are possible. Many of the mothers in the study reported that two of the items from this subscale were ambiguous and difficult to answer. Consequently, many mothers did not answer these two items, or if they did, they put a question mark next to them indicating that they were unsure as to how to rate the statement. Furthermore, while only a moderate amount of Defensiveness was found to be influencing all of the other subscales on the MSI, a high degree of Defensiveness was indicated on the Parental Influence subscale. Again it might have been that the ambiguous nature and/or wording of the items on this subscale may explain the very high degree of Defensiveness associated with this subscale. Future revision of this scale would necessitate either a clarification of or replacement of these ambiguous items.

Further support for the concurrent validity of the MSI was demonstrated by the high correlation between MSI scores and the clinical assessments of maternal self-esteem. However, these correlations were not so high as to suggest that clinical ratings of maternal self-esteem were measuring the same qualities as the mother's self-report measures of their feelings of competence. The high correlations between the clinical ratings of Maternal Self-Esteem and the high correlation with the Self-Report Inventory together strongly support the concurrent validity of the MSI.

Construct validity. A number of analyses were conducted which clearly demonstrated the construct validity of the MSI. Support for the internal consistency of the MSI was demonstrated by the very high correlations between the MSI subscales and the MSI total score at both administrations of the exam. These high correlations suggest that a very homogeneous construct, defined by Maternal Self-Esteem, is being measured by the inventory. As was noted in Chapter III, further evidence for the homogeneity of the scale and construct being measured must be ascertained by conducting an item analysis, and then a factor-analysis of the scale.

Although the degree of Defensiveness increased on both the MSI and the SRI from Time 1 to Time 2, for MSI scores the amount of Defensiveness was still within the normal range for Self-Report scales (Wells & Marwell, 1976). The low degree of the Defensiveness on both of the subscales concerned with Body Image suggests that mothers are perhaps more frank and realistic about such concrete areas as Body Image and Body Functioning than more abstract personality characteristics such as Likeability or Morality. Although Defensiveness was higher at Time 2, indicating a greater influence of social desirability on both measures, this finding does not compromise the validity of the scale as an indicator of the subjects' conscious self-concept. Previous research has not provided any consistent or clear conclusions concerning the validity threat of social desirability or defensiveness distortions to measures of self-esteem (Wells & Marwell, 1976).

The strongest support for the construct validity of the MSI was demonstrated by the large number of high correlations between those

variables which were predicted to be related to Maternal Self-Esteem as well as those variables which were not expected to be directly related to maternal self-esteem.

Concerning the latter, the lack of correlation between demographic variables and MSI scores was consistent with previous findings which suggest that the psychological bases of self-esteem are more dependent on personal relationships and the immediate environment than upon more distant demographic factors (Healey, 1969). For example, it was found that Family Support had a much more salient effect upon maternal self-esteem than did marital status alone. This finding had been predicted based upon reports of clinical findings (Herzog, 1980) as well as previous studies (Aug & Bright, 1970; Feiring & Taylor, 1978) all of which have found that positive attitudes toward mothering, as well as the quality of the mother-infant interaction, are largely influenced by a positive family support system, and not just the presence of a husband. This is also consistent with findings from the self-esteem literature which has found that the major factors which are associated with low self-esteem are being negatively evaluated, critisized, disturbed love relationships, and being made to feel inadequate (Epstein, 1979b).

As had been predicted, there was a significant relationship between both Infant Health status and Maternal Health status, with Maternal Self-Esteem. Infant Health, however, had a much more salient effect upon maternal self-esteem than did Maternal Health. As had been predicted, even the relatively mild and very temporary illnesses that this group of babies encountered, significantly lowered feelings

of maternal competence. Of particular interest was the finding that Infant Health problems during the first few days following delivery, still were having a strong effect upon Maternal Self-Esteem one month later. Apparently, the health of the infant at birth and shortly afterwards, has a very salient and long lasting effect on the mothers perception of herself. Mothers appear to be more vulnerable to insults to their feelings of competence shortly after delivery than they are later on in their parenting experience. This is in agreement with findings reported by Minde, Brown, and Whitelaw (1981), who found that it was not until 3 months after discharge from the hospital that parents of healthy premature infants had recovered emotionally and were able to engage in healthy mother-infant interactions. The mothers of the sick prematures were still unable to develop a healthy attachment to their infants after 3 months of being at home with the infant, despite the fact that the infants had recovered from their earlier illnesses and were doing very well. Apparently, an infant's illness shortly after delivery can override what the mother brings to the mother-infant relationship.

Another related variable which was predicted to effect Maternal Self-Esteem was separation of the mother and infant during the hospital stay. Previous research (Seashore et al., 1973) found that mothers who were separated from their premature infants had significnatly lower maternal self-confidence than did mothers of premature infants who were not separated from their infants. Although in the present study, none of the infants were premature and none of the mothers were discharged home without their infants, a very small group of mothers

were separated from their infants for one day. They were separated because the infants were in the neonatal intensive care unit and the mothers were hospitalized on another floor and not allowed to be with their infant. Although the number of mothers involved was very small, the very high correlation suggests that separation from the infant following the birth of the baby, even for as short a time as 12 hours, had a salient effect on Maternal Self-Esteem. However, the separation factor was confounded by both infant health and maternal health complications. This confound was also present in the Seashore et al. study. In the future, with a large number of subjects, it would be interesting to examine the effect of infant health problems, with and without separation, on maternal self-esteem and mother-infant interaction. Thus one could partial out the effects of infant health complications without the confound of separation for even a short time between mother and infant.

Another variable which was predicted to correlate significantly with Maternal Self-Esteem was Parity. Although the correlation was not significant, there was an indication of a trend in the expected direction. Multiparous mothers tended to have higher maternal self-esteem than did primiparous mothers. Seashore et al. (1973) found that multiparous mothers had more self-confidence as mothers than did primiparous mothers. They suggested that a mother who had experience in caring for other children of her own would be more secure in her mothering ability and could utilize this strength and confidence in caring for a sick infant. The multiparous mothers in the Seashore et al. study who were separated from their infants had greater

self-confidence than the primiparous mothers who were separated from their infants. However, in the present study, the opposite results were found. Multiparous mothers appeared to be more vulnerable and more susceptable to decreased maternal confidence with the birth of an infant with health problems. This finding was not expected. However, close examination of the data revealed that the infants in the study who were most seriously ill were infants of multiparous mothers. This perhaps may explain why the multiparous mothers were more vulnerable to decreases in self-esteem.

Further research with a greater number of subjects with more varied neonatal health courses should be conducted in order to more clearly understand how infant health complications effects maternal attitudes and behavior for both primiparous and multiparous mothers.

Another variable which was hypothesized would be related to Maternal Self-Esteem was the Type of Delivery. Again, although not significant, there was a tendency for mothers who delivered via Caesarean Section to have lower Maternal Self-Esteem scores than mothers who delivered vaginally. Also, mothers who delivered via Caesarean Section had significantly less positive attitudes toward labor and delivery than did mothers who delivered vaginally. This is consistent with findings from Field and Widmayer (1980) who found that Caesarean Section mothers showed less positive attitudes and more anxieties toward labor and delivery. However, also consistent with the findings from the Field and Widmayer study (1980), by Time 2, Caesarean Section mothers had higher self-esteem and less negative attitudes toward labor and delivery.

Field and Widmayer, as well as Pedersen et al. (1980), have suggested that fathers of infants delivered via Caesarean Section tend to assume more caregiving responsibilities and are more supportive than fathers of infants delivered vaginally. They suggest that fathers become more supportive in order to help the mother recover from the ordeal of the operation. In the present study, there was no significant difference in the amount of Family Support that Caesarean Section mothers received in comparison to mothers who deliver vaginally. Also, there was no significant increase in the amount of support that Caesarean Section mothers received from Time 1 to Time 2, although there was a slight increase. There were no significant differences between neonatal characteristics of the infants delivered via Caesarean Section and those delivered naturally. Over the one month period of time, the Caesarean Section mothers did not encounter significantly more health or behavior complication with their infants, and continued to receive support from their family. Thus, they were able to regain feelings of maternal competence and reflect more positively on their delivery experience. This finding also suggests that Maternal Self-Esteem is not as vulnerable to maternal health or delivery experience as long as Family Support remains strong.

One variable which had been expected to be related to Maternal Self-Esteem but was not, was the behavior and responsiveness of the infant as measured by the Brazelton Exam. Two possible interpretations can be posed to explain this finding. The first explanation concerns the subject variability. Both at Time 1 and Time 2, there were only a very small number of infants, 4, who would have been classified as

"worrisome" according to the scoring criteria devised by Als et al. (1979). Although there was a good range of scores on the Brazelton Exam, the majority of infants performed well within the "normal" range. Previous studies which have so clearly demonstrated the effect of the lack of infant responsiveness and disorganization on maternal behavior and interaction with her infant, were dealing with a more high risk population including premature infants, postmature infants, and small for gestational age infants. Because of the limited number of subjects in the present study, as well as the requirement that mother and infant be discharged from the hospital together, there were very few infants who demonstrated worrisome behavior. There was only one premature infant in the study (birth weight 5 pounds, 3 ounces), but this baby was healthy. There was one infant who was diagnosed as being small-for-gestational-age, and only two infants whose clinical symptoms classified them as postmature. These three babies did have medical problems and behavioral deficits, and two of these three mothers had less than average MSI scores. However, with such a small number of "worrisome" infants, the probability of finding a significant relationship was greatly diminished.

Yet, one might still have expected to have seen some trend in the data if indeed the infant's behavioral responsiveness was affecting maternal feelings of competence. Another possible explanation for the lack of any such finding may be that during the newborn period, mothers attend to more obvious, immediate and salient characteristics such as the baby's health, physical appearance, sex, and weight. It may be these characteristics which effect the mothers perception of the baby

and herself during the first month following delivery and only later does behavioral responsiveness come to the fore.

Previous research which had demonstrated the effect of newborn behavior on mother-infant interaction has focused on the impact of the infant's behavior on the mother's behavior, not maternal attitudes or perceptions. In fact, in this study, Brazelton Exam scores at Time 2 did correlate with the mother's behavior, as measured by the Disbrow Scores. Mothers whose infants performed more optimally on the Brazelton Exam were more positive when interacting with their infant and more sensitive to their infant's behavior. So, while the infant's responsiveness does effect maternal behavior, these characteristics are not directly interacting with their feelings of competence and maternal self-esteem. Some support for this interpretation can be found in the increased correlation from Time 1 to Time 2 between the Brazelton Exam and MSI scores. By Time 2, the correlation was in the expected direction, although still very small. Perhaps the infant's behavioral characteristics were beginning to become more salient to the mothers after interacting with their baby for one month, and thus beginning to exert some effect on their feelings of competence.

The dimension of the Brazelton Exam which was expected to correlate most highly with MSI scores was the Orientation Dimension. This reflects the amount of alertness and social feedback provided by the infant. This dimension was expected to correlate most highly because it is through social behavior that infants can provide feedback regarding the mother's competence at caretaking. Although not significant,

this dimension did correlate most highly with Maternal Self-Esteem scores, and by Time 2, this correlation had increased.

In summary, it appears from the data that a period of time of interacting with the baby is needed in order for the mothers to develop a perception of the baby which takes into account his/her particular behavioral characteristics. A future study which followed up mother-infant pairs at perhaps 3 and then 6 months would be of interest to examine whether or not, and when, the infant's behavioral characteristics begin to affect maternal feelings of competence. It is not until around 3 months of age that the infant's social behavior develops intentional characteristics whereby the infant, through smiling, babbling, visually tracking and reaching actively tries to engage the mother in social interactions. Perhaps it is not until this begins to occur that the infant's social behavior will consciously effect the mother's feelings of competence.

Another variable which was predicted to relate to Maternal Self-Esteem and did, was the mother's perception of her baby. As compared to the Brazelton Exam, the Broussard Neonatal Perception Inventory taps more obvious and salient forms of infant behavior, such as amount of crying, feeding behavior, sleeping and elimination. As was expected, the mother's perception of her infant was related to her feelings of her own competence as a mother. Mothers who perceived their infants to be "better than average" also felt that they were better than average mothers. Broussard and Hartner (1971) found that only after one month of experience with their infants did a mother's evaluation of her infant have predictive value to the infant's later adjustment.

Given this finding, it seems quite possible that it would take more than one month of interaction for the mother to become sensitive to and aware of the more subtle behavioral characteristics of their infant such as those assessed by the Brazelton Exam. It is suggested that this would be particularly true in the event that the infant suffered any health or feeding complications.

Two measures which did not demonstrate a relationship with Maternal Self-Esteem were the MABI Exam and the Rothbart Infant Behavior Scale. Both of these scales presented methodological problems and in both cases it was felt that the scales were not able to tap the salient dimensions of the behaviors that they purported to measure.

In the case of the MABI Exam, the scoring procedure was altered from the standard scoring system to such an extent, that it appeared to wipe out many individual differences in infant behavior which had been found using the standard version of the Brazelton Exam. For example, on the Brazelton Exam, optimal scores for the Orienting Dimension require a rating of 6 through 9, on 4 out of 5 of the items in the dimension. However, on the MABI Exam, the optimal score for the Orienting Dimension requires a rating of 8 or 9 on the same 4 our of 5 items. Thus, on the MABI Exam there were only 2 optimal ratings on the Orientation Dimension while on the Brazelton Exam conducted at Time 2 by the trained examiner, there were 11 optimal ratings on the Orientation Dimension. This descrepancy was not due to a difference between maternal ratings and examiner ratings but rather it was due to the changes in the scoring system. If the standard scoring system had been used there would have been 10 optimal ratings on the

MABI. Similar scoring problems existed for the items assessing Peak of Excitement, Skin Color, and Self-Quieting Ability which all required higher scores on the MABI in order to get an optimal rating than is required on the standard Brazelton Exam. The resulting problem with these scoring requirements was that the variability in infant performance was greatly reduced and consequently the chances of finding a significant correlation between MABI scores and MSI scores was reduced. This methodological problem was unfortunate as it was hoped that perhaps the mother's perception of those behavioral characteristics measured by the Brazelton Exam would be more influential in effecting her feelings of competence, than those behavioral characteristics elicited by a trained examiner. It is this author's opinion that further work is needed to revise some of the discrepancies in the scoring of the MABI Exam.

As concerns the scoring complications with the Infant Behavior Scale, too much variability existed on each dimension of the scale concerning the number of items which the mother completed. For each item on the scale, mothers had the option to respond by circling the response called "Does Not Apply". This response was to be used in the case that the mother did not see the baby in the situation described. For example, one question asks "How often during the last week did the baby, when in a position to see the television set, look at it for 2-5 minutes at a time?" If the mother did not have a T.V. or had never put the infant in the position to the the T.V., she should have responded by circling "Does Not Apply". However, this type of question was frequently misinterpreted and rather than appropriately

responding "Does Not Apply", mother's frequently responded by circling "Never". Many such questions were included on the scale and appeared to present a problem for mothers in knowing how to respond. Additionally, many mothers used the "Does Not Apply" column when they should have used the "Never" column. This confusion appears to have negated the validity of the scale as the scale was completed by the mothers and in most cases were not in the presence of the author. In the future, the scale should be administered to the mother by a trained examiner, so that such questions about how to respond can be clarified and these problems of validity averted.

The finding that mothers whose infants encountered feeding problems had lower maternal self-esteem also lent further support to the validity of the scale. Other researchers (Brazelton, 1976; Coopersmith, 1967) have reported that feeding problems can lead to feelings of failure and inadequacy on the part of the mother. Regardless of whether the feeding problem appeared to have developed due to a problem with the baby (cleft pallet) or due to a problem with the mother (breast infection), the mothers appeared to feel responsible. However, it should be noted that it is not clear as to whether feeding problems lead to feelings of incompetence or whether feelings of incompetence impeded successful feeding and feelings of continued incompetence. However, these two variables are clearly related to each other and the more negative experiences the mother has in the caretaking of her child, the lower will be her feelings of competence.

Finally, further support for the validity of the MSI scale was found by the expected strong relationship between maternal behavior

in the mother-infant interaction and the MSI. As had been predicted, mothers who reported having higher self-esteem, also behaved more positively and confidently while interacting with their infants in the teaching task. They were also more sensitive to their infant's cues and able to respond to these cues. As has been found by Coopersmith (1967) and Epstein (1979c) reports of self-attitudes generally are related to overt demonstrations of the target behavior. Thus this finding lends further support to the validity of the MSI as a self-report measure of maternal self-esteem and confidence.

This measure also provided strong support for the major hypothesis of the present study in that the mothers who were more effective in interacting with their infants, had infants who were more receptive and responsive to their help and had more self-confidence in her maternal abilities.

Reliability. The very high test-retest reliability of the MSI lends further support to the validity of the scale. However, the high reliability of Maternal Self-Esteem indicated that Maternal Self-Esteem was much more stable and invulnerable to change during the first month after delivery than had been originally expected. It was particularly surprising to see such stability in a time which as been characterized as a time of emotional and psychological turmoil (Brazelton, 1974). The stability of the MSI scores over time may reflect the healthy and stable nature of the subject population in this study. This, combined with the very high correlation with Epstein's measure of General Self-Esteem, suggests that Maternal Self-Esteem may be so important and

central to a mother's perception of herself, that, like General Self-Esteem, it is fairly impervious to change over a short term basis. Additionally, it must be re-emphasized that the mothers and infants in the present study represented a relatively healthy, normal population. Therefore, the narrow range of subject characteristics and life circumstances provided a very conservative measure of the various influences on maternal self-esteem. It is suggested that with a less healthy population, who was exposed to more stress and changes in specific life circumstances (such as health factors or family support) one would see more variability in Maternal Self-Esteem, as well as less stability over time. Also, one would expect that over time, as the mother-infant relationship develops and changes, one would find more dramatic changes in Maternal Self-Esteem. However, it should also be pointed out that given this very conservative and homogeneous population, the number of significant correlations between maternal self-esteem and other variables can be considered highly significant.

In summary, the results of the validity and reliability analyses can be considered to support unambiguously the Maternal Self-Report Inventory as a valid and reliable measure of maternal feelings of competence and self-esteem. The majority of the variables, which were logically and theoretically expected to be related to Maternal Self-Esteem were indeed related. While a few of the variables which were predicted to relate to Maternal Self-Esteem did not, the major explanation for this seems to lie in the narrow range of variability of the subject population rather than the validity of the MSI scale.

Given the reliability and validity of the MSI, future studies which investigate those variables which predict to maternal self-esteem, using the MSI, would be extremely valuable for understanding how best to modify low maternal self-esteem and prevent the development of negative maternal adaptation. Also of further interest would be the identification of those variables which predict to changes in maternal self-esteem as well as investigating if changes in maternal self-esteem predict to child development. Such a study would require a large heterogeneous group of mothers and infants representing a wide range of family support networks and health factors.

The narrow range of subject characteristics and life circumstances in the present study provided a very conservative measure of the various influences on maternal self-esteem. It is likely that under more stressful circumstances, one would find more variability in Maternal Self-Esteem and less stability. For example, it is suggested that with a greater range of infant health complications or family support networks, one would find more dramatic changes in maternal self-esteem depending upon changes in these variables. An illustrative example from the study of one of the most stressful mother-infant pairs, supports this hypothesis. In this case, the infant was born with a minor cleft pallet but no facial abnormalities, after a normal full term pregnancy. Her mother suffered from migraine headaches following delivery and was very depressed and tired. During her hospital stay she encountered many feeding problems with her infant and expressed much anxiety about her ability to properly feed her baby. The nursing staff was very impatient with the mother's fears and anxieties, which

the mother said made her feel guilty about these feelings. Additionally, following delivery, the mother's husband retreated from helping with caretaking chores and began working an extra shift. At the same time, her other two young children began requiring more attention from their mother. After being home for one month, the infant had not gained weight, had encountered more feeding problems, had developed a rash and required two doctor's visits. Although this mother's maternal self-esteem was relatively low following delivery, by Time 2, her maternal self-esteem had significantly decreased. By Time 2, this mother was requesting psychological services as she felt no longer competent to care for her two children or the baby. In another case, a mother of a small for gestational age infant, who was initially difficult to care for, had very low maternal self-esteem when measured in the hospital. However, her husband enlisted the aid of the other siblings and provided the mother with both caretaking help and much emotional support. By Time 2, this mother's self-esteem had significantly increased and the baby both appeared healthier and was more responsive and easy to care for.

Future research which examines changes in Maternal Self-Esteem with a more stressful and high risk population is necessary to verify these findings.

These findings could have very significant implications for early intervention and abstetrical and neonatal care. Using the Maternal Self-Report Inventory, future studies are now needed which demonstrate the effects of maternal self-esteem on maternal adaptation and infant

development, and which identify the development of and modifiors of maternal self-esteem.

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APPENDIX A

SEVEN SUBSCALES OF THE MATERNAL SELF-ESTEEM INVENTORY

CARETAKING ABILITY

Total Number of Items = 26

# of Item	Item
7.	I feel confident at being able to satisfy my baby's physical needs.
47.	Having to bathe my baby makes me very nervous as he/she is so hard to handle.
52.	I am worried that I will have difficulty changing my baby's diapers.
118.	I am afraid I will be awkward and clumsy when handling my baby.
109.	I worry that I will not know what to do if my baby gets sick.
79.	I am concerned that I will have trouble figuring out what my baby needs.
99.	I am not very good at calming my baby.
12.	I feel confident at being able to know what my baby wants.
112.	It is difficult for me to know what my baby wants.
162.	I worry about being able to fulfill my baby's emotional needs.
150.	As long a I love my baby, it doesn't matter if I breast feed or bottle feed.
125.	I feel like I have lots of love to give to my baby.
58.	I doubt that I will be able to satisfy my baby's emotional needs.
25.	If it is true that breast feeding is important it is because it brings the mother and baby closer together.
14.	I feel unable to give my baby the love and care which he/she needs.
78.	I will not mind getting up in the middle of the night to feed my baby.
2.	Feeding my baby is fun.

42. I worry that feeding my baby will be a burden for me.

88. I feel competent at being able to feed my baby.

121. I looked forward to breast feeding my baby.

138. I am worried about being able to feed my baby properly.

147. I am afraid that someday I will hurt my baby.

113. I feel that I am too good a mother to ever lose my temper with my baby.

101. I never feel like spanking a crying baby.

65. I often worry that I may be forgetful and cause something bad to happen to my baby.

26. I sometimes feel very angry when a baby won't stop crying.

GENERAL ABILITY AND PREPAREDNESS FOR MOTHERING ROLE

Total Number of Items = 25

# of Items	Items
86.	I feel guilty about bringing a baby into this troubled world.
165.	I have mixed feelings about being a mother.
156.	I feel that I will do a good job taking care of my baby.
154.	I feel somewhat anxious about all the things a mother must do.
69.	I have no anxieties about all there is to do as a mother.
148.	I do not find being a mother to be as fulfilling an experience as I thought it would be.
104.	It really makes me feel depressed to think about all there is to do as a mother.
95.	I feel like I am (or will be) a failure as a mother.
76.	I am confident that I will be able to work out any normal problems I might have with my baby.

75. I have some unique contributions which I alone can make to my baby's life.

71. I feel emotionally prepared to take good care of my baby.

67. I feel like I am (or will be) a very good mother.

22. This is a very happy time in my life.

16. I think that I will be a good mother.

1. I feel that being a mother will be a very rewarding experience.

40. I feel reasonably competent in taking care of my new baby.

15. I do not mind having to sacrifice my present personal activities in order to stay at home with my baby.

90. I expect that I won't mind staying home to care for my baby.

54. I look forward to taking my baby home.

107. I am enthusiastic about taking responsibility for caring for my baby.

131. I am frightened about all the day-to-day responsibilities of having to care for my baby.

159. I know enough to be able to teach my baby many things which he/she will have to learn.

126. I feel confident about being able to teach my baby new things.

23. I don't have much confidence in my ability to help my baby learn new things.

157. I do not feel emotionally secure enough to care for my baby by myself.

ACCEPTANCE OF BABY

Total Number of Items = 10

# of Item	Item
5.	I am dissappointed with the sex of my baby.
39.	I think my baby is very beautiful.

30. I was overjoyed when I first saw my baby.

4. My baby is very fragile and I worry that people will be too rough with him/her.

97. I am concerned about whether my baby will develop normally.

36. I have real doubts about whether my baby will develop normally.

130. I am confident that my baby will be strong and healthy.

137. I have great expectations for what my baby will be like.

73. When I first saw my baby I was disappointed.

133. I am concerned about whether my baby will develop normally.

EXPECTED RELATIONSHIP WITH BABY

Total Number of Items = 9

# of Item	Item
20.	I am confident that I will have a close and warm relationship with my baby.
96.	I need more time to adjust to my baby.
31.	Looking forward to having a baby gave me more pleasure than actually having one.
60.	The thought of holding and cuddling my baby is very appealing to me.
81.	I feel I don't relate very well to little babies.
85.	I worry about whether my baby will like me.
103.	I doubt that my baby could love me the way I am.
164.	I am confident that my baby will love me very much.
117.	I think I will enjoy my baby more when he/she is older and has a personality of his/her own.

PARENTAL ACCEPTANCE

Total Number of Items = 6

# of Item	Item
89.	My mother was a very caring and loving person and I expect I also will be a very loving mother.
13.	I expect I will be at least as good a mother as my mother was.
49.	My mother was rarely affectionate to me and I worry that I will not be able to be affectionate with my baby.
105.	My father made me feel very loved, and I feel I too can give my baby love and affection.
127.	I feel that my parents did a very bad job raising me and I am sure that I will not make the same mistakes with my baby.
152.	I did not like my mother and I worry that my baby will not like me.

BODY IMAGE AND HEALTH

Total Number of Items = 9

# of Item	Item
145.	I doubt that my figure will ever look as good after having had a baby.
91.	I do not like the way I look after having had my baby.
56.	I think I am at least as good looking now, as I was before I had a baby.
33.	I am concerned about losing my figure after having had a baby.
161.	I felt I looked very good during my pregnancy.
136.	It will take me a long time to get back my energy so I can properly take care of my baby.
82.	I feel as though I have plenty of energy to take care of my baby.

62. I worry whether I am healthy enough to take care of a new baby properly.

48. In general, I don't worry about my own health interfering with my ability to care for my baby.

FEELINGS CONCERNING PREGNANCY, LABOR AND DELIVERY

Total Number of Items = 15

# of Item	Item
44.	I was extremely pleased when I found out I was pregnant.
80.	I missed the feeling of being pregnant after delivering my baby.
142.	When I was pregnant I often had frightening fantasies that I would deliver an abnormal baby.
100.	I took good care of myself during my pregnancy.
84.	When I was pregnant I eagerly awaited the birth of my baby.
74.	I feel that something I did during my pregnancy may have caused problems for my baby.
64.	When I found out I was pregnant, I had mixed feelings about having a baby.
144.	I felt emotionally prepared for my baby's birth.
18.	I felt emotionally "empty" after delivering my baby.
9.	I found the experience of labor and delivery to be one of the most unpleasant experiences I've ever had.
34.	I felt slightly depressed and blue soon after delivery.
114.	I found the whole experience of labor and delivery to be one of the best experiences of my life.
132.	I found labor to be very frightening.
93.	I found the delivery experience to be very exciting.
59.	I found the delivery experience to be frightening and very unpleasant.

APPENDIX B

MATERNAL SELF-REPORT INVENTORY

MATERNAL SELF-REPORT INVENTORY

Please note how accurately the following statements describe how you feel. Read each item carefully and when you are sure you understand it, indicate your answer by drawing a circle around the answer which best expressed the degree to which the statement is true for you.

Rate each statement as follows:

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

For example, circle CF is you feel that statement is completely false, circle MF if the statement is mainly false, circle MT is the statement is mainly true, and circle CT if the statement is completely true. If you are uncertain or feel that the statement is neither true nor false, then circle Un.

Please answer each item as honestly as you can, and work rapidly as first impressions are as good as any. Try to answer every question, and if in doubt, circle the answer which comes closest to expressing your feelings. Although some of the statements seem to be similar, they are not identical, and should be rated separately. All of your answers will be treated with complete confidentiality. There are no right or wrong answers, so please answer according to your own feelings. If you have any questions or comments to make, please feel free to note them at the end of the questionnaire. Your comments are very much appreciated.

Thank you very much.

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

1. I feel that being a mother will be a very rewarding experience. CF MF Un MT CT
2. Feeding my baby is fun. CF MF Un MT CT
3. I am quick to learn new things. CF MF Un MT CT
4. My baby is very fragile and I worry that I might be too rough with him/her. CF MF Un MT CT
5. I am dissappointed with the sex of my baby. CF MF Un MT CT
6. All in all, I'm quite satisfied with who I am. CF MF Un MT CT
7. I feel confident about my being able to satisfy my baby's physical needs. CF MF Un MT CT
8. I am very sensitive to disapproval. CF MF Un MT CT
9. I found the experience of labor and delivery to be one of the most unpleasant experiences I've ever had. CF MF Un MT CT
10. I have never felt that I was punished without cause. CF MF Un MT CT
11. I succeed at most things that I attempt. CF MF Un MT CT
12. I feel confident about being able to know what my baby wants. CF MF Un MT CT
13. I expect I will be at least as good a mother as my mother was. CF MF Un MT CT
14. I feel unable to give my baby the love and care he/she needs. CF MF Un MT CT
15. I do not mind having to sacrifice my own present activities in order to stay at home with my baby. CF MF Un MT CT
16. I think that I will be a good mother. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

17. I'm an easy person to like. CF MF Un MT CT

18. I felt emotionally "empty" after delivering my baby. CF MF Un MT CT

19. My baby's father was very happy with the sex of our baby. CF MF Un MT CT

20. I am confident that I will have a close and warm relationship with my baby. CF MF Un MT CT

21. I regard myself as a highly ethical person. CF MF Un MT CT

22. This is a very happy time in my life. CF MF Un MT CT

23. I don't have much confidence in my ability to help my baby learn new things. CF MF Un MT CT

24. I frequently do things that I later feel guilty about. CF MF Un MT CT

25. If it is true that breast feeding is important it is because it brings the mother and baby closer together. CF MF Un MT CT

26. I sometimes feel very angry when a baby won't stop crying. CF MF Un MT CT

27. I expect my relatives will be proud of me and my new baby. CF MF Un MT CT

28. I like the way I look. CF MF Un MT CT

29. I am not very good at getting people to do as I wish. CF MF Un MT CT

30. I was overjoyed when I first saw my baby. CF MF Un MT CT

31. Looking forward to having a baby gave me more pleasure than actually having one. CF MF Un MT CT

32. I am sure that my baby's father really wants this baby. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

33. I am concerned about "losing my figure" after having had a baby. CF MF Un MT CT

34. I felt slightly depressed and "blue" after delivery. CF MF Un MT CT

35. I can handle almost any important problem I am faced with. CF MF Un MT CT

36. I have real doubts about whether my baby will develop normally. CF MF Un MT CT

37. I sometimes say things that are not completely true. CF MF Un MT CT

38. Self-control is no problem for me. CF MF Un MT CT

39. I think my baby is very beautiful. CF MF Un MT CT

40. I feel reasonably competent in taking care of my new baby. CF MF Un MT CT

41. I am an independent person. CF MF Un MT CT

42. I worry that feeding my baby will be a burden for me. CF MF Un MT CT

43. I tend to assume that people will not like me. CF MF Un MT CT

44. I was extremely pleased when I found out I was pregnant. CF MF Un MT CT

45. At elections I have sometimes voted for people about whom I know very little. CF MF Un MT CT

46. I have been endowed with a strong and healthy body. CF MF Un MT CT

47. Having to bathe my baby makes me very nervous since they are so hard to handle. CF MF Un MT CT

48. In general, I don't worry about my own health interfering with my ability to care for my baby. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

49. My mother was rarely affectionate to me and I worry that I will not be able to be affectionate with my baby. CF MF Un MT CT

50. I lack firm guiding principles. CF MF Un MT CT

51. I like myself. CF MF Un MT CT

52. I am worried that I will have difficulty changing my baby's diapers. CF MF Un MT CT

53. I am lacking in will power. CF MF Un MT CT

54. I look forward to taking my baby home. CF MF Un MT CT

55. I tend to be good at physical activities, such as dancing and sports. CF MF Un MT CT

56. I think I am at least as good looking now as I was before I got pregnant. CF MF Un MT CT

57. I would rather win than lose in a game. CF MF Un MT CT

58. I doubt that I will be able to satisfy my baby's emotional needs. CF MF Un MT CT

59. I found the delivery experience to be very frightening and unpleasant. CF MF Un MT CT

60. The thought of holding and cuddling my baby is very appealing to me. CF MF Un MT CT

61. I have someone close to me with whom I can share my concerns. CF MF Un MT CT

62. I worry whether I am healthy enough to take care of new baby properly. CF MF Un MT CT

63. I have little respect for myself. CF MF Un MT CT

64. When I found out I was pregnant, I had mixed feelings about having a baby. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

65. I often worry that I may be forgetful and cause something bad to happen to my baby. CF MF Un MT CT

66. When I bring my baby home I will have enough help in caretaking and housework responsibilities. CF MF Un MT CT

67. I feel like I am (or will be) a very good mother. CF MF Un MT CT

68. I have at least as much self-control as most people. CF MF Un MT CT

69. I have no anxieties about all the things mother's have to do. CF MF Un MT CT

70. I become ill quite easily. CF MF Un MT CT

71. I feel emotionally prepared to take good care of my baby. CF MF Un MT CT

72. I have never felt like saying something that would hurt someone's feelings. CF MF Un MT CT

73. When I first saw my baby I was disappointed. CF MF Un MT CT

74. I feel that something I did during my pregnancy may have caused (or will cause) problems for my baby. CF MF Un MT CT

75. I have some unique contributions which I alone can make to my baby's life. CF MF Un MT CT

76. I am confident that I will be able to work out any normal problems I might have with my baby. CF MF Un MT CT

77. I am ashamed of my physical appearance. CF MF Un MT CT

78. I will not mind getting up in the middle of the night to feed my baby. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

79.	I am concerned that I will have trouble figuring out what my baby needs.	CF MF Un MT CT
80.	I missed the feeling of being pregnant after delivering my baby.	CF MF Un MT CT
81.	I feel I don't relate well to little babies.	CF MF Un MT CT
82.	I feel as though I have plenty of energy to take care of my baby.	CF MF Un MT CT
83.	I have a firm sense of what is right and wrong, and act accordingly.	CF MF Un MT CT
84.	When I was pregnant, I eagerly awaited the birth of my baby.	CF MF Un MT CT
85.	I worry about whether my baby will like me.	CF MF Un MT CT
86.	I feel guilty about bringing a baby into this troubled world.	CF MF Un MT CT
87.	I have an inferiority complex.	CF MF Un MT CT
88.	I feel competent at being able to feed my baby.	CF MF Un MT CT
89.	My mother was a very caring and loving person and I expect that I will also be a very loving mother.	CF MF Un MT CT
90.	I expect that I won't mind staying at home to care for my baby.	CF MF Un MT CT
91.	I do not like the way I look after having had my baby.	CF MF Un MT CT
92.	I sometimes doubt that anyone who really mattered to me could love me the way I am.	CF MF Un MT CT
93.	I found the delivery experience to be very exciting.	CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

94.	Others often follow my lead.	CF	MF	Un	MT	CT
95.	I feel like I am (or will be) a failure as a mother.	CF	MF	Un	MT	CT
96.	I need more time to adjust to my baby.	CF	MF	Un	MT	CT
97.	I am concerned about whether my baby will develop normally.	CF	MF	Un	MT	CT
98.	Most people like me.	CF	MF	Un	MT	CT
99.	I am not very good at calming my baby.	CF	MF	Un	MT	CT
100.	I took good care of myself during my pregnancy.	CF	MF	Un	MT	CT
101.	I never feel like spanking a crying baby.	CF	MF	Un	MT	CT
102.	I'm not good at influencing people.	CF	MF	Un	MT	CT
103.	I doubt that my baby could love me the way I am.	CF	MF	Un	MT	CT
104.	It really makes me feel depressed to think about all there is to do as a mother.	CF	MF	Un	MT	CT
105.	My father made me feel very loved, and I think I too can show my baby love and affection.	CF	MF	Un	MT	CT
106.	I often worry about my physical health.	CF	MF	Un	MT	CT
107.	I am enthusiastic about taking responsibility for caring for my baby.	CF	MF	Un	MT	CT
108.	I have not been able to share my concerns about my baby with anyone close to me.	CF	MF	Un	MT	CT
109.	I worry that I will not know what to do if my baby gets sick.	CF	MF	Un	MT	CT
110.	I have always been courteous, even to people who have disagreeable to me.	CF	MF	Un	MT	CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

111. I worry about whether my house is large enough for my baby. CF MF Un MT CT

112. It is difficult for me to know what my baby wants. CF MF Un MT CT

113. I feel that I am too good a mother to ever lose my temper with my baby. CF MF Un MT CT

114. I found the whole experience of labor and delivery to be one of the best experiences of my life. CF MF Un MT CT

115. I am very satisfied with my relationship with my baby's father. CF MF Un MT CT

116. I tend to be awkward in most physical activities. CF MF Un MT CT

117. I think I will enjoy my baby more when he/she is older and has a personality of his/her own. CF MF Un MT CT

118. I am afraid I will be awkward and clumsy when handling my baby. CF MF Un MT CT

119. I am not worried about having enough money to care for my baby. CF MF Un MT CT

120. I am not a nice person. CF MF Un MT CT

121. I looked forward to breast feeding my baby. CF MF Un MT CT

122. This is a very stressful time in my life. CF MF Un MT CT

123. I am worried that I will be criticized for not taking proper care of my baby. CF MF Un MT CT

124. I feel that I am a physically attractive person. CF MF Un MT CT

125. I feel that I have lots of love to give to my baby. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

126. I feel confident about being able to teach my baby new things. CF MF Un MT CT

127. I feel that my parents did a very bad job raising me and I am sure that I will not make the same mistakes with my baby. CF MF Un MT CT

128. I have a low opinion of myself. CF MF Un MT CT

129. I am concerned that my baby's father will pay more attention to the baby than to me. CF MF Un MT CT

130. I am confident that my baby will be strong and healthy. CF MF Un MT CT

131. I am frightened about all the day-to-day responsibilities of having to care for my baby. CF MF Un MT CT

132. I found labor to be very frightening. CF MF Un MT CT

133. I am concerned about whether my baby will develop normally. CF MF Un MT CT

134. I am bothered by my lack of self-control. CF MF Un MT CT

135. I am not easily dominated by others. CF MF Un MT CT

136. It will take me a long time to get back my energy so that I can properly care for my baby. CF MF Un MT CT

137. I have great expectations for what my baby will be like. CF MF Un MT CT

138. I am worried about being able to feed my baby properly. CF MF Un MT CT

139. I expect I will have plenty of emotional support while taking care of my baby. CF MF Un MT CT

140. There are very few things that I can honestly say I am good at. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

141. I am concerned that my relatives will be disappointed with my baby. CF MF Un MT CT

142. When I was pregnant, I had frightening fantasies that I would deliver an abnormal baby. CF MF Un MT CT

143. I am well coordinated physically. CF MF Un MT CT

144. I felt emotionally prepared for my baby's birth. CF MF Un MT CT

145. I doubt that my figure will ever look as good after having had a baby. CF MF Un MT CT

146. I have sometimes been irritated by people asking favors of me. CF MF Un MT CT

147. I am afraid that someday I will hurt my baby. CF MF Un MT CT

148. I do not find being a mother to be as fulfilling an experience as I thought it would be. CF MF Un MT CT

149. No matter who I'm talking to, I'm always a good listener. CF MF Un MT CT

150. As long as I love my baby, it doesn't matter if I breast feed or bottle feed. CF MF Un MT CT

151. I feel that I am a person of worth. CF MF Un MT CT

152. I did not like my mother and I worry that my baby will not like me. CF MF Un MT CT

153. My baby's father needs more time to adjust to the baby. CF MF Un MT CT

154. I feel somewhat anxious about all the things a mother must do. CF MF Un MT CT

155. I always practice what I preach. CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain or Neither True or False	Mainly True	Completely True

156. I feel that I will do a good job taking care of my baby. CF MF Un MT CT

157. I do not feel emotionally secure enough to care for my baby by myself. CF MF Un MT CT

158. I think most fathers are more excited and helpful in taking care of their new baby than my baby's father. CF MF Un MT CT

159. I know enough to be able to teach my baby many things which he/she will have to learn. CF MF Un MT CT

160. I have sometimes felt resentful about not getting my way. CF MF Un MT CT

161. I felt I looked very good during my pregnancy. CF MF Un MT CT

162. I worry about being able to fulfill my baby's emotional needs. CF MF Un MT CT

163. My inability to resist temptation is a source of concern for me. CF MF Un MT CT

164. I am confident that my baby will love me very much. CF MF Un MT CT

165. I have mixed feelings about being a mother. CF MF Un MT CT

166. Presently, my greatest concern is:

_____

_____

_____

Comments:

_____

_____

APPENDIX C

ITEMS DERIVED FROM THE EPSTEIN-O"BRIEN SELF-REPORT INVENTORY

ITEMS DERIVED FROM THE EPSTEIN-O'BRIEN SELF-REPORT INVENTORY

I am quick to learn new things.

I have been endowed with a strong and healthy body.

I have always been courteous, even to people who have been disagreeable to me.

I have an inferiority complex.

I am well coordinated physically.

I can handle almost any important problem I am faced with.

I have more physical endurance than most.

I am not easily dominated by others.

I sometimes say things that are not completely true.

I regard myself as a highly ethical person.

I sometimes doubt that anyone who really mattered to me could love me the way I am.

I am bothered by my lack of self-control.

I have never felt that I was punished without cause.

All in all, I'm quite satisfied with who I am.

I like the way I look.

I often worry about my physical health.

I tend to assume that people will not like me.

I have little respect for myself.

I have never felt like saying something that would hurt someone's feelings.

I tend to be good at physical activities, such as dancing or sports.

I frequently do things that I feel guilty about later.

At elections I have sometimes voted for people about whom I know very little.

I have a low opinion of myself.

I am an independent person.

No matter who I'm talking to, I'm always a good listener.

There are very few things that I can honestly say I am good at.

I'm not good at influencing people.

I lack firm guiding principles.

I feel that I am a physically attractive person.

I am very sensitive to disapproval.

Self-control is no problem for me.

I would rather win than lose in a game.

I am not a nice person.

I have at least as much self-control as most people.

I am not very good at getting people to do as I wish.

Most people like me.

I like myself.

My inability to resist temptation is a source of concern for me.

I have sometimes felt resentful about not getting my way.

I have a firm sense of what is right and wrong, and act accordingly.

I feel that I am a person of worth.

I'm an easy prson to like.

I tend to be awkward in most physical activities.

I am lacking in will power.

I have sometimes been irritated by people asking favors of me.

Others often follow my lead.

I always practice what I preach.

I become ill quite easily.

I succeed at most things I attempt.

I am ashamed of my personal appearance.

APPENDIX D

CHARACTERISTICS OF MOTHERS AND INFANTS WHO DISCONTINUED PARTICIPATION IN THE STUDY

A total of six mothers and their infants who agreed to participate in the study dropped out of the study following discharge from the hospital. Two of the mothers were black, two were white, and the remaining two, Puerto Rican. In two of the cases, the mothers had moved and had no telephone and so were unable to be contacted for follow-up visits. Three of the six mothers were less than 19 years of age, single and living alone or with their parents. Two of the women were over forty, divorced and in both cases expressed much ambivalence conerning the birth of this "surprise" baby. Both of these mothers were reported to be of concern to the nursing staff as they were reported to have demonstrated little interest in caring for their infant. Neither of these two mothers wished to participae in a home follow-up visit.

Five of the infants were male and one was female. Of particular interest was that 3 of the six infants were only 37 weeks gestational age and 2 were postmature. Three of the infants were categorized as being "worrisome" on the Brazelton Exam, and three of the mothers had very low scores on the MSI indicating much anxiety and ambivalence concerning their mothering ability.

Additionally, three mothers were asked to participate in the study and refused. One of the mothers refused immediately explaining that her infant had been in the neonatal intensive care unit since the day after he had been delivered and was under observation. She explained that she wouldn't want to commit her feelings to paper at that time as she felt too stressed, confused, "as though everything had changed" and she felt too ambivalent. One of the mothers expressed

much scepticism concerning any form of testing of her infant as her three year old daughter had been tested in the hospital by a psychologist and the child had since developed language problems which the mother believed may have been related to her participation in the newborn study. The third mother, who had a psychiatric history, said she didn't want to be bothered.

APPENDIX E

INFANT BEHAVIOR QUESTIONNAIRE

Infant Behavior Questionnaire
1978 Version

Subject No. _____ Date of Baby's Birth ___ ___ ___
mon. day year

Today's Date _____ Age of Child ___ ___
mons. weeks

Sex of Child _____

INSTRUCTIONS: Please read carefully before starting:

As you read each description of the baby's behavior below, please indicate how often the baby did this during the LAST WEEK (the past seven days) by circling one of the numbers in the left column. These numbers indicate how often you observed the behavior described during the last week.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(X)
Never	Very Rarely	Less Than Half The Time	About Half The Time	More Than Half The Time	Almost Always	Always	Does Not Apply

The "Does Not Apply" (X) column is used when you did not see the baby in the situation described during the last week. For example, if the situation mentions the baby having to wait for food or liquids and there was no time during the last week when the baby had to wait, circle the (X) column. "Does Not Apply" is different from "Never" (1). "Never" is used when you saw the baby in the situation but the baby never engaged in the behavior listed during the last week. For example, if the baby did have to wait for food or liquids at least once but never cried loudly while waiting, circle the (1) column.

Please be sure to circle a number for every item.

Feeding

When having to wait for food or liquids during the last week, how often did the baby:

1 2 3 4 5 6 7 X . . . . (1) seem not bothered?

1 2 3 4 5 6 7 X . . . . (2) show mild fussing?

1 2 3 4 5 6 7 X . . . . (3) cry loudly?

During feeding, how often did the baby:

1 2 3 4 5 6 7 X . . . . (4) lie or sit quietly?

1 2 3 4 5 6 7 X . . . . (5) squirm or kick?

(1) Never	(2) Very Rarely	(3) Less Than Half The Time	(4) About Half The Time	(5) More Than Half The Time	(6) Almost Always	(7) Always	(X) Does Not Apply

During feeding, how often did the baby:

1 2 3 4 5 6 7 X . . . . (6) wave arms?
1 2 3 4 5 6 7 X . . . . (7) fuss or cry when s/he had enough to eat?
1 2 3 4 5 6 7 X . . . . (8) fuss or cry when given a disliked food?

When given a new food or liquid, how often did the baby:

1 2 3 4 5 6 7 X . . . . (9) accept it immediately?
1 2 3 4 5 6 7 X . . . .(10) reject it by spitting out, closing mouth, etc.?
1 2 3 4 5 6 7 X . . . .(11) not accept it no matter how many times offered?

Sleeping

Before falling asleep at night during the last week, how often did the baby:

1 2 3 4 5 6 7 X . . . .(12) show no fussing or crying?

During sleep, how often did the baby:

1 2 3 4 5 6 7 X . . . .(13) toss about in the crib?
1 2 3 4 5 6 7 X . . . .(14) move from the middle to the end of the crib?
1 2 3 4 5 6 7 X . . . .(15) sleep in one position only?

After sleeping, how often did the baby:

1 2 3 4 5 6 7 X . . . .(16) fuss or cry immediately?
1 2 3 4 5 6 7 X . . . .(17) play quietly in crib?
1 2 3 4 5 6 7 X . . . .(18) coo and vocalize for periods of 5 minutes or longer?
1 2 3 4 5 6 7 X . . . .(19) cry if someone doesn't come within a few minutes?

How often did the baby:

1 2 3 4 5 6 7 X . . . .(20) seem angry (crying and fussing) when you left her/him in the crib?
1 2 3 4 5 6 7 X . . . .(21) seem contented when left in the crib?
1 2 3 4 5 6 7 X . . . .(22) cry or fuss before going to sleep for naps?

(1) Never	(2) Very Rarely	(3) Less Than Half The Time	(4) About Half The Time	(5) More Than Half The Time	(6) Almost Always	(7) Always	(X) Does Not Apply

Bathing and Dressing

When being dressed or undressed during the last week, how often did the baby:

1 2 3 4 5 6 7 X . . . .(23) wave his/her arms and kick?
1 2 3 4 5 6 7 X . . . .(24) squirm and/or try to roll away?
1 2 3 4 5 6 7 X . . . .(25) smile or laugh?

When put into the bath water, how often did the baby:

1 2 3 4 5 6 7 X . . . . (26) startle (gasp, throw out arms; stiffen body, etc.)?
1 2 3 4 5 6 7 X . . . . (27) smile?
1 2 3 4 5 6 7 X . . . . (28) laugh?
1 2 3 4 5 6 7 X . . . . (29) have a surprised expression?
1 2 3 4 5 6 7 X . . . . (30) splash or kick?
1 2 3 4 5 6 7 X . . . . (31) turn body and/or squirm?

When face was washed, how often did the baby:

1 2 3 4 5 6 7 X . . . . (32) smile or laugh?
1 2 3 4 5 6 7 X . . . . (33) fuss or cry?

When hair was washed, how often did the baby:

1 2 3 4 5 6 7 X . . . . (34) smile or laugh?
1 2 3 4 5 6 7 X . . . . (35) fuss or cry?

Play

How often during the last week did the baby:

1 2 3 4 5 6 7 X . . . . (36) look at pictures in books and/or magazines for 2-5 minutes at a time?
1 2 3 4 5 6 7 X . . . . (37) look at pictures in books and/or magazines for 5 minutes or longer at a time?
1 2 3 4 5 6 7 X . . . . (38) stare at a mobile, crib bumper or picture for 5 minutes or longer?
1 2 3 4 5 6 7 X . . . . (39) play with one toy or object for 5-10 minutes?

(1) Never	(2) Very Rarely	(3) Less Than Half The Time	(4) About Half The Time	(5) More Than Half The Time	(6) Almost Always	(7) Always	(X) Does Not Apply

How often during the last week did the baby:

1 2 3 4 5 6 7 X . . . . (40) play with one toy or object for 10 minutes or longer?

1 2 3 4 5 6 7 X . . . . (41) spend time just looking at playthings?

1 2 3 4 5 6 7 X . . . . (42) repeat the same sounds over and over again?

1 2 3 4 5 6 7 X . . . . (43) laugh aloud in play?

1 2 3 4 5 6 7 X . . . . (44) smile or laugh when tickled?

1 2 3 4 5 6 7 X . . . . (45) cry or show distress when tickled?

1 2 3 4 5 6 7 X . . . . (46) repeat the same movement with an object for 2 minutes or longer (e.g., putting a block in a cup, kicking or hitting a mobile)?

When something the baby was playing with had to be removed, how often did s/he:

1 2 3 4 5 6 7 X . . . .(47) cry or show distress for a time?

1 2 3 4 5 6 7 X . . . .(48) cry or show distress for several minutes or longer?

1 2 3 4 5 6 7 X . . . .(49) seem not bothered?

When tossed around playfully, how often did the baby:

1 2 3 4 5 6 7 X . . . . (50) smile?

1 2 3 4 5 6 7 X . . . . (51) laugh?

During a peekaboo game, how often did the baby:

1 2 3 4 5 6 7 X . . . . (52) smile?

1 2 3 4 5 6 7 X . . . . (53) laugh?

Daily Activities

How often during the last week did the baby:

1 2 3 4 5 6 7 X . . . . (54) cry or show distress at a loud sound (blender, vacuum cleaner, etc)?

1 2 3 4 5 6 7 X . . . . (55) cry or show distress at a change in parents' appearance (glasses off, shower cap on, etc.)?

(1) Never	(2) Very Rarely	(3) Less Than Half The Time	(4) About Half The Time	(5) More Than Half The Time	(6) Almost Always	(7) Always	(X) Does Not Apply

How often during the last week did the baby:

1 2 3 4 5 6 7 X . . . .(56) when in a position to see the television set, look at it for 2-5 minutes at a time?

1 2 3 4 5 6 7 X . . . .(57) when in a position to see the television set, look at it for 5 minutes or longer?

1 2 3 4 5 6 7 X . . . .(58) protest being put in a confining place (infant seat, play pen, car seat, etc)?

1 2 3 4 5 6 7 X . . . .(59) startle at a sudden change in body position (for example, when moved suddenly)?

1 2 3 4 5 6 7 X . . . .(60) startle to a loud or sudden noise?

1 2 3 4 5 6 7 X . . . .(61) cry after startling?

When being held, how often did the baby:

1 2 3 4 5 6 7 X . . . .(62) squirm, pull away or kick?

When placed on his/her back, how often did the baby:

1 2 3 4 5 6 7 X . . . .(63) fuss or protest?

1 2 3 4 5 6 7 X . . . .(64) smile or laugh?

1 2 3 4 5 6 7 X . . . .(65) lie quietly?

1 2 3 4 5 6 7 X . . . .(66) wave arms and kick?

1 2 3 4 5 6 7 X . . . .(67) squirm and/or turn body?

When the baby wanted something, how often did s/he:

1 2 3 4 5 6 7 X . . . .(68) become upset when s/he could not get what s/he wanted?

1 2 3 4 5 6 7 X . . . .(69) have tantrums (crying, screaming, face red, etc.) when s/he did not get what s/he wanted?

When placed in an infant seat or car seat, how often did the baby:

1 2 3 4 5 6 7 X . . . .(70) wave arms and kick?

1 2 3 4 5 6 7 X . . . .(71) squirm and turn body?

1 2 3 4 5 6 7 X . . . .(72) lie or sit quietly?

(1) Never	(2) Very Rarely	(3) Less Than Half The Time	(4) About Half The Time	(5) More Than Half The Time	(6) Almost Always	(7) Always	(X) Does Not Apply

When placed in an infant seat or car seat, how often did the baby:

1 2 3 4 5 6 7 X . . . .(73) show distress at first; then quiet down?

When you returned from having been away and the baby was awake, how often did s/he:

1 2 3 4 5 6 7 X . . . .(74) smile or laugh?

When introduced to a strange person, how often did the baby:

1 2 3 4 5 6 7 X . . . .(75) cling to a parent?
1 2 3 4 5 6 7 X . . . .(76) refuse to go to the stranger?
1 2 3 4 5 6 7 X . . . .(77) hang back from the stranger?
1 2 3 4 5 6 7 X . . . .(78) never "warm up" to the stranger?
1 2 3 4 5 6 7 X . . . .(79) approach the stranger at once?
1 2 3 4 5 6 7 X . . . .(80) smile or laugh?

When introduced to a dog or cat, how often did the baby:

1 2 3 4 5 6 7 X . . . .(81) cry or show distress?
1 2 3 4 5 6 7 X . . . .(82) smile or laugh?
1 2 3 4 5 6 7 X . . . .(83) approach at once?

Soothing Techniques

Have you tried any of the following soothing techniques in the last two weeks? If so, how often did the method soothe the baby? Circle (X) if you did not try the technique during the LAST TWO WEEKS.

1 2 3 4 5 6 7 X . . . .(84) rocking
1 2 3 4 5 6 7 X . . . .(85) holding
1 2 3 4 5 6 7 X . . . .(86) singing or talking
1 2 3 4 5 6 7 X . . . .(87) walking with the baby
1 2 3 4 5 6 7 X . . . .(88) giving the baby a toy
1 2 3 4 5 6 7 X . . . .(89) showing the baby something to look at
1 2 3 4 5 6 7 X . . . .(90) patting or gently rubbing some part of the baby's body
1 2 3 4 5 6 7 X . . . .(91) offering food or liquid

(1) Never	(2) Very Rarely	(3) Less Than Half The Time	(4) About Half The Time	(5) More Than Half The Time	(6) Almost Always	(7) Always	(X) Does Not Apply

Soothing techniques:

1 2 3 4 5 6 7 X . . . .(92) offering baby his/her security object

1 2 3 4 5 6 7 X . . . .(93) changing baby's position

1 2 3 4 5 6 7 X . . . .(94) other (please specify) _____

APPENDIX F

NEONATAL PERCEPTION INVENTORY

NEONATAL PERCEPTION INVENTORY

Average Baby

Please check the blank you think best describes what most babies are like.

1. How much crying do you think the average baby does?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

2. How much trouble do you think the average baby has in feeding?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

3. How much spitting up or vomiting do you think the average baby does?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

4. How much difficulty do you think the average baby has in sleeping?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

5. How much difficulty does the average baby have with bowel movements?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

6. How much trouble do you think the average baby has in settling down to a predictable pattern of eating and sleeping?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

NEONATAL PERCEPTION INVENTORY

Your Baby

Please check the blank you think best describes your baby.

1. How much crying has your baby done?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

2. How much trouble has your baby had feeding?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

3. How much spitting up or vomiting has your baby done?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

4. How much difficulty has your baby had in sleeping?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

5. How much difficulty has your baby had with bowel movements?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

6. How much trouble has your baby had in settling down to a predictable pattern of eating and sleeping?

   _____ a great deal _____ a good bit _____ moderate amount _____ very little _____ none

DEGREE OF BOTHER INVENTORY

Listed below are some of the things that have sometimes bothered other mothers in caring for their babies. We would like to know if you were bothered by ony of these. Please place a check in the blank that best describes how much you were bothered by your baby's behavior in regard to the following:

1. Crying

   _____ a great deal _____ somewhat _____ very little _____ none

2. Spitting up or vomiting

   _____ a great deal _____ somewhat _____ very little _____ none

3. Sleeping

   _____ a great deal _____ somewhat _____ very little _____ none

4. Feeding

   _____ a great deal _____ somewhat _____ very little _____ none

5. Elimination

   _____ a great deal _____ somewhat _____ very little _____ none

6. Lack of a predictable schedule

   _____ a great deal _____ somewhat _____ very little _____ none

7. Other (specify):

   _____ _____ a great deal _____ somewhat _____ very little _____ none

   _____ _____ a great deal _____ somewhat _____ very little _____ none

APPENDIX G

ITEMS COMPOSING THE FAMILY SUPPORT SCALE

ITEMS COMPOSING THE FAMILY SUPPORT SCALE

I think that most fathers are more excited and helpful in taking care of their new baby than is my baby's father.

My baby's father needs more time to adjust to our baby.

I am concerned that my baby's father will pay more attention to the baby than to me.

I am very satisfied with my relationship with my baby's father.

I am sure that my baby's father really wants this baby.

My baby's father was very happy with the sex of our baby.

I am concerned that my relatives will be disappointed with my baby.

I expect my relatives will be proud of me and my new baby.

I am worried that I will be criticized for not taking proper care of my baby.

I expect that I will have plenty of emotional support while taking care of my baby.

I have not been able to share my concerns about my baby with anyone close to me.

I have someone close to me to share my concerns with.

I am not worried about having enough money to care for my baby.

I worry about whether my house if large enough for my baby.

When I bring my baby home I will have enough help in caretaking and housework responsibilities.

This is a very stressful time in my life.

APPENDIX H

HOME INTERVIEW QUESTIONNAIRE

HOME INTERVIEW

INTERVIEWER_____ DATE_____

TIME STARTED_____ CODE_____

TIME ENDED_____ C.M.C. YES___ NO_____

FREQUENCY OF M+,M-,B+,B-

QUESTIONS

1. Since we last taked with you in the hospital, have there been any changes in your:

   a.)Name_____

   b.)Address_____

   c.)Phone_____

   d.)Marital Status_____

2. Is this your first baby?_____

3. Were you working before the baby was born ? _____

4. How much have you worked since then ?_____

5. How did (do) you feel about stopping?_____

6. How many hours aweek did (do) you work ?_____

7. What did (do) you do? _____

8. How many years of schooling have you completed ?_____

(IF married or living with baby's father)

9. Is your husband/baby's father presently employed? _____

FREQENCY OF M+,M-,B+,B-

QUESTIONS

10. How many years of schooling has he completed ? _____

11. What is your total family income ? _____

12. We are interested in all people living in the baby's home. Since you left the hospital has anyone moved in or out of your home ?

YES_____ NO_____

MOVED IN _____ MOVED OUT _____

13. If yes what is the relationship of that (those) person(s) to your child?_____

age_____

14. Presently, how many people are living in your household ? (DO NOT include the baby and yourself)_____

15. What are the relationships of these people to your new infant ? (Ages)

_____ _____

_____ _____

_____ _____ ___

16. Does having other people in the house make your job as a mother easier?

_____

17. Now that you've had a chance to spend a few weeks with your new baby, how do you feel ? _____

_____

_____

18. What, if any, are your major concerns ? _____

_____

_____

FREQUENCY OF M+,M-,B+,B-

QUESTIONS

19. Could you describe what a typical day is like for you? (Prompt with- did baby wake you up ?) _____

_____

_____ _____

_____

20. Would it be possible for you to roughly break down into hours/minutes how you spend your day:

Cleaning_____

Shopping_____

Personnal grooming_____

Sleep_____

Cooking_____

General caretaking of baby (Bathing,Feeding,Diapering)_____

Playing with baby _____

Total time with other children _____

Time with Friends, Relatives, Neighbors not living in house _____

Time with Friends, Relatives living in house_____

Other (Specify) _____

21. What do you enjoy most about being a mother ? _____

_____

22. What is the hardest part about being a mother ? _____

_____

We're also interested in everyone who takes care of the baby.

23. Who takes care of him/her most of the time (60% or better) _____

_____

Frequency of M+, M-, B+, B-	QUESTIONS

24. Aside from #23 who takes care of t he baby the most ?_____

Relationship _____

25. Which of the following does "X" do in connection with taking care of the baby ? (Record more than 1 if applicable)

Changing Diapers _____

Feeding_____

Bathing _____

Playing_____

Other _____ (Describe)_____

26. Who makes the routine decisions concerning the baby ? (ex. decisions about feeding, sleeping routines)_____

27. What decisions like calling a doctor or a babysitter ? _____

_____

28. How about decisions not concerning the baby ?_____

29. Have you and/or "X" been able to leave the house and spend time away from the baby yet ? _____

30. Did you have trouble finding a baby-sitter ? _____

31. Does the baby sleep in your room , or does he/she have their own room ? _____ _____

32. What kinds of toys (if any) does the baby have yet ? _____

_____

33. Health-wise, how have you been since you left the hospital ?

Colds _____

FREQUENCY OF M+, M-, B+, B-

QUESTIONS

Headaches_____

Specific Illness _____

Other _____

34. Have you been to the Doctor at all, for any reason ? _____

_____

35. How about the baby's health ? _____

36. Has the baby had to see the Doctor for any reason ? _____

_____

Now I'd like to ask you some specific questions about the baby's sleeping and eating habits.

37. What is the usual amount of time the baby spends sleeping per 24 hour day ? _____

38. How is the sleep time distributed over the 24 hour period ? _____

_____

39. Is the baby a light or a deep sleeper (as a general rule) ? _____

_____

40. Does the baby , generally, fall asleep by him(her)self? Or do you have to rock, talk, sing, etc. the baby to sleep ? _____

_____

41. How does the baby behave when he(she) first wakes up ? _____

_____

42. Do you breast feed or bottle feed the baby ? _____

43. How is the baby's apretite ? _____

44. Does the baby have any known allergies ? _____

45. Is the baby on any particular feeding schedule ? _____

_____

FREQUENCY OF M+, M-, B+, B-

QUESTIONS

46. Is the baby easily distracted during feeding ? _____

_____

47. How do you determine when the baby's hungry ? _____

_____

48. How do you determine when the baby'S full ? _____

_____

While it is not possible for you to know the exact age (I.E. Month, day and year) that your baby will begin to walk, talk, etc. We'd like to know approximamtely, you expect the baby to :

50. Begin to smile in response to specific things, like when they see you or you show them a stuffed animal. _____

51. When do you think the baby will begin walking without any support or help ? _____

52. How about when the baby will start to coo or babble (any sounds other than crying)? _____

53. When do you think the baby will be able to see clearly and be aware of her/his surroundings ? _____

54. When do you think the baby will be able to sit up, without being held or supported(for 2-5 minutes) ? _____

55. At what age do you think that you'll begin to toilet train the baby ?

_____

56. At what age do you think the baby will start to vocalize one syllable ?

_____

FOR INTERVIEWER:

1. What was your general impression of the interview ? _____ ____

_____

_____

2. What did you think the mother stressed throughout the interview ?
   Herself _____
   Baby _____
   Other (Specify) _____

3. Were there any unusual/interesting events during the home visit ?

_____

_____ _____

_____

4. Overall, how would you rate the mother's self-confidence :

   HIGH _____ MEDIUM _____ LOW_____

What did you base your rating on ? (Be specific) _____

_____

_____