

A DESCRIPTIVE STUDY
OF THE CONCERNS OF PARENTS DURING
THEIR PREMATURE INFANTS'
FIRST TWO WEEKS AT HOME

by

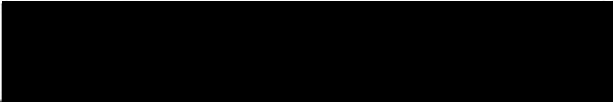
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A Thesis

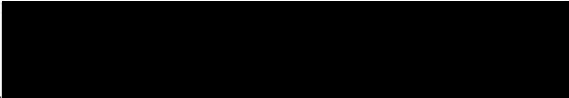
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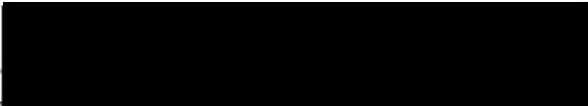
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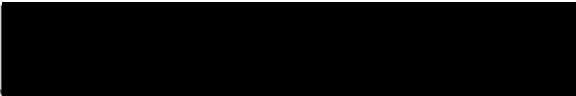
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CHAPTER I

INTRODUCTION

The childbearing process and motherhood bring about many changes in the roles assumed by women today. We see these changes in a wide variety of phases. The alterations that occur in her family structure, physical image and feminine image may be disconcerting for the mother (Clark and Alfonso, 1976). This disequilibrium may be magnified for the mother of a premature infant. Interactions with the health care providers can give added support and increase the woman's understanding of the changes occurring with pregnancy, not only to herself but also to the environment around her.

Parents-to-be undergo several lifestyle modifications in preparation for their new child. Prenatal care and classes as well as supporting family members often help in preparation for the labor and delivery. These practices also help the prospective parents to adjust into new role definitions and to learn about the anticipated needs of their infants.

Traditionally, nursing has utilized the post-partum period to teach infant care and to assist the mother in finding answers to questions that may arise regarding her baby. It is during the first few weeks when the new mother

is assuming full responsibility for her infant's care, that she often needs increased support from the health care system. It is this same time period, however, that occurs after discharge when health care professionals frequently have little or no contact with the family. The primary care provider may not see the child until the infant's first well-child exam. This exam is often not scheduled for as long as six weeks after delivery (Brown, 1977).

When an infant is delivered prematurely, added stress is placed on the families' coping abilities (Mercer, 1977). Grief, guilt, fear, and physical separation are some of the stresses added to the emotions of a new mother (Klaus and Kennel, 1982). The hospitalization and care involved with prematurity is an experience for which most parents are quite unprepared. Help and support from the hospital staff can greatly contribute to positive family functioning and adaptation (Holiday, 1981).

Discharge from the hospital is a monumental event for the family of a premature baby who have waited weeks and sometimes months to take their infant home. Although this period is very exciting, it is filled with anxiety for the parents. They now shoulder the full responsibility of care for their babies that was previously accomplished by a multi-disciplinary team of health care professionals.

Although some studies have described the common concerns of families with term infants, there is little current research on the needs and concerns that have been expressed by mothers of premature infants in the first two weeks after discharge. Regular check-ups often zero in on physical and pathophysiological development of the infant and fail to deal with the everyday concerns and problems faced by mothers. Due to the infant's immature body system and premature birth, preterm infants may have special needs that demand additional attention. By becoming increasingly aware of the needs of these special mothers, the pediatric nurse can better organize discharge planning and teaching interventions to include information that will be most helpful and beneficial to the family.

The purpose of the study is to explore and identify the concerns of new mothers of premature infants and to compare their needs to those of mothers of term infants.

Review of the Literature

From the time a woman first perceives herself as pregnant, mental preparation begins for the developmental tasks of parenting and infant care. Although she begins to prepare herself for this huge task, there are often many unanswered questions that leave mothers feeling frustrated and bewildered. This review of the literature will first discuss the experience of families of term infants by

looking at some of the major concerns raised about infant child care and how nurses have used teaching to address some of these concerns. The major focus of this review, however, will center on how the birth of a premature infant may alter the parenting process, the premature newborn experience, and the learning needs of the particular families.

The Term Newborn Experience

Until an infant is born, parents-to-be can only speculate as to the newborn's impact on the family unit. The labor and delivery of the infant transforms the parents' fantasies into reality. Kennel and Klaus (1976), who have written much in the area of maternal-infant relationships, coined the term "bonding" to describe this fantasy-reality interaction and interdependency between the baby and mother. Broussard and Hartner (1971) view the first few weeks as the crucial period in which a mother's perception of her infant is most important to the development of a strong bond between the two.

Meeting the needs of a first born at home is not an easy task. Bibring summarized these tasks in 1959 by describing the tasks involved with childbearing. She delineated this process as a normal developmental crisis in a woman's life cycle, and although major changes occur, adaptations occur in an orderly fashion resulting in a

family who is at low risk for parenting problems.

Teaching the Parent with a Term Newborn

There is general agreement among health care providers that infant care teaching is necessary. The dilemma, however, as to the optimal time for specific learning to occur remains.

Education usually begins in the prenatal period and deals with a woman's bodily changes due to pregnancy; specifically with the preparation for the actual labor and delivery of the infant. There is some evidence that mothers are usually not ready to receive information about baby care until around the middle of the second trimester (Joy, 1980).

In prenatal classes organized by Smith and Smith (1978), in which pregnancy, childbirth, infant care and child development were discussed, they found, that although as a whole, the mother's knowledge about infants increased, it did not necessarily increase about the information specifically taught. Based on these findings, they concluded that infant care could best be taught in the postpartum period.

The postpartum period has traditionally functioned as the time frame for mothers to learn about infant care. Bath demonstrations, cord care, feeding problems, sleep patterns, and safety are often major points covered in

newborn infant care teaching. Gruis (1977) found that while the postpartum period was commonly utilized as the major time for teaching, mothers taught during this time were actually more interested in body image concerns as well as meeting the increased demands of their husbands and families. She theorized that instead of presenting the traditional array of newborn teachings during the postpartum hospitalization, mothers would more likely benefit from information on how to access community resources after discharge. This would enable the mothers to seek answers to their questions and concerns relevant to their specific needs.

The time available for postpartum teaching has decreased in the past few years with the advent of the shortened hospital stay programs. A new mother and her normal newborn are often sent home on the second day postpartum. Special delivery programs, initiated to help families combat the high cost of hospital care, discharge normal newborns in as little as six hours after birth. This shortened stay is a primary disadvantage for postpartum teaching. It does not allow for realistic learning goals or presentations of manageable doses of information. This creates added stress and blocks the learning process. In some cases, the teaching is not provided at all.

Mothers and their infants who leave the hospital in a few short hours after birth may have had the opportunity to bathe their infant once and perhaps feed their baby two or three times. After this, there is often no contact with the health care system for weeks. Rubin (1975) feels that one of the largest failures in the health care profession lies in the extended postpartum period because the new mother and infant are in essence "abandoned" as they leave the hospital. Hymovich and Chamberlain (1980) concur. They state: "For the normal baby as well as for the baby with problems, contact should be maintained during the first few weeks at home as this is frequently a difficult period of adjustment for many."

Community health referral and teaching, as previously mentioned by Gruis, is one option for receiving information and finding help after discharge from the hospital. She further points out, however, that it is the healthy newborn who often "slips between the cracks" and who is not referred for postpartum follow-up care. Furthermore, budget cuts among public health care agencies have made it increasingly harder for the community health care agencies to make follow up health care visits to every newborn in the community.

The most common source of information and teaching occurs in the pediatrician's office at the first "well-child" visit. However, when Sumner and Fritsch

(1977) surveyed parents, they found that new parents had the most concerns during the time period shortly after discharge from the hospital. They found the second highest incidence of questions to be at two weeks of age. The incidence had severely dropped off by six weeks of age, a traditional time set for the child's first well child visit. McDaniel (1983) explored the need and concerns of mothers of normal newborns in the first two weeks after discharge. She found similar results in that there were a greater number of mothers with concerns relating to general infant care during the first week at home as compared to the second week.

Hall (1980) recognized the need to follow-up and support primiparas in the critical time between discharge from the hospital and the first well-child visit. Many participants in her study expressed the need for assistance and guidance prior to their first check-up.

In response to these needs, Broussard (1971) also remarked regarding the lack of professional follow-up in the initial discharge period. She states:

The present system of postnatal and pediatric care does not provide professional support for the mother during the critical interim between discharge from the hospital and the next "routine" contact with the physician at four

to six weeks. (p. 441)

Follow-up programs have become increasingly more popular. Donaldson (1977) described the one being used by Hoag Memorial Hospital-Presbyterian in Long Beach, California at one week after discharge. Repeat phone calls, problem solving sessions and additional community referrals were made if necessary. Parents were encouraged to call the maternity unit anytime day or night as problems arose.

In summary, the health professions have instigated a variety of teaching interventions that have been introduced in several different phases of child-bearing. However, new parents are still expressing their desire for the health care profession to meet their needs in a more meaningful and timely manner. By continuing to learn more about newborn and parental needs, we can hopefully provide additional information in an improved form.

Prematurity and the Impact on Parenting

Neonatology is a relatively new field in health care. It is continually evolving with what seems daily changes in the care and treatment for the neonate and family. As an example, Barnett's studies on maternal deprivation of mothers' with premature infants (1970) changed visiting regulations in Neonatal Intensive Care Units (NICU's) nationwide. He showed that parents could be allowed in the nursery with twenty-four hour visiting rights without

increasing the risk of infection or interfering with the care of the neonate.

Klaus and Kennel (1976) view children who are premature as exceptionally high risk. Maternal separation, neonatal fragility, and increased length of hospitalization, all act to decrease the infants' ability to respond to their mothers' cues, especially during the first hours.

Maternal deprivation as well as the physical separation of mother and infant are but two of the stressors placed on the parent of the premature infant. Mercer (1977) adds several stress factors that may affect the mother's ability to learn. These include: the parents' physiological unreadiness for the birth; the premature infant's appearance and condition; the mother's loss of self esteem in delivering prematurely; grief over the premature birth and the possibility of neonatal death. DuHamel (1984) stated that the parents responding to his survey on premature babies also feared that their child's emotional or intellectual well-being as well as their physical well-being would be different from that of a term infant.

Parents of premature infants are often frightened and anxious in the postpartum period. Prugh (1953) found that maternal anxiety varied inversely with the size of the infant. In Choi's study (1973), using a questionnaire designed to measure postpartum anxiety and depression, she found that mothers of premature infants were more depressed

and anxious at a statistically significantly higher level when compared with mothers of term newborns. Gennaro's more recent study (1985) supported Choi in finding a level of heightened anxiety in the initial postpartum period for mothers of premature infants. The mothers in this study also reported a decreased level of confidence in their mothering skills.

Gunther's study (1963) done with a matched control group of mothers who delivered at term, found that mothers of premature infants expressed more fear, inadequacy, and nervousness though not at a statistically significant level. Some of these feelings came from a perception of themselves as being exposed to a more stressful lifestyle. Crnic's study also done with matched premature and fullterm infant mother dyads (1983) further supported this idea. He found that increased stress and decreased social support both altered the mother's of their maternal infant relationship.

The work of Cohig (1950) showed that parents of premature infants worry more than other parents. Warrick (1971) goes further to describe the need to direct the care of the premature infant in ways that will involve the parents as much as possible. She states that by utilizing the family centered nursing approach in the intensive care nursery, maternal-infant interactions will be disturbed less.

Mercer summarizes the impact of premature delivery in the following way:

'Parents-at-risk' refer to parents who because of a stressful incident occurring around the time of the birth of their infant, experience interruptions, in their early parent contact and interactions. As a result of these early interruptions, their acquaintance, claiming, and attachment processes, as well as their cueing-in to their infant's unique needs are likewise interrupted. (p. 4)

Differences in the Premature Infant

The following paragraphs will discuss a variety of differences noted when comparing premature infants to term infants. These include both interactional and physical differences.

Interactional Differences. Premature infants have been noted to react differently to their parents. Crawford (1982) observed maternal-infant dyads of both preterm and term infants and found that the premature infants tended to vocalize less, play less, and were more fretful than the term infants. As age increased, the differences decreased. Additional researchers have found that in the first four months of life, premature infants were less attentive in the mother-child interactions (Field, 1977)

and less active on their own (Brown and Bakeman, 1980). Burns (1982) encouraged health care professionals to discuss specifically the special differences of the premature infant with new parents. He found that in the early months of life, premature infants were seen by their parents as less rewarding to care for than term infants. Premature infants spent a smaller amount of time in a quiet-alert state, had wider swings of alertness, that is to say, moving from deep sleep to active crying and back; they tended to feed more slowly, but more frequently, and were often less cuddly due to reduced tone and overall activity. Gorski (1979) examined electroencephalogram tracings of premature infants at forty weeks gestational age. He found these infants had less organized sleep patterns and poorer visual attentiveness than term infants.

In descriptions of premature infant behavior and bonding, Elmer and Gregg (1967) found the premature infants in their study more irritable and more likely to cry. They concluded that these tendencies may also affect early mother-infant interactions. Elmer and Gregg, along with other researchers, (Klein and Stern, 1977, Klaus and Fanaroff, 1979, and Lubchenco, 1976) have observed that the premature infant has a greater incidence of battering and failure to thrive.

Physical differences. Babson and Benson (1977)

describe the need for mothers of premature infants to receive thorough discharge teaching. They emphasize the importance of the physician, neonatal nurse, public health nurse, and social worker responding as a team when preparing families for discharge.

In addition to general newborn care, they point out several learning needs specific to the premature infant. These include the information that decreased brown fat layers may cause the premature infant to have less stable temperature regulation. The babies may require some additional clothing to stay warm. Secondly, the premature's less coordinated suck and swallow may contribute to nipple inefficiency and prolonged feeding periods. This may be alleviated by enlarging the size of the nipple holes. They further recommend supplemental iron for all premature infants for the first year of life. Also due to decreased immunity systems in the premature infant, it is suggested to delay public outings until after the first physician visit which is recommended to occur at four to six weeks after discharge. Babson and Benson also view specific learning needs to include the suggestion that immunizations may need to be postponed for the low birthweight infant or very premature infant until the child reaches ten pounds. Pertussis may be deleted if the child

has any history of neonatal seizures.

Teaching the Family with the Premature Infant

The needs of the new mother are many and involve not only herself, the infant, and the physical tasks at hand, but also the emotional needs of her family and herself. Berger (1985) recently reiterated the importance of health care providers follow-up after the premature infant goes home. He emphasized that the usual family stressors during the immediate discharge period such as, fatigue, financial concerns, sibling reactions, are often exacerbated.

Premature delivery changes the pattern in which infant care is generally taught. Teaching that is usually done in the prenatal stage is often interrupted by premature birth. Prenatal childbirth classes started near the end of the last trimester are interrupted by the birth, or in cases of the very premature, classes may not have even begun.

Ordinarily, the postpartum period serves as the place to teach infant care skills to a new mother. The postpartum period is very different for the mother with a premature infant. At this time, mothers with term infants are relieved and excited that they have delivered a healthy infant, whereas the mother of a premature baby may be even more fearful of her child's outcome. She may even remain behind at a smaller or more rural hospital while

her infant is transported to a neonatal center. She may be expected to grasp many explanations referring to the life-support equipment that surrounds her baby. Instead of learning cord care, she may be told of the need for umbilical cord catheterization or explanations about ventilatory support.

Clearly, the immediate postpartum period of the premature infant does not lend itself well to learning routine infant child care. This may be dependent upon the acuity level of the infants' needs however. The mother may have the opportunity to feed her infant, or participate in routine baths and diaper changes in the less critically ill preterm infant.

The majority of premature infant care teaching occurs after the mother has been discharged from the hospital and the premature infant stabilizes (Slade, 1977). As the infant's respiratory status, temperature maintenance, and overall condition improve, the mother begins to take a larger role in the care and feeding of her infant. It is at this time Taylor and Hall (1979) encourage the nurse acting as the primary instructor to begin to teach the mother about bathing, cord care, feeding, and safety, as well as general newborn behavior. Waddell (1978) emphasizes the nurse's responsibility in responding to the needs of both the mother and the infant, to promote parental trust and confidence in their own abilities to

care for their infant at home.

The public health nurse now enacts an expanded role in dealing with parental concerns at home. Jacknik (1983) reported that the major areas of concern for parents during this transition phase from the hospital to home dealt with the uncertainty of the infant's survival. All respondents felt that home visits had been helpful in dealing with common worries such as temperature regulation and feeding problems.

Many premature infants are now being discharged with apnea and heart rate monitors. These instruments help detect apnea spells which are usually related to the premature infant's immature respiratory system. Upon discharging these infants, special classes are held for members of the family who plan on caring for the infant at home. These special sessions teach family members how to respond to an alarm, how to troubleshoot monitor problems and how to administer cardiopulmonary resuscitation (CPR) to the baby. In a study done by Dimaggio and Sheetz (1983) using a refined version of the questionnaire developed by Gruis, they found that the mothers' greatest concerns were related to their infants' growth and development, responding to the monitor alarm, and social deprivation. Typically, mothers did not have friends outside the home who were willing to stay with a monitored infant.

In summary, discharge teaching and infant care should be planned for the mother at a time after the initial crisis of a premature birth is passed. Due to certain immature systems of the body, additional infant teaching may be needed. Also, the factors involved with premature delivery, such as unreadiness of the parents to assume the parental role, feelings of guilt, anger, grief, and maternal-infant separation, may keep mothers from responding to their infant in the same manner as a term newborn. These additional stresses may decrease the mothers' ability to learn or lower her self-confidence in caring for her child. The physical characteristics of the preterm infant and immature functioning of the body systems, necessitate additional infant care skills. Therefore, mothers of premature infants may have different concerns in relation to their infants in the first two weeks following discharge.

As health care providers, it is important for us to understand and acknowledge the differences in the preterm infant and their impact on the parenting process. We are challenged to examine current practices and search for new ways to help. By increasing our knowledge about the needs and concerns of these families, we may be able to restructure teaching interventions in such a way that would improve the ability of the family with a premature infant

to deal with this stressful situation.

Conceptual Framework

Physical and psychosocial research has upheld many hypotheses dealing with family functioning. Two in particular provide the conceptual framework for this study: Duvall's theory of family development (1977) and Kaplan's and Mason's crisis theory as it relates to the premature infant (1960).

Duvall's eight stages of family development rely heavily on the current theory of growth and development. She describes stage two as the period of time when parenthood and childraising are considered the most critical tasks. First time parenthood, in particular is seen by Duvall as a new developmental phase in which the current relationship is strained until new roles are learned and equilibrium is established.

Parenting has been viewed as a crisis situation by a number of researchers, among them, Le Masters (1957) and Rossi (1968). Dyer (1963) stated that the impact of the crisis depends on the family's previous state and its ability to draw from outside resources to curb the degree of disruption of the critical event. Rubin (1975) suggests that the crisis of parenthood is less severe when parents have accepted their parental roles.

which the mother must resume her interrupted relationship with the baby. At this point, the mother again believes the baby will survive. The new mother's final task is to comprehend the differences between her premature baby and a term infant. She must understand the temporary nature of those differences and how they will lead to the more normally expected patterns.

Johnson (1979) discusses the presence of multiple crises as a high-risk situation for the family involved.

In a premature situation the parents' fear for the child's life is the initial crisis. Later, crisis periods may occur, such as the first visiting of the baby with the fear of his appearance, first caring for the baby with the fear of hurting the child, the mother returning home without the child to a lonely house, the returning of the child home to the mother who is fearful she may not give him adequate care, and the development of parental over-protectiveness which may create problems for both the parents and the child in years to come.

Three stages of nursing interventions have been identified (Koph, and McFadden, 1973) to aid the family in the crisis involved with newborn illness. These are 1) assisting with necessary griefwork; 2) identification of

the parent's readiness for physical contact and 3) reinforcement of positive behavior. The facilitation of families through these tasks is seen by Thornton (1984) as one of the major contributions of nursing to the family with a hospitalized child.

To summarize, the birth of any child is seen as a maturational crisis. When the outcome is normal, appropriate developmental tasks are met, and the result is a smooth adaptation to a new role. When a crisis in addition to the birth occurs simultaneously, one's ability to meet the developmental tasks is compromised, creating a decreased ability to resolve the crises.

By further delineating and understanding the need of families during this crisis period, the health care professional may be better able to provide additional support and insight into potential problems the families may encounter. Furthermore, families who have recently had a premature infant are dealing with the maturational crisis situation of labor and delivery and with the additional situational crises of recent hospitalization and prematurity. These additional stresses may add to or amplify the number of concerns described by the new mother, especially during the first few days after discharge. Learning about special concerns of the mother of the premature infant, may enable the nursing profession to improve discharge teaching and plan appropriate

intervention to more adequately meet the needs of these families.

Research Questions

This descriptive study will deal with the following research questions:

1. What are the major concerns of mothers of premature infants in relation to their infant in the first two weeks after discharge?
2. What differences if any, are there in the concerns of mothers of premature infants and those with term newborns in the first two weeks after discharge?

CHAPTER II

METHODS

Setting

A convenience sample of twenty mothers of premature infants was obtained for this study. They were selected from the population on the Neonatal Intensive Care Unit (NICU), the Intermediate Care Unit (INCUI), and the over-flow beds for premature infants on 13-A, pediatric floor, at the Oregon Health Sciences University Hospitals (OHSU) in Portland, Oregon.

The infants on these units were born at the University North Hospital or transported to the Neonatal Center by the OHSU transport team. The Neonatal Intensive Care Unit is a sixteen bed intensive care unit that cares for neonates who are critically ill. The majority of infants admitted to this unit are born prematurely, but infants are also admitted for congenital anomalies, surgery, or birth trauma. The Intermediate Neonatal Care Unit, located on Four Northeast of the University Hospital North, is an eighteen bed level two nursery that acts as a "stepdown" unit for the NICU and also as a primary admission nursery for premature and term infants whose health status is considered stable, but guarded. The premature infant room on 13-A in Doernbecher Children's Hospital, acts as an overflow room for the populations of NICU and INCUI.

Infants are transferred to this unit only if the NICU and INCU have filled to their capacity. These infants are felt to be the most stable of the neonatal population from the above units and the most likely candidates for discharge home.

Sample

The sample for this study was chosen from the mothers of premature infants on the previously described three units who agreed to participate in the study and who met the following criteria:

- 1) The women were first time mothers between the ages of 17 and 40.
- 2) The mother and father of the infant occupied the same residence.
- 3) The infant admitted on one of the three units was born prematurely, at less than 36 weeks gestation and had no apparent congenital anomalies or health problems except those related to prematurity.
- 4) The infant was hospitalized for longer than a three week period and had never been discharged from the hospital since birth.
- 5) At the time of discharge, the infant showed no apparent signs of neurological damage that would interfere with normal growth and

development.

Procedure for Sample Selection

A comprehensive sample selection process determined the participants for this study. The first step in selecting participants for the study was to review the admission information available on the units. If the mother of the infant met all the criteria, the researcher then discussed with the nursing staff when they anticipated that the baby would be discharged.

At approximately ten to fourteen days prior to the expected date of discharge, the researcher contacted the mother and described the study. Participants were assured of their anonymity during and after the study by assigning a code number to all questionnaires and records. An informed consent form was then obtained from those who agreed to participate in the study (see Appendix A). Participants were also asked to fill out the Family Information Form (FIF) (see Appendix B). A second meeting was scheduled between the researcher and the participant within two days of the actual discharge of the infant. At this time the Daily Concern Record (DCR) (see Appendix C) was given to the mother and any questions regarding further participation in the study were answered. After discharge, the researcher telephoned the participant to discuss any problems or concerns they may have had and to thank them

for participation in the study.

Variables and Measurement

Information for this study was collected by the use of the FIF and DCR. These tools were designed by McDaniel in her study titled, "The Concerns of New Mothers Relating to Their Infants in the First Two Weeks After Discharge" (1983).

The first section of the FIF requested demographic data about the infant and the family. This information was written and submitted by the participant at the interview immediately preceeding discharge. The second section of the FIF which contained information specific to the infant was obtained through hospital records and included information regarding the infant's sex, birthdate, discharge date, labor and delivery complications, and a brief summary of the infant's hospital course. This infant specific data was gathered by the researcher from the medical record rather than by telephone conversation as in the McDaniel study.

The content and the method of the DCR tool, however, was unchanged from the form that McDaniel used. This was done to allow for an accurate comparison of the findings between the two descriptive studies.

The DCR allowed the participant to check daily concerns that she had noted in the first fourteen days after discharge. The DCR listed common concerns about feeding,

sleeping, elimination and crying, derived from the maternal perceptions as discussed by Broussard and Hartner. At the end of each seven day period concerns about safety, appearance, bathing, activities, and family situations were addressed. The DCR also allowed space for the mother to include any other concerns she may have had that were not reflected in the original list. Additional space was provided to encourage documentation of any contact with health care providers.

At the end of the fourteen day period, the DCR was mailed back to the researcher. To encourage participation, a self-addressed, stamped envelope was provided.

Method of Analysis

The descriptive information gathered with the use of the DCR was examined by quantitative analysis. The major daily concerns were addressed under the four categories of Feeding, Elimination, Crying, and Sleeping. Under each of these categories, there were a number of possible concerns listed that related to that major category. The quantitative analysis was done to ascertain the degree, number, and type of concerns noted by the mothers within each of the major categories.

Quantitative analysis was also be done on the items listed under the major headings of Appearance, Bathing, Safety, Activities, and Family Situation, which were

addressed twice in the study; at the end of the seventh and fourteenth days at home.

The results of the analysis of this study were then compared to the descriptive findings of the McDaniel study. She dealt with the concerns of new mothers in relation to their term newborns in their first two weeks at home.

Analysis of the information gathered in the two studies was done in the following manner. The number of answers by mothers that indicated concern for the individual items under the major headings were tabulated. This percentage of concern for both groups of mothers were recorded and arranged in tables for comparison. When a statistical difference between the two groups was found, the items under each of the major headings were examined to determine what, if any, particular items of concern were responsible for the variation between the two groups. These differences in the two groups were compared by the use of Lawshe-Baker nomograph (Downie, 1974).

The Lawshe-Baker nomograph is designed to compare percentages between two groups. Each comparison was examined to ascertain if a difference between two groups existed at a statistically significant level. Comparisons were first analyzed at .05 level of significance. If a significant difference was found, the comparison was then examined to check for a .01 or .001 level of significance.

Each comparison showed significant differences in degree of concern on a daily basis. When a significant difference of concern between mothers of term and preterm infants was expressed on the daily scores for at least three days of the study period, the whole item was considered to be statistically significant.

CHAPTER III

RESULTS AND DISCUSSION

The following chapter will discuss the findings from this study as to the concerns of mothers with preterm infants. This discussion will first describe the sample population and the demographic data obtained from these women. Secondly, findings regarding previous child care experience will be examined. Statistics derived from the demographic findings will then be compared to those obtained by McDaniel (1983). Later in this chapter, information gathered from the sample on daily major variables such as sleeping, feeding, elimination and crying will be examined and compared with the previous findings. Finally, the five variables of appearance, bathing, safety, activity and family situations which were examined weekly will be compared to those of McDaniel.

It was the intent of the investigator to execute the method of this study in as similar a process as possible to that of McDaniel's work; therefore, the collection tool used was identical. The results from this study have generated an abundance of data. It would be difficult to examine all the data collected and attempt comparisons with the McDaniel study. The researcher has therefore chosen to select specific findings and present these in greater

detail. This study is descriptive in nature and uses inferential statistics in an exploratory way in the comparison of mothers of preterm infants with mothers of term infants.

Description of the Sample

Collection of data took place from May 1984 to May 1985. The charts of approximately 52 infants in the neonatal and pediatric units were reviewed by the researcher and found to meet the criteria previously described. Of these patients, the researcher talked with approximately 44 families prior to discharge and 34 mothers agreed to participate in the study. Daily Concern Records (see Appendix A) as well as Family Information Forms (see Appendix B) were given to these mothers, and an interview explaining the study was completed prior to discharge of their infant from the hospital. After the infant's discharge, at least one phone call was made by the researcher to the family to answer any questions regarding the study. Many families received two follow-up phone calls. The phone calls were made immediately after discharge and again during the last week of the two week study.

Thirty-four women signed the informed consent and completed the initial interview, but not all women completed the study. Twenty-two Daily Concern Records

were returned to the researcher; however, two records had greater than two days of unanswered questions and were deleted from the final sample. The final sample size consisted of 20 mothers.

Family Characteristics

Information regarding family characteristics was gathered from the answers given on the Family Information Form. Specific findings regarding age, employment rates, occupations, geographic residence and income level were examined. Some of the characteristics of the two groups are compared in Table 1.

Participants in the study, mothers of preterm infants, ranged in age from 17 to 34 years. The mean age of these women was 24.1. The average number of years of education of mothers participating in this study was 12.9, with a range from 11 to 18. Fathers of the preterm infants ranged from 28 to 40 years of age. Their mean age was 27.3 years of age. The fathers' mean level of education was 14.3 years, ranging from 12 to 19 years.

The fathers in this study were 85 percent employed during their infants' hospitalization. The percentage of mothers who were employed during their pregnancy was 75 percent. Due to the nature of this study, all women went into labor prematurely. This had little impact however, on the comparable rate of employment. The mothers from

Table 1
Comparison of demographic information between
families of preterm and term infants

Demography	Preterm	Term
Mean maternal age	24.1 years	24.4 years
Mean paternal age	27.3 years	27.0 years
Mean maternal education	12.9 years	13.0 years
Mean paternal education	14.3 years	13.5 years
Percentage of fathers employed	85 %	100 %
Percentage of mothers employed	75 %	72 %
Median income	15,000-20,000	15,000-20,000
Mean duration of infant hospitalization	50.1 days	1.8 days

Note: Preterm N=20
Term N=25

the McDaniels study had 72 percent employment during their pregnancies.

Occupations of the parents varied. Women were employed in a variety of jobs ranging from research scientists to banktellers and homemakers. The most common occupation was secretarial in nature. Fathers included bankers, engineers, and salesmen; the most common employment, however, was that of mill work or farming. The most common type of work was not reported in the McDaniel study, however, similar types of employment were shared by both groups.

The majority of families who participated in this study were from the Portland Metropolitan area. The remainder of families, however, were from outlying communities in the Oregon/Washington area. Families resided in towns as far away as Longview, Washinton and Coos Bay, Oregon.

Families in the comparison study were from the rural area of McMinnville. The median income for both groups, however, fell within the \$15,000 to \$20,000 per year range.

Demographic Data Related to the Preterm Infants

The common denominator among families in this study was their infants' prematurity. The infants were born between 26 and 36 weeks gestation and were in the hospital for 21 to 96 days after birth. The mean duration

of hospitalization was 50.1 days. The infant sexes were evenly divided; 10 male and 10 female.

Complications occurred during hospitalization for all but one infant; either through difficulties experienced by the mother, such as placenta previa or preeclampsia; or through some illness of their own secondary to premature delivery. Examples of these included respiratory distress syndrome, oxygen requirements, or feeding intolerance related to their immature body systems.

All infants at time of discharge were felt to be free of chronic illnesses and had no additional problems except those secondary to prematurity. Seventy-five percent of infants at the time of discharge went home without medications or ancillary treatment. Five infants were discharged home on heart rate monitors, however, and of these, three still required small amounts of oxygen. Two of these required Theophylline to aid in respiratory efficiency.

Comparison of Mothers with Preterm Infants and Mothers with Term Infants Past Child Care Experience and Expectations

The following discussion of demographic information was obtained from the Family Information Form. Mothers were asked questions related to past child care experience, as well as to the anticipated extent of child-care assistance they would receive after discharge home. A comparison of some of the findings between the McDaniel study and this study appear in Table 2.

Table 2
Percentage of mothers with previous child care
and expectations

Item	Preterm	Term
Previous amount of child care experience		
a lot	15	0
moderate	50	24
very little	25	56
none	10	20
Amount of confidence in child care		
a lot	50	16
moderate	50	68
very little	0	16
none	0	0
Amount of child care help expected from father		
a lot	60	36
moderate	40	44
very little	0	20
none	0	0
Amount of help with housework expected from father		
a lot	50	36
moderate	40	52
very little	5	12
none	5	0
Additional help at home		
Yes	60	72
No	40	28
Amount of help expected from those receiving additional help		
a lot	31	27
moderate	31	68
very little	38	5

Note: Preterm N=20
Term N=25

Data from this survey showed that 90 percent of the mothers reported previous experience when dealing with newborns, compared to McDaniel's study in which 80 percent reported prior experience. Although the mothers from this survey noted a slightle higher rate of previous newborn experience, when asked about their level of confidence in caring for new infants, 50 percent of this group stated they had a moderate amount of confidence. In contrast, the mothers of term infants studied by McDaniel expressed a moderate amount of confidence 68 percent of the time.

Most mothers in this study stated they planned on receiving some help from the father. In this study, 60 percent of the mothers expected a lot of help and 40 percent expected moderate help. The mothers in the McDaniels' study expected to receive a lot of help 36 percent of the time, moderate help 44 percent of the time, and very little help 20 percent of the time.

Outside additional help was expected by 60 percent of mothers of preterm infants when their infant returned home. The most frequent person to offer additional help to the family was the mothers' mother. McDaniel's study found that 55 percent of her mothers expected help from their own mothers.

Findings Regarding Daily Major Variables

The following section will describe the results from mothers participating in this study. This information was obtained from the completed Daily Concern Record (DCR).

Mothers were asked to complete the DCR for each of the first fourteen days they were home following their infant's hospitalization. At the end of day 7 and at the end of day 14 there was an additional section to complete on five categories of concern involving newborn care. These questions involved the mothers' perceptions on appearance, safety, bathing, activities, and the family situation.

On all items of concern, mothers were asked to make a notation as to whether or not they were concerned about that item on that particular day, and if so, to what degree. Choices included very little, a moderate amount or a great deal.

Each of the nine categories discussed in the DCR will be examined in the remainder of this section. The percent of each concern will be compared to the results found by McDaniel.

Tables 3-10 list the percent of mothers expressing concern in each of the daily categories. These four daily concern categories include behaviors in relation to sleeping, feeding, elimination, and crying. Following these tables, weekly concerns are presented in Tables 11-15. Concerns noted at the end of the first week and at the end

of the second week, such as appearance, bathing, safety, activity, and family situations are also compared.

Each table compares the percentage results obtained from mothers of premature infants with the percentage results obtained by McDaniel for mothers of term infants. These daily comparisons were analyzed by the use of the Lawshe-Baker nomograph (Downie, 1974) at the .05 level of significance. When this degree of significance was found, the comparison was reexamined at the .01 level and again at the .001 level. The researcher considered the item to have a significantly different level of concern between the groups if three daily comparisons for the same item showed differences of at least .05 significance. A global description for the set of tests will also be made.

Sleeping

A total of seven items related to sleeping behaviors were examined over the fourteen day period beginning the day the premature infants were discharged home. The percentage of mothers expressing concern over days 1-7 appears on Table 3. Table 4 shows the percentage of mothers expressing concern on days 8-14.

Examination of these tables reveal that mothers of premature infants showed consistently less concern regarding these sleeping items than mothers of term infants. A few isolated incidents as seen on days 1 and 8 of the item,

Table 3

Percent of mothers expressing concern on 7 sleeping items

Item	Percent						
	1	2	Day 3	4	5	6	7
Sleeping too long between feedings	$\frac{10.0^*}{36.0}$	$\frac{25.0}{36.0}$	$\frac{20.0}{24.0}$	$\frac{21.1}{13.0}$	$\frac{5.0^*}{29.2}$	$\frac{5.0}{20.8}$	$\frac{10.0}{8.3}$
Sleeping too little at night	$\frac{40.0}{25.0}$	$\frac{15.0}{26.1}$	$\frac{25.0}{28.0}$	$\frac{15.0}{39.0}$	$\frac{10.0}{29.2}$	$\frac{5.0}{20.8}$	$\frac{10.0}{29.2}$
Sleeping too much during the day	$\frac{5.0}{20.8}$	$\frac{15.0}{21.7}$	$\frac{15.0}{24.0}$	$\frac{20.0}{20.8}$	$\frac{10.0}{25.0}$	$\frac{0.0^{**}}{25.0}$	$\frac{5.0^*}{29.2}$
Unusual breathing pattern while sleeping	$\frac{15.0}{20.0}$	$\frac{10.0}{12.5}$	$\frac{15.0}{8.0}$	$\frac{0.0}{8.7}$	$\frac{5.0}{8.7}$	$\frac{5.0}{0.0}$	$\frac{0.0}{4.2}$
Sleeping too little between feedings	$\frac{25.0}{12.5}$	$\frac{15.0}{16.7}$	$\frac{5.0}{8.7}$	$\frac{5.3}{21.7}$	$\frac{10.0}{20.8}$	$\frac{10.0}{8.7}$	$\frac{20.0}{8.3}$
Sleeping too much at night	$\frac{10.0}{12.1}$	$\frac{10.0}{8.3}$	$\frac{10.0}{4.0}$	$\frac{10.5}{4.2}$	$\frac{5.0}{0.0}$	$\frac{5.0}{4.2}$	$\frac{5.0}{0.0}$
Sleeping too little during the day	$\frac{5.0}{4.0}$	$\frac{10.0}{12.5}$	$\frac{10.0^*}{0.0}$	$\frac{10.5}{8.7}$	$\frac{15.0}{8.3}$	$\frac{5.0}{0.0}$	$\frac{5.0}{12.5}$

Note: Preterm percent N=20
Term percent N=25

Level of significance .05 = *
.01 = **
.001 = ***

Table 4

Percent of mothers expressing concern on 7 sleeping items

Item	Percent						
	8	9	10	11	12	13	14
Sleeping too long between feedings	$\frac{20.0}{8.3}$	$\frac{10.5}{16.7}$	$\frac{10.0}{20.8}$	$\frac{5.0}{9.1}$	$\frac{0.0}{4.2}$	$\frac{5.0}{4.2}$	$\frac{0.0}{8.7}$
Sleeping too little at night	$\frac{35.0}{29.2}$	$\frac{21.1}{29.2}$	$\frac{25.0}{29.2}$	$\frac{15.0}{26.2}$	$\frac{20.0}{33.3}$	$\frac{15.0}{25.0}$	$\frac{5.0}{21.7}$
Sleeping too much during the day	$\frac{15.0}{25.0}$	$\frac{0.0^*}{13.3}$	$\frac{25.0}{25.0}$	$\frac{5.0^*}{34.8}$	$\frac{10.0}{16.7}$	$\frac{10.0}{25.0}$	$\frac{5.0}{12.5}$
Unusual breathing pattern while sleeping	$\frac{0.0}{0.0}$	$\frac{5.3}{4.2}$	$\frac{5.0}{0.0}$	$\frac{5.3}{4.3}$	$\frac{0.0}{8.3}$	$\frac{0.0}{4.3}$	$\frac{5.0}{12.5}$
Sleeping too little between feedings	$\frac{10.0}{21.7}$	$\frac{5.3}{16.7}$	$\frac{5.0}{16.7}$	$\frac{5.0}{18.2}$	$\frac{0.0^*}{12.5}$	$\frac{0.0}{4.2}$	$\frac{5.0}{4.3}$
Sleeping too much at night	$\frac{5.0}{0.0}$	$\frac{5.3}{0.0}$	$\frac{5.0}{4.2}$	$\frac{5.0}{0.0}$	$\frac{5.0}{0.0}$	$\frac{5.0}{0.0}$	$\frac{5.0}{8.3}$
Sleeping too little during the day	$\frac{10.0}{16.7}$	$\frac{0.0}{8.7}$	$\frac{0.0^*}{16.7}$	$\frac{5.0}{0.0}$	$\frac{0.0}{8.3}$	$\frac{0.0}{8.3}$	$\frac{0.0}{4.2}$

Note: Preterm percent N=20
Term percent N=25

Level of significance .05 = *
.01 = **
.001 = ***

signifiacantly statistical difference. The percentage of mothers expressing concern from both groups are represented on Tables 5 and 6.

Overall, this researcher found that mothers of premature infants reported fewer concerns regarding feeding behaviors than those from the McDaniel study. The exception to this is the fourth item, "not getting enough milk to grow". On each day with the exception of day 6, the mothers of premature infants were more concerned about their infant's ability to grow. When this trend was examined by the Lawshe-Baker nomograph, percentages on days 7, 8, 9, 13, and 14 were found to be at a significantly higher level.

Narrative comments from the mothers indicated great sensitivity regarding this area. Several mothers had Public Health Nurses who visited their home during this time and weighed their infants. Several others made comments about weight gains noted at their first post-hospital check-up. Daily weights during their infants hospitalization may have heightened these mothers' degree of concern with respects to appropriate weight gain.

Two other items under feeding concerns showed five or more days of statistical comparison. Mothers of premature infants consistently documented significantly less concern on the two items labeled,

Table 5

Percent of mothers expressing concern on 12 feeding items

Item	Percent						
	1	2	Day 3	4	5	6	7
Not getting enough milk to be satisfied	20.0* 52.0	25.0 36.0	25.0 40.0	21.1 41.7	30.0 25.0	25.0 25.0	20.0 8.3
Burping very little	30.0 41.7	10.0* 37.5	15.0 20.8	16.7 30.4	15.0 25.0	15.0 25.0	20.0 16.7
Breast discomfort	15.8 39.1	5.3** 39.1	5.3** 47.8	5.3** 40.9	10.5* 37.5	0.0*** 33.3	5.3 25.0
Not getting enough milk to grow	25.0 33.3	25.0 16.0	20.0 12.5	36.8 20.8	20.0 12.5	10.0 13.0	10.0* 0.0
Preparing the breast or bottle	10.0 20.8	15.0 16.7	0.0** 16.7	10.0 9.1	0.0 0.0	5.0 0.0	5.0 0.0
Not eating often enough	5.0 20.0	20.0 20.8	30.0 25.0	35.0 13.0	10.0 8.3	10.0 8.3	10.0 4.3
Not liking the milk	10.0 16.0	5.0 4.0	10.0 4.0	0.0 8.7	5.0 0.0	10.0* 0.0	10.0* 0.0
Milk disagreeing with the baby	5.0 16.0	15.0 8.3	15.0 4.2	15.8 8.7	15.0 16.7	20.0 8.3	10.0 4.2
Spitting up alot	10.0 16.0	15.0 12.5	10.0 20.8	26.3 13.0	25.0 16.7	10.0 16.7	25.0 20.8
Burping a lot	0.0* 12.0	5.0 8.3	5.0 12.5	10.5 13.0	10.0 8.3	0.0 8.3	0.0 0.0
Getting too much milk	15.0 4.0	0.0 4.3	0.0 4.2	10.5 8.7	5.0 12.5	10.0* 0.0	10.0* 0.0
Eating too often	20.0** 0.0	5.0 20.8	0.0** 20.8	0.0*** 30.4	20.0 20.8	10.0 12.5	10.0 12.5

Note: Preterm percent
Term percent

N=20
N=25

Level of significance

.05 = *

.01 = **

.001 = ***

Table 6
Percent of mothers expressing concern on 12 feeding items

Item	Percent						
	8	9	10	11	12	13	14
	Day						
Not getting enough milk to be satisfied	10.0 12.5	10.5 16.7	15.0 20.8	10.0 17.4	10.0 16.7	15.0 17.4	20.0 8.3
Burping very little	15.0 20.8	10.5 12.5	15.0 8.3	15.0 13.0	20.0 16.7	5.0 16.7	15.0 12.5
Breast discomfort	10.5 29.2	5.5* 29.2	10.5* 36.4	5.0 13.0	0.0* 16.7	5.0 16.7	5.0 21.7
Not getting enough milk to grow	15.0* 0.0	15.7* 0.0	15.0 4.2	5.0 4.5	5.2 4.2	20.0** 0.0	20.0** 0.0
Preparing the breast or bottle	0.0 0.0	0.0 4.2	5.0 4.2	0.0 0.0	0.0 8.7	0.0 4.2	0.0 4.2
Not eating often enough	10.0 4.2	10.5 8.3	10.0 21.7	5.0 13.0	0.0 0.0	5.0 8.3	0.0* 12.5
Not liking the milk	0.0 8.3	0.0 8.3	5.0 4.2	0.0 0.0	0.0 4.2	5.0 4.2	15.0 8.3
Milk disagreeing with the baby	10.0 12.5	5.3 25.0	10.0 8.3	15.0 13.0	10.0 17.4	15.0 20.8	10.0 12.5
Spitting up a lot	25.0 36.4	15.7 29.2	10.0 26.1	10.0 26.1	20.0 17.4	10.0 34.8	30.0 16.7
Burping a lot	0.0 0.0	0.0 4.2	0.0 4.2	0.0 0.0	0.0 0.0	0.0 8.7	5.0 0.0
Getting too much milk	5.0 8.3	0.0* 12.5	5.0 12.5	5.0 4.3	5.0 0.0	0.0* 12.5	5.0 12.5
Eating too often	5.0 25.0	0.0*** 29.2	0.0** 20.8	10.0 13.0	0.0** 16.7	5.0 20.8	10.0 12.5

Note: Preterm percent N=20
Term percent N=25

Level of significance .05 = *
.01 = **
.001 = ***

"breast discomfort" and "eating too often".

Less concern for breast discomfort may be explained since all mothers were at least three weeks postpartum. It seems likely that the initial breast engorgement and discomfort may have subsided. Only one mother from the group was entirely breastfeeding her infant. Eight other mothers were breastfeeding some feeds and supplementing with formula. Over half of the mothers chose to bottle feed entirely.

These percentages are considerably different from the 66 percent of mothers of term infants who breast fed throughout the McDaniel study. At her study's onset, even a higher percentage (80%) of mothers were breastfeeding.

The other feeding item where significantly fewer concerns was seen was the "eating too often". It seems that this response closely parallels the higher level of concern noted about getting enough milk to grow. Narrative comments made by the mothers also show that parents appeared to have their infants on a more rigid feeding schedule, usually every three hours with a minimum amount defined by the health care team prior to leaving the hospital. As the second week at home began, it would appear to the investigator that mothers may have relaxed their feeding schedules to a more demand type schedule, but became increasingly

concerned about adequate volumes to grow.

In summary, the only feeding item where a greater percentage of mothers of premature infants showed concern was "not getting enough milk to grow." A possible explanation may relate to mothers moving to a more demand type schedule than previously used.

Elimination

The third major daily category deals with behaviors associated with elimination. The percent of concern noted on the 11 elimination behaviors for this study appear on Tables 7 and 8. A total of 154 daily comparisons were examined and eight comparisons showed a difference of concern at a statistically significant level. Therefore, five percent of daily elimination comparisons showed some statistical difference.

Mothers from both groups were consistently more concerned with stomach pain associated with gas though not at a statistically significant level. A slight downward trend is seen throughout the two week period. Day 14, however, still shows 30 percent of mothers of preterm infants and 21 percent of mothers of term infants expressing concern.

The third item, "too few stools," is the only elimination behavior item that indicated a difference in concern at a statistically significant level for

Table 7
Percent of mothers expressing concern on 11 elimination items

Item	Percent						
	Day						
	1	2	3	4	5	6	7
Gas causing stomach pain	<u>26.3</u> 32.0	<u>35.0</u> 40.0	<u>35.0</u> 28.0	<u>30.0</u> 30.4	<u>35.0</u> 37.5	<u>35.0</u> 29.2	<u>30.0</u> 25.0
Wetting too few diapers	<u>10.0</u> 28.0	<u>20.0</u> 25.0	<u>5.0</u> 8.0	<u>5.0</u> 0.0	<u>5.0</u> 4.2	<u>0.0</u> 0.0	<u>0.0</u> 0.0
Too few stools	<u>25.0</u> 16.7	<u>25.0</u> 28.0	<u>30.0</u> 16.0	<u>25.0</u> 12.5	<u>25.0*</u> 4.2	<u>25.0</u> 16.7	<u>35.0**</u> 4.2
Trouble passing gas	<u>25.0</u> 16.0	<u>20.0</u> 16.0	<u>35.0</u> 20.0	<u>30.0</u> 21.7	<u>30.0</u> 20.8	<u>25.0</u> 8.3	<u>25.0</u> 16.7
Unusual color of stools	<u>5.0</u> 8.0	<u>10.0</u> 16.0	<u>5.0</u> 4.0	<u>0.0*</u> 13.0	<u>0.0</u> 0.0	<u>5.0</u> 4.2	<u>5.0</u> 0.0
Too many stools	<u>5.0</u> 4.2	<u>5.0</u> 4.2	<u>10.0</u> 4.0	<u>10.0</u> 8.7	<u>10.0</u> 8.3	<u>5.2</u> 4.2	<u>5.0</u> 8.3
Stools too hard	<u>0.0</u> 4.0	<u>5.0</u> 0.0	<u>5.0</u> 0.0	<u>5.0</u> 4.3	<u>0.0</u> 4.2	<u>0.0</u> 4.2	<u>5.0</u> 8.3
Passing stools causing pain	<u>15.0</u> 4.0	<u>20.0**</u> 0.0	<u>15.0*</u> 0.0	<u>10.0</u> 4.3	<u>10.0</u> 12.5	<u>15.0</u> 8.3	<u>15.0</u> 8.3
Stools too loose	<u>15.0*</u> 0.0	<u>10.0</u> 8.0	<u>10.0</u> 4.0	<u>15.0</u> 8.7	<u>20.0</u> 4.2	<u>5.0</u> 12.5	<u>10.0*</u> 0.0
Wetting too many diapers	<u>0.0</u> 0.0	<u>5.0</u> 4.0	<u>5.0</u> 0.0	<u>0.0</u> 0.0	<u>0.0</u> 0.0	<u>0.0</u> 0.0	<u>5.0</u> 4.2
Unusual urine color	<u>0.0</u> 0.0	<u>0.0</u> 0.0	<u>0.0</u> 0.0	<u>0.0</u> 0.0	<u>0.0</u> 0.0	<u>0.0</u> 0.0	<u>0.0</u> 0.0

Note: Preterm percent N=20
Term percent N=25

Level of significance .05 = *
.01 = **
.001 = ***

Table 8

Percent of mothers expressing concern on 11 elimination items

Item	Percent						
	8	9	10	11	12	13	14
Gas causing stomach pain	$\frac{30.0}{33.3}$	$\frac{26.3}{30.4}$	$\frac{25.0}{25.0}$	$\frac{20.0}{26.1}$	$\frac{20.0}{25.0}$	$\frac{25.0}{29.2}$	$\frac{30.0}{20.8}$
Wetting too few diapers	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{0.0}{4.3}$	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$
Too few stools	$\frac{35.0^*}{8.3}$	$\frac{5.3}{13.0}$	$\frac{10.0}{12.5}$	$\frac{20.0}{8.7}$	$\frac{30.0}{12.5}$	$\frac{15.0}{20.8}$	$\frac{25.0}{12.5}$
Trouble passing gas	$\frac{25.0}{16.7}$	$\frac{26.3}{21.7}$	$\frac{35.0}{20.8}$	$\frac{25.0}{17.4}$	$\frac{25.0}{20.8}$	$\frac{30.0}{29.2}$	$\frac{20.0}{12.5}$
Unusual color of stools	$\frac{5.0}{0.0}$	$\frac{5.3}{4.3}$	$\frac{15.0}{8.3}$	$\frac{5.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{0.0}{4.2}$	$\frac{5.0}{8.3}$
Too many stools	$\frac{5.0}{12.5}$	$\frac{5.3}{4.3}$	$\frac{5.0}{4.2}$	$\frac{5.0}{0.0}$	$\frac{5.0}{4.2}$	$\frac{0.0}{0.0}$	$\frac{0.0}{4.2}$
Stools too hard	$\frac{0.0}{8.3}$	$\frac{0.0}{4.3}$	$\frac{5.0}{4.2}$	$\frac{5.0}{4.3}$	$\frac{0.0}{4.2}$	$\frac{0.0}{4.2}$	$\frac{0.0}{4.2}$
Passing stools causing pain	$\frac{15.0}{12.5}$	$\frac{15.8}{4.3}$	$\frac{20.0}{8.3}$	$\frac{15.0}{13.0}$	$\frac{10.0}{4.2}$	$\frac{5.0}{12.5}$	$\frac{15.0}{12.5}$
Stools too loose	$\frac{15.0}{4.2}$	$\frac{21.1}{4.3}$	$\frac{4.0}{8.3}$	$\frac{5.0}{4.3}$	$\frac{5.0}{8.3}$	$\frac{5.0}{0.0}$	$\frac{10.0}{8.3}$
Wetting too many diapers	$\frac{5.0}{8.3}$	$\frac{0.0}{0.0}$	$\frac{0.0}{4.2}$	$\frac{0.0}{0.0}$	$\frac{0.0}{8.3}$	$\frac{0.0}{8.3}$	$\frac{0.0}{4.2}$
Unusual urine color	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{0.0}{0.0}$	$\frac{5.0}{0.0}$	$\frac{0.0}{0.0}$

Note: Preterm percent N=20
Term percent N=25

Level of significance .05 = *
.01 = **
.001 = ***

more than three days during the study period. At least one fourth of all mothers of preterm infants were concerned about this behavior for the first eight days of the study. Beginning on days 9 and 10 a decrease in concern is shown from the prior baseline mean of 28 percent. This is followed by an upward trend to a lower mean of 22.2 percent for the remainder of the study.

Mothers who volunteered comments for this section wrote most frequently about too few stools. Documentation of the time of the last stool was common. At least four mothers administered suppositories to their infants and one other mother called her pediatrician who recommended the addition of Karo syrup to the formula to promote stooling.

This information was obtained from narrative comments, therefore, it difficult to know the number of mothers of term infants who administered stool softening agents. It is not unusual in the neonatal units at OHSU to routinely administer glycerin suppositories to premature infants if no stool is produced in 12-24 hours. This is done to promote gut motility and to help prevent feeding intolerance. If mothers of premature infants were familiar with this policy, it may explain why at least 25 percent of mothers of premature infants felt comfortable in

administering suppositories or other stool producing agents. It is of interest that although mothers were concerned about too few stools and administered a stool producing agents, very few mothers from either group noted they were concerned about stool hardness.

Other items that showed a high percent of concern were closely tied. "Trouble passing gas," and "stomach pain related to gas," were also very concerning to both groups.

The responses to the remainder of the items varied. Mothers of term infants were slightly more concerned about wetting too few diapers, and unusual color of stools. Mothers of preterm infants were slightly more concerned with stools being too loose.

Some concern is seen regarding too few diapers in the first few days, then the level of concern decreases greatly for the remainder of the study. Almost no concern was noted by either group in regards to wetting too many diapers or unusual urine color.

In summary, the items that indicated the most concern regarding eliminative behaviors were closely related. Both groups were most concerned about "too few stools", "trouble passing gas", and "gas causing stomach pain". On only the item, "too few stools," were the two groups of mothers found to be at a statistically different level. Mothers of preterm

infants expressed a higher percent of concern. Neither group expressed concern that stool hardness was a contributing factor.

Crying

A representation of nine concerns of mothers in relation to crying behaviors appear on Tables 9 and 10. A total of 126 daily comparisons were examined over the 14 day period. Seventeen percent of these (21 of the 126) comparisons were found to have statistical differences. The percent of concern expressed by the mothers of preterm infants was routinely less than that of mothers with term infants. Both groups expressed the most concern about not knowing why their baby was crying.

Three of the nine items showed at least three days where a significant difference in percent of concern was seen. In each case mothers of preterm infants showed less concern than mothers of term infants.

The three items indicating a significant difference in concern all seem to be closely related. They all deal with excessive or potentially bothersome crying behaviors. The reasons for this difference is unclear. Most comments volunteered by mothers did express some concern about excessive crying. Further examination of the narrative comments did not reveal

Table 9
Percent of mothers expressing concern on 9 crying items

Item	Percent						
	Day						
	1	2	3	4	5	6	7
Not knowing why your baby was crying	30.0 48.0	20.0 29.2	25.0 24.0	15.0 21.7	20.0 21.7	15.0 16.7	20.0 16.7
Crying bothering someone else	10.0* 36.0	5.0* 28.0	5.0 24.0	0.0** 21.7	0.0** 20.8	0.0** 16.7	0.0 8.3
Not able to stop the crying	5.0* 32.0	5.0 12.5	0.0** 32.0	5.0 21.7	5.0 8.3	10.0 12.5	10.0 16.7
Crying making you feel like you weren't a good parent	5.0* 32.0	5.0 8.0	0.0** 16.0	0.0 8.7	0.0 8.3	0.0 4.2	0.0 8.3
Crying too much	5.0 16.0	0.0** 16.0	5.0* 25.0	5.0* 26.1	15.0 12.5	10.0 4.2	10.0 8.3
Crying too little	5.0 12.4	10.0 4.0	10.0 8.0	5.0 0.0	10.0 4.2	10.0 4.2	5.0 0.0
Cry sounding wrong	5.0 0.0	5.0 0.0	5.0 0.0	0.0 0.0	0.0 8.3	0.0 0.0	0.0 0.0
Crying making you feel like the baby didn't love you	0.0 0.0	0.0 0.0	5.0 4.0	0.0 0.0	0.0 4.2	0.0 0.0	0.0 0.0
Crying making you feel like you might lose control	0.0 0.0	0.0 0.0	0.0 4.0	0.0 0.0	0.0 4.2	0.0 4.2	0.0 0.0

Note: Preterm Percent N=20
Term Percent N=25

Level of significance .05 = *
.01 = **
.001 = ***

Table 10
Percent of mothers expressing concern on 9 crying items

Item	Percent						
	8	9	10	11	12	13	14
	Day						
Not knowing why your baby was crying	20.0 16.7	26.3 13.0	5.0* 25.0	0.0** 21.7	10.0 20.8	20.0 8.3	15.0 4.2
Crying bothering someone else	0.0 8.3	0.0* 13.0	5.0 12.5	0.0 8.7	0.0** 20.8	0.0** 20.8	0.0* 12.5
Not able to stop the crying	5.0 12.5	10.5 17.4	15.0 20.8	0.0* 13.0	10.0 16.7	15.0 12.5	10.0 4.2
Crying making you feel like you weren't a good parent	0.0 0.0	5.3 0.0	5.0 4.2	0.0 4.3	0.0 8.3	0.0 4.2	0.0 0.0
Crying too much	5.0 16.7	15.7 13.0	10.0 16.7	0.0* 13.0	5.0 12.5	0.0** 20.8	15.0 8.3
Crying too little	5.0 4.2	5.3 8.7	5.0 0.0	5.0 4.3	5.0 0.0	0.0 0.0	5.0 0.0
Cry sounding wrong	0.0 0.0	5.3 4.3	0.0 0.0	0.0 0.0	0.0 0.0	5.0 0.0	0.0 0.0
Crying making you feel like the baby didn't love you	0.0 0.0	0.0 0.0	0.0 4.2	0.0 4.3	0.0 4.2	0.0 4.2	0.0 0.0
Crying making you feel like you might lose control	0.0 4.2	0.0 0.0	0.0 0.0	0.0 4.3	0.0 4.2	0.0 8.7	0.0 0.0

Note: Preterm percent N=20
Term percent N=25

Level of significance .05 = *
.01 = **
.001 = ***

any statements that suggested mothers of preterm infants felt their infant was too quiet. Many chose not to make comments regarding this behavior.

Few mothers from either group noted concern about "crying too little," or their "cry sounding wrong." A possible explanation for this may be related to the amount of time spent with the infant since birth. Mothers of preterm infants may have spent three or more weeks growing accustomed to their child's behaviors and therefore, were attuned to their calm or crying periods. A further explanation for a lower expression of concern among mothers of preterm infants maybe related to an increase in noise exposure. Hospital neonatal units are intrinsically noisy. Care and procedures for 15 to 20 infants, heart monitors, auxiliary equipment, telephones, close quarters, and high staff ratio, all contribute to increased noise levels. It may be possible that mothers of premature infants who have been exposed to this increased level for at least three weeks, may have become desensitized to noise to some degree.

In summary, four items proved to have three or more days where the difference between groups was statisically different. In all items preterm mothers were found to express less concern regarding crying behaviors.

Findings Regarding Major Weekly Variables

The following section of this report will discuss the findings pertaining to the percentage of mothers who expressed concern on the weekly major variables of appearance, bathing, safety, activity, and family situations. The percentages for these major variables examined at the ends of weeks 1 and 2 appear in Tables 11-15. The percentage for mothers of preterm infants appear as the top number associated with each item. The percentage of mothers of term infants expressing concern is written as the lower number for each item.

Appearance

A total of five items regarding concerns about appearance were asked at the end of week 1 and at the end of week 2. The percentages for each group appears in Table 13. Examination of the first three items titled, "skin color", "rashes", and "appearance of genitalia," showed that mothers of premature infants expressed less concern than the mothers of term infants studied.

Both groups noted less concern regarding their babies' skin color in the second week than in the first. Due to the slightly different sample sizes, percentages are commensurate. The percentage of concern remained stable regarding rashes in both weeks 1 and 2.

There were statisically significant differences in

Table 11
Percent of mothers expressing concern on 5 appearance items

Item	Percent	
	Week 1	Week 2
Skin Color	$\frac{20.0}{41.7}$	$\frac{10.0}{8.7}$
Rashes	$\frac{25.0}{37.5}$	$\frac{25.0^*}{54.2}$
Appearance of genitalia	$\frac{0.0^{***}}{30.4}$	$\frac{0.0^*}{12.5}$
Crossed eyes	$\frac{25.0}{12.5}$	$\frac{15.0^*}{0.0}$
Eye drainage	$\frac{10.0}{12.5}$	$\frac{20.0}{8.3}$

Note: $\frac{\text{Preterm percent}}{\text{Term percent}}$ $\frac{N=20}{N=25}$ Level of significance .05 = *
.01 = **
.001 = ***

weeks 1 and 2 regarding the concerns about the appearance of the infants' genitalia. Mothers of preterm infants expressed no concern in relation to the appearance of their infants' genitalia; whereas, approximately one third of the mothers with term infants expressed concern in week 1, but decreased to 12.5 percent by week 2.

The investigator could find no information in the families' additional comments that may help explain the difference between the two groups. Mothers of preterm infants may indeed be less concerned with the appearance of their infants genitalia. It is probably more likely, however, that these results may be related to the amount of time that had transpired since birth. The mean age for infants being discharged from the hospital was 50.1 days. The mean age for the term population at hospital discharge was 1.8 days.

A plausible explanation for the difference in these two groups may be related to the mothers of preterm infants having had a longer length of time to grow accustomed to their baby's body. They may also have had more opportunity to ask health care providers their opinion regarding normal appearance.

The last two items appearing on Table 11 refer to concerns about eye drainage and crossed eyes. Both groups showed a drop in percentage during week 2 in respect to concerns over crossed eyes. While the drop in concern among

mothers of term infants also decreased regarding eye drainage, almost twice as many mothers of premature infants became concerned in week 2.

Narrative comments provided by some of the mothers may provide a possible explanation for this finding. Two mothers stated they were aware of previous signs of eye infection while in the hospital and felt these symptoms were returning. It is also possible that the parents of premature infants already had exposure to the symptoms and treatments for eye infections, and were simply more aware of the problem. Another likelihood may be that the premature infants in this study might have had previous treatment with antibiotics. This could have conceivably interrupted normal immune responses to infections, and the premature infants were indeed having an increased rate of eye drainage.

It is feasible that the term newborns did indeed have a decreased amount of eye drainage in the second week. This could depend on the type of eye prophylaxis used at birth.

In general, mothers of term infants expressed more concern regarding items on appearance than those of mothers with preterm infants. The only item where a significant difference in concern was seen for both weeks was that on the appearance of genitalia. This item still indicated that a lower amount of concern was reported by mothers of premature infants.

Bathing

Six items were included in the major weekly variables for the category of bathing. Percentages of concern are reported on Table 12. Expression of concern was seen on 4 (30%) of the 12 individual comparisons examined. Overall, mothers of preterm infants reported fewer concerns than mothers of term infants.

The percentage of concern expressed by mothers of preterm infants in all categories stayed stable or decreased from Week 1 to Week 2. Two categories showed concern at a statistically significant level. The first item, 'Caring for the cord' showed less concern at the .001 level. No mothers of preterm infants expressed concern in week 1 or 2. The most likely explanation for this is the age difference between the two groups. All preterm infants in this study were at least 23 days old when discharged from the hospital, and probably no longer had an umbilical cord stump. The mean age for term infants was 1.8 days at discharge, therefore, more cord care was required.

The fourth item listed "which cleaning product to use", showed the degree of concern lower among mothers of premature infants at a .05 level of significance. Percent of concerns among preterm mothers remained stable, while the concerns among mothers of term infants rose slightly.

The researcher could not find any apparent reasons for this difference upon examining narrative comments made by

Table 12
Percent of mothers expressing concern on 6 bathing items

Item	Percent	
	Week 1	Week 2
Caring for the cord	<u>0.0***</u> 58.3	<u>0.0***</u> 34.8
The temperature of the water	<u>25.0</u> 33.3	<u>20.0</u> 16.7
How often to bathe	<u>15.0</u> 29.2	<u>10.0</u> 8.7
Which cleansing products to use	<u>5.0*</u> 25.0	<u>5.0*</u> 29.2
Caring for the genitalia	<u>20.0</u> 25.0	<u>20.0</u> 20.8
When to start a tub bath	<u>15.0</u> 8.3	<u>15.0</u> 12.5
Note: Preterm percent N=20 Term percent N=25		Level of significance .05 = * .01 = ** .001 = ***

mothers. A possible explanation may be that mothers of preterm infants may have had more opportunity to bathe their infant prior to discharge, therefore already arriving at some decisions related to cleansing products. They may also have had a greater opportunity to discuss these types of products with their family or health care professionals.

It is interesting to note that on all items mothers of preterm infants concern either dropped slightly or remained stable, while concern expressed by mothers of term infants dropped by a much larger percentage.

In review, most items specific to Bathing concerns were seen to show mothers with preterm infants to be less concerned than mothers of term infants. Two items showed a statistically significant difference for both weeks. It is possible that the age of the infant at hospital discharge may contribute to the different levels of concern.

Safety

In recent years, there has been a surge of promotion and advertising regarding child safety. This section will examine the findings from six items concerned with child safety issues. Percentage of maternal concerns are recorded on Table 13.

Examination of twelve individual comparisons reveal that only one item was noted to be different at a statistically significant level. "Safety while traveling"

Table 13

.05	**	**
.01	**	**
.001	**	**

showed mothers of preterm infants less concerned in week 2 than in week 1, while the concern of mothers with term infants remained stable.

It is of interest that on the remaining five items, there is, in general, a higher degree of concern among mothers of preterm infants than in their comparison group. Until this point in the analysis, the reverse was mostly the case.

Mothers of preterm infants were more concerned about the items; "exposure to illness", "choking while sleeping", "choking while feeding", "holding onto the baby while bathing" and "dropping the baby". The percent of concern among mothers decreased from week 1 to week 2 in both groups.

Additional statements made by mothers with preterm infants indicated that they felt their babies were too small for the car seats, and did not provide them with enough support, making them difficult to use. Another common narrative dealt with their infants choking during feedings. One mother stated her son had "trouble with the suck, swallow, breathe routine". Another said she worried about how much spitting with feedings was normal.

The majority of the comments for this section dealt with exposure to illness. Narrative comments such as these, led this investigator to believe that some mothers of preterm infants may perceive their infant to have an

increased degree of fragility regarding safety related items. Another mother wrote she worried about her daughter being readmitted to the hospital if she caught a cold. Other parents wrote they screened visitors for cold symptoms prior to them visiting. Another family whose son was on oxygen wrote they thought they might delay outings for one month due to increased chance of exposure to illnesses.

In summary, the researcher found that mothers of preterm infants expressed a slightly higher concern with regards to safety items than mothers of term infants, though not to a statistically significant degree. In addition they volunteered many additional comments regarding their concerns of safety items.

Activity

Two items were examined on a weekly basis relating to activities of the new family. Findings are displayed in Table 14.

More mothers of preterm infants expressed concern for each item than their comparison group though not at a statistically significant level.

When comparing weeks 1 and 2, it can be seen that both groups show a decrease of concern over time. Additional comments in this category indicated to the investigator that mothers viewed their infants as having a high degree

Table 14
Percent of mothers expressing concern on 2 activity items

Item	Percent	
	Week 1	Week 2
Taking the baby out	$\frac{60.0}{54.2}$	$\frac{52.6}{41.7}$
People coming to visit	$\frac{55.0}{29.2}$	$\frac{31.6}{8.7}$
Note: Preterm percent N=20 Term percent N=25		
	Level of significance	.05 = * .01 = ** .001 = ***

of fragility. Many noted they were concerned with both of these items in relation to an increased chance of exposure to illness. One mother worried about friends visiting who have colds, and she stated her son's lungs must be "protected". Another mother inferred her daughter's condition was delicate and stated, "Even trips to the doctor interrupt her schedule".

In summary, parents of premature infants expressed more concern on activity items than mothers of term infants. Their major comment in respect to these concerns dealt with the risk of exposure to illness.

Family Situation

Ten items were examined at the end of weeks 1 and 2 in relationship to the family. Table 15 lists the percentage of concern for mothers of preterm and term infants. In 4 of 20 the comparisons, mothers of preterm infants expressed more concern, though not at a statistically significant level.

Four comparisons were found to be different at the .05 level. For both weeks 1 and 2, the third item, "your relationship with the baby's father", had a significantly higher percent of concern among term mothers. Two other items showed a higher percentage of concern among mothers with term infants, though only for one week.

Narrative comments from mothers of preterm infants frequently stated how glad they were to have their infant

Table 15

Percent of mothers expressing concern on 10 family situation items

Item	Percent	
	Week 1	Week 2
Working out a new family routine	<u>45.0</u> 58.3	<u>50.0</u> 70.8
Adjusting to caring for the baby	<u>40.0</u> 50.0	<u>45.0</u> 30.4
Your relationship with the baby's father	<u>10.0*</u> 41.7	<u>5.0*</u> 33.3
Your feelings about being a parent	<u>32.0</u> 37.5	<u>15.0</u> 30.4
Your relationship with your in-laws	<u>15.0</u> 33.3	<u>5.0</u> 16.7
The father's relationship with the baby	<u>5.3*</u> 29.2	<u>10.0</u> 25.0
The father's feelings about being a parent	<u>15.0</u> 29.2	<u>5.0</u> 21.7
The fathers involvement in caring for the baby	<u>20.0</u> 20.8	<u>10.0</u> 20.8
Your relationship with the baby	<u>10.0</u> 12.5	<u>0.0**</u> 17.4
Your relationship with your own parents	<u>20.0</u> 12.5	<u>0.0</u> 8.3
Note: Preterm percent N=20 Term percent N=25		Level of significance .05 = * .01 = ** .001 = ***

home. One remarked that although it was an adjustment, it was so much better than the hospital. Another stated, "Having waited so long for a baby, we are making adjustments well. However, they are adjustments."

Working out a new family routine concerned more mothers than any other item. Both groups showed slightly higher concern in week 2 than in week 1. Many of the additional comments pertained to this item. One mother stated that it was a full time job caring for a newborn. Most mothers of preterm infants who made comments stated their family and husbands were very supportive.

This data reveals an overall higher percentage of concern expressed by mothers of term infants than by mothers of preterm infants. Areas of greatest difference dealt with the mothers relationship with the father, and his relationship with the infant. The area for most concern in both groups was working out a new family routine.

Additional Findings from the Study

Narrative comments volunteered by mothers throughout this study provided an abundance of additional information, which gave the researcher additional insight to the mothers responses. An area of interest that the investigator did not set out to compare with the McDaniel study, were related to the amount of contact with health care professionals.

The mean range of contact with health care professionals by mothers of preterm infants was 3.3 times during this two week period. Contact with health professionals varied from no contact to ten contacts by phone or visitation. Figures from the McDaniel study found that mothers made contact with health professionals an average of 2.4 times in the two week period. Since limited information was gathered on this item, an analysis of these results would be difficult to do. Other information that would help in examining this question would be the length of visit or phone call as well as the content discussed.

Overall, this study found mothers of premature infants to show less concern than mothers of term infants. Table 16 summarizes all daily comparisons where a statistically significant level of concern was found. Concerns related to feeding were the only area in which more concern was found by mothers of preterm infants. In all other areas examined, mothers of term infants expressed more concern.

The initial prolonged length of hospitalization may indeed alter the types of concerns mothers may have. This initial time in the hospital may have allowed mothers of preterm infants some time to resolve her concerns regarding activities of daily living, such as sleeping, feeding, elimination and crying. Mothers may, however have an increased number of concerns about future illnesses and growth patterns.

Table 16

Summary of statistically significant daily comparisons
for mothers of preterm and term infants

Area of concern	Number of total comparisons	Number of statistically significant daily comparisons	Higher concern by mothers of preterm infants	Higher concern by mothers of term infants
<u>Daily</u>				
Sleeping	98	9 (9%)	1	8
Feeding	168	30 (18%)	20	10
Elimination	154	8 (5%)	7	1
Crying	126	21 (17%)	0	21
<u>Weekly</u>				
Appearance	10	4 (40%)	0	4
Bathing	12	4 (30%)	0	4
Safety	12	1 (8%)	0	1
Activities	4	0 (0%)	0	0
Family Situation	20	4 (10%)	0	4

Note: Preterm N=20
Term N=25

Additional comments made by two mothers of premature infants stated they were most concerned with their infants further development. Concerns regarding this area were not addressed at all in this study.

Increased contact with health professionals during this two week period may also have served to answer some questions or allay some concerns.

Chapter Four will present a general study summary, conclusions and their implications for nursing practice, as well as further recommendations for nursing research.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter will include the summary of the study; its pertinent conclusions and implications for nursing practice as well as limitations of the study. It concludes with recommendations for further nursing research in the area of neonatal nursing.

Summary

The major research questions addressed in this study were:

1) What are the major concerns of mothers in relation to their infant in the first two weeks at home after discharge?

2) What differences, if any, are there between the concerns of mothers of preterm infants and those of mothers of term infants in the first two weeks after discharge?

The review of the literature shows that nursing is interested and concerned with the parenting process. The real impact of premature birth and hospitalization is unclear. Kaplan and Mason state that the birth of a premature infant is a crisis superimposed upon a crisis, which places the family at a higher risk for parenting. Further understanding the concerns of mothers of preterm infants can add insight to nursing care. With this information, anticipatory guidance and parent teaching may

be restructured to more accurately meet the mothers' needs.

A convenience sample of twenty mothers of premature infants were chosen from the neonatal and pediatric units at Oregon Health Sciences University. Demographic information was gathered by use of the questionnaire titled, "Family Information Form," after families had signed the informed consent. Each mother then filled out daily questionnaires for a total of fourteen days from the Daily Concern Record.

Analysis of the data was first examined by the percent of concern noted by mothers in both groups. These daily concerns were also examined for downward trends over time.

The results of this study showed that mothers of perterm infants were consistently less concerned than mothers of preterm infants on 37 of 39 daily concern items. There were two items, however, in which mothers of preterm infants were more concerned than their comparison group. These items were, "not getting enough milk to grow", and, "too few stools", both of which showed a difference of concern at .05 level of statistical significance.

Analysis was also done on 29 concern items at the end of both weeks 1 and 2. Several safety and activity items showed a higher rate of concern among mothers of preterm infants. There were no instances, however, in which the concern of preterm mothers was found to be higher than that

of mothers of term infants at a statistically significant level.

Conclusions and Implications for Nursing Practice

The reading of current literature as well as previous clinical experience with families of preterm infants originally led the investigator to believe that mothers of preterm infants would have more concerns after hospital discharge than mothers of term infants. On the basis of this study only, that hypothesis is not proven true. It can be surmised that either the sample population was generally less concerned, or that the survey may not have asked the appropriate questions to adequately examine areas in which they were truly concerned.

Upon examination of the data, it appears that the amount of familiarity mothers have had with their infants may alter the degree of concern mothers perceived after discharge. Prolonged hospitalization allowed the mothers of preterm infants the opportunity to explore, handle, and care for their infants' activities of daily living prior to discharge. This may have alleviated some of the concerns or allowed mothers to work through fears that were initially present.

To some degree these results are encouraging for neonatal nursing. The implications are, that in fact, nurses may be providing information and anticipatory guidance on issues that parents are truly concerned about,

thus facilitating the transition home.

This is consistent with current literature by health care professionals regarding parenting and premature infants. This media presents the nursing profession as one of the major educators for the family.

Other implications of the study are less encouraging, however. Comments made by mothers regarding weekly items about safety and activities, indicate that they may perceive their infant as more fragile and requiring additional protection. If mothers do indeed view their children as more susceptible to infections and other problems, it may interfere or change the general interaction between the parents, their infant, future siblings and peer groups.

Nursing is thus challenged to further identify ways in which to help the parent decrease the stigma which encourages further protective monitoring after discharge. This is necessary to promote normalization of the newborn.

The information gathered in this study adds to the knowledge base of neonatal nursing. It provides a greater understanding of maternal concerns and responses when dealing with the parent of a preterm infant.

Limitations

There are certain limitations with this study, as in all descriptive studies, that are necessary to acknowledge. Intake criteria has eliminated certain

groups of mothers from participating in this study. Single parent mothers, non-English speaking mothers, and mothers who have already experienced the delivery of another child are such examples.

The small size of the population examined may limit this study's external validity and reliability. Further research would benefit with a larger sample size and the use of a more random method of selecting a sample population.

Self-administered questionnaires have inherent weaknesses which should be addressed. It is possible that certain questions were misunderstood and answered by participants without seeking clarification. The length and repetitiveness of the DCR may have influenced the mothers response to questions as time went on. This study did not attempt to exercise control over other variables to which families were exposed. The responses of the participants may have also been influenced by other means. Repeated phone contact and outside stressors are two examples of variables that may have altered responses.

When examining the results of this study, it is important to keep in mind the limitations of this study as described above. It is also important to use caution in interpreting the results.

Recommendations for Further Nursing Research

The investigator recommends that in future replications of this study, several suggestions be employed. The use of a larger sample size chosen in a random fashion would increase the generalizability. Secondly, the Daily Concern Record should be further used and tested to improve its validity and reliability. To widen the scope of the study, additional questions inquiring as to maternal perceptions related to their infants' growth and development, as well as health risks could be developed and examined.

The findings of this study have generated many other questions regarding parenting in families with premature infants. The following list presents eight possible suggestions for further nursing research in this area.

- 1) A comparative study completed by single mothers of premature infants may provide information as to how support systems alter the mother's ability to deal with everyday concerns.

- 2) A comparative study examining the differences in concerns of mothers according to the degree of prematurity found in their infants would also be informative. Possible groups for comparison would include infants born at 25-28 weeks gestation, those

born 29-32 weeks gestation and those born at 33-35 weeks gestation. Information gathered may provide insight about how the degree of prematurity affects level of maternal concern.

3) A comparative study might look at the differences in concerns of mothers of premature infants in relation to their parity. Concerns toward their infant may vary with respect to the number of children mothers have previously had.

4) A similar study conducted comparing breastfeeding mothers to bottle feeding mothers may be useful in sorting out concerns related to feeding, satisfaction and time intervals.

5) A comparative study completed by fathers of premature infants would add insight to this area of study. These results may reveal new information about changes occurring to the father's role with the birth of a premature child.

6) The inclusion of a survey to help quantify outside stressors being dealt with by the family simultaneously while completing the questionnaire may reveal interesting findings about the relationship between outside stressors and coping with daily concerns.

7) A comparative study could be done with two groups of mothers whose visiting patterns differ

greatly. This information may help define what role familiarity of the infant plays in maternal concerns.

8) An interesting comparison that could be made would be the examination of the compliance rate by term and preterm families in utilization of health care follow-up services.

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APPENDICES

APPENDIX A
Informed Consent

THE OREGON HEALTH SCIENCES UNIVERSITY

School of Nursing
Department of
Family Nursing

3181 S.W. Sam Jackson Park Road Portland, Oregon 97201 (503) 225-8382

I, _____
(first name) (middle name) (last name)
agree to participate in a study titled "A Descriptive Study of the Concerns of Parents During Their Premature Infants First Two Weeks at Home" conducted by Delores Marrs, R. N., B. S. N., and supervised by Marie Scott Brown, R. N., Ph. D., Professor of Family Nursing at the Oregon Health Sciences University School of Nursing. The purpose of this study is to learn more about the concerns of mothers of premature infants during the first two weeks after the infants' hospital discharge.

I agree to:

1. Be interviewed by the researcher for approximately 15 minutes and to complete a background information questionnaire. This will be arranged by the researcher within one week of the estimated date of discharge for the premature infant.
2. A second meeting within two days of the actual discharge of the premature infant and the Daily Concern Record (DCR) will be given to me and discussed in order to clear up any questions I may have.
3. Be called once by the researcher near the end of the two weeks to help me answer any further questions regarding the DCR, and to discuss any problems encountered.
4. Keep a daily record of my concerns in relation to my premature infant for the two weeks following hospital discharge taking about 10 minutes each day.

If I have any questions I may call the researcher at (503) 628-2036.

My participation involves a minimum amount of risk to myself from any inconvenience associated with completing the questionnaire or being called by the researcher. All information obtained will be kept confidential and my name will not appear on any records. Code numbers will be used to protect my privacy. The information obtained in the study will be reported in such a way that cannot be identified by me.

It is not the policy of the Department of Health and Human Services or any other agency funding the research project in which I am participating to compensate or provide medical treatment for human subjects in the event the research results in physical injury. The Oregon Health Sciences University, as an agency of the State, is covered by the State Liability Fund. If I suffer an injury from the research project, compensation would be available to me only if I establish



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that the injury occurred through the fault of the University, its officers or employees. If you have any further questions please call Dr. Micheal Baird, M. D., at (503) 225-8014.

While I may not benefit directly from participation in this study, my participation will help health care professionals learn more about the concerns of new mothers with premature infants. Such information would be helpful in planning health care for families with premature infants.

I understand I may refuse to participate or withdraw from the study at any time without affecting my relationship with, or treatment at, the Oregon Health Sciences University.

I have read the foregoing and agree to participate in this study.

Date

(signature of participant)

(witness)



APPENDIX B
Family Information Form

Family Information Form

1. How much experience have you had in caring for infants?
(Please check one)

None Very Little Moderate Amount A Lot

2. How confident do you feel about caring for your baby?
(Please check one)

None Very Little Moderate Amount A Lot

3. How much help do you expect the baby's father to give with
the actual care of the baby? (Please check one)

None Very Little Moderate Amount A Lot

4. How much of the household responsibilities do you anticipate
the baby's father will do for the first two weeks after the
baby is discharged? (Please check one)

None Very Little Moderate Amount A Lot

5. Will you have additional help in the home after you leave the
hospital? yes

 no

If yes, who? a. your mother
 b. your sister
 c. Your friend
 d. Other

How much help do you anticipate from this person?

Very Little Moderate Amount A Lot

The following background information about you will help us
better understand the kinds of people to whom the results of this
study will apply:

6. Mother's birthdate

7. Father's birthdate

8. Were you employed during any part of your pregnancy?

 yes
 no

If yes, what is your occupation?

If yes, at what month did you discontinue working?

9. Will you be returning to work?

_____ yes
 _____ no
 _____ undecided

If yes, how soon? _____

10. Is the baby's father presently employed? _____ yes
 _____ no

Current (or most recent) occupation _____

11. Family income level:

Less than \$6,000 _____
 \$6,000 to \$9,999 _____
 \$10,000 to \$14,999 _____
 \$15,000 to \$19,999 _____
 Above \$20,000 _____

12. What was the last year of education you completed?
 (Please circle your answer)

Grade School: 1 2 3 4 5 6 7 8
 High School: 1 2 3 4
 College: 1 2 3 4
 Post College: 1 2 3 or more

13. What was the last year of education the baby's father completed?
 (Please circle your answer)

Grade School: 1 2 3 4 5 6 7 8
 High School: 1 2 3 4
 College: 1 2 3 4
 Post College: 1 2 3 or more

 The following information about your infant will be obtained
 from the baby's chart by the researcher:

Infant's sex _____ male _____ female Apgar scores _____

Infant's birthdate _____ Gestational age at birth _____

Infant's birthweight _____ Discharge date from hospital _____

Problems during the labor and delivery of the infant _____

Problems specific to the infant during hospitalization _____

APPENDIX C
Daily Concern Record

#

DAILY CONCERN RECORD

Congratulations! Your premature infant is being discharged. We know that this is an exciting and special time for you, but it is not uncommon for you to have some questions and concerns about your baby's care or behavior after they are home. New mothers often have concerns about their infants, and as a mother of a premature baby your concerns may be a bit different. These concerns change from day to day and family to family.

As health care professionals we are interested in learning about the questions and concerns you have so we may improve our teaching in ways that will best help our families with premature babies in their first few weeks at home.

This booklet will be a daily and weekly record of your particular concerns during your first two weeks at home. For each day there is a list of concerns common to new parents. To the right of the list is a place for you to check which concerns were problems for you and to rate how much of a problem they were to you. If you have other concerns that were not listed, please add them under "Other" and rate them also. At the end of each group of concerns is a place for you to make comments.

EXAMPLE OF HOW TO FILL OUT THE DAILY CONCERN RECORD

SLEEPING

Today, were you concerned about your baby's sleeping pattern, and if so, how much were you concerned about:

1. Sleeping too much during the day -
2. Sleeping too little during the day -
3. Etc. - - - - -
4. Other - - - - -

Comments:

Only sleeps 15 mins
at a time

Were you concerned?		If yes, how much?		
No	Yes	very little	moderate amount	a great deal
✓				
	✓	✓		
✓				
	✓			

At the end of each day note any contact with a health care provider. Following Day #7 and Day #14, there is an additional list of concerns that you may have experienced sometime during the previous week. Please record them in the same way you do your daily concerns.

Begin this record on your first day home with your premature infant. As soon as you have completed the second week, return the booklet in the enclosed self-addressed stamped envelope to

De Marrs, R. N.
18600 S.W. Castle Drive
Aloha, Oregon 97007

If you have any questions or need any assistance in completing this record, please feel free to call me at 642-9917.

Thank-you.

DAY #1
(First day home from the hospital)

Date _____

Age of your baby (in days) _____

Method of feeding used today _____ breast
 _____ bottle
 _____ both

SLEEPING

Today, were you concerned about your baby's sleeping pattern, and if so, how much were you concerned about:

	Were you Concerned?		If yes, how much?		
	No	Yes	very little	mod. amount	a great deal
1. Sleeping too much during the day _____					
2. Sleeping too little during the day _____					
3. Sleeping too much at night _____					
4. Sleeping too little at night _____					
5. Sleeping too long between feedings _____					
6. Sleeping too little between feedings _____					
7. An unusual breathing pattern while sleeping _____					
8. Other _____					

Comments:

FEEDING

Today were you concerned about your baby's feeding pattern, and if so, how much were you concerned about:

	Were you Concerned?		If yes, how much?		
	No	Yes	very little	mod. amount	a great deal
1. Your baby not eating often enough _____					
2. Your baby eating too often _____					
3. You baby not getting enough milk to be satisfied _____					
4. Your baby not getting enough milk to grow _____					
5. You baby getting too much milk _____					
6. You baby not liking the milk you are giving _____					
7. The milk disagreeing with your baby _____					
8. Burping a lot _____					
9. Burping very little _____					
10. Spitting up a lot _____					

DAY #1
(continued)

FEEDING (continued)

11. Preparing the breast or bottle _____

12. Breast discomfort _____

13. Other _____

Comments:

Were you Concerned?		If yes, how much?		
No	Yes	very little	mod. amount	a great deal

ELIMINATION

Today were you concerned about your baby's bowel movements or urine, and if so, how much were you concerned about:

1. There being too many stools _____

2. There being too few stools _____

3. The stools being too hard _____

4. The stools being too loose _____

5. The stools being an unusual color _____

6. It hurting your baby to pass the stools _____

7. The baby having trouble passing gas _____

8. Gas causing your baby to have stomach
pain _____

9. Your baby wetting too many diapers _____

10. Your baby wetting too few diapers _____

11. Your baby's urine smelling unusual
or like something was wrong with it _____

12. Other _____

Comments:

Were you Concerned?		If yes, how much?		
No	Yes	very little	mod. amount	a great deal

CRYING

Today, were you concerned about the way your baby cried or didn't cry, and if so, how much were you concerned about:

1. Your baby crying too much _____

2. Your baby crying too little _____

3. They cry sounding wrong (too weak, too
high pitched, etc.) _____

4. Not knowing why your baby was crying _____

5. Not being able to do anything to stop
the crying _____

Were you Concerned?		If yes, how much?		
No	Yes	very little	mod. amount	a great deal

DAY #1
(continued)

CRYING (continued)

6.	The crying might bother someone else				
7.	The crying making you feel like you were not a good parent				
8.	The crying making you feel like the baby didn't love you				
9.	The crying making you feel like you might lose control and hurt the baby				
10.	Other				

Comments:

Today, did you have any contact with a health care provider? _____ yes
no

If yes; Who made the contact? _____ you
a health care provider

How was contact made? _____ telephone
visit

Whom did you speak with? _____

Reason:

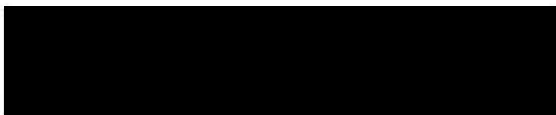
AN ABSTRACT OF THE THESIS OF

Delores Lee Marrs

For the MASTER of NURSING

Date of receiving this degree: June 12, 1987

Title: A DESCRIPTIVE STUDY OF THE CONCERNS OF PARENTS
DURING THEIR PREMATURE INFANTS' FIRST TWO WEEKS AT
HOME

Approved: 
Marie Scott Brown, R. N., Ph. D., Thesis Advisor

The purpose of this descriptive study was to investigate and explore the common concerns of first time mothers of premature infants during their infants first two weeks at home following hospitalization. The results of this study were then compared with those found by McDaniel (1983) in her study of concerns of first time mothers with term infants. Identical tools were used gathering of data, i. e. the Family Information Form (FIF) and the Daily Concern Record (DCR).

The FIF was used to collect demographic data as well as some information on previous experience in childcare. The DCR consisted of four major areas of concern to be examined daily and explored 43 questions felt to be most commonly asked by parents of newborn infants. These major daily

categories were Sleeping, Feeding, Elimination, and Crying. Five areas of general concern were examined at the end of the first and second weeks and included Appearance, Bathing, Safety, Activities, and Family Situation.

The subjects for this study were a convenience sample of twenty mothers between the ages of 17 and 40. All were first pregnancies which resulted in the delivery of a premature infant of less than 36 weeks gestation, requiring more than three weeks of hospitalization.

Daily results of this study and those from the McDaniel study were compared by use of the Lawshe-Baker nomograph. The results study indicated that mothers of preterm infants consistently showed less concern than mothers of term infants. The difference in length of hospitalizations as well as contact with health care professionals may have altered the amount of concern noted by mothers.

The findings from this research add to the knowledge base of health care providers dealing with mothers and infants. By learning more about the differences and likenesses of families with premature and term infants, we may be able to better structure teaching and anticipatory guidance to meet the needs of parents in a more meaningful way. The results of this study support the need for continued research in several related areas and recommendations are made.