MATERNAL ATTITUDE AND PARENTING SATISFACTION IN MOTHERS OF FULL-TERM, OBSERVATIONAL-CARE, AND PRETERM INFANTS

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by

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One hundred and forty-three mothers of at-risk infants and typical full-term infants were examined to determine if initial infant health status affected mothers' confidence in parenting skills, mood state, maternal attitude, and/or satisfaction with parenting. The at-risk infants included in the study consisted of either preterm infants (between 32 and 37 weeks gestation) or full-term infants requiring observational-care (infants who were potentially at-risk and were placed under observation in the neonatal intensive care nursery). Mothers were examined one or two days post delivery and again three months later. To determine if the three groups differed on the variables investigated, a series of MANOVAs were conducted. At birth, mothers of the two at-risk infant groups reported significantly higher maternal concern for their infants' health status, and significantly less enjoyment and confidence in parenting than full-term mothers. Mothers were re-assessed three months later, at which time differences in enjoyment and parenting satisfaction were not observed. As well, there were no differences among the three groups with respect to mood state at either time. Our data suggested that infant hospitalization has a major influence on early maternal experiences.

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Maternal Attitude and Parenting Satisfaction in Mothers

of Full-Term, Observational-Care, and Preterm Infants

The birth of a child may be a stressful event even under normal circumstances (Mercer, 1981). Typically, mothers have specific expectations regarding pregnancy. While in the majority of cases the expected outcome is of a healthy full-term infant, this is not always the case. This study investigated birth outcomes including infants born preterm and those requiring observational care. For the purposes of this study only preterm infants who were between 32 to 37 weeks gestation were included in the preterm-infant group. Preterm infants with this status have a much better survival rate than their lower-weight and younger gestational-age counterparts (Manginello & DiGeronimo, 1991; Tadmor & Brandes, 1986). Additionally, these infants were less likely to experience health complications in addition to prematurity (Manginello & DiGeronimo, 1991). Infants in this category are referred to as moderately premature.

The Regina General Hospital classifies infants who require observational care as those full-term infants who: received an Apgar score of five or less at one minute post-partum; or seven or less at five minutes post-partum but over seven at ten minutes; or were foul smelling at birth. Maternal conditions that require infants to receive observational care are: membranes ruptured more than 24 hours prior to delivery; signs of infection; chronic ingestion of narcotics; antidepressants or anti-convulsants; narcotic administration within three hours of delivery; toxemia treated with magnesium sulfate; diazepam; or narcotics; inherited metabolic disorder; birth trauma; myotonic dystrophy; diabetes; Rh isoimmunization; hyperthyroidism; thrombocytopenia; or myasthenia gravis

(T. Belgaumkar, personal communication, June 1996). The inclusion criteria for the full-term infants were a gestational age of 38-40 weeks and absence of identified medical illnesses. To avoid confounds no infants with identified neurological impairments were included in the study.

Commonly, premature birth is precipitated by a series of unanticipated, rapidly evolving events for which the mother is not likely to be prepared. These may include hospitalization, medication, and/or multiple tests (Tadmor & Brandes, 1986). Following the birth of a preterm infant, the infant may be placed in a neonatal intensive care unit (NICU). Observational-care infants are also placed in the NICU. The hospitalization of a neonate in a NICU is a time of crisis for both the family and the infant. The highly technical nature and intrusiveness of the NICU can compound parental anxiety (Perlman, 1986). The infant may be required to endure multiple painful interventions. The family must give up the vision of the ideal infant that they were expecting and possibly prepare themselves for a potential loss.

Parental reaction to the prematurity crisis has been described as a mourning or grief response (Kaplin & Manson, 1960). Parents may experience symptoms such as anxiety, hostility, and depression (McGettigan, Greenspan, Antunes, Greenspan, & Rubenstein, 1994). Mothers of preterm infants may also experience significant distress due to the guilt they feel over failing to create a normal full-term infant (Cramer, 1976; Silcock, 1984). One of the goals of the present study was to investigate if mothers of observational-care infants experienced affective reactions comparable to those of preterm mothers or if their reactions were more like those of mothers with full-term infants.

Additional hospitalization time may be required with preterm and observational-care infants. Mothers are often required to leave the hospital and return home without their baby. This maternal-infant separation may be prolonged, during which time the mother may not assume the role as primary caregiver. This means that it may be several days or weeks before the mother can care for the infant as she anticipated. In their study of preterm infants with very low birthweight (less than 1500 grams), Zarling, Hirsch, and Landry (1988) reported that family rituals surrounding the birth and coming home of the infant are disrupted as a result of this extended hospital stay. As well, during the time spent in the hospital the preterm and observational-care infant is not under direct family care, and parents may feel uninvolved in their infant's situation. Zarling et al., (1988) suggested that this situation may serve to undermine parents' sense of competence. Sluckin, Herbert, and Sluckin (1983) theorized that all or any of these factors make it more difficult for a mother to develop a satisfying relationship with her infant.

Factors Related to Maternal Enjoyment and Parenting Satisfaction

Curry (1987) reviewed factors related to the development of maternal parenting behavior. One of the most commonly described factors is the quality of social support, especially the marital relationship. In addition Curry identified physical health, socioeconomic status, previous pregnancy loss, negative childbearing experiences, and self-concept as affecting maternal parenting behavior. Mercer (1986) outlined maternal self-concept, childrearing attitudes, social support, and infant characteristics as factors that influenced the development of maternal behavior.

For the purposes of this study maternal attitude has been conceptualized to include a number of variables such as maternal confidence in parenting, maternal enjoyment, and maternal mood state. This study investigated these variables in the three groups: mothers of full-term, observational-care, and preterm infants. Denham and Moser (1994) suggested that a mother's attitude towards her infant is an important foundation of maternal responsiveness and is related to later parenting satisfaction. Sameroff and Chandler (1975) developed a transactional model that proposed that infant characteristics and other environmental factors contributed to maternal enjoyment and responsive behaviors of the mother toward her infant. Denham and Moser (1994) suggested that mothers found it more difficult to respond appropriately to fussy babies, both in terms of feelings and behaviors. This may place preterm infants at a disadvantage because they have been described as more challenging to care for than their full-term counterparts. This study investigated if a similar situation existed with observational-care infants. Researchers (e.g., Als, 1982; Beckwith, 1984) have found that preterm infants were more irritable, less skilled at engaging and reinforcing parental behavior, and poorer at communicating their needs than were full-term infants. Additionally, specific environmental stressors, such as single parenthood and low SES, may make it more difficult for mothers to respond positively to their infants. Thus, infant temperament and maternal stress may impact on maternal enjoyment. Intuitively, it is postulated that the early emergence of a positive maternal attitude may be helpful to facilitate later parenting satisfaction in mothers. This previously established bond may serve to help mothers through the difficult experiences associated with having a preterm or observational-care infant.

For the purposes of this study mothers were examined on the following variables related to the development of maternal enjoyment and parenting satisfaction: confidence in parenting abilities; social support; mood state; and infant physical; and behavioral characteristics.

Confidence in parenting abilities. A woman's self-confidence and nurturant qualities have been observed to contribute to her capacity as a mother (Shereshefsky & Yarrow, 1973). Kemp and Page (1988) have also stressed the importance of a woman's positive self-esteem in relationship to her delivery experience, perception of the neonate, and mothering ability. The experience of a pregnancy outcome that is less than ideal (e.g., birth of a preterm or observational-care infant) may compromise a woman's confidence in her capacity as a mother and she may feel less capable in performing her mothering role. As Fleischman (1987) reported, the birth of a normal infant helps to reaffirm parental beliefs of their own normalcy. Again, the birth of preterm or observational-care infant may serve to undermine these beliefs.

The impact of events during labor and delivery have the potential to affect a mother's confidence and early interactions with her infant (Peterson & Mehl, 1978). Premature delivery is commonly treated and conceptualized as a medical emergency, and mothers typically view the premature birth experience non-favorably (Goldberg, 1978). Similar findings were expected with mothers of observational-care infants. Cramer (1976) studied 13 mothers of preterm infants who were hospitalized for a minimum of two weeks. Cramer reported that the most frequent feeling reported by these mothers was a sense of failure due to an imagined physiological deficit. The author hypothesized that guilt

feelings may have interfered with the establishment of the mother-infant relationship because of maternal feelings of inadequacy and blame. Silcock (1984) also reported that over 60% (n=15) of her sample of mothers felt a moderate to strong sense of failure as a result of delivering a preterm infant. Unfortunately, these two studies did not compare the reactions of preterm mothers to those of full-term mothers and therefore it cannot be concluded that a sense of failure is unique to mothers of preterm infants. Chatwin and MacArthur (1993) proposed that continued maternal feelings of self-blame, guilt and fear may produce a "distancing effect" between mother and infant. As well, during the time spent in the hospital, the infants are not under direct family care and as a result parents may feel alienated and helpless. This situation may also undermine the parents' sense of competence.

Social support. Social support is conceptualized as a coping resource and protective factor during times of stress. Nuckoolls, Cassel, and Kaplan (1972) proposed that social support serves as an environmental mediator that influences a women's experience and outcome of pregnancy. In their sample, 91% of women with high stress levels and low social support experienced pregnancy complications. However, only 33% of women who had similar stress levels, but higher levels of social support experienced complications. Albrecht and Rankin (1989) found that pregnant women who had less social support had significantly higher levels of state and trait anxiety. Another finding of the same study was that women who had less social support drank alcohol. Reading (1983) theorized that a lack of social support may lead to increased anxiety, which

typically prompts behaviors, such as alcohol consumption, that are contraindicated during pregnancy.

Even under the most ideal circumstances, the birth of an infant is typically accompanied by increased stress in the lives of mothers. This normal stress reaction may be magnified if the infant is born with an "at-risk" developmental status, such as prematurity (Crnic, Greenberg, Rogozin, Robinson, & Bashaw, 1984) or requiring observational care as in the present study. Several studies of social support networks suggest that social support is an important positive influence on parenting and mother-child relationships (Crittenden, 1985; Levitt, Weber, & Clark, 1986). Bronfenbrenner and Crouter (1983) suggested that social support networks affect parenting attitudes and behaviors, which directly and indirectly influence children's development. Chatwin and MacArthur (1993) found that social support has a positive influence on maternal affect postpartum. These authors investigated maternal perceptions of preterm infants, NICU environment, and attitudes towards parenting in 30 mothers of preterm infants. The authors reported that mothers derived strength and confidence from paternal support. Shea and Tronick (1988) investigated the influence of social support as it relates to maternal confidence at the time of delivery. They found that family social support, especially proximal personal relationships, is positively related to the quality of mother-infant interaction and positive attitudes toward parenting.

Crnic, Greenberg, and Slough (1986) studied the relationship among early stress, social support and mother-infant functioning in 52 mothers of preterm infants who were considered high risk due to associated perinatal illnesses. The results indicated that

increased social support was related to more positive mother and infant functioning at eight months. Increased social support was also consistently related to less infant noncompliance and more secure attachments to the mothers at 12 months. This indicated that maternal social support during early postnatal crises had lasting and important influences on infant development, as well as parenting satisfaction.

However, not all studies have found that mothers of preterm infants experienced higher stress levels. For example, Crnic et al. (1984) investigated maternal stress in 52 mothers of preterm infants and 53 mothers of full-term infants one month after the infants came home from the hospital. They reported that there were no significant differences between groups on stress levels. However, when they pooled the data, the authors found that mothers with greater social support were significantly more positive in their attitudes and behaviors towards their infants. Support was a significant predictor of satisfaction with parenting and with infant responsiveness. Maternal stress was a significant predictor of infant behavior and clarity of cues. For both findings, the greater the maternal-stress levels, the less optimal were the cues and behavior of the infant. Based on these findings the authors proposed that mothers who are under greater stress are less responsive to infant cues. As well, infants whose mothers were under greater stress were less responsive and less clear in the cues that they provided to their caregivers. This suggests that a circular feedback loop exists in mother-infant relationships.

Crnic et al. (1986) proposed that during early infancy, when the crisis of prematurity has not yet been resolved, both mothers and infants are more sensitive to the impact of stresses, and more responsive to their available supports. Consequently, the

impact of events that occur during this time may have long-term effects both for mothers and the infant, primarily as a function of their occurrence during a time of vulnerability.

Mood state. Ainsworth (1979) reported that the quality of mother-infant attachment is particularly influenced by mothers' sensitivity and responsiveness to infant cues. Maternal mood state is known to affect mother-infant interactions. For example, depressed mothers are more likely to behave insensitively with their infants, in a hostile and intrusive manner, or with detached withdrawal (Cohn, Matias, Tronick, Connell, & Lyons-Ruth, 1986). Choi (1973) compared maternal psychological reactions to preterm and full-term newborns. The results of the study supported the hypothesis that mothers of preterm infants were more depressed and anxious in the early postpartum period than mothers of full-term infants. As well, in the group of mothers of preterm infants there was a statistically significant negative correlation between birthweight and degree of anxiety and depression. Anxiety and depression decreased in relation to increased weight at birth. However, this finding did not occur in the full-term mother group. Jeffcoate, Humphrey, and Lloyd (1979) reported similar findings. They studied 17 families of preterm and 17 families of full-term infants and found that the parents of the preterm infants were more anxious than parents of full-term infants at one year after birth.

Gennaro (1988) examined differences in depression and anxiety in mothers of full-term and preterm infants during the first seven weeks of life. Mothers of preterm infants were matched with mothers of the full-term infants on parity, age, race, and type of delivery. In the first post-partal week mothers of preterm infants were significantly more anxious and depressed than mothers of full-term infants. This difference did not exist at

the end of the six week experimental period. The preterm infants in the study were categorized into three groups: very ill, moderately ill, and mildly ill. Results indicated that the health status of the preterm infant was unrelated to maternal anxiety and depression when mothers were grouped according to their infants' risk status. Gennaro (1988) also found that maternal affect was unrelated to parity or type of delivery in the first post-partal week and over the six week experimental period. Results of this study indicated that although initially (i.e. in the first week) mothers of preterm infants had heightened anxiety and depression, both groups of mothers experienced a similar affective response over time and mothers of preterm infants were able to regain psychological equilibrium in a short period of time. Similar findings were reported by Scheiner, Sexton, Rockwood, Sullivan and Davis (1985).

Maternal assessment of infant health. A minority of parents experience an indifferent or negative first impression of their infant at birth that can potentially exert an enduring detrimental effect on the parent-to-infant bond (Condon & Dunn, 1988; Entwistle and Doering, 1981; Robson & Kumar, 1980). It is believed that a mother's perception of her infant modifies her behavior toward the infant (Crnic & Greenberg, 1987). Robson and Kumar (1980) found that traumatic deliveries negatively color the first impression of the infant and as outlined earlier, the birth of a preterm or observational-care infant is typically unexpected and viewed as a medical emergency. Parents of preterm infants are often unprepared and distressed at the arrival of an infant who does not meet their parental expectations of what an infant should look like (Goldberg, 1978). Infants requiring placement in observational-care may also violate maternal expectations. Parents

of preterm babies base their expectations for their baby's appearance and behavior on what they would expect of a healthy, full-term baby. If parents are not informed about the differences between preterm and full-term babies, the unusual physical and behavioral characteristics of the preterm baby may complicate the development of a positive parent-infant relationship (Harrison & Twardosz, 1986).

The description of a preterm infant is defined by a large head, thin limbs, and small body size. These babies tend to have a reddish transparent skin color, and very little subcutaneous fat. Compared to their full-term counterparts, the underdeveloped frame of the preterm infant is more likely to produce a negative reaction from parents than would the appearance of a full-term infant (Caputo & Mandell, 1970; Frodi & Lamb, 1980). Lowenthal (1987) investigated levels of distress in parents of preterm infants who were considered to be high risk due to associated perinatal illnesses. Lowenthal reported that parents of high risk preterm infants experienced higher levels of distress than parents of full-term healthy infants. As well, this distress appeared to be directly related to the appearance and behavior of the preterm infant.

Shea and Tronick (1988) investigated the impact infant health status at birth on maternal confidence. The authors found that even mild and very temporary illness (as in the case of most observational-care infants) impacted significantly on maternal confidence as measured by the Maternal Self-Report Inventory. Infant health outweighed the impact of maternal health or delivery method on mothers' feelings of competence. Shea and Tronick (1988) also found that early infant health problems had a strong effect upon maternal confidence one month later. Similar findings have been reported by Minde,

Brown, and Whitelaw (1981) who found that at three months after the discharge of healthy preterm infants parents began to engage in appropriate parent-infant interactions, despite the fact that the infants in the study had much earlier recovered from initial birth illness and were healthy.

Broussard and Harther (1970) examined the maternal perceptions of 318 first-time mothers of healthy full-term babies. They reported that significantly more of the infants who were perceived by their mothers as "worse than average" or "high risk" in the perinatal periods required therapeutic intervention for developmental and emotional deviations at age four than did the "low risk" comparison group. One possible explanation for this finding is that negative maternal perceptions of infants may be related to later child development, as well as, mother-infant interaction. Interestingly, a study by Shea and Tronick (1988) found that although infant behavior did not show a direct relation to maternal confidence, mothers who perceived their infants as "better than average" or "less bothersome" reported higher maternal confidence.

Infant behavioral characteristics. Korner and Grobstein (1967) observed that infant characteristics at birth such as soothability and clearness of communicating needs positively influenced mother-infant interactions. Mothers rated high in adaptive maternal behavior have been observed to have infants with easy temperaments (Feiring, 1976). This suggests that competent infants may facilitate caregiving; and, variations in an infant's alertness, habituation, irritability, and activity level affect infants' interactions with their mothers (Scanlon, Scanlon, Tronick, 1983). Conversely, infant irritability has been related to less positive outcomes. Denham and Moser (1994) investigated the effects of infant

temperament on maternal responsiveness and found that mothers of fussy infants had more difficulty responding appropriately to their infants than mothers of less difficult infants. Cutrona and Troutman (1986) found that difficult infant temperament at three months accounted for almost one third of the variance in mothers' perception of their parenting ability. Similarly, Deutsch, Brooks-Gunn, Fleming, Ruble, and Stangor (1988) found that in the first three months mothers of infants with difficult temperaments were significantly more likely to appraise their mothering negatively than mothers of babies with easy temperaments. Pridham, Chang, and Chiu (1994) explored the contribution that a mother's perception of her infant's temperament makes to her self-appraisal of parenting. The authors found that the contribution of infant temperament was greater at one month than at three months. They proposed that this result may be due to new mothers focusing their attention on infant behavior when they are adjusting to their new infants, however by three months mothers may be more confident that they know their infants.

Bell (1974) reviewed research on infant-mother interactions and found that infants selectively reinforced parent behavior, thus modifying socialization efforts. In fact, Bell (1974) reported that infants initiate approximately 50% of parent-infant interactions. The infant is considered an active social partner, and characteristics of both the infant and the mother interact in the role-taking process. Each partner's behavior reflects the progression of this process.

Several studies have found that preterm infants were less competent in their socialization efforts, and were more irritable than their full-term counterparts. For example, initially preterm infants cry very little, but as they mature they cry more than

their full-term counterparts, and their cries are typically higher pitched (Frodi, 1978). Frodi (1978) reported that the pitch and pattern of crying in preterm infants is associated with increased parental annoyance and anxiety. Als (1982) found that preterm infants at one month old are awake a shorter period of time and spend a greater percentage of that time crying than do full-term infants. Preterm infants also experienced increased difficulty in feeding. They may have one or more of the following feeding problems: a decreased rate of food intake, excessive movement during feeding, and recurrent regurgitation (Minde, 1984). Goldberg, Brachfield and DiVitto (1980) reported that during feedings parents of preterm infants with perinatal medical problems touched, cuddled, and talked to their babies less than parents of full-term infants.

Preterm infants are less active and responsive than full-term babies and display increased gaze aversion and fussiness (Goldberg, 1978). Field (1977) reported that full-term infants gazed significantly more at their mothers than did preterm infants. As well, Greenberg and Crnic (1988) reported that studies of mother-infant interaction during the first year of life have generally shown that preterm infants tended to be delayed in their behavioral organization, and consequently showed lower social responsiveness and more gaze aversion than their full-term counterparts. During interactions with their mothers, preterm infants were less attentive and active. There was also evidence of fewer synchronous interactions between preterm infant and mother pairs than in full-term infant and mother pairs (Karger, 1979).

Preterm infants are or may be more difficult to care for than their full-term counterparts because they are less responsive, attentive, and less capable of maintaining

social interactions. Beckwith (1984) proposed that preterm infants may be less adequate social partners, and therefore, their caregivers are required to be very sensitive to the infants' efforts to interact. As outlined, infant characteristics do influence the quality of parent-infant interactions. Studies indicate that the difficulties associated with preterm birth are likely to make the parent-infant relationship less harmonious. Overall, interactions with preterm infants appear to be more challenging than interactions with full-term infants (Als, 1983).

The Prematurity Stereotype

Interestingly, there are indications that adults' perceptions of infants are influenced by knowledge of the infant's prematurity. To determine the extent that perceptions were influenced by prematurity knowledge independent of infant behavior, adults' ratings of infants described as full-term have been compared with adult ratings of the same infants described as preterm. Stern and Hildebrandt (1984) presented videotapes of full-term infants to college students and mothers of full-term infants. However, for some subjects infants were labeled preterm, and for other subjects the same infants were labeled full-term. Both students and mothers rated the infants labeled as preterm as weaker, smaller, less attentive, slower, less smart, and less fun to play with than the infants labeled as full-term. Based on this finding the authors suggested that adults may interact more cautiously with preterm infants. To test this hypothesis Stern and Hildebrandt (1986) observed mothers of full-term infants during interactions with an unfamiliar full-term infant either labeled full-term or preterm. Mothers touched the preterm-labeled infants less and gave them a more immature toy to play with than they gave the full-term infants. As well, the

preterm-labeled infants were less active during the interaction than the full-term-labeled infants.

Davis and Thoman (1988) compared the early social environment of preterm infants to their full-term counterparts. Naturalistic observations were made in the home when both groups of infants were two, three, four, and five weeks old. Results indicated that mothers of preterm infants left their infants alone more and changed them less than did the mothers of full-term infants. There was less movement of infants, talking to infants, looking, and holding infants by mothers in the preterm infant group compared to the full-term group. This finding suggests that preterm infants may receive significantly less stimulation from their caregivers than full-term infants. The authors proposed that this finding had implications for maternal enjoyment and responsive behavior towards the infants. The underlying assumption is that during the early perinatal period maternal perceptions and interactional patterns are developing that may have lasting effects on the infant's development. This assumption is especially pertinent in understanding the possible long-term effects of mother-infant complications with preterm infants. Evidence is accumulating that suggests that mother-preterm infant interaction during infancy is related to later developmental competence of the infant (Goldberg, Corter, Lojkasek, & Minde, 1992).

However, there is evidence to suggest that the need for social stimulation may differ in preterm and full-term infants. The neurobehavioral organization of preterm infants is different from that of full-term infants. This difference is most evident in the sleep and waking states during the first weeks of life (Davis & Thoman, 1987). Als,

Lester, and Brazelton (1979) described the preterm infant as an organism whose systems are required to function before they are well regulated and integrated. Until the interactions of systems are well integrated, an infant cannot accomplish sophisticated interaction with an environmental stimulus without evidencing disruptions in more basic autonomic functions. Therefore, in some cases low levels of maternal stimulation may be adaptive for the newly born preterm infant. However, this pattern of interaction may become inappropriate as the infant becomes older, more similar to it's full-term counterpart, and is better able to integrate stimulation.

Study Objectives

It is proposed that the three groups of mothers can be viewed along a continuum of infant health status. Mothers in the full-term group had infants with the lowest health risk, followed by the potentially at-risk infants in the observational-care group, and finally the at-risk infants in the preterm group. However, it is expected that mothers of observational-care and preterm infants may be more similar to each other than to the full-term mothers because of their infants' hospitalization in NICU. The observational-care infants also served as a control group for the preterm infants, as they were similar to the preterm infants in hospitalization, but they were not premature. Based on these proposals this study has four objectives:

(1). To investigate the characteristics of observational-care infants because there has not been a previous examination of this group.

(2). To determine if initial infant health status affected mothers' confidence in parenting skills, mood state, maternal attitude, and/or satisfaction with parenting.

(3). To determine the impact of removing at-risk preterm and potentially at-risk full-term observational-care infants from a traditional-care nursery.

(4). To determine whether it is prematurity per se or the disruption and anxiety associated with infant hospitalization that leads to parenting difficulties.

Hypotheses:

The following hypotheses were proposed:

1. Mothers of observational-care infants and mothers of preterm infants will have higher scores on the Perception of Infant Health (POIH) questionnaire than mothers of full-term infants indicating higher maternal concern for infant health;

2. Mothers of observational-care infants and mothers of preterm infants will have lower enjoyment ratings as indicated by Hauck Enjoyment Scale (HES) scores than mothers of full-term infants at both Time 1 and Time 2. However, it is expected that there will be improvements in HES scores from Time 1 to Time 2 in all three groups of mothers as they adjust to their infants;

3. Mothers of observational-care infants and mothers of preterm infants will have higher initial Profile of Mood States (POMS) Depression and Tension subscale scores and POMS total scores than mothers of full-term infants due to the stress associated with having a potentially ill infant. This difference is not expected at Time 2 as the crisis associated with perinatal illness is likely to have been resolved. It is also hypothesized that there will be improvements in POMS Tension, Depression, Vigor, and Total scores from Time 1 to Time 2 in all three groups of mothers, indicating a more positive mood state;

4. Due to the fact that at risk infants may be more difficult to care for it is hypothesized that mothers of observational-care infants and mothers of preterm infants will have lower Maternal Self Report Inventory (MSRI) Caretaking Ability and Acceptance of Baby subscale scores and Total Scores than mothers of full-term infants;

5. Mothers of observational-care infants and mothers of preterm infants will score higher on the Infant Behavior Questionnaire (IBQ) Activity, Distress to Limits, and Distress to Novel subscales than mothers of full-term infants. Mothers of observational-care infants and mothers of preterm infants will score lower on IBQ Smile, Soothe, and Orienting subscales than mothers of full-term infants. These hypotheses suggest that infants in the two at risk groups may be more challenging to care for and more difficult temperamentally;

6. Mothers of observational-care infants and mothers of preterm infants will score lower on What Being the Parent of a New Baby is Like (WPL) Evaluation subscale than mothers of full-term infants indicating less satisfaction with parenting. Mothers of observational-care infants and mothers of preterm infants will score higher than mothers of full-term infants on WPL Centrality and WPL Life Change subscale due to infants' illness and the additional care required.

7. Group differences in social support are not expected. In this investigation social support is considered a demographic variable and will be measured to determine if infant health status was confounded with quality of social support.

Method

Groups

This study was conducted through the cooperation of the maternity ward and the NICU of the Regina General Hospital (Regina, SK, Canada). Based on their infant's health status mothers were placed into 3 groups:

1. Preterm: Mothers who delivered infants between 32 to 37 weeks gestational age (moderately premature). Preterm infants with this status have a much better survival rate and were less likely to experience health complications in addition to prematurity than their lower-weight and younger gestational-age counterparts (Manginello & DiGeronimo, 1991; Tadmor & Brandes, 1986). This study specifically targeted mothers of preterm

infants who were expected to survive, in hope of assessing the initial impact of early perinatal emergencies among relatively healthy infants.

2. Observational care: Infants requiring observational care were full-term infants who: received an Apgar score of five or less at one minute post-partum; or seven or less at five minutes post-partum but over seven at ten minutes; or were foul smelling at birth. Maternal conditions that required infants to receive observational care were: membranes ruptured more than 24 hours prior to delivery; signs of infection; chronic ingestion of narcotics, antidepressants, or anti-convulsants; narcotic administration within three hours of delivery; toxemia treated with magnesium sulfate, diazepam, or narcotics; inherited metabolic disorder; birth trauma; myotonic dystrophy; diabetes; Rh isoimmunization; hyperthyroidism; thrombocytopenia; or myasthenia gravis (T. Belgaumkar, personal communication, June 1996).

3. Full-term: Mothers who delivered infants between 38 and 40 weeks gestational age.

The initial sample was recruited over a four-month period. Testing took place over two sessions, the first occurred one to two days post-partum (Time 1) and the second session occurred three months later (Time 2). At Time 1 (if maternal health status allowed) mothers were approached by the author to participate in the study. Mothers were provided with an explanation of the purpose and requirements of the study. They were told that the study investigated the experiences of mothers of full-term, observational-care, and preterm infants. They were informed that the study was being completed by a Master of Arts in Psychology candidate from the University of Regina and that the project had received ethics approval from both the University of Regina and the

Regina General Hospital. It was clearly stated to the mothers that participation was completely voluntary and that a refusal to participate would *not* affect their care or the care of their infant. Standard informed consent procedures were employed (see Appendix B).

Measures included in the Time 1 package assessed confidence in parenting, maternal enjoyment, mood state, perception of infant health, and demographics. All mothers who agreed to participate completed the questionnaire battery and agreed to be contacted at approximately three months post-partum. The measures included in the three month follow up (Time 2) assessed parenting satisfaction, maternal enjoyment, social support, mood state, and infant behavioral characteristics.

Measures

The following measures were utilized in the study (see Appendix E).

Confidence in parenting skills. Confidence in parenting skills was assessed at Time 1 using the Maternal Self Report Inventory- Short Form (MSRI) (Shea & Tronick, 1988). The MSRI measures five dimensions of maternal confidence: Caretaking Ability; General Ability as a Mother; Acceptance of Infant; Expected Relationship with Infant; and Feelings During Pregnancy, Labor, and Delivery. Higher ratings indicate increased maternal confidence. Mothers and psychologists evaluated the test items for face validity. Shea and Tronick (1988) reported that the correlation between clinical ratings of maternal self esteem and the MSRI scores was $r = .35$, $p < .02$. This supports the concurrent validity of the MSRI as a measure for assessing maternal self esteem. The four week test-retest Pearson product moment reliability coefficient for the MSRI is $r = .85$.

Social support. Social support was measured at Time 2 using the Norbeck Social Support Questionnaire (NSSQ) (Shea & Tronick, 1988). For the purposes of this study social support was conceptualized as a demographic variable as it was measured to determine if infant health status was confounded with quality of social support. The NSSQ measures multiple dimensions of social support including network size, sources, and functional support that consists of affect, affirmation, and aid components. The subject was required to list all persons they consider significant in their life. For each individual listed, questions relating to social support were asked. Network members were categorized. The NSSQ provides scores for the number of members listed, as well as affect, affirmation, and aid scores. A score for total functional support can be obtained by summing the data from the affect, affirmation, and aid items. Norbeck, Lindsey, and Carrieri (1981) reported high test-retest reliability (r = .85 to r = .92). The internal consistency was tested through intercorrelations among all items, which ranged from r = .54 to r = .97. Evidence for concurrent validity was obtained through moderately high correlations with the Cohen and Lazarus instrument of social support (Norbeck, Lindsey, & Carrieri, 1981).

Mood state. Maternal mood state was assessed at Time 1 and Time 2 using the Profile of Mood States (POMS) (Norbeck, Lindsey, & Carrieri, 1981). The POMS samples an individual's mood currently, over the past week, and on the day of testing. The POMS is a 65-item scale that measures six identifiable mood states: anxiety; depression; anger; fatigue; confusion; and vigor. Extensive factor analytic studies have established the independence of the six mood states Test-retest reliability ranged from r = .65 to r = .74.

All items within each factor have a internal consistency rating of $r = .90$ or above. Affleck, Allen, McGrade, and McQueeney (1982) reported that validity studies have shown that POMS scores change with short-term psychotherapy, controlled drug trials, and emotional inducing conditions.

Maternal assessment of infant health. Maternal assessment of infant health was measured at Time 1 using the Perception of Infant Health questionnaire (POIH) (McGrath, Boukydis, & Lester, 1993). The POIH consists of 13 items requiring a mother to indicate on a Likert scale her concern regarding the general and specific aspects of her child's health. The scale includes items regarding feeding, breathing, weight, and skin color, as well as maternal perception of fragility and strength of the infant. A physician, two psychologists, and two perinatology nurse clinical specialists reviewed the questionnaire for content validity. Based on a consensus of the experts, 2 items of the original 15 were deleted. The test-retest stability for mothers of full-term infants, tested two days after birth and again at 44 weeks was $r = .85$. The POIH test-retest stability for mothers of preterm infants tested at 36 weeks and again at 40 weeks was $r = .82$. McGrath et al. (1993) reported a Cronbach's alpha coefficient of $r = .89$.

Infant temperament. Infant temperament was assessed at Time 2 using the Infant Behavior Questionnaire (IBQ) (Rothbart, 1981). The IBQ is a caretaker-report instrument of infant temperament and measures six dimensions of infant temperament including activity level, smiling and laughter, distress to limitations, fear, soothability and duration of orienting. Reliability product moment correlations for mothers and a second adult in the household ranged from $r = .45$ to $r = .69$ on the six subscales and were significant at $p <$

.05. The stability of the IBQ was measured at three, six, nine, and twelve months. For the scales of Activity Level and Smiling the correlations revealed considerable stability, and stability was found for most cohorts and age comparisons for the scales of Orienting and Soothability. For the scales measuring Fear and Distress to Limitations the three months scores are not predictive of later scores with stability found only in predictions from six months (Rothbart, 1981).

Demographic questionnaire. This questionnaire was administered at Time 1 and was created by the author to obtain pertinent demographic information such as maternal age, marital status, family income, and method of delivery. This questionnaire also assessed maternal satisfaction with the amount and quality of information provided to them by the staff of the Regina General Hospital with respect to their infant's health status.

Parenting satisfaction. Parenting satisfaction was assessed at Time 2 using the What Being The Parent of a New Baby is Like (WPL) questionnaire (Pridham & Chang, 1989). The WPL is a measure of the parenting experience with young infants and satisfaction in the parenting role. It is a 25-item instrument that uses a 9-point Likert rating scale. The WPL measures three dimensions of the parenting experience including: centrality of the infant; life change; and evaluation in the parenting role. Centrality of the Infant subscale measures the degree to which infant concerns are primary to the mother. The Life Change subscale measures changes in an individual's personal and interpersonal life associated with having an infant. The Evaluation subscale examines maternal satisfaction with parenting. The three subscale constructs were confirmed by factor

analysis (Pridham & Chang, 1989). The authors reported that alpha coefficients for the subscales at one week, one month, and three months after the infants birth were at least r = .87 on Evaluation, r = .80 on Centrality, and r = .77 on Life Change. Intracorrelation coefficients were at least r = .72 between one week and one month, r = .61 between one and three months, and r = .46 between one week and three months. Pridham and Chang (1989) reported that the WPL has acceptable construct, content and factorial validity.

Maternal enjoyment. Maternal enjoyment was assessed at Time 1 and Time 2 using the Hauck Enjoyment Scale (HES) (Hauck, 1983). The HES is an adaptation of the Hauck's Postpartum Attachment Questionnaire (Hauck, 1983) and there is no information available on the reliability or validity of the measure. The HES is a 14-item measure of maternal enjoyment with the infant. The HES requires mothers to rate the enjoyment they derive from their newborn, for example, the baby's smile, appearance, or caretaking responsibilities, including bathing and changing diapers.

Procedure

A longitudinal prospective design was employed. Data was collected one or two days post-partum on the maternity ward of the Regina General Hospital (Time 1), and at three months post-partum (Time 2). At Time 1, mothers completed the MSRI, HES, POMS, POIH, and Demographic Questionnaire. This took approximately 20 minutes. At Time 2, a follow-up questionnaire package was mailed to the mothers. At this time the mothers were asked to complete the WPL-R, HES, NSSQ, POMS, and the IBQ. This also took approximately 20 minutes. Mothers returned the Time 2 questionnaire in a pre-paid envelope. Non-respondents were telephoned at home as a reminder.

Data Analysis and Results

One hundred and forty-three mothers agreed to take part in a longitudinal study of their adaptation to the birth of a healthy full-term infant or an infant who had been treated in NICU. At Time 1 nine of the mothers approached to participate refused. These refusals were equally distributed among the three groups. Seventy-one percent of these mothers completed both Time 1 and Time 2 data, and were included in the final data analysis for a total sample of one hundred and two mothers. This sample was comprised of 39 mothers of full-term infants, 39 mothers of observational-care infants, and 24 mothers of preterm infants. Return rates for the three groups are listed in Table 1. A chi square analysis revealed that a significantly higher proportion of observational-care mothers returned the Time 2 questionnaire than the other two groups of mothers (χ^2 (1, N = 46) = 3.72, p < .05). Six of the Time 2 packages were returned indicating the participant had moved. These were equally distributed among the three groups.

Table 1
Percentage of Time Two Respondents

	Full-term	Observational-Care	Preterm
Time 1	n = 58	n = 49	n = 36
Time 2	n = 39	n = 39	n = 24
Percent Returned	67.2 %	79.6 % *	66.7 %

* significant at p < .05.

Demographics of the Mothers

The mean age of the total sample of mothers was $M = 28.7$ years (range 17 - 42 years). A one-way analysis of variance (ANOVA) revealed that observational-care mothers were significantly older ($M = 30.5$ years, $SD = 5.0$, range 20 to 42) than the full-term mothers, ($M = 27$ years, $SD = 5.3$, range 17 to 37; $F(2,96) = 4.31$, $p < .05$) but did not differ from the preterm mothers ($M = 28.8$ years, $SD = 4.9$, range 21 to 42). The three groups did not differ on the other demographic characteristics including amount of education completed, the number of children at home, family income, or marital status. Mothers in the study completed an average 13.7 years of education, with median of 13 years and a mode of 12 years (range 8 to 20 years). Mothers had an average of 0.97 children at home, with a median and mode of 1 (range 0 to 5). Only five mothers in the sample had more than two children at home. The average family income of the sample was in the range of 40,000 to 49,999 thousand dollars, with a median of 40,000 to 49,999 thousand dollars. Only 23.2% of this sample endorsed earning less than 30,000 thousand dollars a year. The majority of mothers in this sample were married (79.5%) or living common law (11.8%).

The amount and quality of social support available to the three groups of mothers was assessed at Time 2 using the NSSQ. A MANOVA was performed on the Functional, Emotional, and Total support scales of the NSSQ. Results indicated that there were no significant differences in social support among the three groups.

A one-way ANOVA revealed that the mothers in the observational-care group had significantly more miscarriages ($M = 1.2$, $SD = 1.1$) than the mothers in the full-term

group (M = 0.44, SD = 0.64; F (2, 98) = 3.49, p < .05). There were no significant differences in number of miscarriages between the preterm (M = 0.91, SD = 0.97) and observational-care mothers. There were no other significant differences.

Mothers' satisfaction with the services that they received from the staff at the Regina General Hospital was also investigated. Mothers were asked to rate on a scale of 1 to 10 how satisfied they were with both the *amount* and *quality* of information that they received from the staff regarding their infant's delivery and health status. A score of one indicated that mothers were not satisfied and a score of 10 indicated that they were very satisfied. The mean rating for satisfaction with the amount of information was M = 8.1, SD = 2.1 and the mean rating for satisfaction with the quality of information was M = 8.0, SD = 2.2. There were no significant differences among the three groups of mothers with respect to satisfaction.

Infant Physical Characteristics

The groups did not differ on birth order of the infant, infant sex (58 were male), or method of delivery (76 were vaginal and 26 were cesarean). Table 2 lists infant age and weight by group. One-way ANOVAs indicated that the preterm infant group was significantly younger and weighed less than the full-term and the observational-care infant groups (age: F (2,99) = 119.58, p < .0001; weight: F (2,99) = 16.56, p <.0001).

Table 2

Infant Mean Age and Weight by Group

	Full-term (n=39)		Observational-Care (n=39)		Preterm (n=24)	
	M	SD	M	SD	M	SD
Weeks Gestation	39.54	0.97	39.67	1.15	35.29***	1.55
Weight (Kg)	3.61	0.47	3.51	0.44	2.93***	0.53

*** significant at $p < .0001$.

A duration of stay in the NICU was calculated for the preterm and observational-care infant groups. The observational-care infants had a mean stay of 2.1 days (range 0.5 to 12 days) and the preterm infant group had a mean stay of 4.7 days (range 1 to 15 days). This duration of stay was significantly longer for the preterm infants (t (61) = 3.05, p <.001).

A one-way ANOVA revealed that maternal perceptions of infant health one or two days after delivery were significantly different among the groups (F (2, 99) = 10.40, p <.001). Bonferroni post hoc tests indicated that mothers of observational-care and preterm infants had significantly higher POIH scores (M = 44.77, SD = 16.59 and M = 48.58, SD = 15.48), respectively than mothers of full-term infants (M = 31.97, SD = 14.80; t (99) = 3.61, $p < .001$; t (99) = 4.09, $p < .001$), respectively. This indicated higher maternal concern for infant health status among the mothers of at-risk observational-care and preterm infants. There were no other significant differences among the groups.

Maternal Enjoyment

A 3 x 2 repeated measures ANOVA with infant group as a between-subjects factor and testing session (Time 1, Time 2) as a within-subjects factor was used to examine maternal enjoyment. Mothers were asked to rate the enjoyment they derived from their newborn. There was no time by group interaction and no main effect of group. A main effect of time indicated that there were improvements in HES scores from Time 1 to Time 2 in the three groups of mothers (F (1, 99) = 87.97, p < .0001). This indicated that maternal enjoyment toward the infants improved over time regardless of birth health status.

Post hoc investigations were completed based on a priori predictions (see hypotheses). At Time 1 there were significant differences among the three groups on the HES (F (2, 99) = 15.60, p <.001). Bonferroni comparisons indicated that mothers of observational-care and preterm infants had significantly lower HES scores (M = 90.53, SD = 27.21, and M = 81.16, SD = 31.65, respectively) than mothers of full-term infants (M =113.41, SD = 13.01; t (99) = 4.19, p < .0001; t (99) = 5.15, p <.0001), respectively. There were no other significant differences among the three groups of mothers at Time 1. At Time 2 there were no significant difference in HES scores among the three groups of mothers.

Mood State

A 3 x 2 repeated measures ANOVAs with infant group as a between-subjects factor and testing session (Time 1, Time 2) as a within-subjects factor were used to examine maternal mood state (Depression, Tension, and Vigor subscales of the POMS and

the POMS total score were included in the analysis). There were no significant differences among the three groups at either time. There was a main effect for time (F (3, 96) = 25.63, $p < .0001$) with significant improvements over time in the Tension and Vigor scores among the three groups of mothers (F (1, 98) = 41.89, $p < .0001$; F (1,98) = 10.33, $p < .01$). There was no group by time interaction or main effect for group. There were no other significant differences.

Confidence in Parenting Abilities

A multivariate analysis of variance (MANOVA) was performed on the five subscales of the MSRI. There was a significant main effect of group (F (12, 190) = 3.61, $p < .0001$. Further analyses (ANOVA) indicated that there were significant group differences on the Caretaking Ability (F (2, 99) = 10.16, $p < .0001$) and the Acceptance of Baby subscales of the MSRI (F (2, 99) = 16.33, $p < .0001$). As well, significant differences were found among the three groups on the Total MSRI score (F (2, 99) = 8.17, $p < .01$). As indicated in Table 3, Bonferroni t-tests revealed that mothers of full-term infants scored significantly higher on the Total MSRI score and Caretaking Ability and Acceptance of Baby subscales than mothers of observational-care and preterm infants, but the two at risk groups did not differ from one another. There were no significant differences among the groups and the other subscales.

Table 3

Average Scores for the Maternal Self Report Inventory

Maternal Self Report Inventory Scores	Full-term (n=39) M	SD	Observational-Care (n=39) M	SD	Preterm (n=24) M	SD
Caretaking Ability	24.9[A]	3.4	21.2[B]	5.0	20.5[B]	4.7
Acceptance of Baby	12.9[C]	1.9	9.44[B]	3.5	9.4[B]	3.5
Total score	110.0[D]	9.2	100.5[B]	11.9	100.6[B]	14.2

A.- Significant difference between full-term and observational-care groups t (99) = 3.8, $p < .0001$; significant difference between full-term and preterm groups t (99) = 3.9, $p < .0001$.

B.- No significant differences between observational-care and preterm groups.

C.- Significant difference between full-term and observational-care groups t (99) = 5.1, $p < .0001$; significant difference between full-term and preterm groups t (99) = 4.5, $p < .0001$.

D.- Significant difference between full-term and observational-care groups t (99) = 3.7, $p < .0001$; significant difference between full-term and preterm groups t (99) = 3.1, $p < .0001$.

Infant Behavioral Characteristics

Maternal perceptions of infant temperament were assessed at Time 2 using the IBQ. A MANOVA performed on the six subscales of the IBQ indicated that there was a significant main effect for group (F (12, 184) = 2.96, $p < .001$. The means and standard deviations for each of the IBQ subscales are listed in Table 4. Significant group differences were found on the Smile (F (2, 97) = 3.81, $p < .05$), and Soothe subscales of the IBQ (F (2, 96) = 4.88, $p < .05$). Observational-care mothers scored significantly lower on the Soothe subscale (t (97) = 3.06, $p < .01$) than the preterm mothers. Observational-care mothers scored significantly higher on the Smile subscale than the preterm mothers (t (96) = 2.75, $p < .05$). No other differences were found among the three groups.

Table 4

Average Scores for the Infant Behavior Questionnaire

	Full-term		Observational-Care		Preterm	
IBQ Scores	M	SD	M	SD	M	SD
Activity	4.05	0.79	3.91	0.68	3.88	0.68
Distress to Limits	3.15	0.89	2.99*	0.72	3.50	0.64
Distress to Novel	2.81	3.44	2.19	0.99	2.33	0.85
Orienting	4.53	1.33	4.48	1.00	4.77	1.00
Smile	4.84	1.09	5.11*	0.79	4.29	1.56
Soothe	5.14	1.02	4.68**	1.05	5.49	0.90

* significant at $p < .05$, ** significant at $p < .01$, significant difference between observational-care and preterm mothers only.

Satisfaction with Parenting

Self-reported maternal satisfaction with parenting was assessed at Time 2 using the WPL. A MANOVA was performed on the Evaluation, Centrality, and Life Change subscales of the WPL. No significant main effect for group was found for any of the measures. However, since it was hypothesized that the two at-risk infant groups would differ from the full-term group on measures of parenting satisfaction the two groups were collapsed to form one group. Subsequently, a t-test was performed on the various measures. No significant differences were found between the two groups on these measures of parenting satisfaction.

Correlations

Correlations among the POIH, Time 1 HES, Time 2 HES, MSRI, WPL were conducted to investigate if maternal perceptions' of infant health were related to maternal enjoyment scores at Time 1 and Time 2, confidence in parenting, and parenting satisfaction (see Table 5). A negative correlation was found between POIH scores and the Time 1 HES scores (r (102) = -.471, p <.01), indicating that mothers who rated their infants as healthier reported experiencing more enjoyment with their infants. A negative correlation was also found between POIH scores and MSRI scores (r (102) = -.657, p <.01) suggesting, that mothers who rated their infants as healthier were more confident in their parenting abilities. There were no significant correlations between HES Time 1 and Time 2 scores.

Table 5

Correlation Matrix of Maternal Perception's of Infant Health, Enjoyment Scores, Parenting Confidence, and Satisfaction.

	POIH (1)	HEST1 (2)	HEST2 (3)	MSRI (4)	WB-CEN (5)	WB-LC (6)	WB-EVAL (7)
1.		-.471** (102)	-.027 (102)	-.657** (102)	.142 (101)	.066 (101)	.040 (101)
2.			.186 (102)	.503** (102)	-.117 (101)	-.001 (101)	.117 (101)
3.				.067 (102)	.284** (101)	-.089 (101)	.351** (101)
4.					-.164 (101)	-.143 (101)	.146 (101)
5.						.130 (101)	.343** (101)
6.							-.042 (101)

Note. POIH = Perception of Infant Health. HEST1 = Time 1 Hauck Enjoyment Scale. HEST2 = Time 2 Hauck Enjoyment Scale. MSRI = Maternal Self Report Inventory. WB-CEN = What Being the Parent of a Baby is Like-Centrality Subscale. WB-LC = What Being the Parent of a Baby is Like-Life Change Subscale. WB-EVAL = What Being the Parent of a Baby is Like-Evaluation Subscale. ** $p < .01$.

Further Investigations

To investigate the outcome of mothers who experienced high or low enjoyment with their infant at Time 1 a median split was conducted on the HES total score. Regardless of infant health status, mothers were divided into a high and a low group based on their enjoyment score. A series of t-tests were conducted to determine how maternal enjoyment related to the other variables investigated. Results indicated that mothers in the low enjoyment group had significantly less confidence in their parenting abilities at Time 1 (M = 98.59, SD = 11.53) and significantly lower enjoyment scores at Time 2 (M = 115.68, SD = 19.68) than did the mothers in the high enjoyment group (M = 109.73, SD = 10.53; M = 121.98, SD = 8.72; confidence: t (100) = -5.10, p < .0001; enjoyment: t (100) = -2.09, p <.05), respectively. Additionally, mothers in the low enjoyment group at Time 1 reported significantly higher maternal concern for their infants' health status (M = 48.02, SD = 16.16) than mothers in the high enjoyment group (M = 33.53, SD = 14.83; t (100) = 4.72, p < .0001. There were no significant differences between the two groups on ratings of maternal mood state, parenting satisfaction, or infant temperament. These findings are consistent with the correlations that indicated mothers who reported experiencing more enjoyment with their infants also rated their infants as healthier and reported greater confidence in their parenting abilities.

Discussion

Return Rate

This study was a longitudinal investigation of maternal enjoyment and satisfaction with parenting. There was a significant difference among the Time 2 return rates for the three groups. A significantly higher proportion of observational-care mothers returned the their follow-up questionnaires, however there is no previous literature from which to speculate on this finding. There was no conclusive evidence in the data set to help explain the disparity among the groups. One possible explanation may be that the observational-care mothers were significantly older than the full-term mothers and perhaps more conscientious in their study involvement. Attempts were made to contact all non-respondents by telephone once their Time 2 data was not returned.

Demographics

The three groups of mothers did not differ on years of education completed, number of children at home, family income, or marital status. The average family income of the sample was in the range of 40,000 to 49,999 thousand dollars. Only 23.2% of this sample endorsed earning less than 30,000 thousand dollars a year. According to Statistics Canada (1996) data the socioeconomic status (SES) of this sample was average and comparable to incomes in the province. The majority of mothers in this sample were married (79.5%) or living common law (11.8%). Results indicated that there were no significant differences in social support among the three groups. Thus, in this investigation the social support available to mothers was not confounded with infant health status.

The mothers differed significantly with respect to age. Results revealed that observational-care mothers (M = 30.5 years) were significantly older than the full-term mothers (M = 27 years), but did not differ from the preterm mothers (M = 28.8 years). Although this finding is statistically significant, it may not be of practical significance as the range of the three groups' mean age is only three-and-a-half years. As well, the three groups of mothers had comparable age ranges and were not at different critical age periods, such as teenagers versus adults. It is worthwhile to note that only the full-term mother group included mothers younger than 20 years of age.

Pregnancy Variables

With regard to the infant variables investigated, the three groups of mothers did not differ on birth order of the infant, infant sex, or method of delivery. However, the mothers of observational-care infants had significantly more previous miscarriages than the mothers of full-term infants. There were no significant differences in the number of miscarriages between the preterm and observational-care mothers. Although the difference was not significant, the mothers of preterm infants had more miscarriages than full-term mothers. These findings suggest that there was a trend for the mothers of at risk infants to have a higher incidence of miscarriages than mothers of full-term infants. This trend may also help to explain why the two at risk groups of mothers reported less enjoyment and confidence in parenting at Time 1. It is possible that these mothers may have experienced greater stress and self-blame due to their previous negative pregnancy experiences.

Overall, mothers were very satisfied with both the amount and quality of information they received from the staff of the Regina General Hospital regarding their

infant's delivery and health status. There were no significant differences among the three groups of mothers with respect to satisfaction. This indicates that mothers in the three groups endorsed that they received the same quality of care regardless of delivery experience, extent of infant health risk, or range of maternal concerns. This is an encouraging finding for the hospital as it implies that staff were equally sensitive to all three groups of mothers.

Maternal Enjoyment and Parenting Satisfaction

It was proposed that the three groups of mothers could be viewed along a continuum based on infant health status. Full-term mothers had infants with the lowest health risk, followed by the potentially at-risk infants in the observational-care group, and finally the at-risk infants in the preterm group. The two at risk groups were conceptualized to be more similar to each other than to the full-term group given their common experience in NICU. Evidence for the validity of this assumption was provided by the duration of stay in the NICU calculation for the preterm and observational-care infant groups. The duration of stay was significantly greater for the preterm infants. Additionally the preterm infant group was significantly younger and weighed less than the full-term and observational-care infant groups.

Research has shown that a minority of parents experience an indifferent or negative first impression of their infant at birth (Condon & Dunn, 1988; Entwistle & Doering, 1981; Robson & Kumar, 1980). Goldberg (1978) reported that parents of preterm infants are often unprepared and distressed at the arrival of an infant who does not meet their parental expectations of what an infant should look like. Results of this study support

Goldberg's (1978) findings for both preterm and observational-care infants. Mothers of observational-care and preterm infants had significantly higher POIH scores than mothers of full-term infants indicating higher concern for infant health status among the mothers of at-risk observational-care and preterm infants.

A negative correlation was found between maternal perception of infant health scores and Time 1 enjoyment scores. This finding indicated that mothers' who rated their infants as healthier reported experiencing more enjoyment with their infants. There was also a negative correlation found between maternal perception of infant health scores and maternal confidence in parenting, suggesting that mothers who rated their infants as healthier were more confident in their parenting abilities. Similar findings have also been found with respect to infant health status and parental confidence. Shea and Tronick (1988) found that mild and temporary illness impacted significantly on maternal confidence. Infant health status outweighed the impact of maternal health or delivery method on mothers' feelings of parenting competence both at birth and one month later.

In addition to lower scores on infant health ratings, mothers of observational-care and preterm infants also scored significantly lower on enjoyment scores and confidence in parenting at Time 1. This indicated that with regard to mothers' perceptions, the two at risk groups are not differentiating between 'potentially' at risk and 'actually' at risk infants. The findings suggest that it is *not* prematurity per se that is related to these parenting difficulties, but perhaps the disruption associated with infant illness and additional hospitalization that leads to less positive maternal attitudes. The fact that the observational-care mothers had significantly more miscarriages may have also had an

impact on their enjoyment and parenting confidence scores. Mothers who have previously miscarried may feel less confident in their parenting abilities and may be less able to enjoy early contact with their infants. This may be especially true for the mothers' with infants in NICU given the initial ambiguity of their infants' health status. As well, it should be noted that there was a significant trend of increased enjoyment over time for all mothers. It appears that time and exposure to the infant enhances enjoyment ratings.

Given that there are significant differences between the full-term and at-risk mother groups on perception of infant health, enjoyment, and parenting confidence at Time 1, it is surprising that the three groups did not differ with respect to maternal mood state. These groups did not differ on Depression, Tension, Vigor, or the total score of the Profile of Mood States at either Time 1 or Time 2. It may be that all mothers who give birth experience similar emotional reactions. A more probable explanation may be related to the fact that this study included only those preterm infants with gestational ages between 32 and 37 weeks. As a result, these infants may not have been "sick enough" to illicit extreme mood states as predicted. As hypothesized maternal mood state improved significantly over time for all mothers. The timing of the three-month follow up may have provided mothers with sufficient opportunity to adjust to their new infant.

Although there is ample evidence in the literature to suggest that mothers of preterm infants are at a greater risk for developing relationship difficulties with their infants than are mothers of full-term infants (Davis & Thoman 1988; Goldberg, 1979; Karger, 1979), no significant differences were found at three months post partum among the three groups on the measures of enjoyment or parenting satisfaction. Thus, by three

months, this sample of mothers accepted and adjusted to their infants needs, and were better able to enjoy their interactions with their babies. The crisis of giving birth to a preterm or observational-care baby may simply be resolved at three months. This finding may also indicate that at three months, the infants who were at-risk had progressed and matured to the equivalent of their full-term counterparts. It may also be related to the fact that this study investigated relatively older and healthier preterm infants. Therefore, the preterm infants excluded from this study may be the infants at greater risk for developing relational problems with respect to infant-mother dyads. Similar findings have been reported by Minde, Brown, and Whitelaw (1981) who found that at three months after the discharge of healthy preterm infants parents began to engage in appropriate parent-infant interactions, although the infants in the study were long recovered from initial birth illness and were healthy.

An investigation of infant behavior found that the observational-care infant group scored significantly higher than preterm infant group on the Smile subscale. This indicated that the observational-care infants were reported to be more pleasant than the preterm infants. However, the observational-care infant group scored lower on the Soothe subscale than the preterm group. It is possible that mothers in the observational-care group were not required to utilize as many soothing techniques because their infants were more pleasant, as indicated by their Smile score.

The observational-care infants were more pleasant and required less soothing techniques than the preterm infants. No significant differences existed between the observational-care and full-term infant groups. Although it has been established that

interactions with preterm infants can be more challenging than interactions with full-term infants (Als, 1983; Davis & Thoman, 1988) this finding was not supported in the present study. In fact, preterm infants in this study did not have more difficult temperaments than the full-term infants. This is a surprising finding given the wealth of literature that suggests that preterm infants are more difficult than full-term infants. Beckwith (1989) proposed that preterm infants may be less adequate social partners because they are less responsive, attentive, and less capable of maintaining social interactions. Similarly, Greenberg and Crnic (1988) reported that during the first year of life preterm infants tend to be delayed in their behavioral organization and as a result they showed less responsiveness and more gaze aversion than full-term infants. At one month, preterm infants are awake a shorter period of time and spend a higher percentage of that time crying than do full-term infants (Als, 1982). This study's finding may be attributed to the fact that the temperament questionnaire was administered at the earliest possible time, i.e. 3 months. At this early date, stable infant temperaments may be just beginning to emerge, and as a result, the present scores may not be a reliable indicator of the infants' temperaments. The fact that the preterm infants included in this study did not have serious health complications and were relatively older in relation to the age range in which prematurity falls may account for the lack of significant differences between the preterm and full-term infants in the study.

Although this study did not experimentally examine the prematurity stereotype, the results do permit observations to be made. Results indicated that although mothers knew that their infant was preterm, there were no significant differences in infant temperament

ratings between the mothers of full-term and preterm infants. If the prematurity stereotype has real-life connotations, these results are contrary to what would be expected.

In summary, at Time 1 mother's of observational-care infants experienced affective reactions comparable to those of preterm mothers. At Time 1, mother's of preterm and observational-care infants differed from those of full-term infants with respect to lower scores on both the enjoyment and confidence in parenting scales. As well, they reported significantly more concern for their infants' health. This discrepancy among the groups disappeared at Time 2, with the three groups showing similar enjoyment levels and satisfaction with parenting by three months. At both Time 1 and Time 2, there were no differences among the three groups with respect to mood state of the mother.

For interest an investigation of the outcomes of mothers who reported high or low enjoyment with their infant at Time 1 was conducted. Based on a median split of the HES total score mothers were divided into a high and a low group. The results were consistent with the correlations that indicated mothers who reported experiencing more enjoyment with their infants also rated their infants as healthier and reported greater confidence in their parenting abilities. As well, mothers in the low enjoyment group at Time 1 reported significantly lower enjoyment at Time 2 than did the mothers in the high enjoyment group. It is surprising that although the two groups differed significantly on enjoyment scores at Time 2 there were no significant differences on measures of parenting satisfaction, given also that these two measures were significantly correlated.

Limitations

A major limitation of this study is that it relied entirely on maternal self-report, and therefore it is difficult to determine the accuracy of responses. However, it is assumed that participants responded truthfully. In a possible future extension of this study, behavioral observations of mother-infant interactions coded for maternal responsiveness could be included. These observations could help to validate maternal self-reports and provide additional information on responsiveness. The three-month follow-up is another limitation of the present investigation since this is a relatively short period of time between the initial and final data collection. The findings of the study should not be generalized beyond the three-month time frame. Ideally, follow-ups should continue throughout early childhood.

Findings of this investigation indicated that by three months postpartum the crises associated with early perinatal infant illnesses were resolved. At three months, mothers did not differ on the amount of enjoyment they derived from their infants or their satisfaction with parenting. This three-month follow up may have masked the process and occurrence of change among the three groups. The assessment of the groups at only two points in time (birth and three months) prevented the accurate determination of when changes may have occurred. It is not possible to report whether the two at-risk groups experienced change in maternal enjoyment at similar times of whether changes are variable within the groups.

This study was designed to target mothers of preterm infants who were not expected to have future health complications, in hope of assessing the initial impact of early perinatal emergencies among relatively healthy infants. The preterm infants in this

study were relatively older in relation to the age range in which prematurity falls. They were selected on this basis due to the potential of infant mortality and serious future complications among the younger preterm infants. Therefore, the preterm infants selected for this study may not be representative of all preterm infants.

Contributions

One of the goals of this investigation was to examine observational-care infants, who had not previously been examined in the literature. This study provided information on the characteristics of this infant group and on the early parenting experiences of their mothers. These experiences were compared to the experiences of mothers of preterm and full-term infants.

This research contributes to the understanding of mediating factors in the development of positive maternal-infant relationships. Women who deliver their infants preterm or whose infants require observational-care comprise special groups of mothers. Therefore, interventions targeted toward "at-risk" mothers of preterm and observational-care infants may be especially important. Shea and Tronick (1988) found that even minor and transitory infant health problems impacted strongly on maternal confidence. The present study also found that mothers in the at-risk infant groups scored significantly lower on measures of parenting confidence at Time 1 than mothers of full-term infants. Unfortunately at Time 2 this measure was not re-administered so this study can not address the longer term impact of perinatal illness on maternal confidence. This is a limitation of study and future investigations should include this variable in a repeated measures design.

This study raises important issues regarding the prematurity stereotype. It appears from our data that although mothers of at-risk infants initially had reduced confidence in parenting, lower enjoyment ratings and perception of infant health ratings, their ratings of infant temperament at three months similar to the temperament ratings of full-term mothers. Although these similar ratings may be partly due to the fact that these infants were only moderately preterm, this does suggest that preterm infants are not an homogeneous group. As such, parent-infant interactions depend upon the gestational age of the infant, and we suggest that this is an important consideration for future studies.

This study has made a significant improvement over previous research designs by the inclusion of observational-care infants as a third group. This allowed us to determine that it is not prematurity per se that is solely responsible for early parenting difficulties but that the disruption and anxiety associated with infant hospitalization is also an important factor. Our results suggest that the placement of an infant in NICU is a very important variable. Since preterm infants are not a homogeneous group and early infant hospitalization has an initial impact on maternal confidence, enjoyment, and perceptions of infant health future studies need to use observational-care infants as a control group.

The present study has several implications for NICU programs and developmental follow-up clinics. Assessing maternal self-confidence, satisfaction with social support, mood state, and perceptions of the infant are essential in determining mother-infant dyads at risk. However, in addition to the variables included in this investigation, there are many other variables that may influence maternal enjoyment and parenting satisfaction. A

complete intervention program should consider all possible mediating variables (e.g. maternal age, race, previous pregnancy experiences, and health).

Future Studies

A closer examination of observational-care infants is an important direction for future studies. This group of infants can be divided on the basis of those infants who actually develop illness and those who do not. As well, divisions can be made based on the severity of infant illness within the group. Although it is unknown how many health-care centers actually participate in observation-care programs; currently much of medical practice is devoted to preventative approaches in health care, which is ultimately the goal of the observational-care program. As such, future studies may wish to investigate not only differences in among observational-care infants, but also among programs at other hospitals that are like the observational-care program at the Regina General Hospital.

As well, future studies may address potential interventions for at-risk mothers. Sigman, Cohen, and Forsythe (1981) suggested that the best predictor of an infant's developmental outcome is caregiver behavior. Consistent with these findings, there is a need for direct interventions targeted at parents rather than interventions directed towards the preterm or observational-care infant. Consequently, enhancing mothers' enjoyments toward their infants and helping them to develop modified parenting skills may be one of the most important interventions for the preterm and observational-care infant. Based on this information health care professionals can provide interventions to facilitate healthy mother-infant relationships. Chatwin and MacArthur (1993) proposed that a preterm birth precipitated a series of adjustments for the mother. It is important that these mothers learn

how the needs and growth patterns of the preterm infant differ from their preconceived notions of the full-term infant.

Field (1981) suggested providing mothers with relevant information about preterm infants. Health care professionals can explain to mothers that their preterm infant's appearance is appropriate for their gestational age and that they will begin to look like typical babies in a specific amount of time. Parents could also be provided with examples of preterm infant behavior through the use of the Brazelton scale (Brazelton, 1973). With the guidance of a trained health care professional mothers could actively participate in a developmental and behavioral assessment of their infant within the NICU. This intervention may help parents develop more realistic assessments of their infant's capabilities. Parker, Zahr, Cole, and Brecht (1992) demonstrated the efficacy of the Brazelton in a short-term perinatal intervention for mothers of preterm infants who were born into poverty. Compared with mothers of preterm infants who received standard postpartum care, mothers in the intervention group rated their infants as significantly less difficult temperamentally at four and eight months and had home environments that were developmentally more appropriate. Infants of mothers who had received the intervention had higher developmental quotients at four and eight months.

Crinic and Greenberg (1987) suggested that interventions can be specifically directed at increasing mothers' satisfaction with their infant and in their maternal role. This may be accomplished by structuring parent-infant interactions to maximize preterm infant responsiveness and should aim to increase reciprocity, synchrony, and mutual satisfaction during interactions. This may include taking a less active approach in initiating

interactions, allowing the infant to lead, and developing an awareness of when the infant is over stimulated.

References

Affleck, G., Allen, D., McGrade, B.J., & M., McQueeney (1982). Maternal causal attributions at hospital discharge of high risk infants. American Journal of Mental Deficiency, 86, 575-580.

Ainsworth, M. (1979). Infant-mother attachment. American Psychologist, 34, 932-937.

Albrecht, S.A., & Rankin, M. (1989). Anxiety levels, health behaviors, and support systems of pregnant women. Maternal Child Nursing Journal, 18, 49-60.

Als, H. (1982). The unfolding of behavioral organization in the face of a biological violation. In E. Tronick (Ed.), Social interchange in infancy (pp. 125-160). Baltimore, MD: University Park Press.

Als, H. (1983). Towards a synactive theory of development: Promise for the assessment and support of infant individuality. Infant Mental Health Journal, 3, 229-243.

Als, H., Lester, B., & Brazelton, T.B. (1979). Dynamics of the behavioral organization of the premature infant: A theoretical perspective. In T.M. Field (Ed.), Infants born at risk. (pp. 173-192) New York: SP Medical and Scientific Books.

Beckwith, L. (1984). Parent interaction with their preterm infants and later mental development. Early Childhood Development and Care, 16, 27-40.

Bell, R.Q. (1974). Contributions of human infants to caregiving and social interaction. In M. Lewis and L.A. Rosenblum (Eds.), The effect of the infant on its caregiver. (pp. 1-19). New York: John Wiley & Sons.

Brazelton, T.B. (1973). Neonatal behavioral assessment scale. London: Spastic International Medical Publications.

Bronfenbrenner, U., & Crouter, A.C. (1983). The evolution of environmental models in developmental research. In P.H. Mussen (Ed.), Handbook of child psychology (4th ed.) (pp. 357-414). New York: John Wiley.

Broussard, E.R., & Harther, M.S. (1970). Maternal perceptions of the neonate as related to development. Child Psychiatry and Human Development, 1, 16-25.

Caputo, S. V., & Mandell, W. (1970). Consequences of low birth weight. Developmental Psychology, 3, 363-383.

Chatwin, S.L., & MacArthur, B.A. (1993). Maternal perceptions of the preterm infant. Early Child Development and Care, 87, 69-82.

Choi, M.W. (1973). A comparison of maternal psychological reactions to premature and full-size newborns. Maternal-Child Nursing Journal, 2, 1-13.

Cohn, J., Matias, R., Tronick, E., Connell, D., & Lyons-Ruth, K. (1986). Face-to-face interactions of depressed mothers and their infants. In E. Tronick & T. Field (Eds.), Maternal depression and infant disturbance: New directions for child development (pp. 31-45). San Francisco: Jossey-Bass.

Condon, J.T., & Dunn, J. (1988). Nature and determinants of parent-to-infant attachment in the early postnatal period. American Academy of Child and Adolescent Psychiatry, 27, 293-299.

Cramer, B. (1976). A mother's reaction to the birth of a premature baby. In M.H. Klaus and J.H. Kennell (Eds.), Maternal infant bonding. (pp. 156-166). St. Louis, C.V. Mosby.

Crittenden, P.A. (1985). Social networks, quality of child rearing, and child development. Child Development, 56, 1299-1313.

Crnic, K.A., & Greenberg, M.T. (1987). Transactional relationships between perceived family style, risk status and mother/child interactions in two year olds. Journal of Pediatric Psychology, 12, 343-362

Crnic, K.A., Greenberg, M.T., Rogozin, A.S. Robinson, N.M., & Bashaw, R.B. (1984). Effects of stress and social support on mothers and premature and full-term infants. Child Development, 54, 209-217.

Crnic, K.A., Greenberg, M.T., & Slough, N.M. (1986). Early stress and social support influences on mothers' and high risk infants' functioning in late infancy. Infant Mental Health Journal, 7, 19-33.

Curry, M.A. (1987). Maternal behavior of hospitalized pregnant women. Journal of Psychosomatic Obstetrics and Gynecology, 7, 165-182.

Cutrona, C.E., & Troutman, B.R. (1986). Social support, infant temperament, and parenting self-efficacy: A mediation model of postpartum depression. Child Development, 57, 1507-1518.

Davis, D.H., & Thoman, E.B. (1987). Behavioral states of premature infants: Implications for neural and behavioral development. Developmental Psychobiology, 20, 25-38.

Davis, D.H., & Thoman, E.B. (1988). The early social environment of premature and full-term infants. Early Human Development, 17, 221-232.

Denham, S.A., & Moser, M.H. (1994). Mother's attachment to infants: Relations with infant temperament, stress, and responsive maternal behavior. Early Child Development and Care, 98, 1-6.

Deutsch, F.M., Brooks-Gunn, J., Fleming, A., Ruble, D.N., & Stangor, C. (1988). Information seeking and maternal self-definition during the transition to motherhood. Journal of Personality and Social Psychology, 55, 420-431.

Entwistle, D.R., & Doering, S.G. (1981). The first birth: A family turning point. Baltimore, MD: Johns Hopkins University Press.

Feiring, D. (1976). The influence of the child and secondary parent on maternal behavior: Toward a social systems view of early infant-mother attachment. Unpublished doctoral dissertation, University of Pittsburgh, Pittsburgh, IL.

Field, T.M. (1977). Effects of early separation, interaction deficits and experimental manipulations on infant-mother face-to-face interaction. Child Development, 48, 763-771.

Field, T.M. (1981). Intervention for high-risk infants and their parents. Educational Evaluation and Policy Analysis, 3, 69-78.

Fleischman, A.R. (1987). The immediate impact of the birth of a low birth weight infant on the family. Zero to Three, 6, 1-5.

Frodi, A.M. (1978). Fathers' and mothers' responses to the faces and cries of normal and premature infants. Developmental Psychology, 14, 490-498.

Frodi, A.M, & Lamb, M.E. (1980). Infants at risk for child abuse. Infant Mental Health Journal, 1, 240-247.

Gennaro, S. (1988). Postpartal anxiety and depression in mothers of term and preterm infants. Nursing Research, 37, 82-85.

Goldberg, S. (1978). Prematurity: Effects on parent-infant interaction. Journal of Pediatric Psychology, 3, 137-144.

Goldberg, S. (1979). Premature birth: Consequences for parent-infant relationship. American Scientist, 67, 214-220.

Goldberg, S., Brachfield, S., & DiVitto, B. (1980). Feeding, fussing, and play: Parent-infant interaction in the first year as a function of prematurity and perinatal medical problems. In T.M. Field et al. (Eds.) High-risk infants and children (pp. 133-151). New York: Academic Press.

Goldberg, S., Corter, C., Lojkasek, M., & Minde, K. (1992). Prediction of behavior problems in four-year olds born prematurely. Development and Psychopathology, 15-30.

Greenberg, M.T., & Crnic, K.A. (1988). Longitudinal predictors of developmental status and social interaction in premature and full-term infants at age two. Child Development, 59, 554-570.

Harrison, L.L., & Twardosz, S. (1986). Teaching mothers about their preterm infants. Journal of Obstetric, Gynecological, and Neonatal Nursing, 15, 165-172.

Hauck, M.P. (1983). Postnatal parental attachment. (Measure available from author: Psychological Sciences Institute, 7008 Security Blvd., Suite 209, Baltimore, MD 21207).

Jeffcoate, L.A., Humphrey, M.E., & Lloyd (1979). Disturbance in parent-child relationship following preterm delivery. Developmental Medicine and Child Neurology, 21, 344-352.

Kaplin, D.M., & Manson, F. A. (1960). Maternal reactions to premature birth viewed as an acute emotional disorder. American Journal of Orthopsychiatry, 30, 523-537.

Karger, R. (1979). Synchrony in mother-infant interactions. Child Development, 50, 882-885.

Kemp, V.H., & Page, C. (1988). Maternal self-esteem and prenatal attachment in high risk pregnancy. Journal of the American Academy of Child and Adolescent Psychiatry, 27, 293-299.

Korner, A.F., & Grobstein, R. (1967). Individual differences at birth. Journal of the American Academy of Child Psychiatry, 6, 676-690.

Levitt, M.J., Weber, R.A., & Clark, M.C. (1986). Social network relationships as sources of maternal support and well-being. Developmental Psychology, 22, 310-316.

Lowenthal, B. (1987). Stress factors and their alleviation in parents of high-risk preterm-infants. The Exceptional Child, 34, 21-30.

Manginello, F.P., & DiGeronimo, T.F. (1991). Your premature baby. Toronto: John Wiley and Sons, Inc.

McGettigan, M.C., Greenspan, J.S., Antunes, M.J., Greenspan, D.I., & Rubenstein, S.D. (1994). Psychological aspects of parenting critically ill neonates. Clinical Pediatrics, 33, 77-82.

McGrath, M., Boukydis, Z.C.F., & Lester, B.M. (1993). Determinants of maternal self-esteem in the neonatal period. Infant Mental Health Journal, 14, 35-48.

Mercer, R.T. (1981). A theoretical framework for studying factors that impact on the maternal role. Nursing Research, 30, 73-77.

Minde, K.K. (1984). The impact of prematurity on the later behavior of children and on their families. Clinical Perinatalogy, 11, 227-243.

Minde, K., Brown, J., & Whitelaw, A. (1981). The effect of severe physical illness on the behavior of very small premature infants. Paper presented at the Society for Research in Child Development, Boston, Massachusetts.

Norbeck, J., Lindsey, A., & Carrieri, V. (1981). The development of an instrument to measure social support. Nursing Research, 30, 264-269.

Nuckoolls, K., Cassel., J., & Kaplan, B. (1972). Psychosocial assets, life crisis and the prognosis of pregnancy. American Journal of Epidemology, 95, 431-441.

Parker, S., Zahr, L.K., Cole, J.G., & Brecht, M. (1992). Outcome after developmental intervention in the neonatal intensive care unit for mothers of preterm infants with low socioeconomic status. Journal of Pediatrics, 120, 780-781.

Perlman, N.B. (1986). What are they doing to my baby now? Zero to Three: Bulletin of the National Center for Clinical Infant Programs, 6, 10-11.

Peterson, G.H., & Mehl, L.E. (1978). Some determinants of maternal attachment. American Journal of Psychiatry, 135, 1168-1173.

Pridham, K., & Chang, A. (1989). What being a parent of a baby is like: Revision of an instrument. Research in Nursing and Health, 12, 323-329.

Pridham, K., Chang, A., & Chiu, Y.M. (1994). Mothers' parenting self appraisals: The contribution of perceived infant temperament. Research in Nursing and Health, 17, 381-392.

Reading, A.E. (1983). The influence of maternal anxiety on the course and outcome of pregnancy: A review. Health Psychology, 2, 187-202.

Robson, K.M., & Kumar, R. (1980). Delayed onset of maternal affection after childbirth. British Journal of Psychiatry, 136, 347-353.

Rothbart, M.K. (1981). Measurement of temperament in infancy. Child Development, 52, 569-578.

Sameroff, A.J., & Chandler, M.J. (1975). Reproductive risk and the continuum of caretaking causality. In F.D. Horowitz (Ed.), Review of child development research (vol. 4) (pp. 187-244). Chicago: University of Chicago Press.

Scallion, J., Scanlon, K., & Tronick, E.Z. (1983). Physiological variables and the behavior and extremely small infants. Unpublished manuscript, University of Massachusetts.

Scheiner, A.P., Sexton, M.E., Rockwood, J., Sullivan, D., & Davis, H. (1985). The vulnerable child syndrome: Fact and theory. Journal of Developmental and Behavioral Pediatrics, 6, 298-301.

Shea, E., & Tronick, E. (1988). The maternal self-report inventory: A research and clinical instrument for assessing maternal self-esteem. In H.E. Fitzgerald, B. Lester, & M.W. Yogman (Eds.), Theory and research in behavioral pediatrics (pp.101-139). New York: Plenum.

Shereshefsky, P.M., & Yarrow, L.J. (1973). Psychological aspects of a first pregnancy and early postnatal adaptation. New York: Raven Press.

Sigman, M., Cohen, S.E., & Forsythe, A.B. (1981). The relation of early infant measures to later development. In S.L. Friedman & M. Sigman (Eds.), Preterm birth and psychological development (pp. 313-327). New York: Academic.

Silcock, A. (1984). Crises in parents of prematures: An Australian study. British Journal of Developmental Psychology, 2, 257-268.

Sluckin, W., Herbert, M., & Sluckin, A. (1983). Maternal bonding. London: Basil Blackwell.

Statistics Canada (1996). Canada Yearbook. Statistics Canada: Minister of Industry.

Stern, M., & Hildebrandt, K. (1984). A prematurity stereotype: The effects of labeling on adults' perceptions of infants. Developmental Psychology, 20, 360-362.

Stern, M., & Hildebrandt, K. (1986). Prematurity stereotyping: Effects of mother-infant interaction. Child Development, 57, 308-315.

Tadmor, C.S., & Brandes, J.M. (1986). Premature birth: A crisis intervention approach. Journal of Primary Prevention, 6, 244-254.

Zarling, C., Hirsch, B., & Landry, S. (1988). Maternal social networks and mother-infant interactions in full-term and very low birth weight infants. Child Development, 59, 178-185.

HUMAN SUBJECT RESEARCH ETHICS REVIEW COMMITTEE

Application for Approval of Research Procedures

Section I: Identification and Purposes

1. **Date:** Sept. 25, 1996

   Name of Applicant(s): Heather Pike

   Address: 83 Centennial St., Regina, SK. S4S 6W3. (306) 584-8735

   Title of Research: Perinatal Predictors of Maternal Attitude and Parenting Satisfaction at Three Months Post-Partum in Mothers of Preterm, Full-Term, and Observational-Care Infants.

2. **If the project will be part of a thesis, or class requirement, give the name of the supervisor:**
   Dr. Joan Roy
   Department or Faculty:
   Psychology

3. **Purposes. Give a brief outline of the main features and variables of the research problem. Include a brief statement which describes the significance and potential benefits of the study.**

Maternal confidence in parenting abilities, social support, mood state, as well as infant physical, and behavioral characteristics have been identified as predictors of maternal attitude and satisfaction with parenting. This study will compare the relationship among these variables at three months post-partum in mothers of preterm, full-term, and observational-care infants. Numerous studies have indicated that the birth and early parenting experiences of mothers of preterm infants are more difficult than those experienced by mothers of full-term infants (Als, 1983; Beckwith, 1984).

A potential benefit of this study is that variables that are determined to be predictive of positive maternal attitudes and parenting satisfaction (in all groups) can be enhanced during pregnancy or soon after birth. However, it is expected that these variables may differ among the three groups. Therefore, interventions targeted toward "at-risk" mothers of preterm infants and observational-care infants are especially important. The present study also has several implications for Neonatal Intensive Care Unit (NICU) programs and developmental follow-up clinics which attempt to improve mothers' attitudes toward their infants and help them to develop adaptive parenting skills.

Section II: Subjects

1. Briefly describe the number and kind of subjects required for data collection.

This study will be conducted with the cooperation of the Regina General Hospital. Subjects will be first-time mothers whose infants were vaginal deliveries. Thirty mothers of preterm infants, 30 mothers of full-term infants, and 30 mothers of observational-care infants will be required for data analysis. However, a larger sample of mothers will be followed to allow for the development of three groups of mothers that do not significantly differ on socioeconomic status, maternal age, or single vs. two-parent family status.

2. What information about the research problem and their role in the project will potential subjects be given?

Subjects will initially receive a consent form (see Appendix) that fully informs them of the nature of the study and the extent of their participation in the study. Mothers will be told that the purpose of the study is to investigate the predictors of maternal attitude and parenting satisfaction in mothers. Mothers will be asked to complete 5 questionnaires 1 or 2 days post-partum (taking approximately 20 minutes) and 6 questionnaires at 3 months post-partum (taking approximately 30 minutes).

3. How will the consent of the subjects to participate be obtained?

Mothers will be approached by the primary researcher and will be provided with a description of the study. They will be shown the questionnaires that they will be required to complete and informed of the time commitment involved. Standard consent procedures that describe the nature of the project and the extent of subject involvement will be employed (see Appendix).

4. What will the subjects be required to do in the course of the project?

Subjects will be required to complete a package of eleven questionnaires concerning their relations with their infant, experience of parenthood, social support networks and feelings about life in general. Data will be collected one or two days post-partum (time one), and at three months post-partum (time two). At time one, mothers will complete the Maternal Self Report Inventory (MSRI), Profile of Mood States (POMS), Perception Of Infant Health (POIH), Hauck's Enjoyment scale, and Demographic Questionnaire.

At time two, a follow-up questionnaire package will be mailed to the mothers. At this time the mothers will be asked to complete the Norbeck Social Support Questionnaire (NSSQ), Hauck's Enjoyment scale, What Being The Parent of a New Baby is Like (WPL), Profile of Mood States (POMS), Infant Behavior Questionnaire (IBQ), and the Beck Depression Inventory (BDI). Non-respondents will be sent a mailed reminder. Total participation time (time 1 and time 2) should be no more than 60 minutes.

Mothers in this study who are found to be significantly depressed (as measured by the BDI cutoff scores greater than 30) at three months post-partum will not be included in the final data analysis. The rationale for this exclusion is that chronic, clinically significant depression in mothers can account for a lack of parenting satisfaction regardless of additional mediating variables. Should any of the mothers in this study exhibit serious signs of depression (e.g. BDI score greater than 30, indication of suicidal ideation) they will be interviewed by Dr. Joan Roy. Dr. Roy will ensure that these mothers are referred to appropriate follow-up services through their local mental health programs.

4b. What will the Regina General Hospital be required to do in the course of the project?

The only commitment from the Regina General Hospital will be daily communication between the labor clerk and the researcher to ascertain the number of new mothers who meet the study criteria. The researcher will make contact with the mothers while they are in the hospital, obtain consent, and supply the questionnaires for the mothers to complete.

5. What assurances will the subjects be given and what precautions will be taken regarding the confidentiality of the data or information which they provide in the study?

Subjects will be assured in the consent form (see Appendix one) that all information that they provide will be kept strictly confidential and will be accessible only to the principal researcher, Heather Pike and her supervisor, Dr. Joan Roy. Subjects will be provided with envelopes in which to seal their completed questionnaire packages. All subjects will be assigned identification numbers so that individual identities can never be directly associated with particular responses. Similarly, address information will be recorded in a separate file so that individuals' names and addresses cannot be associated with responses. A list identifying the subject and their identification number will be maintained in a locked filing cabinet in Dr. Joan Roy's research lab at the University of Regina.

6. Will children be used as a source of data?

Yes __ No X
If Yes, indicate how consent will be obtained on their behalf.

7. Will the researcher or any member of the research team be in a position of power or authority in relation to his subjects? (For example: A teacher doing research and using her class as subjects or a counselor collecting research data from his clients.

Yes __ No X
If Yes, indicate how coercion of subjects will be avoided.

8. **Will deception of any kind be necessary in the project?**

Yes __ No X

If Yes, explain why and indicate how subjects will be debriefed after the study.

Section III: Access to Data and Findings

1. **Who will have access to the original data of the study?**

The principal researcher, Heather Pike and her supervisor, Dr. Joan Roy.

2. **Will subjects have some access to the findings of the study?**

Mothers who express an interest in receiving information regarding the study's findings will be sent a summary. Additionally, subjects will be informed of the date that the thesis will be available to the public at the University of Regina. Subjects will be encouraged to approach the principal researcher, Heather Pike or Dr. Joan Roy if they have any questions or concerns. The Regina General Hospital will also be provided with a summary of the findings.

3. **What will be the final disposition of the original data after the study is completed?**

All data will be stored anonymously in a locked storage area in Dr. Joan Roy's research lab at the University of Regina. Additionally, the electronically stored data will be password protected. Coded data will be retained for purposes of secondary or future analysis for seven years, in accordance with the Canadian Psychological Association guidelines. Following this time all data will be destroyed.

Signature of Applicant(s):

_____

_____

Signature of Advisor or Instructor:

_____

Appendix B

Participation Consent Form

I understand that Heather Pike, a Master's student in Clinical Psychology at the University of Regina, is investigating the ways in which mothers are adapting to the challenges of parenthood in the first three months after the birth of their baby.

I understand that my participation in this study will involve filling out a package of five pencil and paper questionnaires one or two days after the birth of my baby and six additional questionnaires will be mailed to me at my home three months later. I will be asked about my relationship with my infant, experience of parenthood, social support networks, feelings about motherhood, and life in general. My involvement should take me a total of no more than 60 minutes.

I understand that the information I provide will be held in the strictest confidence. I will be assigned an identification number so that my identity cannot be directly associated with a particular response. I understand that I will have complete freedom to withdraw my participation at any time during the course of the study, without penalty. **This will in no way affect my care or the care of my infant at the Regina General Hospital.**

I understand that if I have *any* questions about *any* aspect of my participation in this study I can call Heather Pike at 585-4221 or her supervisor, Dr. Joan Roy at 585-4157. This project has been reviewed and received ethics approval through the Office of Research and Graduate Studies at the University of Regina, as well as the Medical Advisory Committee of the Regina Health District.

I _____ **agree to participate in this study.**

(Please print your name)

_____ **(participant signature)**

_____ **(signature of witness)**

Date: _____

For the purpose of the three-month follow up we require your home mailing address

Address _____

_____ **Phone Number** _____

UNIVERSITY OF REGINA

OFFICE OF ASSOCIATE VICE-PRESIDENT AND DEAN
FACULTY OF GRADUATE STUDIES AND RESEARCH

DATE: October 7, 1996

TO: Heather Pike
Department of Psychology

FROM: G.W. Maslany, Chair
Research Ethics Review Committee

Re: Perinatal Predictors of Maternal Attitude and Parenting Satisfaction at Three Months Post-Partum in Mothers of Preterm, Full-Term and Obsevational-Care Infants

---

Please be advised that the committee has considered this proposal and has agreed that it is:

✓ 1. Acceptable as submitted.
(Note: Only those applications designated in this way have ethical approval for the research on which they are based to proceed.)

_____ 2. Acceptable subject to the following changes and precautions (see attached):
Note: These changes must be resubmitted to the Committee and deemed acceptable by it prior to the initiation of the research. Once the changes are regarded as acceptable a new approval form will be sent out indicating it is acceptable as submitted.
Please address the concerns raised by the reviewer(s) by means of a supplementary memo.

_____ 3. Unacceptable to the Committee as submitted. Please contact the Chair for advise on whether or how the project proposal might be revised to become acceptable (ext. 4161/5186.)

/mm
cc: Dr. J. Roy, supervisor
(Ethics2.doc)

Regina Health District

MEMORANDUM

DATE: October 9, 1996

FROM: George D. Carson, M.D., FRCSC

TO: Marcia Scott, Director of Nursing, Women's and Children's Health
Joyce Still, ADN, 2C and 2D
Dorothy Schropp, ADN, NICU
Gail Rosseker, ADN, L&D

SUBJECT: MS. HEATHER PIKE - RESEARCH PROJECT

The Department of Psychology, University of Regina has received ethical approval at the MAC meeting of October 8, 1996 to conduct a research project entitled Perinatal Predictors of Maternal Attitudes and Parenting Satisfaction at Three Months Postpartum in Mothers of Preterm, Full-Term, and Observational-Care Infants. Ms. Heather Pike is the primary researcher for this thesis project.

Subjects will be first-time mothers recruited from the Regina General Hospital. Thirty mothers of preterm infants, 30 mothers of full-term infants, and 30 mothers of observational-care infants will be required for data collection.

Ms. Pike will telephone the postpartum ward (766-4228) or to Labour and Delivery (766-4307) for the names of patients who may be eligible for enrollment in this project. Ms. Pike will speak to eligible patients and, if they agree to participate in the study, will obtain a consent and collect the data. There is no expectation or requirement of involvement by the nursing staff.

Your support of this research project is appreciated.

George D. Carson, M.D., FRCSC
Head, Department of Obstetrics and Gynecology
Director, Maternal-Fetal Medicine
Regina Health District
GDC/jmb

c.c. Dr. Joan M. Roy. Head, Department of Psychology, University of Regina
Ms. Heather Pike, Principal Researcher

Regina General Hospital
1440 - 14th Avenue, Regina, Saskatchewan S4P 0W5

Appendix E

Please read and answer the following questions as accurately as you can.

Date of Birth _____ Age _____
month day year

Please circle **one** of the following that best indicates your current relationship status.

A	B	C	D	E	F	G
Married	**Common Law**	**Single**	**Separated**	**Divorced**	**Widowed**	**Other**

Please circle one of the following to indicate your **total** yearly family income.

A	B	C	D	E	F	G	H
$0-9, 999	**$10,000-19,999**	**$20,000-29, 999**	**$30,000-39,999**	**$40,000-49,999**	**$50,000-59,999**	**$60,000-69,999**	**70, 000+**

What is the highest level of education you have completed? _____

Are you still in school? Yes No (Please circle one).
If yes, what year or grade are you in? _____

Are you currently employed outside of your home? Yes No (Please circle one)
What is your occupation? _____

Did you attend prenatal classes? Yes No (Please circle one)

How satisfied are you with the information that you received on pregnancy, labor, and delivery **during your pregnancy** from your doctor or other health care professionals? **Please place an X through these lines to indicate how you are feeling.**
Not satisfied _____ **Very satisfied**

Was your baby (Please circle one)
vaginal delivery **planned cesarean delivery** **unplanned cesarean delivery**

Is this baby your **1st** **2nd** **3rd** **4th** **5th or more** (Please circle one)

Do you have other children at home? Yes No (Please circle one). If yes, how many?

Have you ever had a pregnancy that did not go to term? Yes No (Please circle one)
If yes, how many? _____

How satisfied are you with the **amount** of information that you have received from the staff regarding your infant's delivery and current health status?
Not satisfied _____ **Very satisfied**
How satisfied are you with the **quality** of information that you have received from the staff regarding your infant's delivery and current health status?
Not satisfied _____ **Very satisfied**

ENJOYMENT SCALE

At this point, how much pleasure or lack of pleasure do you derive from each of the following aspects of your baby?

DIRECTIONS: Please place an **X** through these lines to indicate how you are feeling. For example, suppose that you had not eaten since yesterday, you would probably put the **X** closer to the extremely hungry end of the line.

not hungry ——————————————x—— **extremely hungry**

NOTE: There may be some statements that do not apply to you or your infant. If this is the case place an **X** next to **No Opportunity.**
(Example: _X_ **No Opportunity**).

1. Holding or touching the baby

No Pleasure _____ **I Love it**
_____**No Opportunity**

2. The baby's cuddliness

No Pleasure _____ **I Love it**
_____**No Opportunity**

3. Eye contact with the baby

No Pleasure _____ **I Love it**
_____**No Opportunity**

4. The baby's smile

No Pleasure _____ **I Love it**
_____**No Opportunity to Observe**

5. The baby's responsiveness

No Pleasure _____ **I Love it**
_____**No Opportunity to Observe**

6. The baby's alertness
No Pleasure _____ **I Love it**

7. The baby's temperament or disposition

No Pleasure _____ **I Love it**

8. The baby's size or abilities

No Pleasure _____ **I Love it**

9. Bottlefeeding or breastfeeding

No Pleasure _____ **I Love it**
_____**No Opportunity**

10. The baby's appearance

No Pleasure _____ **I Love it**

11. The baby's resemblance to a member of the family

No Pleasure _____ **I Love it**

12. The fact that your baby is a boy

No Pleasure _____ **I Love it**

13. The fact that your baby is a girl

No Pleasure _____ **I Love it**

14. Caretaking (changing diapers, bathing, burping, etc.)

No Pleasure _____ **I Love it**
_____**No Opportunity**

Appendix E

INSTRUCTIONS FOR MATERNAL SELF-REPORT INVENTORY

Please note how accurately the following statements describe how you feel.

Rate each statement as follows:

CF	**MF**	**Un**	**MT**	**CT**
Completely False	Mainly False	Uncertain	Mainly True	Completely True

For example, circle **CF** if you feel that statement is completely false, circle **MF** if the statement is mainly false, circle **MT** if the statement is mainly true, and circle **CT** if the statement is completely true. If you are uncertain circle **Un**.

Please answer each item as honestly as you can, and work rapidly as first impressions are as good as any. Try to answer every question, and if in doubt, circle the answer which comes closest to expressing your feelings. Although some of the statements seem to be similar, they are not identical, and should be answered separately. All of your answers will be treated with complete confidentiality. There are no right or wrong answers. Your comments are very much appreciated.

Thank you very much.

---

1. I found the experience of labor and delivery to be one of the most unpleasant experiences I've ever had.

CF MF Un MT CT

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

CF MF Un MT CT

3. I am confident that I will have a close and warm relationship with my baby.

CF MF Un MT CT

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

CF MF Un MT CT

5. Looking forward to having a baby gave me more pleasure than actually having one.

CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain	Mainly True	Completely True

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

CF MF Un MT CT

7. I found the delivery experience frightening and very unpleasant.

CF MF Un MT CT

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

CF MF Un MT CT

9. I am confident that I will be able to work out any normal problems I might have with my baby.

CF MF Un MT CT

10. I am concerned that I will have trouble figuring out what my baby needs.

CF MF Un MT CT

11. I worry about whether my baby will like me.

CF MF Un MT CT

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

CF MF Un MT CT

13. I found the delivery experience to be very exciting.

CF MF Un MT CT

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

CF MF Un MT CT

15. I doubt that my baby could love me the way I am.

CF MF Un MT CT

CF	MF	Un	MT	CT
Completely False	Mainly False	Uncertain	Mainly True	Completely True

16. It really makes me feel depressed to think about all there is to do as a mother.

CF MF Un MT CT

17. I worry that I will not know what to do if my baby gets sick.

CF MF Un MT CT

18. It is difficult for me to know what my baby wants.

CF MF Un MT CT

19. I found the whole experience of labor and delivery to be one of the best experiences of my life.

CF MF Un MT CT

20. I am afraid I will be awkward and clumsy when handling my baby.

CF MF Un MT CT

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

CF MF Un MT CT

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

CF MF Un MT CT

23. I feel that I will do a good job taking care of my baby.

CF MF Un MT CT

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

CF MF Un MT CT

25. I worry about being able to fulfill my baby's emotional needs.

CF MF Un MT CT

26. I am confident that my baby will love me very much.

CF MF Un MT CT

Appendix E

Infant Behavior Questionnaire

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

(1) Never	(2) Very Rarely	(3) Less than Half the Time	(4) About Half the Time	(5) More than Half the Time	(6) Almost Always	(7) Always	(X) Does not Apply

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

Feeding

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

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

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

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

During feeding, how often did the baby:

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

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

During feeding, how often did the baby:

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

1 2 3 4 5 6 7 X . . . . (7) fuss or cry when s/he had enough to eat?

Sleeping

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

1 2 3 4 5 6 7 X . . . . (8) show no fussing or crying?

During sleep, how often did the baby:

1 2 3 4 5 6 7 X . . . . (9) toss about in the crib?

1 2 3 4 5 6 7 X . . . . (10) move from the middle to the end of the crib?

1 2 3 4 5 6 7 X . . . . (11) sleep in one position only?

(1) Never	(2) Very Rarely	(3) Less than Half the Time	(4) About Half the Time	(5) More than Half the Time	(6) Almost Always	(7) Always	(X) Does not Apply

After sleeping, how often did the baby:

1 2 3 4 5 6 7 X . . . . (12) fuss or cry immediately?

1 2 3 4 5 6 7 X . . . . (13) play quietly in crib?

1 2 3 4 5 6 7 X . . . . (14) coo and vocalize for periods of 5 minutes or longer?

1 2 3 4 5 6 7 X . . . . (15) cry if someone doesn't come within a few minutes?

How often did the baby:

1 2 3 4 5 6 7 X . . . . (16) seem angry (crying and fussing) when you left him/her in the crib?

1 2 3 4 5 6 7 X . . . . (17) seem contented when left in the crib?

1 2 3 4 5 6 7 X . . . . (18) cry or fuss before going to sleep for naps?

Bathing and Dressing

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

1 2 3 4 5 6 7 X . . . . (19) wave his/her arms and kick?

1 2 3 4 5 6 7 X . . . . (20) squirm and/or try to roll away?

1 2 3 4 5 6 7 X . . . . (21) smile or laugh?

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

1 2 3 4 5 6 7 X . . . . (22) smile?

1 2 3 4 5 6 7 X . . . . (23) laugh?

1 2 3 4 5 6 7 X . . . . (24) splash or kick?

1 2 3 4 5 6 7 X . . . . (25) turn body and/or squirm?

When face was washed, how often did the baby:

1 2 3 4 5 6 7 X . . . . (26) smile or laugh?

1 2 3 4 5 6 7 X . . . . (27) fuss or cry?

When hair was washed, how often did the baby:

1 2 3 4 5 6 7 X . . . . (28) smile or laugh?

1 2 3 4 5 6 7 X . . . . (29) fuss or cry?

(1) Never	(2) Very Rarely	(3) Less than Half the Time	(4) About Half the Time	(5) More than Half the Time	(6) Almost Always	(7) Always	(X) Does not Apply

Play

How often during the last week did the baby:

1 2 3 4 5 6 7 X . . . . (30) stare at a mobile, crib bumper or picture for 5 minutes or longer?

1 2 3 4 5 6 7 X . . . . (31) play with one toy or object for 5-10 minutes?

1 2 3 4 5 6 7 X . . . . (32) play with one toy or object for 10 minutes or longer?

1 2 3 4 5 6 7 X . . . . (33) spend time just looking at playthings?

1 2 3 4 5 6 7 X . . . . (34) laugh aloud in play?

1 2 3 4 5 6 7 X . . . . (35) smile or laugh when tickled?

1 2 3 4 5 6 7 X . . . . (36) cry or show distress when tickled?

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

1 2 3 4 5 6 7 X . . . . (37) cry or show distress for a time?

1 2 3 4 5 6 7 X . . . . (38) cry or show distress for several minutes or longer?

1 2 3 4 5 6 7 X . . . . (39) seem not bothered?

When tossed around playfully, how often did the baby:

1 2 3 4 5 6 7 X . . . . (40) smile?

1 2 3 4 5 6 7 X . . . . (41) laugh?

During a peekaboo game, how often did the baby:

1 2 3 4 5 6 7 X . . . . (42) smile?

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

(1) Never	(2) Very Rarely	(3) Less than Half the Time	(4) About Half the Time	(5) More than Half the Time	(6) Almost Always	(7) Always	(X) Does not Apply

Daily Activities

How often during the last week did the baby:

1 2 3 4 5 6 7 X . . . . (44) cry or show distress at a loud sound (blender, cleaner, etc.)?

1 2 3 4 5 6 7 X . . . . (45) cry or show distress at a change in parents' appearance (ex. glasses off)?

1 2 3 4 5 6 7 X . . . . (46) when in a position to see the television set, look at it for 2-5 minutes at a time?

1 2 3 4 5 6 7 X . . . . (47) when in a position to see the television set, look at it for 5 minutes or longer?

1 2 3 4 5 6 7 X . . . . (48) protest being put in a confining place (infant seat, play pen, car seat, etc.)?

How often during the last week did the baby:

1 2 3 4 5 6 7 X . . . . (49) cry after startling?

When being held, how often did the baby:

1 2 3 4 5 6 7 X . . . . (50) squirm, pull away or kick?

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

1 2 3 4 5 6 7 X . . . . (51) fuss or protest?

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

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

1 2 3 4 5 6 7 X . . . . (54) wave arms and kick?

1 2 3 4 5 6 7 X . . . . (55) squirm and/or turn body?

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

1 2 3 4 5 6 7 X . . . . (56) wave arms and kick?

1 2 3 4 5 6 7 X . . . . (57) squirm and turn body?

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

1 2 3 4 5 6 7 X . . . . (58) lie or sit quietly?

1 2 3 4 5 6 7 X . . . . (59) show distress at first; then quiet down?

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

1 2 3 4 5 6 7 X . . . . (60) smile or laugh?

Soothing Techniques

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

(1) Never	(2) Very Rarely	(3) Less than Half the Time	(4) About Half the Time	(5) More than Half the Time	(6) Almost Always	(7) Always	(X) Does not Apply

Soothing Techniques:

1 2 3 4 5 6 7 X . . . . (61) rocking

1 2 3 4 5 6 7 X . . . . (62) holding

1 2 3 4 5 6 7 X . . . . (63) singing or talking

1 2 3 4 5 6 7 X . . . . (64) walking with the baby

1 2 3 4 5 6 7 X . . . . (65) giving the baby a toy

1 2 3 4 5 6 7 X . . . . (66) showing the baby something to look at

1 2 3 4 5 6 7 X . . . . (67) patting or gently rubbing some part of the baby's body

1 2 3 4 5 6 7 X . . . . (68) offering food or liquid

1 2 3 4 5 6 7 X . . . . (69) offering baby his/her security object

1 2 3 4 5 6 7 X . . . . (70) changing baby's position

Appendix E

What Being the Parent of a Baby is Like

For each question, please CIRCLE the number that best shows how you feel.

1. How satisfying has being the parent of a new baby been for you?

1	2	3	4	5	6	7	8	9
Not at all Satisfying								Completely Satisfying

2. How much has your life changed since you had the baby?

1	2	3	4	5	6	7	8	9
Hardly at All								A Great Deal

3. How much is the baby on your mind when you are at home with him/her?

1	2	3	4	5	6	7	8	9
Very Little								All of the Time

4. Overall, how easy is it for you to be distracted from thinking about the baby?

1	2	3	4	5	6	7	8	9
Not Easy at All								Very Easy

5. How much do you think that you positively affect your baby's development?

1	2	3	4	5	6	7	8	9
Not at All								A Great Deal

6. How much is the baby or the baby's care on your mind?

1	2	3	4	5	6	7	8	9
Very Little of the Time								All of the Time

7. How much have the tasks of taking care of a new baby been satisfying to you?

1	2	3	4	5	6	7	8	9
Not at All Satisfying								Completely Satisfying

8. How much do you think your baby enjoys his/her interactions with you ?

1	2	3	4	5	6	7	8	9
Not at All								A Great Deal

9. How much do you relate to family members in a different way since you have had the baby?

1	2	3	4	5	6	7	8	9
Not at All								A Great Deal

10. On the whole, how stressful is your life, being the parent of a young baby and perhaps having other things to deal with?

1	2	3	4	5	6	7	8	9
Not at all Stressful								Very Stressful

11. How much do you look at yourself differently since you had the baby?

1	2	3	4	5	6	7	8	9
Not at All								A Great Deal

12. When you go out and leave the baby with someone else, how much do you have the baby on your mind during the time that you are away?

1	2	3	4	5	6	7	8	9
Very Little of the Time								All of the Time

13. How much of the time can you tell what you baby needs?

1	2	3	4	5	6	7	8	9
Hardly Ever								Almost all of the Time

14. How much does that baby seem like a person with his/her own personality, to you?

1	2	3	4	5	6	7	8	9
Very Little of the Time								All of the Time

15. How much is the baby's physical health on your mind?

1	2	3	4	5	6	7	8	9
Very Little of the Time								All of the Time

16. How easy would it be for you to leave the baby with your spouse/partner when you go out?

1	2	3	4	5	6	7	8	9
Not Easy at All								Very Easy

17. How well do you think that you know your baby?

1	2	3	4	5	6	7	8	9
Hardly at All								Very Well

18. How well are you meeting your expectations for yourself as a parent of a new baby?

1	2	3	4	5	6	7	8	9
Not at All								Completely

19. How much has the baby's growth and development been a source of satisfaction to you?

1	2	3	4	5	6	7	8	9
Not at All								A Great Deal

20. How in tune with your baby do you feel? (How much do you feel like you and your baby are in harmony with each other)?

1	2	3	4	5	6	7	8	9
Not In Tune								Completely In Tune

21. How much has your life with family members changed?

1	2	3	4	5	6	7	8	9
Hardly at All								A Great Deal

22. How easy would it be for you to leave the baby with <u>someone other than your spouse/partner</u> when you go out?

1	2	3	4	5	6	7	8	9
Not Easy at All								Very Easy

23. How satisfied are you with the way you relate to your baby and your baby's needs?

1	2	3	4	5	6	7	8	9
Not at All Satisfied								Completely Satisfied

24. How much do you feel that having a baby affects what you do and when?

1	2	3	4	5	6	7	8	9
Not at All								A Great Deal

25. How much does the baby or the baby's care come first in your thoughts, taking precedence over the things that you would otherwise spend time thinking about?

1	2	3	4	5	6	7	8	9
Not at All								A Great Deal

NAME DATE

SEX Male M Female F

IDENTIFICATION

Below is a list of words that describe feelings people have. Please read each one carefully. Then fill in ONE circle under the answer to the right which best describes HOW YOU HAVE BEEN FEELING DURING THE PAST WEEK INCLUDING TODAY

The numbers refer to these phrases

0 = Not at all
1 = A little
2 = Moderately
3 = Quite a bit
4 = Extremely

Col C O P O

	NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	EXTREMELY
1. Friendly	0	1	2	3	4
2. Tense	0	1	2	3	4
3. Angry	0	1	2	3	4
4. Worn out	0	1	2	3	4
5. Unhappy	0	1	2	3	4
6. Clear-headed	0	1	2	3	4
7. Lively	0	1	2	3	4
8. Confused	0	1	2	3	4
9. Sorry for things done	0	1	2	3	4
10. Shaky	0	1	2	3	4
11. Listless	0	1	2	3	4
12. Peeved	0	1	2	3	4
13. Considerate	0	1	2	3	4
14. Sad	0	1	2	3	4
15. Active	0	1	2	3	4
16. On edge	0	1	2	3	4
17. Grouchy	0	1	2	3	4
18. Blue	0	1	2	3	4
19. Energetic	0	1	2	3	4
20. Panicky	0	1	2	3	4
21. Hopeless	0	1	2	3	4
22. Relaxed	0	1	2	3	4
23. Unworthy	0	1	2	3	4
24. Spiteful	0	1	2	3	4
25. Sympathetic	0	1	2	3	4
26. Uneasy	0	1	2	3	4
27. Restless	0	1	2	3	4
28. Unable to concentrate	0	1	2	3	4
29. Fatigued	0	1	2	3	4
30. Helpful	0	1	2	3	4
31. Annoyed	0	1	2	3	4
32. Discouraged	0	1	2	3	4
33. Resentful	0	1	2	3	4
34. Nervous	0	1	2	3	4
35. Lonely	0	1	2	3	4
36. Miserable	0	1	2	3	4
37. Muddled	0	1	2	3	4
38. Cheerful	0	1	2	3	4
39. Bitter	0	1	2	3	4
40. Exhausted	0	1	2	3	4
41. Anxious	0	1	2	3	4
42. Ready to fight	0	1	2	3	4
43. Good natured	0	1	2	3	4
44. Gloomy	0	1	2	3	4
45. Desperate	0	1	2	3	4
46. Sluggish	0	1	2	3	4
47. Rebellious	0	1	2	3	4
48. Helpless	0	1	2	3	4
49. Weary	0	1	2	3	4
50. Bewildered	0	1	2	3	4
51. Alert	0	1	2	3	4
52. Deceived	0	1	2	3	4
53. Furious	0	1	2	3	4
54. Efficient	0	1	2	3	4
55. Trusting	0	1	2	3	4
56. Full of pep	0	1	2	3	4
57. Bad-tempered	0	1	2	3	4
58. Worthless	0	1	2	3	4
59. Forgetful	0	1	2	3	4
60. Carefree	0	1	2	3	4
61. Terrified	0	1	2	3	4
62. Guilty	0	1	2	3	4
63. Vigorous	0	1	2	3	4
64. Uncertain about things	0	1	2	3	4
65. Bushed	0	1	2	3	4

MAKE SURE YOU HAVE ANSWERED EVERY ITEM

EdITS POM 021

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STEP 1

Please list each significant person in your life in the column **Persons(s) who Provide(s) Support** (which is on th back of this page). Consider all the persons who provide personal support for you or who are important to you. For example:

spouse or partner	*friends*	*neighbors*	*counselor or therapist*
family members	*work or school associates*	*health care providers*	*minister/priest/rabbi*

Use only first names or initials, and then indicate your relationship to that person in the **Relationship** column. For example:

Persons(s) who Provide(s) Support.	**Relationship**
1. Mary T.	Friend
2. Bob	Brother
3. M.T.	Mother
4. Sam	Friend
5. Mrs. R.	Neighbor

You **do not** have to use all 18 spaces. Use as many spaces as you have important persons in your life.

STEP 2

Please circle the numbers that best indicate how you feel (back of this page).

STEP 3

During the past year have you lost any important relationships due to moving, a job change, divorce or separation, death, or some other reason?

Yes No (Please circle one)

If NO, PLEASE STOP HERE

If YES:

Please indicate the **number of persons** from each category who are *no longer available* to you.

_____ spouse or partner
_____ family members or relatives
_____ friends
_____ work or school associates
_____ neighbors
_____ health care providers
_____ minister/priest/rabbi/
_____ other

Overall, how much of your support was provided by these people who are no longer available to you?

_____ none at all
_____ a little
_____ a moderate amount
_____ quite a bit
_____ a great deal

	Person(s) who Provide(s) Support	Relationship	How much does this person make you feel liked or loved?	How much does this person make you feel respected or admired?	How much can you confide in this person?	How much does this person agree with or support your actions and thoughts?	If you needed to borrow ten dollars or a ride to the doctor, how much could this person usually help?	If you were confined to bed for several weeks, how much could this person help you?	How long have you known this person? (e.g. 2 months, 6 years)	How frequently do you usually have contact with this person? (e.g. daily, weekly, monthly, yearly, never)
1			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
2			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
3			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
4			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
5			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
6			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
7			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
8			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
9			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
10			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
11			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
12			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
13			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
14			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
15			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
16			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
17			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		
18			0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4		

0 = Not at all
1 = A little
2= Moderately
3 =Quite a bit
4= A great deal

PERCEPTION OF INFANT HEALTH STATUS

Directions: **We are interested in the way you perceive your infant's health status. Please circle the number which best describes how you view your infant's health.**

1. Were you prepared for the health status of your infant when he/she was born?

1	2	3	4	5	6
prepared					not prepared

2. Are you concerned about your child's health?

1	2	3	4	5	6
not concerned					very concerned

3. How would you rate your child's "fighting spirit"?

1	2	3	4	5	6
weak					strong

4. Are you confident that your child will "outgrow" any health problem he/she develops?

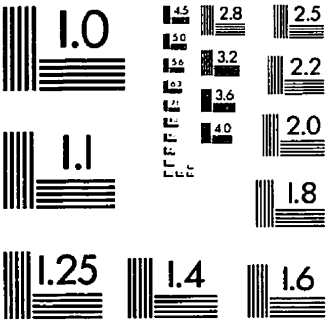
1	2	3	4	5	6
very confident					not confident

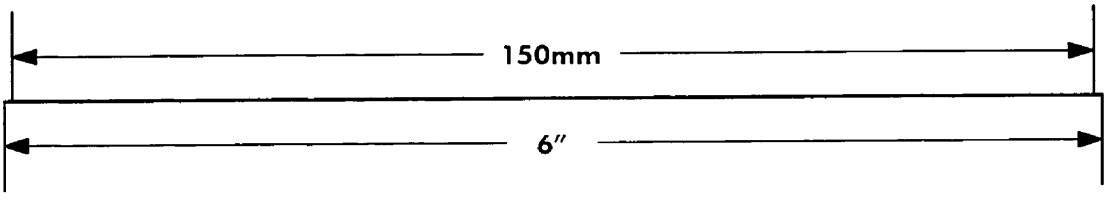
5. Are you concerned that your child is more fragile compared to other infant's like him/her?

1	2	3	4	5	6
very concerned					not concerned

Rate your concern for your child in the following areas:

	not concerned					very concerned
6. Feeding	1	2	3	4	5	6
7. Breathing	1	2	3	4	5	6
8. Muscle tone/Activity	1	2	3	4	5	6
9. Heart	1	2	3	4	5	6
10. Weight	1	2	3	4	5	6
11. Color - Blue	1	2	3	4	5	6
12. Color - Yellow (jaundice)	1	2	3	4	5	6
13. Cry	1	2	3	4	5	6





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