

1999

Attachment Classification Among 18 Month Old Children of Adolescent Mothers

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ATTACHMENT CLASSIFICATIONS AMONG 18-MONTH-OLD CHILDREN OF
ADOLESCENT MOTHERS

BY

LYNNE ANDREOZZI

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

IN

PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

1999

DOCTOR OF PHILOSOPHY DISSERTATION

OF

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UNIVERSITY OF RHODE ISLAND

1999

Abstract

This investigation was conducted to examine the nature of the attachment relationship among children of adolescent mothers using a standard measure known as the Strange Situation procedure. This project compared the attachment relationships of children of adolescent mothers with children of older, non-adolescent adult mothers. Given the paucity of research on attachment among infants of adolescent mothers, the rationale for conducting this study was to supplement an existing weak literature base. The major prediction of this study was that there would be significantly more insecurity among 18-month-old infants of adolescent mothers. The study further attempted to examine this relationship in the context of maternal characteristics such as depression, self-esteem, parenting stress, child abuse potential, psychological distress, perception of infant behavior, as well as the caregiving environment. Results indicate that infants of adolescent mothers may resemble normative groups in prevalence of secure attachments to their mothers. However, the mothers in the adolescent group reported lower amounts of self-esteem, more parenting stress, more child abuse potential, and provided a lower quality of the home environment than the mothers in the non-adolescent group. These mothers also rated their infants as having a higher activity level than infants born to older mothers. Results are discussed in terms of implications for future research and interventions.

Acknowledgments

There are several people that I would like to acknowledge for their support, encouragement, and understanding during my graduate career. Most of them will never truly know the impact that they have had upon my life. I would like to extend my sincerest thanks and gratitude to my major professor, Dr. Janet Kulberg, for her continued support, guidance, and interest throughout this process and through my graduate career. Her knowledge and guidance have been invaluable to me. I would also like to thank the members of my committee for their contributions to this project and my professional career. I thank Dr. Barry Lester, for his thoughtful questions, support, and the opportunity to utilize this data. He has been a mentor and a constant source of support for me. I thank Dr. Al Berman for his time and encouragement; Dr. Margaret McGrath for her insight and support; Dr. Ronald Seifer for his expertise and insight into this project; and Dr. David Byrd for his time and support. I would also like to thank Dr. Patricia Flanagan for advising me on this topic and for the opportunity to use this data. I also thank my friend and colleague, Susan Brunner, for her help with this project.

Finally, I would like to thank my family and friends for their love and support, without them, this may not have been possible. First, I thank my husband, Kevin Fontaine, for his unconditional love and support through this process. His understanding and patience helped me immensely. Without him, I may not have seen this project to fruition. I would like to thank my parents, Joseph and Rosemary Andreozzi, for their encouragement and love. They have always been a source of encouragement and support for all of my endeavors. I truly appreciate and treasure their love. And finally, my brother, Mark Andreozzi, for always believing in me. I admire him for being able to do what I was always afraid of doing. I would also like to thank the rest of my family and friends who have supported me with their understanding, encouragement, love, and laughter.

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Attachment Classifications Among 18-Month-Old Children of Adolescent Mothers

Introduction

Given the recent interest in examining the mother-child relationship among children of adolescent parents, it would seem logical to examine the affectional tie or bond between the two. This tie is often referred to as the attachment relationship between a mother and child. However, there have been relatively few studies that examine the nature of this relationship. This study attempts to examine the nature of the attachment relationship among children of adolescent mothers using a standard measure known as the Strange Situation procedure. This project will compare the attachment relationships of children of adolescent mothers with children of older, non-adolescent adult mothers.

Adolescent Parenting

Adolescent parenting is a topic that has received much press within the last few decades. It is thought that adolescent mothers may provide a poorer quality of parenting that may affect or determine the later attachment relationship as observed by the infants behavior in the Strange Situation (Lamb, Hopps, & Elster, 1987). This link to attachment behavior will be discussed further, however, it is appropriate to first discuss the research pertaining to adolescent mothers.

There is considerable research that shows that the behavior of adolescent mothers is different than that of older mothers (Barratt & Roach, 1995; Becker, 1987; Culp, Appelbaum, Osofsky, & Levy, 1988; DeLissovoy, 1973; Elster, McAnarney, & Lamb, 1983; Field, Widmayer, Stringer, & Ignatoff, 1980; Garcia Coll, Hoffman, & Oh, 1987; Garcia Coll, Vohr, Hoffman, & Oh, 1986; Hubbs-Tait, Osofsky, Hann, & Culp, 1994;

Jones, Green, & Krauss, 1980; Levine, Garcia Coll, & Oh, 1985; McAnarney, Lawrence, & Aten, 1979; Parks & Arndt, 1990; Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982; Roosa, Fitzgerald, & Carlson, 1982; Roosa & Vaughan, 1984; Sandler, Vietze, & O'Connor, 1981). In a variety of studies, with infants of varying ages, it has repeatedly been found that adolescent mothers vocalize less to their infants than non-adolescent mothers (Culp, et al., 1988; Garcia Coll, et al., 1987; Field, 1980; Jones, et al., 1980; Levine, et al., 1985; Roosa, et al., 1982; Sandler, et al., 1981). Adolescent mothers have also been described as engaging in fewer behaviors associated with parenting, such as touching or using a high pitched voice while speaking to the infant (McAnarney, et al., 1979). Most of these studies employed home based observations of maternal and infant behavior. These results have been found in samples of varying ethnic, racial, and socioeconomic groups.

Adolescent parents are more likely to behave in ways that are different from non-adolescent parents (Elster, et al., 1983; Lamb, et al., 1987). For instance, younger mothers are less sensitive to their infant's cues and exhibit less interactive sensitivity than older mothers (DeLissovoy, 1973; Ragozin, et al., 1982). They have also been found to exhibit less emotional and verbal responsivity than non-adolescent mothers (Barratt & Roach, 1995; Garcia Coll, et al., 1986). Jones, Green, and Krauss (1980) reported that mothers aged seventeen to eighteen years old were less responsive to their infants than mothers aged twenty-one to twenty-three years of age.

As we will see later, all of the above factors as well as psychosocial indices may be important influences in later development. Specifically, Hurlbut, Culp, Jambunathan, and

Butler (1997) assert that maternal self-esteem may be a good predictor of adolescent parenting.

Adolescent mothers may provide a less optimal environment for their children than do non-adolescent mothers (Garcia Coll, et al., 1987). Observation of the home environments of adolescent mothers revealed them to be less appropriate, in that adolescent mothers are providing less stimulation or less consistent learning environments for their infants (Garcia Coll, et al., 1986; Parks & Arndt, 1990). Adolescent mothers smile less and show toys to their infants less often than non-adolescent mothers (Barratt & Roach, 1995). Adolescent mothers interact more negatively with their infants (Culp, et al., 1988). They tend to be more restrictive, irritable, hostile, and punitive to their infants (DeLissovoy, 1973; Garcia Coll, et al., 1986). Teenage mothers who scored poorly on a parent-infant interaction scale were more likely to be communicatively demanding or protesting with their infants (Flanagan, Coppa, Riggs, & Alario, 1994). Furthermore, adolescent mothers are more likely to choose physical modalities (poking and pinching) for interactions rather verbal modalities (Lawrence, McAnarney, Aten, Iker, Baldwin, & Baldwin, 1981).

The differences in the environments provided and interactions given may be due to the fact that adolescent mothers tend to know less about child development (Roosa & Vaughan, 1984) and have a poorer understanding of their infant's developmental abilities and needs (Parks & Arndt, 1990). They tend to expect behaviors of walking, talking, or toileting several months early (DeLissovoy, 1973). Teenage mothers also tend to have a more negative attitude toward parenting (Roosa & Vaughan, 1984). They also tend to

rate their infant's behavior or temperament as being more difficult than do non-adolescent mothers (Field, 1980).

It is thought that infants of adolescent mothers fare less well than infants of older mothers. Adolescent parenthood has been correlated with maltreatment of their children (McCullough & Scherman, 1998; Zuravin, 1988). For example, children of adolescent mothers are at increased risk for experiencing physical abuse (Miller, 1984). Also, Flanagan, Garcia Coll, Andreozzi, and Riggs (1995) examined the risk of adolescent mothers maltreating their children and found that living apart from related adults was a strong risk factor associated with maltreatment, as measured by a substantiated case by the state child protective agency.

There also has been research that links differences in maternal characteristics of self-esteem and depression among adolescent mothers to adverse child outcome (Hubbs-Tait, et al., 1994). Furthermore, children of teenage mothers are thought to be at risk for cognitive impairments such as developmental delays or later academic failure (Baldwin & Cain, 1980; Becker, 1987; Furstenburg, Brooks-Gunn, & Morgan, 1987; Whitman, Borkowski, Schellenbach, & Nath, 1987; Zuravin, 1988).

The above research suggests that adolescent parents may provide less optimal or less sensitive caregiving to their infants, which may in turn, have implications for later child outcome or parent-child relationships. Thus, it seems possible that adolescent parenting may lead to disturbances in the mother child attachment relationship. However, the literature is not conclusive, because as we will see, this is a topic that is relatively new in the literature and has not been fully explored. A more complete review will be

explained later, but first it is important to discuss the nature of attachment and the theory surrounding it.

Attachment

It is thought that attachment theory originated with John Bowlby. Bowlby (1969) thought that all infants have an inborn need for social interaction and that this need usually becomes focused on a specific figure. He postulated that it may be of survival value for an infant to seek the protective closeness of certain adults and as a result, these infants should be equipped with specific behaviors to attain that closeness. For instance, we see examples of this, when we witness a baby cry or smile. Bowlby (1969) also suggested that adults are also equipped with caregiving behaviors intended to compliment the infant's behaviors. However, Bowlby was a psychoanalyst and thought that there may be more at work here. He argued that an infant and his caregiver share an affectional tie (Bowlby, 1969). Through this tie they seek to be close to this caregiver and also to maintain the contact with the caregiver, particularly when under stress. Over the course of the first year of life, the child exhibits behaviors that illustrate this desire to maintain closeness such as, turning toward the caregiver, crying, smiling, reaching, clinging, etc. Bowlby (1969) maintains that these are goal directed behaviors focused around a specific caregiver. Most often the caregiver we speak of is the child's mother, and this individual is most often the child's first attachment figure. Also, most of the empirical research done in attachment has focused on the relationship between a mother and her infant. According to Bowlby (1969), the infant's daily experiences with the caregiver contribute to an internal representation of the caregiver. This representation has been termed a "working model."

Closeness to the attachment figure provides protection and a sense of security. Thus, the child's daily experiences have led him to construct a working model of his caregiver as one of trust and security. Bowlby (1969) also predicted consequences regarding a child's working model of a mother who is unavailable. However, Ainsworth and her colleagues were the first to test this theory empirically (Ainsworth & Witting, 1969; Ainsworth, Blehar, Waters, & Wall, 1978).

A major step in attachment measurement occurred when Mary Ainsworth (Ainsworth, et al., 1978) developed a standardized procedure for measuring the quality of attachment to the mother in infants 12 to 21 months old. This procedure is thought to reflect the infant's understanding and expectations of the mother's behavior or to reflect the "working model" that the child has created of his/her caregiver.

The Strange Situation is a laboratory procedure consisting of eight episodes in which the mother and child interact with each other and a stranger unknown to the infant, separate from each other, and then are reunited all in an environment that offers the child an opportunity for exploration. As the procedure progresses, each episode is considered to be more progressively stressful to the child. The strategy the child uses to cope with these stressors is indicative of the attachment relationship or working model he/she has constructed of his/her mother (Ainsworth, et al., 1978). Children are classified according to the pattern of behavior they exhibit throughout the Strange Situation but primarily for the behavior they show in the reunion episodes following the separations. The infant is assigned to a category according to the system defined by Ainsworth, et al. (1978). The first category is secure. Secure infants use their mother as a secure base from which to explore the environment. They derive comfort from their caregiver and this is illustrated

by the child's attempts to be close to the caregiver (i.e., proximity-seeking and contact-maintaining behaviors) and also by the child's willingness to explore the environment. Secure infants are usually consoled by contact with the mother and easily move back to exploration, perhaps with brief checks on the mother.

The second category is insecure-avoidant. Avoidant infants show behaviors of avoiding interactions with or proximity to the mother. In fact, the infant may actively avoid the mother upon reunion, ignore social bids from mom, and/or avoid eye contact. The third category is insecure-resistant. Resistant infants may show a mixture of seeking contact while at the same time pushing away or refusing to be comforted by the mother. Their responses to the mothers return may seem ambivalent in quality. They may display anger towards their mother during reunions or refusal of her offering of toys or interaction. Resistant infants may show persistent pouting, whining, or tantruming behaviors.

Main and Solomon (1990) determined that some infants do not show a clear pattern of handling separations and then reunions. They do not seem to employ any of the behavioral strategies described above. Therefore, a final category was proposed which may occur in the presence of a secure or insecure attachment relationship. This category is called disorganized or disoriented. Disorganized infants show odd, disoriented, disorganized behavior or a combination of both avoidant and resistant behavior. Other behaviors that are indicative of disorganization are marked stilling or freezing in contact with the caregiver, anomalous postures, dazed avoidance, or demonstration of fear or apprehension of the caregiver. Main and Solomon (1990) state that these behaviors may

reflect a child who is in conflict with or has feelings of fear or confusion regarding their caregiver.

The prevalence in the population for each of the Ainsworth categories seems to be relatively consistent. A meta-analysis of 39 studies indicated similar distributions of security (65%), resistance (14%), and avoidance (21%) (Van Ijzendoorn & Kroonenberg, 1988). Research also shows that the classifications tend to be relatively stable over time. Stability of these classifications in infants between 12 to 18 months of age has ranged from 53% to 96% (Thompson, Lamb, & Estes, 1982; Lamb, et al., 1985; Waters, 1978). In terms of long term stability, it has been reported that infant attachment classifications have predicted attachment classifications in six year old children (Main & Cassidy, 1988).

The newer disorganized category has been found to be a relevant category in clinical samples such as maltreated infants or those with depressed mothers (Crittenden, 1985; Radke-Yarrow, Cummings, & Kuczynski, 1985; Spieker & Booth, 1988). The prevalence of disorganization in nonclinical samples however, appears to be between 10% to 15% (Cicchetti, 1987).

Maternal Predictors of Attachment

Most of the attachment research has focused on providing links from maternal behaviors to each of these attachment categories. Ainsworth, et al. (1978) assert that sensitivity to the infant's cues is a prerequisite for secure attachments. Mothers of infants with secure attachments have been described as sensitive to their child's cues, responding appropriately to these cues, and being available to their infants (Ainsworth, et al., 1978; Belsky, Rovine, & Taylor, 1984; Egeland & Farber, 1984; Grossmann, Grossmann,

Spangler, Suess, & Unzner, 1985). Mothers of avoidantly attached infants have been described as insensitive, rejecting, and unavailable to their infants, whereas mothers in resistant relationships are seen as lacking appropriateness and consistency in response to their infant's cues (Ainsworth, et al., 1978; Belsky, et al., 1984; Egeland & Farber, 1984; Grossmann, et al., 1985). Thus, it does seem that these maternal behaviors do play an influential role in the quality of the attachment relationship (Ainsworth, 1984).

Further research has focused on providing links from maternal or environmental characteristics to the child's attachment classification. Stress in the family may be one contributor to insecure attachment classifications. Vaughn, Egeland, Sroufe, and Waters (1979) found that the change from secure to insecure from twelve to eighteen months was associated with increased stress. Tronick, Ricks, and Cohn (1982) found that mothers of secure group infants rated themselves significantly higher on self-esteem and competence. However, Seifer, Sameroff, Dickstein, Keitner, Miller, Rasmussen, and Hayden (1996) did not find an association between maternal characteristics or environment and attachment. Only a moderate correlation between major depression and attachment status was evident. Yet, the role of maternal psychopathology in attachment classification is somewhat contradictory.

A recent meta-analysis determined that parental mental illness was related to attachment classifications (Van IJzendoorn, Goldberg, Kroonenberg, & Frenkel, 1992). However, most of the studies included did not use the Strange Situation procedure (Seifer, et al., 1996). Specifically, maternal depression has been found to be related to increased rates of insecure attachment on a preschool measure of attachment (Teti, Gelfand, Messinger, & Isabella, 1995). It does seem reasonable that having the experience

of a caregiver who has been unavailable due to depression may lead the child to expect that his mother cannot be relied upon thus, in turn affecting the attachment relationship (Seifer & Schiller, 1995). However, Radke-Yarrow, Cummings, Kuczynski, and Chapman (1985) did not find any disproportionate differences in attachment among depressed mothers.

Child maltreatment has also been offered as a predictor of insecure attachment. Egeland and Sroufe (1981) state that when maternal caregiving is of an extremely poor quality there is an increase in insecure attachment. Specifically, there were more resistant types of insecure attachment in 12 month old infants among caregiving patterns of abuse and neglect. At 18 months, the avoidant type of insecurity was more common among the same caregiving patterns. Other studies have also found higher rates of insecurity among maltreated children (Crittenden, 1985; Schneider-Rosen, & Cicchetti, 1984).

Infant Predictors of Attachment

Although most of the research on attachment concerns maternal predictors, there has been recent interest in examining characteristics of the infant that may affect attachment status. The relationship between attachment security and the child's temperament remains controversial. Essentially, the question is whether the behaviors and affect viewed in the Strange Situation can be attributed to intrinsic temperament of the child or the attachment relationship. Sroufe (1985) argues that temperament and attachment are essentially two different constructs. Yet, negative temperament has been shown to be correlated with increased crying and resistance in the Strange Situation (Vaughn, Lefever, Seifer, & Barglow, 1989). Infant distress at 3 and 9 months of age was

associated with insecurity at 12 months of age, although the authors also found that these observed differences may have been influenced by differences in maternal behavior (Belsky, et al., 1984). However, Vaughn, Stevenson-Hinde, Waters, Kotsaftis, Lefever, Shouldice, Trudel, and Belsky (1992) offer that most temperament rating scales include information about the child's behavior in the context of the parent-child interactions and it is logical that the parent-child relationship may influence the parent's ratings of the child's temperament. They further claim that it may be helpful to view temperament and attachment as falling on a continuum of assessment possibilities rather than as separate distinct entities (Stevenson-Hinde, 1988, as cited in Vaughn, et al., 1992).

Given that insecure attachment is more likely to occur when maternal behavior is of an inconsistent level (Ainsworth, et al., 1978) in addition to the other factors that may affect the attachment relationship, coupled with the research on adolescent mothers, one may suspect that there is a disproportionate amount of insecurity among infants of adolescent mothers.

Of the relatively few studies that have examined the attachment behavior of infants of adolescent mothers, only four utilized the Strange Situation as a measure of attachment quality. Lamb, et al. (1987) hypothesized that because of the assertion that avoidant attachments are related to intrusive maternal behavior (Ainsworth, et al., 1978) there would be a disproportionate amount of infants classified as insecure avoidant. The authors conducted the Strange Situation procedure when a sample of 40 infants were 14 months of age (Lamb, et al. 1987). They reported significantly more avoidantly attached infants in their sample of adolescent mothers as opposed to other samples of non-adolescent mothers, specifically the Ainsworth, et al. (1978) sample (Lamb, et al. 1987).

Other studies have also reported lower rates of security among infants of adolescent mothers. Frodi and colleagues investigated two indices of socio-emotional development (attachment and mastery motivation) in infants of adolescent mothers as compared to infants of adult mothers (Frodi, Grolnick, Bridges, & Berko, 1990). Here, the authors found that among the total sample of 63 infants, the distribution of secure attachment was slightly lower in the group of infants of adolescent mothers. Later Chi-square analysis determined this difference non-significant.

Another study, conducted by Broussard (1995), utilized a modified version of the Strange Situation, using only one separation and reunion. This study classified infants into one of four classifications; secure, avoidant, resistant, and disorganized. In her sample of 38 infants of adolescent mothers, a lower proportion of secure attachment was found. When compared to another sample that also included disorganization as a category, comparisons of secure vs. insecure were statistically different. Although, it is unclear whether this second sample utilized the same modified version of the Strange Situation. Broussard (1995) further tries to examine differences in attachment according to race. Fewer black infants were classified as secure than were white infants (Broussard, 1995).

Ward and Carlson (1995), in their study of adolescent mothers from environments characterized by poverty and stress, did not find higher proportions of insecurity among their 15-month-old infants.

Given the paucity of research on attachment among infants of adolescent mothers, the rationale for conducting this study was to supplement an existing weak literature base. A question that flows naturally from this is, is there a difference in the presence of insecurity among children of adolescent mothers in comparison to children of non-

adolescent mothers. If differences in attachment classification are determined, can they be explained by maternal characteristics? The major prediction of this study was that there would be a significantly higher proportion of insecurity among 18-month-old infants of adolescent mothers. Also, there would be a higher proportion of disorganization among the infants of adolescent mothers. The secondary predictions for this project were that differences in maternal characteristics, maternal perception of infant behavior, and environment for the infants of adolescent mothers would explain differences in attachment security. Specifically, there would be higher levels of depression, stress, psychological distress, child abuse potential, and higher ratings of difficult infant behaviors, as well as lower self-esteem among the adolescent mothers which in turn would increase the probability of insecurely attached 18-month-old infants.

Method

Participants

The participants in this study were 140 mothers and their 18-month-old infants. All subjects were initially recruited to be part of a prospective study aimed at examining the effects of maternal lifestyles during pregnancy on a variety of infant outcomes. The larger maternal lifestyles study (MLS) is a multi-site, longitudinal study that began recruiting mothers and their infants in 1991. This study is funded by the National Institute of Child Health and Development (NICHD), National Institute on Drug Abuse (NIDA), Association for Children, Youth and Families (ACYF), and Council on Substance Abuse Treatment (CSAT). The mother infant dyads were seen at regular scheduled intervals (1, 4, 8, 10, 12, 18, 24, 30, 36, and 48 months) either in the laboratory or in the infant's home. All infants were seen within a two week window on either side of the scheduled interval. A variety of data concerning infant outcome and possible family or maternal predictors or confounding variables were collected at each of the visits either by evaluation, observation, or self report. One of the specific aims of MLS is to determine what effect illicit substance abuse during pregnancy may have upon infant outcome. Maternal substance abuse was determined both by self report and drug testing of the infant's first stool or meconium. If positive identification was made then the infant was recruited for the follow up phase of the study and efforts were made to obtain an infant for the control group. Infants in the control group were not exposed to cocaine and / or opiates during pregnancy as confirmed by meconium testing and were also matched for sex, gestational age, and birth weight.

Exclusionary criteria for MLS included presence of a chromosomal abnormality, multiple births, and mothers less than eighteen years of age. Since adolescence was an exclusionary criterion, all mothers in the MLS study are over the age of eighteen. The mean age of the mothers at recruitment is approximately 26 years of age. An ancillary project to study this excluded cohort of adolescent mothers with the same protocol as MLS was approved by all the principal investigators in the MLS study and thus, these mother infant dyads were recruited at the same time as the larger MLS sample. The ancillary was only conducted at the Providence, Rhode Island site. This group of adolescent mothers does not contain any abuse of cocaine and / or opiates as obtained by maternal report and meconium testing.

For inclusion into the current study, participants had to attend the eighteen month visit, had to have been living with their biological mother since birth, and also had to have their biological mother as their primary caregiver.

The sample of 140 mothers comprised the subjects in two groups. The first group consisted of 60 eighteen-month-old infants born to adolescent mothers in Providence, Rhode Island. This group is approximately 60% of the total sample in the adolescent ancillary study to the larger maternal lifestyles project. The second group consisted of 80 eighteen-month-old infants and their mothers born in Providence, Rhode Island. This group was taken from the controls in MLS since the adolescent sample does not contain exposure to cocaine and / or opiates. This comprises approximately 80% of the control group of the MLS Providence site. Both groups of infants were born roughly at the same time. Both groups of infants and mothers were recruited at the time of the infant's birth and agreed to participate in follow up visits. The procedures for the follow up visits were

the same for all subjects. Since the primary hypothesis of the study concerns the infant's attachment classifications to his biological mother, it is important to note that some of the subjects are not included in the present analyses. Eight subjects were not included from the adolescent group because some did not complete a strange situation paradigm or technical problems were experienced during videotaping (6), or the mother was not present for the assessment and another caregiver was used (1), or the assessment was deemed uncodeable due to the examiner or mother wishing to discontinue the procedure (1). A final subject was dropped from the adolescent sample because the mother was not the primary caregiver. The remaining 51 subjects comprised the adolescent sample. For the older mother sample, four subjects were dropped from the analyses. In one of these, the mother was not the primary caregiver. The remaining three procedures were either not completed or not videotaped. Therefore the total number of subjects in the non-adolescent sample was seventy-six.

Procedure

Strange Situation. Infant attachment classifications were assessed from review of videotaped sessions of Ainsworth's Strange Situation procedure (Ainsworth, et al., 1978). The Strange Situation is a laboratory procedure consisting of eight episodes in which the mother and child interact with each other and a stranger unknown to the infant, separate from each other and then are reunited all in an environment that offers the child an opportunity for exploration (Table 1).

Table 1

Strange Situation Procedure

Episode 1 -	Mother and baby - 20 seconds
Episode 2 -	Mother and baby - 3 minutes
Episode 3 -	Stranger enters and sits - 1 min Stranger talks to Mother - 1 min Stranger plays with baby - 1 min
Episode 4 -	Mother leaves the room, Stranger remains - 3 min First Separation
Episode 5 -	Mother returns, Stranger leaves the room - 3 min First Reunion
Episode 6 -	Mother leaves the baby alone - 3 min Second Separation
Episode 7 -	Stranger returns - 3 min
Episode 8 -	Mother returns, Stranger leaves - 3 min Second Reunion

Scoring depends on review of each episode but primarily the two reunion episodes (Ainsworth, et al., 1978). Each child is rated for specific behaviors at each reunion (see Appendix A). These consist of Proximity-Seeking, Contact-Maintaining, Avoidant, and Resistant behaviors. These behaviors are rated on a 7-point Likert-type scale in which a higher score reflects more of the behavior. Proximity-seeking behavior can be described as attempts to be close to the caregiver. Presumably the separation has caused some distress in the infant which would lead him to approach the mother upon her return. Contact-maintenance refers to the child trying to maintain contact with the caregiver. For example, the child may cling to the mother or resist being put down when held. Avoidant behavior reflects attempts from the infant to move away from or ignore the caregiver. The

avoidant behaviors can range from a brief look away from the mother to a full snub of the mother's return regardless of the mother's bids for contact or interaction, if any. Resistant behavior is evidenced in the infants desire for contact but also in the resistance of comforting, and the inability to be soothed. Resistant behaviors can range from crying after having been comforted by the caregiver to a full blown tantrum. From this information, specifically the scores on the above four behaviors, the dyad is then categorized into one of three general categories (Table 2). The first category is secure or commonly referred to as type B. Secure (B) infants derive comfort from their caregiver and this is illustrated by the child's attempts to be close to the caregiver (i.e. proximity seeking and contact maintaining behaviors) and also by the child's willingness to explore the environment. The second category is insecure-avoidant or commonly referred to as type A. Avoidant infants tend to show very little proximity seeking behaviors and may actively avoid the mother upon reunion. The third category is insecure-resistant or C. Resistant infants may show a mixture of seeking contact while at the same time pushing it away or refusing to be comforted by the mother.

Table 2
Attachment classifications

	A - Avoidant	B - Secure	C - Resistant
Separation Episodes <i>Episodes 4 and 6</i>	Child shows little distress.	May or not be distressed. Makes efforts to search for mother.	Child shows much distress.
Reunion Episodes <i>Episodes 5 and 8</i>	Child snubs or avoids mother.	Child comforted by mothers return and makes efforts to contact and/or greet her.	Child may refuse to be comforted and seeks and rejects contact.

A final category is also determined and may occur in the presence of security or insecurity. This category is disorganization (D) and is also rated on a 7 point Likert type scale (Main and Solomon, 1990). A higher score reflects more D behavior or a clear theme or pattern of disorganization. Disorganized infants show odd, disoriented, disorganized behavior or a combination of both avoidant and resistant behavior. For example, infants may approach the stranger at the moment of reunion after showing much distress or infants may show apprehension of the mother by backing away from her at reunions. Infants are assigned a level of D (1-7) based upon their behaviors and then are classified as disorganized or not disorganized.

The A,B,C classifications have been reliably identified in 39 studies in eight countries and prevalence rates have been reported earlier (Van Ijzendoorn & Kroonenberg, 1988). Stability of these classifications in infants between 12 to 18 months of age has ranged from 53% to 96% (Thompson, Lamb, & Estes, 1982; Lamb, et al., 1985; Waters, 1978). In terms of long term stability, it has been reported that infant attachment classifications have predicted attachment classifications in six-year-old children (Main & Cassidy, 1988). The predictive validity of the strange situation had shown that insecurity predicts behavior problems later on (Erickson, Sroufe, & Egeland, 1985; Turner, 1991)

Maternal Characteristics. Since maternal characteristics have been shown to be related to patterns of caregiving and later attachment (Ainsworth, et al., 1978), several measures were also assessed in both samples (Table 3). These measures were gathered by the larger MLS study by examiners trained to administer each, if appropriate. All

adolescent data was scored by this examiner. Copies of the instruments used in the current study from the larger MLS study are included in Appendixes B-H. Use of the MLS forms requires permission granted by the National Institute of Health (NIH).

First, the Home Observation for Measurement of the Environment (HOME) (Caldwell & Bradley, 1984) was used (see Appendix B). This instrument is useful for measuring the social-emotional support available within the infant's home (Caldwell & Bradley, 1984). The 45 scale items are scored on the basis of observations of the home and on interviews with the mother. This tool was administered at the 10-month visit by an examiner working on the larger maternal lifestyles project. The items are then subdivided into dimensions including Responsivity of Parent, Acceptance of Child Behavior, Organization of Environment, Appropriate Play Materials Provided by Parent, Variety of Daily Stimulation, and Total Quality of Home Environment. Only the total score was used in this study. This tool has been found to be both reliable and valid (Caldwell & Bradley, 1984). Internal consistency for the Total score ranges from .44 to .89. Temporal stability of the HOME ranges from .3 to .7 for time periods ranging from six months to two years. Validity has been established by obtaining correlations with performance on cognitive measures and behavioral records (i.e., Bayley Scales of Infant Development). These correlations range from .3 to .7, depending upon the age at which the relationship was examined. The correlations tended to become stronger up to age three.

Parenting stress was measured using the Parenting Stress Inventory (PSI) (Abidin, 1983). The 36 item short form was used and was collected at the four-month scheduled visit. It was administered by interview to the mother by an examiner working on the larger maternal lifestyles study (see Appendix C). The PSI measures stress arising from

parenting. The mother rates each item on a five point likert scale ranging from strongly agree to strongly disagree. The PSI yields three subscales and a summary index of total stress. Only this summary index was used in this study. Higher scores reflect greater stress. The norms for the PSI reveal the mean to be 71.

Next, a measure of child abuse potential was assessed. The Child Abuse Potential Inventory (CAPI) (Milner, 1980) is a 77 item self-report scale that examines maternal psychological difficulties such as distress, rigidity, and unhappiness and also interactional problems experienced by the mother such as problems with self, family, or others. This instrument was obtained at the 8 month scheduled visit (see Appendix D). Scores are generated for each of the factors and a total score. Once again only the total score was used in this study. Psychometric properties such as reliability and validity have been established (Milner, 1980). Internal consistency for the CAPI ranges from .92 to .98 and temporal stability from .91 to .75 for time periods of one day and three months respectively. Construct validity has been established by obtaining correlations with measures of parental stress and also the family environment. These correlations are from .62 and .41, respectively. Also, Mee (1983, as cited in Milner, 1980) examined the relationship between the CAPI and attachment using the Interview Schedule for Social Interaction. Mothers who had high adequacy for attachment had lower scores on the CAPI.

Maternal depression was assessed using the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) which was collected at the 4 month visit. The BDI is a 21 item self report scale written at a fifth grade reading level, that indicates the respondent's level of depression (see Appendix E). Scale item responses

range from zero to three and items are summed to obtain an overall score. A higher score reflects a higher level of depression. The BDI has well established psychometric properties. It possesses good internal consistency, stability, and reliability. Split-half reliabilities range from .78 to .93. Test-retest reliabilities have been reported from .48 with undergraduate populations after a time period of three months. The validity of the scale has been demonstrated with a number of other depression measures (Beck, Steer, & Garbin, 1988).

used Maternal psychological distress was determined by the Brief Symptom Inventory (BSI) (Derogatis, 1993). It is a 53 item questionnaire that is the short form of the Revised 90 item Symptom Checklist (SCL-90-R). The BSI was administered by interview to the mother at the four month visit by an examiner working on the larger MLS project (see Appendix F). The BSI yields 9 primary symptom dimensions as well as a global severity index. Higher scores reflect more reported symptoms. Only the global score was used in this study.

Maternal self-esteem was assessed via the Maternal Self-Report Inventory (MSRI) (Shea & Tronick, 1988) which was collected at the 10 month visit (see Appendix G). The MSRI is a 26 item scale that yields a total score which reflects the mothers self-esteem. A higher score indicates increased self-esteem. It has been shown that maternal self-esteem influences the quality of a mother's behavior with her infant (Shea & Tronick, 1988). Test-retest, concurrent, and constructive validity for the MSRI have been established (Shea & Tronick, 1988). Concurrent validity was determined by correlations between another self report inventory and clinical ratings of maternal self-esteem. Correlations were .74 and .35 respectively. Construct validity was obtained by correlations between

the MSRI and other independent measures such as family support (.69), maternal perception of the infant (.36), and maternal infant interaction (.33). Reliability was obtained by a four week test-retest reliability coefficient of .85.

Infant Characteristics. Information on the infant's temperament and behavior was also obtained to help explain any differences that may have been found. There is some controversy as to whether infant characteristics are significant predictors of attachment security. To address this, the Infant Behavior Questionnaire (IBQ) (Rothbart, 1981) was used. The IBQ is a 90 item questionnaire administered to the mother at the four month visit to measure her perceptions of the infant's temperament and behavior in common everyday situations (see Appendix H). This measure yields six summary scales: Activity Level, Smiling and Laughter, Distress to Approach Sudden or Novel Stimuli, Distress to Limitations, Soothability, and Duration of Orienting. These summary scores have coefficient alpha values ranging from .72 to .85. Stability correlations range from .43 to .80 for time periods of 9 months to 12 months (Rothbart, 1981).

Table 3

Measures

Procedure	Visit	Domain
Strange Situation Collected at	18 month	Attachment

PARENT REPORT

Beck Depression Inventory	4 month	Depression
Brief Symptom Inventory	4 month	Psychological Distress
Parenting Stress Inventory	4 month	Parenting Stress
Child Abuse Potential Inventory	8 month	Child Abuse Potential
Maternal Self-Report Inventory	10 month	Self Esteem
Infant Behavior Questionnaire	4 month	Maternal Perception of Infant Temperament

OBSERVATION

Home Observation for Measurement of the Environment	10 month	Social, Emotional, and Cognitive Support in the Home
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Demographics. Demographics of the participants obtained throughout the larger study were also collected to describe the samples further. These include such variables as maternal education, socioeconomic status, race, parity, number of prenatal care visits, birthweight, gestational age, gender, apgar scores at one and five minutes after birth, and extent of alcohol, marijuana, and cigarette use of the mother during pregnancy.

Socioeconomic status was determined by a method of combining such factors as education, income, occupation, and other contributors to the household. It is similar to the Hollingshead Four Factor Index of Social Position (Hollingshead, 1975), although it is

measured on a continuous rather than a categorical scale. Twenty-nine through thirty-nine constitutes middle class, less than twenty-nine constitutes lower socioeconomic levels, and greater than thirty-nine constitutes higher socioeconomic levels.

Data Reduction. Strange Situation procedures of the adolescent group were coded by this examiner trained to classify infants according to Ainsworth's classification procedure for A, B, and C (Ainsworth, et al., 1978) and Main and Solomon's procedure for Disorganization (Main & Solomon, 1990). Training on the scoring system occurred over approximately a time period of two years by a trained examiner, Ron Seifer, Ph.D.

Reliability of the adolescent sample was evaluated on approximately 20% of the sample by an independent coder also trained at the time of this examiner (S.B.). Inter-rater reliability of 94% was determined by using the percent agreement criterion for the 20% recoded for reliability. The Strange Situation procedures of the non adolescent sample were coded by either this examiner or the above mentioned coder.

Given the nature of the adolescent sample, it would have been hard for this examiner to remain blind to group assignment. Essentially, adolescents may look younger than their non-adolescent counterparts thus making it difficult for any coder to remain blind to group status. To help address this fact and strengthen this study, a group of mothers from the larger MLS study who were between the ages of eighteen and twenty at the time of recruitment were identified (11). The Strange Situation procedures of this group of younger non-adolescent mothers were included with those of the adolescent sample. Thus, these procedures were rescored to help address the issue of blindness to group assignment. The recoded classifications for these subjects revealed the same original classifications.

Occasionally, it was difficult to determine a definitive attachment classification. When these situations arose, the procedures were conferenced among trained examiners. In the current sample three procedures were conferenced and agreement was obtained.

Given the prevalence data of the specific secure and insecure attachment patterns (Van Ijzendoorn & Kroonenberg, 1988) and the sample size in this study, all the insecure groups (both A and C) were combined. Thus the rating for each infant will be classified as secure or insecure. Since the D classification can occur with or without the presence of security, Disorganization will also be categorized into two groups, presence of D or not.

A power analysis was conducted to determine if a significant difference in the proportion of security/insecurity could be detected between these two groups. With the current sample size, the power analysis yielded a value of .87. According to Cohen (1988), this is enough power to conduct the study at hand. Since we know that the prevalence of security in normal populations tends to be approximately 65% (Van IJzendoorn & Kroonenberg, 1988), and thus if the rate of security in the non-adolescent population is 25 points higher than the rate in the adolescent sample, then there is an 87% chance that the effect in this study will be 15 points or more to be significant. This means that the rate of security in the adolescent sample must be 40% (which computes to 21 subjects) in order to be significant. The power value indicates that there is an 87% chance that this difference will occur (Cohen, 1988).

Results

Analysis of Demographics

To determine if there were differences between the two groups, a number of maternal and infant characteristics were examined. The demographics for the samples were compared using the X^2 statistic to describe the distributional differences for data that were categorical and with t -tests to compare mean values when data were continuous.

Maternal characteristics. The demographics for the two samples are presented in Table 4. As expected, there was a significant difference between the two groups of mothers on most of the maternal demographic characteristics.

Mothers in the non-adolescent sample were more likely to have more than one living child (parity) ($M = 2.2$) than the mothers in the adolescent sample ($M = 1.1$), $t(87) = -6.8$, $p < .05$.

A continuous measure of socioeconomic status or index of social position was computed for each participant. This value was derived from a variety of factors such as occupation, contribution to household income, education, etc. A higher score reflects higher socioeconomic status. Mothers in the older sample were more likely to have a higher socioeconomic status ($M = 35.3$) than the younger mothers ($M = 25.5$), $t(115) = -5.3$, $p < .01$. The majority of the mothers in the adolescent sample had an index of social position which reflected the subjects were primarily in the lower and middle to lower socioeconomic groups. The majority of the subjects in the non-adolescent sample fell in the middle to upper middle class range.

Similarly, level of education as measured by number of years completed in school was significantly lower in the adolescent group. The older mothers had completed more

years of school ($M = 12.7$) than the mothers in the adolescent sample ($M = 9.2$), $t(109) = -10.3$, $p < .01$.

Marital status also differed between the two groups with a higher proportion of the non-adolescent mothers being married ($X^2 = 40.41$, $p < .05$). The distributions of race also differed between the two groups with a higher proportion of Hispanic women in the adolescent group and a higher percentage of Black women in the non-adolescent group ($X^2 = 16.7$, $p < .01$).

Dichotomous measures of alcohol, marijuana, and cigarette use were determined for each of the subjects. History was determined by yes or no for use during pregnancy. This information was collected at the initial recruitment interview in the hospital during the immediate post-partum period. The proportions of use differed between the two groups for each of the substances of alcohol and marijuana. A higher proportion of non-adolescent mothers reported having used alcohol during their pregnancy ($X^2 = 37.0$, $p < .01$). A higher proportion of adolescent mothers reported having used marijuana during their pregnancy ($X^2 = 20.7$, $p < .01$). There was no difference between the two groups with respect to self-reported nicotine use during pregnancy.

Table 4

Means and Standard Deviations or Frequencies and Tests of Significance for Maternal Demographic Characteristics of Sample by Maternal Age Group

	<u>Adolescent</u>	<u>Non-Adolescent</u>	<u>t/X²</u>
<u>Mother Characteristics</u>			
Maternal Age	16.1 (.9)	28.6 (5.7)	-12.7*
Education (grade level)	9.2 (1.2)	12.7 (2.8)	-10.3*
Prenatal Care (# visits)	14.1 (6.5)	12.7 (4.8)	NS
Parity	1.1 (.3)	2.2 (1.4)	-6.8*
Socioeconomic Status	25.5 (7.3)	35.3 (12.8)	-5.3*
Marital Status			
N Married	1	40	40.41*
N Not Married	49	35	
Race			
White	12	16	16.7*
Black	15	44	
Hispanic	23	12	
Other	0	3	
Alcohol Use during pregnancy			
Yes	4	47	37.0*
No	47	29	
Marijuana Use during pregnancy			
Yes	16	2	20.7*
No	35	74	
Nicotine Use during pregnancy			
Yes	10	17	NS
No	41	59	

Infant characteristics. The demographics for the two samples are presented in Table 5. There were no significant differences between the two groups on number of prenatal care visits, infant gender, birthweight, gestational age, and apgar scores at one and five minutes after birth. The percentages of males and females in the adolescent

sample were 47% and 53%, respectively, and the percentages of males and females in the non-adolescent sample were 53% and 47%, respectively.

Although there were no differences in the mean birthweights of the infants in either group, it is important to describe the two samples further. The percentage of infants with birthweights less than 2500 grams was 13.7 in the adolescent sample and 25.3 in the non-adolescent sample. Similarly, the percentages for the amount of infants with gestational ages less than 37 weeks was 13.6 and 25.3 respectively. The percentage of infants with birthweights less than 2500 grams was converted into a dichotomous variable to determine if the proportion of infants with birthweights less than 2500 grams differed between the two groups. There was no significant difference between the two on this variable ($\chi^2 = 2.5, p > .05$). Similarly, the percentages for the amount of infants with gestational ages less than 37 weeks was also converted into a dichotomous variable. Once again there was no significant difference between the two samples on the proportion of infants with gestational ages less than 37 weeks ($\chi^2 = 2.3, p > .05$).

Table 5

Means and Standard Deviations or Frequencies and Tests of Significance for Infant Demographic Characteristics of Sample by Maternal Age Group

Infant Characteristics

Gender	F	27	35	NS
	M	24	40	
Birthweight (grams)		3063.8 (550.7)	3005.4 (803.5)	NS
Gestational Age (weeks)		38.5 (2.9)	37.7 (2.9)	NS
Apgar	1 minute	7.5 (1.7)	7.5 (1.4)	NS
	5 minutes	8.6 (1.1)	8.6 (.9)	NS

* $p < .05$

Analysis of Attachment Classification

It was predicted that there would be significantly more insecure infants among 18-month-old infants of adolescent mothers. A power analysis was conducted to determine if a significant difference in the proportion of security/insecurity could be detected between these two groups. With the current sample size, the power analysis yielded a value of .87.

First, it is important to describe the two samples in terms of their attachment classifications. Table 6 shows the distributions of the different attachment categories for each group. In the adolescent sample, approximately 66.7% of the infants were classified as secure (B), 17.7% were classified as insecure-avoidant (A), and 7.8% were classified as insecure-resistant (C). In the non-adolescent sample, approximately 61.8% of the infants were classified as secure (B), 11.8% were classified as insecure-avoidant (A), and 11.8% were classified as insecure-resistant (C). Due to the nature of the sample size, the two insecure categories of A and C were combined to create one insecure category; therefore, infants were categorized as either secure or insecure.

Occasionally, infants were unable to be classified into one of the three groups or exhibited behaviors that indicated the infants had a mixed strategy of both resistance and avoidance. One infant in the adolescent sample and six infants in the non-adolescent sample were unable to be classified. Three and five infants showed a mixed strategy of A/C in the adolescent and non-adolescent samples respectively.

Table 6

Number and (Percent) of Each Attachment Classification Category for Infants of Adolescent and Non-Adolescent Mothers

	<u>Adolescent</u> N=51	<u>Non-Adolescent</u> N=76
A - Avoidant	9 (17.7)	9 (11.8)
B - Secure	34 (66.7)	47 (61.8)
C - Resistant	4 (7.8)	9 (11.8)
U - Unclassifiable	1 (1.96)	6 (7.9)
A/C - Mixed Strategy	3 (5.9)	5 (6.6)
D - Disorganized	5 (9.8)	15 (19.7)

At the same time, infants were rated as being disorganized (D) or not. Among the infants in the adolescent sample, 10% were classified as D and 19.7% of the infants in the non-adolescent sample were rated as disorganized.

To determine presence of security and insecurity categorically, infants classified as insecure via A, C, or A/C classifications were all categorized as insecure and were compared to those infants classified as secure via B classifications. Since data were categorical (secure vs. insecure and adolescent, non-adolescent), a Two-Way Chi-Square analysis was utilized to determine the difference in the proportion of insecurity between the two groups ($X^2 = .003, p > .05$). Another Chi-Square analysis was employed to determine the difference in the proportion of disorganization between the two groups ($X^2 = .99, p > .05$). Neither of these Chi-squares was significant, indicating that there was no difference in the proportion of insecurity nor disorganization among the two groups.

Since there was enough power in the study to determine differences if there were in fact any, one can assume that the lack of differences was not due to a Type II error.

Analysis of Self Report and Observation Measures

Additional analyses were conducted on variables that may predict attachment classification. These factors have been shown to be related to attachment security and insecurity. A series of analyses of group means in the form of *t*-tests were conducted for the BDI, PSI, BSI, HOME, MSRI, CAPI, and IBQ. Table 7 shows the means and standard deviations for each of the maternal self report measures and the home observation by group. The two groups did not differ in amount of maternal depression as measured by the BDI, $t(100) = 1.92, p > .05$. On the MSRI, the mothers in the adolescent group reported significantly less self-esteem as a mother ($M = 96.5$) as opposed to the mothers in the non-adolescent group ($M = 104.2$), $t(100) = -4.3, p < .01$. On the BSI, the two groups did not differ on the amount of symptoms reported as measured by the global severity index, $t(110) = 1.95, p > .05$. On the PSI, the mothers in the adolescent sample reported more stress arising from parenting ($M = 80.0$) as compared to the mothers in the non-adolescent sample ($M = 65.43$), $t(110) = 5.21, p < .05$. On the CAPI, the mothers in the adolescent group reported significantly more child abuse potential ($M = 160.6$) as opposed to the mothers in the non-adolescent group who had less child abuse potential ($M = 103.14$), $t(89) = 2.8, p < .01$. On the IBQ, the mothers in the two groups did not differ on any of the dimensions except for Activity Level. The adolescent mothers rated their infants as being significantly more active ($M = 3.28$) than infants of mothers in the non-adolescent group ($M = 2.95$), $t(108) = 2.9, p < .01$.

On the observational measure of the HOME, adolescent mothers provided a home environment of poorer quality ($M = 30.63$) than mothers in the non-adolescent group ($M = 35.56$), $t(107) = -4.2$, $p < .01$.

Table 7

Means and (Standard Deviations) and Tests of Significance of 6 Self Report and Observation Measures (BDI, BSI, PSI, MSRI, CAPI, IBQ)

	<u>Adolescent</u>	<u>Non-Adolescent</u>	<u>t</u>
Beck Depression Inventory	10.27 (9.3)	7.05 (7.4)	NS
Brief Symptom Inventory	.71 (.61)	.49 (.56)	NS
Parenting Stress Inventory	80.00 (13.68)	65.43 (14.81)	5.21*
Maternal Self Report Inventory	96.50 (6.4)	104.16 (11.8)	-4.3*
Child Abuse Potential Inventory	160.55 (87.6)	103.14 (96.5)	2.8*
Infant Behavior Questionnaire			
Activity Level	3.28 (.6)	2.95 (.6)	2.9*
Smiling and Laughter	3.45 (.7)	3.48 (.7)	NS
Distress to Sudden Stimuli	2.21 (.6)	2.07 (.6)	NS
Distress to Limitations	2.42 (.5)	2.50 (.5)	NS
Soothability	3.28 (.7)	3.12 (.7)	NS
Duration of Orienting	2.85 (.5)	2.73 (.6)	NS
HOME	30.63 (5.5)	35.56 (6.4)	-4.2*

* $p < .01$

Additional Analyses

A logistic regression was performed to determine what effect maternal age as measured by the two sample groups and the other related maternal characteristics which proved significant, may have on determining the probability of insecure attachment. A logistic regression is used when the dependent variable is measured on a nominal scale and is dichotomous and there are two or more explanatory variables. The model gives the probability that the outcome occurs as an exponential function of the independent variables. Here, the purpose was to determine if the probability of an infant having an insecure attachment to his mother could be explained by such factors as maternal age, self-esteem as a mother, child abuse potential, quality of the home environment, and maternal perceptions of infant temperament and behavior. Only those measures that differed significantly between the two groups were used in the logistic regression (Table 8). The logistic regression did not significantly explain attachment security by any of the above factors. ($X^2 = 5.6, p > .05$).

Table 8

Parameter Estimates for Logistic Regression Model

	<u>β</u>	<u>SE</u>	<u>Odds Ratio</u>	<u>Confidence Interval 95%</u>	
Adolescent/Non-adolescent	.637	.681	1.89	.139	2.01
Parenting Stress	.022	.024	1.02	.935	1.03
Self Esteem	.011	.031	1.01	.932	1.05
Child Abuse Potential	.001	.003	1.00	.992	1.01
HOME	-.071	.051	.93	.972	1.19
Maternal Perception of Infant Temperament (Activity Level)	.159	.507	1.17	.316	2.30
Race	.109	.378	1.15	.428	1.88
Socioeconomic Status	.058	.032	1.06	.886	1.00

Discussion

The purpose of this study was to examine the attachment relationship of 18-month-old infants of adolescent mothers as compared to non-adolescent mothers. The study further attempted to examine this relationship in the context of maternal characteristics such as depression, self-esteem, parenting stress, child abuse potential, psychological distress, perception of infant behavior, as well as the caregiving environment.

It was suspected that infants of adolescent mothers would have greater incidences of insecure attachment and disorganization as compared to infants of non-adolescent mothers. It was also suspected that these differences could be explained by such factors as depression, self-esteem, parenting attitudes, as well as the caregiving environment. These hypotheses were not confirmed in the present study.

Given the nature of the two samples, it is reasonable to expect that these two groups would differ demographically. Understandably, the adolescent mothers also differed on other demographic variables that defined the nature of this group. Education levels of the adolescent mothers were significantly lower than that of the non-adolescent mothers, as was socioeconomic status (SES). SES is largely comprised of such variables as education, income, and occupation, thus making it difficult for the adolescent mother to have higher levels of SES.

Once again, the nature of the sample reflected another demographic difference in these two groups of mothers. The adolescent mothers were less likely to be married. Half of the non-adolescent mothers were married, whereas only one of the adolescent mothers

was married. The adolescent mothers were also less likely to have more than one living child.

There were significant differences between the two groups with respect to racial identity. The adolescent sample had a higher proportion of Hispanic subjects than the non-adolescent mothers. The non-adolescent mothers had a higher proportion of Black participants as compared to the adolescent mothers.

There were significant differences between the two groups on dichotomous measures of prenatal history of use of alcohol and marijuana. A greater proportion of non-adolescent mothers reported use of alcohol during their pregnancy, whereas, a higher proportion of the adolescent mothers reported use of marijuana during pregnancy. There were no significant differences in the use of nicotine.

Although it was expected that there would be differences between the two groups on maternal demographics, it is encouraging that there were no differences between the two groups on any of the infant characteristics. This eliminated the possibility of differences being related to subtleties in infant medical status.

It was predicted that there would be a significantly greater proportion of infants with insecure attachments in the adolescent sample. The finding of no differences between the two groups with regards to attachment classification is consistent with one of the few studies that examined attachment, via the strange situation, in infants of adolescent mothers (Ward & Carlson, 1995). The result of 67% security among the infants of the adolescent mothers is also consistent with normative data presented by Van Ijzendoorn and Kroonenberg (1988). This suggests that infants of adolescent mothers may resemble normative groups in prevalence of secure attachments to their mothers.

What is particularly interesting is the drastic difference between the two groups on a number of self-reported maternal characteristics. The mothers in the adolescent group reported lower amounts of self-esteem than the mothers in the non-adolescent group on the Maternal Self Report Inventory. Essentially, these mothers have less confidence in the parenting role and less self-esteem as a mother as compared to their older counterparts. This finding is consistent with Hurlbut and colleagues (1997) who also found that adolescent self-esteem is lower than that of older mothers, although a different measure was used. Hurlbut and colleagues (1997) offer that self-esteem is a good indicator of an adolescent mother's parenting. It is a good indicator of her own developmental level and may reflect her own struggle with identity, which in turn affects her skills as a mother. Low self-esteem may lead the mother to have a poor view of the role of the child or to lack the knowledge of parenting skills (Hurlbut, et al., 1997). Additional findings by Hubbs-Tait, Osofsky, Hann, and Culp (1994) support this by suggesting that maternal self-esteem as well as maternal depression predict adolescent parenting. However, in this study no differences were found between the adolescent mothers and non-adolescent mothers on level of depression as measured by the Beck Depression Inventory.

When adolescent mothers were asked to rate whether they agreed or disagreed with statements of parenting stress, expectations of children, etc. on the CAPI, they endorsed stricter parenting attitudes indicative of potential for child abuse. These elevated findings can be discussed in reference to both adolescent and ethnic differences.

Adolescents tend to score higher on the CAPI (Milner, 1986; McCullough & Scherman, 1998) These findings are consistent with reports of normative samples by Milner (1986). High school students (non parents) had an average rating of approximately 188 which is

similar to the current finding. Also, adolescent mothers have been found to be more restrictive and punitive with their children than non-adolescent mothers (Garcia Coll, et al., 1986). Also, as mentioned before, adolescent mother's increased child abuse potential may be due to their lack of adequate knowledge of parenting and appropriate child behavior (McCullough & Scherman, 1998) or living apart from related adults (Flanagan, et al., 1995).

Since the adolescent sample contained a large proportion of Hispanic youths, differences can be explained in terms of cultural attitudes toward parenting. Hispanic mothers when asked to assess the reasons for attachment behavior were more likely to focus on obedience and maintaining a proper demeanor than white anglo mothers (Harwood & Miller, 1991), hence, the adolescents may reflect more stringent parenting beliefs.

In terms of quality of the attachment relationship, it has been hypothesized elsewhere that the Strange Situation may not be a good instrument for use in Hispanic or non-Anglo populations (Harwood, Miller, & Irizarry, 1995). Although, in the current study, the majority of infants in the adolescent sample were classified as secure. Differences in attachment were not found and attachment classifications were not different according to race. This is contrary to Broussard's (1995) finding that fewer black infants were classified as secure.

In order to address the issue that differences may be due to psychological characteristics of the child, a measure of maternal perception of infant's temperament and behavior was compared between the two samples. Although it has been found that teenage mothers have perceptions of their infant's temperament as more difficult than do

older mothers (Field, et al., 1980), this finding was not supported in the current study.

However, adolescent mothers rated their infants as having more activity than the ratings of activity level given by the non-adolescent mothers.

It has been shown that adolescent mothers may provide a less optimal home environment for their infants (Garcia Coll, et al., 1987). This was also confirmed in the present study. Roosa, et al. (1982) in their review of the literature, though limited at the time, found that SES and caretaking environment could be related to developmental problems for the children. More optimal SES, home environment, and maternal infant interaction were found among samples of older mothers (Roosa, et al., 1982). However, in this study only higher SES and more optimal home environments were found among the participants in the non-adolescent group.

In sum, the adolescent mothers have less self-esteem, more stress, stricter parenting attitudes, and provide a lower quality of the home environment than non-adolescent mothers. These mothers are also more likely to rate their infants as having a higher activity level than infants born to older mothers. Perhaps these data are reflecting the fact that over half of the non-adolescent mothers have had the experience of caring for another child, yet, it is still fascinating that these groups look so different on maternal psychosocial factors and these differences do not perturb the attachment relationship. Seifer and colleagues (1996) found no associations between a multiple risk index comprised of such factors as maternal psychopathology, maternal distress, poor quality of home environment, low SES and education, etc. and attachment classification.

It is encouraging that although theoretically, adolescent mothers are portrayed as disadvantaged in virtually every way possible, they do seem to be providing a relationship

for their infant as one of availability and trust. Since the majority of the infants of adolescent mothers were securely attached, some other system may account for this finding. It is possible that the rate of security found in the infants of adolescent mothers is due to factors not measured here.

The unexpected finding of not being able to relate attachment insecurity to differences in maternal age, even when maternal psychosocial differences were so apparent, leads to a variety of questions. Each of the maternal characteristics measured have been related to adverse outcomes for children. This study may not have measured those particular outcomes. For example, adolescent parenting has been associated with lower cognitive functioning in their children at school age (Baldwin & Cain, 1980).

Perhaps some other characteristic of the mother or child has buffered the child against the adversity associated with low SES, poor home environment, low maternal self-esteem, etc. Although the adolescent mothers reported higher levels of parenting stress, the family's living situation or level of perceived social support could be a buffer or protective factor for the child and thus the attachment relationship. However, these two factors were not measured in the current study.

It is also possible that the maternal psychosocial factors measured here may not reflect parenting competence of adolescent mothers. Shapiro and Mangelsdorf (1994) suggest that adult models of parenting competence may not accurately describe the factors that foster or inhibit parenting competence among adolescent mothers. For instance, they found results that seem to be at odds with the notion that parenting competence is positively associated with social support and well being and inversely related to perceived stress. Specifically, adolescent mothers who perceived high support from the baby's

father had higher self esteem and felt more efficacious. Yet, the more support they perceived, the less competent they were in terms of their overall expressivity (Shapiro & Mangelsdorf, 1994). Moreover, Rauch-Elnekave (1994) postulate adolescent mothers may experience difficulties in school and that early motherhood may be a way for them to experience success.

Attachment theory is believed to purport that the infant's experiences prior to the Strange Situation do correlate in a predictable and consistent manner to attachment behavior (Lamb, Thompson, Gardner, & Charnov, 1985). Mothers who behave sensitively to their infants tend to have securely attached infants (Ainsworth, et al., 1978). Mothers who deviate from this are more likely to have insecurely attached infants. Factors associated with insecurity were present among the adolescent sample yet, they did not seem to influence the incidence of insecurity. The data do not seem to reflect the theoretical underpinnings of attachment.

Observational measures of infant characteristics were not used in the current study, hence, one can not rule out the role they may play in describing the mother-infant relationship. Since most temperament questionnaires include items that ask the parent to rate the child's behavior in the context of parent-child interactions (Vaughn, et al., 1992), it may be advantageous to include an objective observational measure of temperament or parent-child interaction and examine their relationship to attachment security. Future studies should attempt to examine this in the context of those variables presented here.

The findings of the present study may be related to the larger environmental context of these dyads. For example, the level of parenting stress, social support, developmental level of the mother, knowledge of child development, race, ethnicity, drug

use, and socioeconomic status may contribute to some of the findings herein. The difference in drug use between the two groups may have contributed to the results seen, although the measure of drug use did not take into account the frequency, amount, or timing of exposure. Future investigations should examine this further.

Some other limitations include the fact that measures of the adolescent mother's developmental level and knowledge of child development were not included, so, it is difficult to conclude that these may have been related to the results. Flanagan (1998) challenges the notion that adolescent parenting is associated with adversity and purports that the developmental process may impact the mothering experience of adolescents. Here, is where interventions should be targeted (Flanagan, 1998). Future research should include these factors, as well as, measures of social support and examinations of the larger caregiving environment, to determine the impact they may have on the quality of parenting provided by adolescent mothers and the quality of the attachment relationship between adolescent mothers and their infants.

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Str: _____
ID: _____

Appendix A

Strange Situation Scoring Worksheet

Strange Situation Scoring Worksheet

ID:

Rater:

Episode 2: Mother-Child

Episode 3: Stranger Enters

Episode 4: 1st Separation

Episode 5: 1st Reunion

Proximity Seeking Contact Maintenance Avoidance Resistance

Episode 6,7: 2nd Separation / Stranger Reunion

Episode 8: 2nd Reunion

Proximity Seeking Contact Maintenance Avoidance Resistance

Appendix B

MLS Form for HOME

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Center Number

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Screening Number

1	4	8	10	12	18	24	30	36
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Visit Month

Birth Number

NEW HOME OBSERVATION FOR MEASUREMENT OF ENVIRONMENT

Record whether the behavior or events described in each item are observed during the visit or reported by the parent or caretaker as characteristic of the home environment.

* These items may require direct questions.

Part I. EMOTIONAL AND VERBAL RESPONSIVITY OF MOTHER/CARETAKER

- | | Yes | No |
|---|--------------------------|--------------------------|
| 1. Caretaker spontaneously vocalizes to child at least twice during visit (excluding scolding). | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Caretaker responds to child's vocalizations with verbal response. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Caretaker tells the child the name of some object during visit or says name of person or object in a "teaching style". | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Caretaker's speech is distinct, clear and audible. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Caretaker initiates verbal interchanges with observer-asks questions, makes spontaneous comments. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Caretaker expresses ideas freely and easily and uses statements of appropriate length for conversations (e.g., gives more than brief answers). | <input type="checkbox"/> | <input type="checkbox"/> |
| * 7. Caretaker permits child occasionally to engage in "messy" types of play. | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Caretaker spontaneously praises the child's qualities or behavior twice during visit. | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. When speaking of or to child, caretaker's voice conveys positive feeling. | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Caretaker caresses or kisses child at least once during visit. | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Caretaker shows some positive emotional responses to praise of child offered by visitor. | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Caretaker makes eye to eye contact with child. | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Caretaker conveys positive affect non-verbally toward child. | <input type="checkbox"/> | <input type="checkbox"/> |

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC63.1

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Center Number

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Screening Number

1	4	8	10	12	18	24	30	36
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Visit Month

Birth Number

Part II. AVOIDANCE OF RESTRICTION AND PUNISHMENT

- | | Yes | No |
|--|----------------------------|----------------------------|
| 14. Caretaker does not shout at child during visit. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 15. Caretaker does not express overt annoyance with or hostility toward child. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 16. Caretaker neither slaps nor spansks child during visit. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| *17. Caretaker reports that no more than one instance of physical punishment occurred during the past week. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 18. Caretaker does not scold or derogate child during visit. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 19. Caretaker does not interfere with child's actions or restrict child's movements more than 3 times during my visit. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 20. At least ten books are present and visible. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| *21. Family has a pet. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

Part III. ORGANIZATION OF ENVIRONMENT

- | | Yes | No |
|---|----------------------------|----------------------------|
| 22. When caretaker is away, care is provided by one of three regular substitutes. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 23. Someone takes child into grocery store at least once a week. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 24. Child gets out of house at least four times a week. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 25. Child is taken regularly to doctor's office or clinic. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 26. Child has a special place in which to keep his/her toys and "treasures". | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 27. Child's play environment appears safe and free of hazards. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 28. Home environment appears clean. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 29. Child has a feeding schedule. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

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Center Number

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Screening Number

1	4	8	10	12	18	24	30	36
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Visit Month

Birth Number

Part III. ORGANIZATION OF ENVIRONMENT (continued)

- | | Yes | No |
|--|----------------------------|----------------------------|
| 30. Meals are planned and provided at regular times for family members. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 31. Child has a safe, consistent place to sleep (e.g. crib, bassinet, play pen). | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 32. Each member of the family regularly sleeps in a specific place. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 33. Family has regular and appropriate morning routine. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| *34. There are sufficient staples for children. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 35. Child and child's clothing appear clean. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 36. Caretaker has not made more than two moves in the past 2 years. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

Part IV. PROVISION OF APPROPRIATE PLAY MATERIAL

- | | Yes | No |
|---|----------------------------|----------------------------|
| 37. Child has some muscle activity toys or equipment. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 38. Child has push or pull toy. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 39. Child has stroller or walker, kiddie car, scooter or tricycle. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 40. Caretaker provides toys or interesting activities for child during interview. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 41. Provides learning equipment appropriate to age - cuddly toy or role playing toys. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 42. Provides learning equipment appropriate to age - mobile, table and chairs, high chair, play pen. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 43. Provides eye-hand coordination toys - items to go in and out of receptacle, fit together toys, beads. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC63.1

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Center Number

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Screening Number

1	4	8	10	12	18	24	30	36
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Visit Month

Birth Number

Part IV. PROVISION OF APPROPRIATE PLAY MATERIAL (continued)

- | | Yes | No |
|---|--------------------------|--------------------------|
| 44. Provides eye-hand coordination toys that permit combinations - stacking or nesting toys, blocks or building toys. | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Provides toys for literature and music. | <input type="checkbox"/> | <input type="checkbox"/> |

Part V. MATERNAL/CARETAKER INVOLVEMENT WITH CHILD

- | | Yes | No |
|--|--------------------------|--------------------------|
| 46. Caretaker tends to keep child within visual range and to look at him/her often. | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. Caretaker "talks" to child while doing her work. | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. Caretaker consciously encourages developmental advance. | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. Caretaker invests "maturing toys" with value via her attention. | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. Caretaker structures child's play periods. | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. Caretaker provides toys that challenge child to develop new skills. | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. Older children are not handling child in inappropriate fashion. | <input type="checkbox"/> | <input type="checkbox"/> |
| 53. The child is not left alone or left in the care of other children less than 12 years of age. | <input type="checkbox"/> | <input type="checkbox"/> |
| *54. Child is not regularly cared for by other children in place of the caretaker. | <input type="checkbox"/> | <input type="checkbox"/> |
| *55. Child is not allowed to feed self. | <input type="checkbox"/> | <input type="checkbox"/> |
| 56. Caretaker picks up child regularly when not sleeping. | <input type="checkbox"/> | <input type="checkbox"/> |

Part VI. OPPORTUNITIES FOR VARIETY IN DAILY STIMULATION

- | | Yes | No |
|---|--------------------------|--------------------------|
| 57. Father (or Caretaker's partner) provides some caretaking every day. | <input type="checkbox"/> | <input type="checkbox"/> |
| 58. Caretaker reads stories at least three times weekly. | <input type="checkbox"/> | <input type="checkbox"/> |

Appendix C

MLS Form for PSI

[Faint, illegible text within a rectangular border, likely a form or table with multiple rows and columns.]

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

PARENTING STRESS INDEX (PSI)

Directions:
In answering the following questions, please think about the the child you brought in today for the study visit. I am going to read some statements to you. Using this scale I want you to tell me how close the statements are to how you feel.

In other words if your feelings about the statement are:

"Yes, that's certainly how I feel" then your choice would be (1) Strongly Agree.

"Yes, that's how I feel sometimes" then your choice would be (2) Agree.

"I'm not sure how I feel" then your choice would be (3) Not Sure.

"No, I don't usually feel that way" then your choice would be (4) Disagree.

"No, I don't feel that way at all" then your choice would be (5) Strongly Disagree.

While you may not find an answer which exactly states your feelings, please choose the answer which comes closest to describing how you feel.

YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.

Start with an example (SEE SCRIPT)

(1)	(2)	(3)	(4)	(5)
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
(Yes, certainly)	(Yes, sometimes)		(Not usually)	(Not at all)

- | | | | | | | |
|----|---|---|---|---|---|---|
| 1. | You often have the feeling that you cannot handle problems very well. | 1 | 2 | 3 | 4 | 5 |
| 2. | You find yourself giving up more of your life to meet this child's needs than you ever thought you would. | 1 | 2 | 3 | 4 | 5 |
| 3. | You feel trapped by responsibilities as a parent. | 1 | 2 | 3 | 4 | 5 |
| 4. | Since having this child you have been unable to do new and different things. | 1 | 2 | 3 | 4 | 5 |
| 5. | Since having this child you feel that you are almost never able to do things that you like to do. | 1 | 2 | 3 | 4 | 5 |
| 6. | You are unhappy about the last clothes that you bought. | 1 | 2 | 3 | 4 | 5 |
| 7. | There are quite a few things that bother you about your life. | 1 | 2 | 3 | 4 | 5 |
| 8. | Having this child has caused more problems than you thought it would between you and your spouse/boyfriend. | 1 | 2 | 3 | 4 | 5 |

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

Strongly Agree 1	Agree 2	Not Sure 3	Disagree 4	Strongly Disagree 5
---------------------	------------	---------------	---------------	------------------------

- | | | | | | | |
|-----|--|---|---|---|---|---|
| 9. | You feel alone and without friends. | 1 | 2 | 3 | 4 | 5 |
| 10. | When you go to a party you usually think that you won't enjoy yourself. | 1 | 2 | 3 | 4 | 5 |
| 11. | You are not as interested in people as you used to be. | 1 | 2 | 3 | 4 | 5 |
| 12. | You don't enjoy things as you used to. | 1 | 2 | 3 | 4 | 5 |
| 13. | This child hardly ever does things that make you feel good. | 1 | 2 | 3 | 4 | 5 |
| 14. | Most times you feel that this child does not like you and does not want to be close to you. | 1 | 2 | 3 | 4 | 5 |
| 15. | This child smiles at you much less than you expected. | 1 | 2 | 3 | 4 | 5 |
| 16. | When you do things for this child you get the feeling that s/he doesn't notice or appreciate them. | 1 | 2 | 3 | 4 | 5 |
| 17. | When playing, s/he doesn't often giggle or laugh. | 1 | 2 | 3 | 4 | 5 |
| 18. | This child doesn't seem to learn as quickly as most children. | 1 | 2 | 3 | 4 | 5 |
| 19. | This child doesn't seem to smile as much as most children. | 1 | 2 | 3 | 4 | 5 |
| 20. | This child is not able to do as much as you expected. | 1 | 2 | 3 | 4 | 5 |
| 21. | It takes a long time and it is very hard for this child to get used to new things. | 1 | 2 | 3 | 4 | 5 |
| 22. | You feel that you are: <ul style="list-style-type: none"> 1. not very good at being a parent, 2. a person who has some trouble being a parent, 3. an average parent, 4. a better than average parent, 5. a very good parent. (Use a written card for the mother to choose.) | 1 | 2 | 3 | 4 | 5 |
| 23. | You are bothered by not having closer and warmer feelings for this child. | 1 | 2 | 3 | 4 | 5 |
| 24. | Sometimes this child does things that bother you, just to be bad. | 1 | 2 | 3 | 4 | 5 |
| 25. | This child seems to cry or fuss more often than most children. | 1 | 2 | 3 | 4 | 5 |
| 26. | This child generally wakes up in a bad mood. | 1 | 2 | 3 | 4 | 5 |
| 27. | You feel that s/he is very moody and easily upset. | 1 | 2 | 3 | 4 | 5 |

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Center Number

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Screening Number

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Visit Month

Birth Number

CAP INVENTORY FORM VI

Interviewer: The items should be read aloud without explanation, advice, or comment. If the respondent asks questions about the meaning of any item, explain that you are interested in her interpretation and repeat the statement emphasizing such words as "never, sometimes, always, often, etc." which can help to define the answers. Statements which refer to "your child" refer to the study child, you may need to clarify this for the respondent.

I am going to read you a list of statements expressing how you might feel about many different matters. Please listen carefully and tell me whether you agree or disagree with the statement.

	Agree	Disagree
1. You never feel sorry for others	<input type="checkbox"/> 1	<input type="checkbox"/> 2
2. You enjoy having pets	<input type="checkbox"/> 1	<input type="checkbox"/> 2
3. You have always been strong and healthy	<input type="checkbox"/> 1	<input type="checkbox"/> 2
4. You like most people	<input type="checkbox"/> 1	<input type="checkbox"/> 2
5. You are a confused person	<input type="checkbox"/> 1	<input type="checkbox"/> 2
6. You do not trust most people	<input type="checkbox"/> 1	<input type="checkbox"/> 2
7. People expect too much from you	<input type="checkbox"/> 1	<input type="checkbox"/> 2
8. Children should never be bad	<input type="checkbox"/> 1	<input type="checkbox"/> 2
9. You are often mixed up	<input type="checkbox"/> 1	<input type="checkbox"/> 2
10. Spanking that only bruises a child is okay	<input type="checkbox"/> 1	<input type="checkbox"/> 2
11. You always try to check on your child when he/she is crying	<input type="checkbox"/> 1	<input type="checkbox"/> 2
12. You sometimes act without thinking	<input type="checkbox"/> 1	<input type="checkbox"/> 2
13. You cannot depend on others	<input type="checkbox"/> 1	<input type="checkbox"/> 2
14. You are a happy person	<input type="checkbox"/> 1	<input type="checkbox"/> 2

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Visit Month

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- | | Agree | Disagree |
|---|----------------------------|----------------------------|
| 15. You like to do things with your family | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 16. Teenage girls need to be protected | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 17. You are often angry inside | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 18. Sometimes you feel all alone in the world | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 19. Everything in a home should always be in its place | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 20. You sometimes worry that you cannot meet the needs of a child | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 21. Knives are dangerous for children | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 22. You often feel rejected | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 23. You are often lonely inside | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 24. Little boys should never learn sissy games | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 25. You often feel very frustrated | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 26. Children should never disobey | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 27. You love all children | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 28. Sometimes you fear that you will lose control of yourself | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 29. You sometimes wish that your father would have loved you more | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 30. You have a child who is clumsy | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 31. You know what is the right and wrong way to act | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 32. Your telephone number is unlisted | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

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Visit Month

Birth Number

- | | Agree | Disagree |
|--|----------------------------|----------------------------|
| 33. The birth of a child will usually cause problems in a marriage | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 34. You are always a good person | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 35. You never worry about your health | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 36. You sometimes worry that you will not have enough to eat | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 37. You have never wanted to hurt someone else | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 38. You are an unlucky person | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 39. You are usually a quiet person | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 40. Children are pests | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 41. Things have usually gone against you in life | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 42. Picking up a baby whenever he cries spoils him | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 43. You sometimes are very quiet | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 44. You sometimes lose your temper | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 45. You have a child who is bad | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 46. You sometimes think of yourself first | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 47. You sometimes feel worthless | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 48. Your parents did not really care about you | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 49. You are sometimes very sad | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 50. Children are really little adults | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

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Visit Month

Birth Number

- | | Agree | Disagree |
|---|----------------------------|----------------------------|
| 51. You have a child who breaks things | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 52. You often feel worried | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 53. It is okay to let a child stay in dirty diapers for a while | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 54. A child should never talk back | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 55. Sometimes your behavior is childish | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 56. You are often easily upset | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 57. Sometimes you have bad thoughts | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 58. Everyone must think of himself first | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 59. A crying child will never be happy | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 60. You have never hated another person | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 61. Children should not learn how to swim | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 62. You always do what is right | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 63. You are often worried inside | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 64. You have a child who is sick a lot | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 65. Sometimes you do not like the way you act | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 66. You sometimes fail to keep all of your promises | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 67. People have caused you a lot of pain | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 68. Children should stay clean | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

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Visit Month

Birth Number

- | | Agree | Disagree |
|---|--------------------------|--------------------------|
| 69. You have a child who gets into trouble a lot | <input type="checkbox"/> | <input type="checkbox"/> |
| 70. You never get mad at others | <input type="checkbox"/> | <input type="checkbox"/> |
| 71. You always get along with others | <input type="checkbox"/> | <input type="checkbox"/> |
| 72. You often think about what to do | <input type="checkbox"/> | <input type="checkbox"/> |
| 73. You find it hard to relax | <input type="checkbox"/> | <input type="checkbox"/> |
| 74. These days a person doesn't really know on whom one can count | <input type="checkbox"/> | <input type="checkbox"/> |
| 75. Your life is happy | <input type="checkbox"/> | <input type="checkbox"/> |
| 76. You have a physical handicap | <input type="checkbox"/> | <input type="checkbox"/> |
| 77. Children should have play clothes and good clothes | <input type="checkbox"/> | <input type="checkbox"/> |
| 78. Other people do not understand how you feel | <input type="checkbox"/> | <input type="checkbox"/> |
| 79. A five year old who wets his bed is bad | <input type="checkbox"/> | <input type="checkbox"/> |
| 80. Children should be quiet and listen | <input type="checkbox"/> | <input type="checkbox"/> |
| 81. You have several close friends in your neighborhood | <input type="checkbox"/> | <input type="checkbox"/> |
| 82. It is the school's responsibility to educate the child | <input type="checkbox"/> | <input type="checkbox"/> |
| 83. Your family fights a lot | <input type="checkbox"/> | <input type="checkbox"/> |
| 84. You have headaches | <input type="checkbox"/> | <input type="checkbox"/> |
| 85. As a child you were abused | <input type="checkbox"/> | <input type="checkbox"/> |
| 86. Spanking is the best punishment | <input type="checkbox"/> | <input type="checkbox"/> |

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Visit Month

Birth Number

	Agree	Disagree
87. You do not like to be touched by others	<input type="checkbox"/> 1	<input type="checkbox"/> 2
88. People who ask for help are weak	<input type="checkbox"/> 1	<input type="checkbox"/> 2
89. Children should be washed before bed	<input type="checkbox"/> 1	<input type="checkbox"/> 2
90. You do not laugh very much	<input type="checkbox"/> 1	<input type="checkbox"/> 2
91. You have several close friends	<input type="checkbox"/> 1	<input type="checkbox"/> 2
92. People should take care of their own needs	<input type="checkbox"/> 1	<input type="checkbox"/> 2
93. You have fears no one knows about	<input type="checkbox"/> 1	<input type="checkbox"/> 2
94. Your family has problems getting along	<input type="checkbox"/> 1	<input type="checkbox"/> 2
95. Life often seems useless to you	<input type="checkbox"/> 1	<input type="checkbox"/> 2
96. A child should be potty trained by the time he's one year old	<input type="checkbox"/> 1	<input type="checkbox"/> 2
97. A child in a mud puddle is a happy sight	<input type="checkbox"/> 1	<input type="checkbox"/> 2
98. People do not understand you	<input type="checkbox"/> 1	<input type="checkbox"/> 2
99. You often feel worthless	<input type="checkbox"/> 1	<input type="checkbox"/> 2
100. Other people have made your life unhappy	<input type="checkbox"/> 1	<input type="checkbox"/> 2
101. You are always a kind person	<input type="checkbox"/> 1	<input type="checkbox"/> 2
102. Sometimes you do not know why you act as you do	<input type="checkbox"/> 1	<input type="checkbox"/> 2
103. You have many personal problems	<input type="checkbox"/> 1	<input type="checkbox"/> 2
104. You have a child who often hurts himself	<input type="checkbox"/> 1	<input type="checkbox"/> 2

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Visit Month

Birth Number

	Agree	Disagree
105. You often feel very upset	<input type="checkbox"/> 1	<input type="checkbox"/> 2
106. People sometimes take advantage of you	<input type="checkbox"/> 1	<input type="checkbox"/> 2
107. Your life is good	<input type="checkbox"/> 1	<input type="checkbox"/> 2
108. A home should be spotless	<input type="checkbox"/> 1	<input type="checkbox"/> 2
109. You are easily upset by your problems	<input type="checkbox"/> 1	<input type="checkbox"/> 2
110. You never listen to gossip	<input type="checkbox"/> 1	<input type="checkbox"/> 2
111. Your parents did not understand you	<input type="checkbox"/> 1	<input type="checkbox"/> 2
112. Many things in life make you angry	<input type="checkbox"/> 1	<input type="checkbox"/> 2
113. Your child has special problems	<input type="checkbox"/> 1	<input type="checkbox"/> 2
114. You do not like most children	<input type="checkbox"/> 1	<input type="checkbox"/> 2
115. Children should be seen and not heard	<input type="checkbox"/> 1	<input type="checkbox"/> 2
116. Most children are alike	<input type="checkbox"/> 1	<input type="checkbox"/> 2
117. It is important for children to read	<input type="checkbox"/> 1	<input type="checkbox"/> 2
118. You are often depressed	<input type="checkbox"/> 1	<input type="checkbox"/> 2
119. Children should occasionally be thoughtful of their parents	<input type="checkbox"/> 1	<input type="checkbox"/> 2
120. You are often upset	<input type="checkbox"/> 1	<input type="checkbox"/> 2
121. People don't get along with you	<input type="checkbox"/> 1	<input type="checkbox"/> 2

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Visit Month

Birth Number

- | | Agree | Disagree |
|---|----------------------------|----------------------------|
| 122. A good child keeps his toys and clothes neat and orderly | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 123. Children should always make their parents happy | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 124. It is natural for a child to sometimes talk back | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 125. You are never unfair to others | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 126. Occasionally, you enjoy not having to take care of your child | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 127. Children should always be neat | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 128. You have a child who is slow | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 129. A parent must use punishment if he wants to control a child's behavior | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 130. Children should never cause trouble | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 131. You usually punish your child when he/she is crying | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 132. A child needs very strict rules | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 133. Children should never go against their parents' orders | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 134. You often feel better than others | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 135. Children sometimes get on your nerves | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 136. As a child you were often afraid | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 137. Children should always be quiet and polite | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 138. You are often upset and do not know why | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 139. Your daily work upsets you | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

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1	4	8	10	12	18	24	36
---	---	---	----	----	----	----	----

Visit Month

Birth Number

- | | Agree | Disagree |
|--|----------------------------|----------------------------|
| 140. You sometimes fear that your children will not love you | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 141. You have a good sex life | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 142. You have read articles and books on how to raise children | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 143. You often feel very alone | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 144. People should not show anger | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 145. You often feel alone | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 146. You sometimes say bad words | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 147. Right now, you are deeply in love | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 148. Your family has many problems | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 149. You never do anything that is bad for your health | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 150. You are always happy with what you have | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 151. Other people have made your life hard | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 152. You laugh some almost every day | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 153. You sometimes worry that your needs will not be met | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 154. You often feel afraid | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 155. You sometimes get silly | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 156. A person should keep his business to himself | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| 157. You never raise your voice in anger | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

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Visit Month

Birth Number

- | | Agree | Disagree |
|---|--------------------------|--------------------------|
| 158. As a child you were knocked around by your parents | <input type="checkbox"/> | <input type="checkbox"/> |
| 159. You sometimes think of yourself before others | <input type="checkbox"/> | <input type="checkbox"/> |
| 160. You always tell the truth | <input type="checkbox"/> | <input type="checkbox"/> |

Interviewer Response:

161. Rate how confident you feel that information reported on this form is reliable and truthful.

Not Confident	Somewhat Confident	Very Confident
1	2	3

Form completed by:	<table border="1" style="display: inline-table;"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>					Date form completed:	<table border="1" style="display: inline-table;"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>								
	First Last		Month Day Year												

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<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Center Number		Screening Number				Visit				

BECK INVENTORY (BDI) - INTERVIEWER RESPONSE

A. Interviewer Preliminary Text and Response

Interviewer: Read this statement to the respondent prior to their attempting this questionnaire

"This questionnaire has to do with your own feelings. On the questionnaire are groups of statements. Read the group of statements in each question; then pick out the one statement in that group which best describes the way you have been feeling this past week, including today. The statements refer to feelings in general--not just about being a parent, but generally. Check the number to the left of the statements that corresponds to your feelings. I will go over the first questions with you to make sure you understand the procedure. Please read the first group of statements and tell me which number you would choose. (Would it be easier if I read the statements and you marked the form? Remember these are statements about your feelings.)"

Interviewer Response:

1. Relationship Code of respondent Primary Respondent

2. Record how this questionnaire was administered to the respondent

Interview	Self-Administration
<input type="text"/>	<input type="text"/>

2a. If Interview, rate how confident you feel that information reported on this form is reliable and truthful

Not Confident	Somewhat Confident	Very Confident
<input type="text"/>	<input type="text"/>	<input type="text"/>

Interview conducted by: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> First Last 	Date of Interview: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Month Day Year
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4	4.5	5	5.5	6	6.5	7
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Visit

BECK INVENTORY (BDI)

Interview or Self-Assessment

1.

1
2
3
4

 I do not feel sad.
 I feel sad.
 I am sad all the time and I can't snap out of it.
 I am so sad or unhappy that I can't stand it.

2.

1
2
3
4

 I am not particularly discouraged about the future.
 I feel discouraged about the future.
 I feel I have nothing to look forward to.
 I feel that the future is hopeless and that things cannot improve.

3.

1
2
3
4

 I do not feel like a failure.
 I feel I have failed more than the average person.
 As I look back on my life, all I can see is a lot of failures.
 I feel I am a complete failure as a person.

4.

1
2
3
4

 I get as much satisfaction out of things as I used to.
 I don't enjoy things the way I used to.
 I don't get real satisfaction out of anything any more.
 I am dissatisfied or bored with everything.

5.

1
2
3
4

 I don't feel particularly guilty.
 I feel guilty a good part of the time.
 I feel quite guilty most of the time.
 I feel guilty all of the time.

6.

1
2
3
4

 I don't feel I am being punished.
 I feel I may be punished.
 I expect to be punished.
 I feel I am being punished.

7.

1
2
3
4

 I don't feel disappointed in myself.
 I am disappointed in myself.
 I am disgusted with myself.
 I hate myself.

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

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Center Number

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Screening Number

4	4.5	5	5.5	6	6.5	7
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Visit

8.

1
2
3
4

 I don't feel I am any worse than anybody else.
I am critical of myself for my weaknesses or mistakes.
I blame myself all the time for my faults.
I blame myself for everything bad that happens.
9.

1
2
3
4

 I don't have any thoughts of killing myself.
I have thoughts of killing myself, but I would not carry them out.
I would like to kill myself.
I would kill myself if I had the chance.
10.

1
2
3
4

 I don't cry any more than usual.
I cry more now than I used to.
I cry all the time now.
I used to be able to cry, but now I can't cry even though I want to.
11.

1
2
3
4

 I am no more irritated now than I ever am.
I get annoyed or irritated more easily than I used to.
I feel irritated all the time now.
I don't get irritated at all by the things that used to irritate me.
12.

1
2
3
4

 I have not lost interest in other people.
I am less interested in other people than I used to be.
I have lost most of my interest in other people.
I have lost all of my interest in other people.
13.

1
2
3
4

 I make decisions about as well as I ever could.
I put off making decisions more than I used to.
I have greater difficulty in making decisions than before.
I can't make decisions at all any more.
14.

1
2
3
4

 I don't feel I look any worse than I used to.
I am worried that I am looking old or unattractive.
I feel that there are permanent changes in my appearance that make me look unattractive.
I believe that I look ugly.

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

Center Number		Screening Number				Visit						
						4	4.5	5	5.5	6	6.5	7

- 15.

1
2
3
4

 - I can work about as well as before.
 - It takes an extra effort to get started at doing something.
 - I have to push myself very hard to do anything.
 - I can't do any work at all.

- 16.

1
2
3
4

 - I can sleep as well as usual.
 - I don't sleep as well as I used to.
 - I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
 - I wake up several hours earlier than I used to and cannot get back to sleep.

- 17.

1
2
3
4

 - I don't get more tired than usual.
 - I get tired more easily than I used to.
 - I get tired from doing almost anything.
 - I am too tired to do anything.

- 18.

1
2
3
4

 - My appetite is no worse than usual.
 - My appetite is not as good as it used to be.
 - My appetite is much worse now.
 - I have no appetite at all any more.

- 19.

1
2
3
4

 - I haven't lost much weight, if any, lately.
 - I have lost more than 5 pounds.
 - I have lost more than 10 pounds.
 - I have lost more than 15 pounds.

- 19 a.

1
2

 - I am purposely trying to lose weight by eating less.
 - Yes
 - No

- 20.

1
2
3
4

 - I am no more worried about my health than usual.
 - I am worried about physical problems such as aches and pains; or upset stomach; or constipation
 - I am very worried about physical problems and it's hard to think of much else.
 - I am so worried about my physical problems that I cannot think about anything else.

- 21.

1
2
3
4

 - I have not noticed any recent change in my interest in sex.
 - I am less interested in sex than I used to be.
 - I am much less interested in sex now.
 - I have lost interest in sex completely.

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC49.
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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

BRIEF SYMPTOM INVENTORY (BSI)

I am going to read to you a list of problems and complaints that people sometimes have. Listen carefully, and select one of the numbered descriptions on the card that best describes HOW MUCH OF A PROBLEM THIS HAS BEEN FOR YOU DURING THE PAST 1 MONTH INCLUDING TODAY. If you don't understand the problem I am describing, please let me know.

The card should have the following scale written on it:

(0)	(1)	(2)	(3)	(4)
Not At All	A Little Bit	Moderately	Quite a Bit	Extremely/A Whole Lot

In the past 1 MONTH, how much were you bothered by:

1. Feeling nervous or shaky inside	0	1	2	3	4
2. Feeling faint or dizzy	0	1	2	3	4
3. The idea that someone else can control your thoughts	0	1	2	3	4
4. Feeling other people are to blame for most of your troubles	0	1	2	3	4
5. Trouble remembering things	0	1	2	3	4
6. Feeling easily annoyed or irritated	0	1	2	3	4
7. Pains in heart or chest	0	1	2	3	4
8. Feeling afraid in open spaces	0	1	2	3	4
9. Thoughts of ending your life	0	1	2	3	4
10. Feeling that most people cannot be trusted	0	1	2	3	4
11. Poor appetite	0	1	2	3	4
12. Feeling suddenly scared for no reason	0	1	2	3	4
13. Temper outbursts that you could not control	0	1	2	3	4
14. Feeling lonely even when you are with people	0	1	2	3	4
15. Feeling blocked in getting things done	0	1	2	3	4
16. Feeling lonely	0	1	2	3	4
17. Feeling blue	0	1	2	3	4

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC49
10/20/95
Page 2 of

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(0) Not At All	(1) A Little Bit	(2) Moderately	(3) Quite a Bit	(4) Extremely/A Whole Lot
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In the past 1 MONTH, how much were you bothered by:

18. Feeling no interest in things	0	1	2	3	4
19. Feeling fearful	0	1	2	3	4
20. Your feelings being easily hurt	0	1	2	3	4
21. Feeling that people are unfriendly or dislike you	0	1	2	3	4
22. Feeling inferior to others	0	1	2	3	4
23. Nausea or upset stomach	0	1	2	3	4
24. Feeling that you are watched or talked about by others	0	1	2	3	4
25. Trouble falling asleep	0	1	2	3	4
26. Having to check and double-check what you do	0	1	2	3	4
27. Trouble making decisions	0	1	2	3	4
28. Feeling afraid to travel on buses, subways, or trains	0	1	2	3	4
29. Trouble catching your breath	0	1	2	3	4
30. Hot or cold spells	0	1	2	3	4
31. Having to avoid certain things, places or activities because they frighten you	0	1	2	3	4
32. Your mind going blank	0	1	2	3	4
33. Numbness or tingling in parts of your body	0	1	2	3	4
34. The idea that you should be punished for your sins	0	1	2	3	4
35. Feeling hopeless about the future	0	1	2	3	4
36. Trouble concentrating	0	1	2	3	4
37. Feeling weak in parts of your body	0	1	2	3	4
38. Feeling tense or keyed up	0	1	2	3	4
39. Thoughts of death or dying	0	1	2	3	4

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC49.
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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(0) Not At All	(1) A Little Bit	(2) Moderately	(3) Quite a Bit	(4) Extremely/A Whole Lot
-------------------	---------------------	-------------------	--------------------	------------------------------

In the past 1 MONTH, how much were you bothered by:

40. Having urges to beat, injure, or harm someone	0	1	2	3	4
41. Having urges to break or smash things	0	1	2	3	4
42. Feeling very self-conscious with others	0	1	2	3	4
43. Feeling uneasy in crowds	0	1	2	3	4
44. Never feeling close to another person	0	1	2	3	4
45. Attacks of terror or panic	0	1	2	3	4
46. Getting into frequent arguments	0	1	2	3	4
47. Feeling nervous when you are left alone	0	1	2	3	4
48. Other people not giving you credit for your achievements	0	1	2	3	4
49. Feeling so restless you couldn't sit still	0	1	2	3	4
50. Feeling worthless	0	1	2	3	4
51. Feeling that people will take advantage of you if you let them	0	1	2	3	4
52. Feelings of guilt	0	1	2	3	4
53. The idea that something is wrong with your mind	0	1	2	3	4

Interviewer Response:

54. Rate how confident you feel that information reported on this form is reliable and truthful.

Not Confident
1

Somewhat Confident
2

Very Confident
3

Form completed by:

--	--	--	--

First Last

Date form completed:

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Month Day Year

Appendix G

MLS form for MSRI

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC66.1
02/16/94
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Center Number

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Screening Number

1	4	8	10	12	18	24	30	36
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Visit Month

Birth Number

MATERNAL SELF-REPORT INVENTORY

Instructions: This questionnaire is to be answered by the **BIOLOGICAL MOTHER ONLY**. Statements about "your baby" refer to the baby enrolled in the study. Try to isolate the mother from others in the home to conduct this interview.

In this questionnaire I am going to read statements that talk about feelings and attitudes that some mothers have. Please use the 5 point scale to choose the answer that comes the closest to how much you agree or disagree with the statement.

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree or Disagree	(4) Agree	(5) Strongly Agree
--------------------------	-----------------	-------------------------------------	--------------	-----------------------

1. You found the experience of labor and delivery to be one of the most unpleasant experiences you've ever had.	1	2	3	4	5
2. You think that you are a good mother.	1	2	3	4	5
3. You are sure that you will continue to have a close and warm relationship with your baby.	1	2	3	4	5
4. You are not sure of your ability to help your baby learn new things.	1	2	3	4	5
5. Looking forward to having a baby gave you more pleasure than actually having one.	1	2	3	4	5
6. You have real doubts about whether your baby is growing up normally.	1	2	3	4	5
7. You remember that delivering your baby was very frightening and unpleasant.	1	2	3	4	5
8. You often worry that you may be forgetful and cause something bad to happen to your baby.	1	2	3	4	5
9. You are sure that you will be able to work out any normal problems with your baby.	1	2	3	4	5
10. You are worried that you are not able to figure out what your baby needs.	1	2	3	4	5
11. You worry about whether or not your baby likes you.	1	2	3	4	5
12. You don't mind the things you can't do since having this baby.	1	2	3	4	5
13. You remember the delivery experience as being very exciting.	1	2	3	4	5
14. You are worried about whether or not your baby is growing up normally.	1	2	3	4	5
15. You don't think that your baby can love you the way that you are.	1	2	3	4	5

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC66.1
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<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Center Number		Screening Number				Visit Month						Birth Number							

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree or Disagree	(4) Agree	(5) Strongly Agree
--------------------------	-----------------	-------------------------------------	--------------	-----------------------

- | | | | | | |
|--|---|---|---|---|---|
| 16. It really makes you feel sad when you think about all there is to do as a mother. | 1 | 2 | 3 | 4 | 5 |
| 17. You worry that you will not know what to do if your baby gets sick. | 1 | 2 | 3 | 4 | 5 |
| 18. It is easy for you to know what your baby wants. | 1 | 2 | 3 | 4 | 5 |
| 19. You remember the whole experience of labor and delivery to be one of the best experiences of your life. | 1 | 2 | 3 | 4 | 5 |
| 20. You no longer are awkward and clumsy in handling your baby. | 1 | 2 | 3 | 4 | 5 |
| 21. You are sure that you will be able to teach your baby new things. | 1 | 2 | 3 | 4 | 5 |
| 22. You are sure that your baby will be strong and healthy. | 1 | 2 | 3 | 4 | 5 |
| 23. You feel that you do a good job taking care of your baby. | 1 | 2 | 3 | 4 | 5 |
| 24. You are not sure that you know enough to be able to teach your baby the many things which he/she will have to learn. | 1 | 2 | 3 | 4 | 5 |
| 25. You worry about being able to take care of your baby's emotional needs. | 1 | 2 | 3 | 4 | 5 |
| 26. You are sure that your baby will love you very much. | 1 | 2 | 3 | 4 | 5 |

Interviewer Response:

27. Rate how confident you feel that information reported on this form is reliable and truthful.

Not Confident	Somewhat Confident	Very Confident
1	2	3

Form completed by:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Date form completed:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	First	Last				Month	Day	Year			

Appendix H

MLS form for IBQ

[The content of this form is extremely faint and illegible. It appears to be a multi-section document with various fields and headings, but the text cannot be transcribed.]

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC48.1

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(1) Never	(2) Some of the Time	(3) About Half the Time	(4) Most of the Time	(5) Always
--------------	-------------------------	----------------------------	-------------------------	---------------

3. Was s/he ever given a food s/he didn't like? Yes 1 No 2
 If yes,
- | | | | | | |
|---|---|---|---|---|---|
| a. did s/he fuss or cry when given that food? | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
4. Was s/he given a new food? Yes 1 No 2
 If yes, how often did the baby:
- | | | | | | |
|---|---|---|---|---|---|
| a. take it immediately? | 1 | 2 | 3 | 4 | 5 |
| b. reject if by spitting out, closing mouth, etc? | 1 | 2 | 3 | 4 | 5 |
| c. refuse it no matter how many times you tried? | 1 | 2 | 3 | 4 | 5 |

Section B. Sleeping

Where does the baby usually sleep at night? _____
Interviewer: Substitute caretaker's response if other than <i>bed</i> in #7, 7a, 7b, 8d, 27, 27a, 27b

5. Are you normally there when the baby falls asleep at night? Yes 1 No 2
 If yes, before falling asleep at night during the last week, how often did the baby:
- | | | | | | |
|-----------------|---|---|---|---|---|
| a. fuss or cry? | 1 | 2 | 3 | 4 | 5 |
|-----------------|---|---|---|---|---|
6. Do you usually see the baby before going to sleep for naps? Yes 1 No 2
 If yes, how often did the baby:
- | | | | | | |
|--|---|---|---|---|---|
| a. cry or fuss before going to sleep for naps? | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
7. Do you usually see the baby asleep in his/her *bed* at night? Yes 1 No 2
 If yes, how often did the baby:
- | | | | | | |
|--|---|---|---|---|---|
| a. toss about in the <i>bed</i> ? | 1 | 2 | 3 | 4 | 5 |
| b. move from the middle to the end of the <i>bed</i> ? | 1 | 2 | 3 | 4 | 5 |
| c. sleep in one position only? | 1 | 2 | 3 | 4 | 5 |

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC48.1

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(1) Never	(2) Some of the Time	(3) About Half the Time	(4) Most of the Time	(5) Always
--------------	-------------------------	----------------------------	-------------------------	---------------

	Yes		No	
	1	2	3	4
8. Are you usually there when the baby wakes up after sleep?				
If yes,				
<u>after sleeping, how often did the baby:</u>				
a. fuss or cry immediately?	1	2	3	4
b. cry if someone didn't come within a few minutes?	1	2	3	4
c. coo and talk for periods of 5 minutes or longer?	1	2	3	4
d. play quietly in bed?	1	2	3	4

Section C. Bathing and Dressing

	Yes		No	
	1	2	3	4
9. During the <i>last week</i> , were you there while the baby was bathed and dressed?				
If yes,				
<u>when being dressed or undressed, how often did the baby:</u>				
a. wave his/her arms and kick?	1	2	3	4
b. squirm and/or try to roll away?	1	2	3	4
c. smile or laugh?	1	2	3	4
<u>when put into the bath water, how often did the baby:</u>				
d. smile?	1	2	3	4
e. laugh?	1	2	3	4
f. splash or kick?	1	2	3	4
g. turn body and/or squirm?	1	2	3	4
<u>when his/her face was washed, how often did the baby:</u>				
h. smile or laugh?	1	2	3	4
i. fuss or cry?	1	2	3	4
<u>when his/her hair was being washed, how often did the baby:</u>				
j. smile or laugh?	1	2	3	4
k. fuss or cry?	1	2	3	4

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

FORM NC48.1

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(1) Never	(2) Some of the Time	(3) About Half the Time	(4) Most of the Time	(5) Always
--------------	-------------------------	----------------------------	-------------------------	---------------

Section D. Play

					Yes	No
10. During the <i>last week</i> , did you see the baby look at pictures in books and/or magazines?					<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did the baby look at them:</u>						
a. for 5 minutes or longer at a time?	1	2	3	4	5	
b. for a few minutes at a time but not as long as 5 minutes?	1	2	3	4	5	
					Yes	No
11. During the <i>last week</i> , did you see the baby stare at a mobile, crib bumper, or picture?					<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did the baby stare at it for:</u>						
a. 5 minutes or longer?	1	2	3	4	5	
					Yes	No
12. During the <i>last week</i> , did you see the baby play with a toy or object?					<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did the baby:</u>						
a. play with it for 10 minutes or longer?	1	2	3	4	5	
b. play with it for 5-10 minutes but not for more than 10 minutes?	1	2	3	4	5	
c. Spend time just looking at playthings but not holding or touching them?	1	2	3	4	5	
d. 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)?	1	2	3	4	5	
					Yes	No
13. During the <i>last week</i> , did you watch the baby play or play with him or her yourself?					<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did the baby:</u>						
a. repeat the same sounds over and over again?	1	2	3	4	5	
b. laugh aloud during play?	1	2	3	4	5	
					Yes	No
14. Did something the baby was playing with have to be taken away?					<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did s/he:</u>						
a. cry or show distress for more than 3 minutes?	1	2	3	4	5	
b. cry or show distress but not longer than 3 minutes?	1	2	3	4	5	
c. not care?	1	2	3	4	5	

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(1) Never	(2) Some of the Time	(3) About Half the Time	(4) Most of the Time	(5) Always
--------------	-------------------------	----------------------------	-------------------------	---------------

				Yes	No
15. Did you see the baby tickled in the <i>last week</i> ?				1	2
If yes, <u>how often did the baby:</u>					
a. smile or laugh when tickled?	1	2	3	4	5
b. cry or show distress when tickled?	1	2	3	4	5
				Yes	No
16. Did you see the baby tossed around playfully in the <i>last week</i> ?				1	2
If yes, <u>how often did the baby:</u>					
a. smile?	1	2	3	4	5
b. laugh?	1	2	3	4	5
				Yes	No
17. Did the baby play peek-a-boo during the <i>last week</i> ?				1	2
If yes, <u>how often did the baby:</u>					
a. smile?	1	2	3	4	5
b. laugh?	1	2	3	4	5

Section E. Daily Activities

				Yes	No
18. In the <i>last week</i> , did you ever see the baby respond to a loud sound (blender, car backfires, vacuum cleaner, etc)?				1	2
If yes, <u>how often did the baby:</u>					
a. cry or show distress?	1	2	3	4	5
				Yes	No
19. Did the baby see a change in a parent or caregiver's appearance (new glasses, face cream, new hair style)?				1	2
If yes, <u>how often did s/he:</u>					
a. cry or show distress?	1	2	3	4	5
				Yes	No
20. During the last week, did you see the baby watch TV?				1	2
If yes, <u>how often did s/he:</u>					
a. look at it for 5 minutes or more at a time?	1	2	3	4	5
b. look at it but not as long as 5 minutes?	1	2	3	4	5

THE EFFECTS OF MATERNAL LIFESTYLES ON INFANT OUTCOMES

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(1) Never	(2) Some of the Time	(3) About Half the Time	(4) Most of the Time	(5) Always
--------------	-------------------------	----------------------------	-------------------------	---------------

				Yes	No
26. Was the baby placed in other confining places (play pen, swing, etc.)?				<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did the baby:</u>					
a. protest (or become upset)?	1	2	3	4	5
				Yes	No
27. During the <i>last week</i> , did you ever leave the baby in the <i>bed</i> when s/he was awake (night/nap)?				<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did s/he:</u>					
a. seem angry (crying and fussing) when you left her/him in the <i>bed</i> ?	1	2	3	4	5
b. seem contented when left in the <i>bed</i> ?	1	2	3	4	5
				Yes	No
28. During the <i>last week</i> , were you ever away from the baby and then returned when s/he was awake?				<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>when you came back, how often did s/he:</u>					
a. smile or laugh?	1	2	3	4	5
				Yes	No
29. During the <i>last week</i> , did the baby meet a new or unfamiliar person (store clerk, clinic nurse, friend, family member they haven't seen before)?				<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did the baby:</u>					
a. cling to a parent or caregiver?	1	2	3	4	5
b. refuse to go to the stranger?	1	2	3	4	5
c. keep a distance from the stranger?	1	2	3	4	5
d. never act friendly or "warm up" to the stranger?	1	2	3	4	5
e. approach the stranger at once?	1	2	3	4	5
f. smile or laugh?	1	2	3	4	5
				Yes	No
30. During the <i>last week</i> , was the baby introduced to a dog or cat?				<input type="checkbox"/> 1	<input type="checkbox"/> 2
If yes, <u>how often did the baby:</u>					
a. cry or show distress?	1	2	3	4	5
b. smile or laugh?	1	2	3	4	5
c. approach at once?	1	2	3	4	5

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(1) Never	(2) Some of the Time	(3) About Half the Time	(4) Most of the Time	(5) Always
--------------	-------------------------	----------------------------	-------------------------	---------------

Section F. Soothing Techniques

31. Have you tried any of the following soothing techniques in the last two weeks (or in a recent two week period)?

If yes, how often did the method soothe the baby?

a. rocking	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5
b. holding	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5
c. singing or talking	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5
d. walking with the baby	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5
e. giving the baby a toy	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5
f. showing the baby something to look at	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5
g. patting or gently rubbing some part of the baby's body	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5
h. offering something to eat or drink	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 2	If yes, 1 2 3 4 5

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Center Number

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Screening Number

1	4	8	10	12	18	24	36
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Visit Month

Birth Number

(1) Never	(2) Some of the Time	(3) About Half the Time	(4) Most of the Time	(5) Always
--------------	-------------------------	----------------------------	-------------------------	---------------

- i. offering baby his/her security object (special toy like a blanket or doll)
- | | | | | | | | | |
|--|----------------------------|----------------------------|---------|---|---|---|---|---|
| | Yes | No | | | | | | |
| | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | If yes, | 1 | 2 | 3 | 4 | 5 |
- j. changing baby's position
- | | | | | | | | | |
|--|----------------------------|----------------------------|---------|---|---|---|---|---|
| | Yes | No | | | | | | |
| | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | If yes, | 1 | 2 | 3 | 4 | 5 |
- k. other (please specify) _____
- | | | | | | | | | |
|--|----------------------------|----------------------------|---------|---|---|---|---|---|
| | Yes | No | | | | | | |
| | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | If yes, | 1 | 2 | 3 | 4 | 5 |

Interviewer Response:

32. Rate how confident you feel that information reported on this form is reliable and truthful.

Not Confident	Somewhat Confident	Very Confident
1	2	3

Form completed by:

--	--	--	--

First Last

Date form completed:

--	--	--	--	--	--

Month Day Year

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