

THE EFFECT OF FATHER'S PRESENCE DURING DELIVERY
ON HIS PERCEPTION OF HIS NEWBORN

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CHAPTER 1

INTRODUCTION

The paternal role in early child development has received increased attention in the past decade. Fathers are now regarded as a significant part of the triadic relationship of the mother, father, and infant. Their role is viewed as an active and unique one with both the mother and the infant, rather than one of support to the mother alone (Greenberg & Morris, 1974; Jones, 1981; Peterson, Mehl, & Leiderman, 1979; Taubenheim, 1981).

Research and articles involving fathers and their relationship, contact, influence, attitudes, and feelings toward their infants are considerably fewer in number than those involving the mother (Bowen & Miller, 1980; Greenberg & Morris, 1974; Jones, 1981; Taubenheim, 1981). It has only been within the past 10 to 15 years that researchers have focused on the early father-newborn relationship and contact during the first postpartum week (Bowen & Miller, 1980; Greenberg & Morris, 1974; Jones, 1981; Rodholm, 1981; Taubenheim, 1981). In a study of the relationships of fathers and their newborns, Greenberg and Morris (1974) determined that a bond begins by the third day, and often earlier in the neonatal period. They indicated that the

process of the developing relationship is similar, although not identical, to the process of maternal-infant bonding and is called engrossment--a term which describes feelings of preoccupation, absorption, and interest in the newborn. Klaus and Kennell (1976) have used the term engrossment interchangeably with bonding and attachment. These terms are used synonymously throughout most of the literature (Bowen & Miller, 1980; Campbell & Taylor, 1979; Greenberg & Morris, 1974; Klaus & Kennell, 1976).

Early contact of fathers with their newborns has been documented as a significant factor in stimulating engrossment (Bowen & Miller, 1980; Greenberg & Morris, 1974; Jones, 1981; Peterson et al., 1979). Other documented variables associated with the relationship of fathers and their newborns include: age of the father (Taubenheim, 1981); marital status (married, divorced, single) (Greenberg & Morris, 1974); planning of the pregnancy (Leonard, 1976); sex of the infant (Jones, 1981; Taubenheim, 1981); breast-feeding (Leonard, 1976); the father's experience in child care (Lindsay, 1981; Taubenheim, 1981); expectations about the degree and character of the father-infant interaction (Pedersen & Robson, 1969); how the fathers were fathered (Peterson et al., 1979; Taubenheim, 1981); attendance at prenatal

classes (Bowen & Miller, 1980; Lindsay, 1981 Taubenheim, 1981); and instructions in infant care (Peterson et al., 1979; Taubenheim, 1981). Although supported separately in the literature, no comparative levels of importance have been assigned to these variables.

Problem of Study

There is a paucity of documentation in the literature about the father-infant relationship as compared to the mother-infant relationship (Greenberg & Morris, 1974; Jones, 1981; Peterson et al., 1979). The process of the development of the father-infant relationship is not well understood; however, a crisis or critical period early in the relationship is thought to exist (Greenberg & Morris, 1974). In an effort to assess the effect of an early father-infant relationship, the following problem was proposed for study: Does a relationship exist between early contact in the delivery room and the father's perception of his infant?

Justification of Problem

The role of the father in child development has received increased attention in the past 10-15 years as reflected in the amount of literature available on the topic. Interest in fathers has developed as a by-product of

research on the maternal-infant relationship. The research available demonstrated that the role of the father is significant in the child's development (Gollober, 1976; Jones, 1981; Leonard, 1976; Taubenheim, 1981). Nurses have emphasized the father's early relationship with the infant through the use of family-centered care even though little research is available to support their concept (Forgione, 1977; Gollober, 1976; Hines, 1971). In this approach the nurse focuses on the adjustment and participation of all family members toward the newborn, rather than solely on that of the mother. If this process is to be used, the actual needs and perceptions of fathers should be assessed in order for nurses to identify the most appropriate approach for encouraging a positive father-infant relationship (Forgione, 1977; Gollober, 1976).

The effects of maternal participation in delivery are well documented. Physical contact between mothers and infants immediately after delivery is correlated with prolonged breast-feeding and increased maternal affectionate behavior during the immediate postpartum period, as well as at the ages of one month, three months, and one year (Hales, Lozoff, Sosa, & Kennell, 1977; Klaus & Kennell, 1976; Lozoff, Brittenham, Trause, Kennell, & Klaus, 1977). Observations by de Chateau (1976) included the existence of

a sensitive period within the first minutes of birth, during which the infant's presence with or absence from the mother affects maternal behavior and possibly the infant's development throughout the first year of life. Klaus and Kennell (1976) studied the relationship which developed at this time and named it bonding. According to this study, the process of bonding occurs within the first few hours to days after birth. They supported the concept that bonding is facilitated by the physical contact between mothers and infants during which mothers are most likely to develop strong affections for their infants.

Direct investigation of fathers has not been conducted in many studies because of the traditional ideas about fatherhood (father's role as provider rather than nurturer), less acknowledgment of the father's importance in direct infant care, and inaccessibility of the father (Pedersen & Robson, 1969). Pedersen and Robson collected data on the father-infant relationship by making home visits and interviewing mothers. Their failure to interview the father was listed as a study limitation. This statement demonstrates an acknowledgment by researchers that direct interviewing of fathers was considered as necessary.

A few researchers have correlated the father-infant relationship with other variables. Jones (1981) related early postpartum contact, sex, and irritability of the

infants with the perceptions and behaviors of 51 fathers. She found that fathers who held their infants in the first hour postpartum had more nonverbal communication with them at one month than did those without early contact. Testing infant sex and irritability significance, she charted scores for high- and low-irritability levels within each sex. Fathers' perceptions of high-irritability girls ($q=2.628$, $p<.05$) were more positive.

Leonard (1976) investigated fathers' attitudes along psychosocial and demographic lines. She devised a questionnaire to evaluate fathers' feelings and attitudes toward their infants and young children, the fathering role, relationships with wife and newborn, and characteristics of bonding and engrossment. In her original study, 52 first-time fathers participated on the second postpartum day. Fathers who enjoyed taking care of and being around children, had experience with children, desired more children, planned the pregnancies, and rated a high knowledge of baby care scored high on the attitude questionnaire. During a one month follow-up, 41 of the original subjects responded to a mailed questionnaire. No significant changes in fathers' attitudes at two days and one month postpartum were found (S. Leonard, 1977).

Taubenheim (1981) used behavior and attitude scales to assess the paternal-infant bonding process of 10 fathers

during the first three days postpartum. She found a correlation between high behavior scores and feeding, holding en face (face-to-face), and talking to the infant. Subjects who fed their infants during the observation period had high behavior scores. The most frequent behavior documented was the fathers' eagerness in talking to others about their infants. Attitude scores for most of the fathers were high when behavior scores were high.

Lindsay (1981) studied the relationship between early contact of 12 fathers with their infants and their subsequent participation in infant caretaking activities. She found a positive relationship, although not statistically significant (.07 level of significance), between presence in the delivery room and participation in infant caretaking activities at two weeks. Positive relationships were also found between the father's participation in infant caretaking activities and several extraneous variables such as early child care experience ($r=.168$) participation in infant caretaking activities with other infants ($r=.420$), contact with other infants ($r=.123$), and inclusion of the father in infant care instructions ($r=.411$).

In past years maternal care during both pre- and post-natal periods has been directed at the mother-infant dyad (Gollober, 1976). More recently, this approach has

been expanded into a family-centered one. In practice this approach for the mother means rooming-in and participating in classes on feeding and caretaking activities. Paternal participation in this approach involves attendance at prenatal classes, as well as the delivery, and visits to the baby and mother postpartally. In order for nursing to focus on the family-centered concept, investigations should be conducted documenting the value of family-centered nursing for the father and infant. Therefore, part of the justification of this study is that it will add to the knowledge of the father-infant relationship.

Considering the general need for research on fathers and the specific need for empirical data on their perceptions of and participation in the childbearing process, the father-infant relationship was a logical focus of study. If information on the paternal-infant relationship is documented, it may be used to determine the value of family-centered nursing as it is now practiced.

Conceptual Framework

Early research on maternal-infant attachment and bonding has contributed to an accepted principle of early childhood development. It supports the idea that a warm, nurturing, and consistent relationship between mother and infant is vital for optimal development (Campbell & Taylor,

1979). As observations in the past decades have increased the understanding of the early mother-infant relationship, implications for the father-infant relationship have become of interest. In attempting to understand fathers' relationships with their newborns, the concepts of attachment (Ainsworth, 1969; Bowlby, 1969), bonding (Klaus & Kennell, 1976), engrossment (Greenberg & Morris, 1974), and crisis in transition to parenthood (Le Masters, 1957; S. Leonard, 1977) were surveyed. These concepts were derived from studies in the fields of psychology, anthropology, and sociology.

Available psychological research on animal behavior indicated that newborns have a strong impact upon males of many species (Howells, 1969). While the concept is still controversial, fathering in the animal kingdom is as well defined as mothering, with the term "instinct" applying to fathering as much as to mothering (Howells, 1969). However, in nonhuman primates, less information is available concerning the relationship between the adult males of a troop and the infants born into it than on the adult females and their infants. Itani (1959) described a routinized form of paternal care in the Japanese macaques during the birthing season. This paternal care was similar to maternal care except for the lack of suckling.

There is a wide variety of methods of caring for the young in the animal kingdom. Howells (1969) stated that the fact that care is given is more important than the method or the individual doing the care. He indicated that the capacity to be flexible with the method of care increases with higher vertebrates and attains its greatest diversity in *Homo sapiens*.

Mead (1930, 1935) indicated that newborns have a powerful impact upon their fathers. In numerous primitive cultures, fathers held, caressed, and showed great interest in their newborns. On the Island of Manus, in the Admiralty Islands, fathers took a dominant and possessive role in the upbringing of the children. As soon as the first born child could stand, the father took it from its mother to be his fishing companion while the mother was sent to work. After the birth of the second child, the infant stayed with the mother for a few months while the first born became a constant companion of the father, including sleeping with him, until the age of seven to eight years. All of the children remained companions of the father throughout their lives (Mead, 1935).

Among the Arapesh (Mead, 1935), fathers played an equal part with the mothers during pregnancy and after the births. Fathers were required to remain in bed during the deliveries and for several days afterward. At the time of birth they

mimicked the labor and went through the motions of giving birth. The care of the children was considered to be a task for both men and women.

Nash (1965) cited the variability and flexibility of methods of caring for the human child. He indicated that the family is the basic group and can be defined in many ways, with parenting carried out by mothers, fathers, or others. Fathering is an important element in the upbringing of the child and occasionally is the only element (Nash, 1965; Howells, 1969). The child's identification with a parent through a warm, nurturing, and prolonged relationship is probably more significant in his development than the presence of one or the other parent (Nash, 1965).

In Western society, child care has been perceived as matri-centric. This has been reflected in research and literature which focuses primarily on the mother. The emotional response of fatherliness in men has been given minimal significance (Biller, 1971; Forgione, 1977; Howells, 1969; Nash, 1965).

Hines (1971) asserted that the traditional role of fathers was associated with the 19th century view of the father as the provider or breadwinner who was feared, yet respected and obeyed. The authority of the father was unquestioned. He lived near his work or on the farm; therefore, he spent a great deal of time at home and acted

as a role model for his children, who saw him at work or helped him with it. This traditional or authoritarian role can still be seen in rural American families (Hines, 1971).

Gollobar (1976) noted that the role of the father changed due to urbanization. Fathers were taken from the rural setting to a place of work and recreation outside of the home, often at a considerable distance. Urbanization, coupled with World War II, contributed to defining a new nontraditional or individual male role. Gollobar contended that authority previously held by fathers was shared with mothers. Some characteristics of the father such as progressiveness, dominance, and aggressiveness were incorporated into the maternal role, while fathers acquired qualities of love, warmth and compassion. This contemporary blending underlies a trend toward cooperative childrearing (Gollobar, 1976).

Within the past 10 to 15 years research on bonding and attachment has revealed that parents and infants form relationships early. The concepts entitled bonding and attachment have been used interchangeably throughout the literature. Research and theory on attachment has been principally associated with Bowlby (1969) and Ainsworth (1969). Bowlby (1969) defined attachment as "a product of the activity of a number of behavioral systems that have proximity to the mother as a predictable outcome" (p. 179).

Attachment was further defined by Ainsworth (1969) as "an affectional tie that one person (or animal) forms to another specific individual" (p. 971). Thus attachment was described as discriminating, specific, and enduring.

The concept of bonding refers to a rapid process that occurs immediately after birth and reflects parent-infant attachment. Bonding is primarily unidirectional (parent infant) and rapid (within the first hours or days after birth). It is facilitated by physical contact between parents and their newborns through skin-to-skin contact, suckling, mutual visual regard, or fondling (Campbell & Taylor, 1979; Klaus & Kennell, 1976).

Research and theory on bonding have been principally associated with the work of Klaus and Kennell (1976). They theorized that there is a sensitive period during the first minutes to the first few hours of life in which mothers are most likely to develop a strong affectional bond with their infants. Species-specific behavior patterns of the infants (eye movement, body movement) elicit responses at a time when the mothers and fathers are particularly sensitive to such cues.

Greenberg and Morris (1974) noted that fathers demonstrated a preoccupation and absorption with their infants which the authors termed engrossment. Their research revealed that fathers who had early contact with

their infants were enthusiastic and involved with their newborns. Bowen and Miller (1980), Jones (1981), and Lindsay (1981) noted an increased social attachment behavior in fathers who were present at delivery as compared to those who were not present.

Le Masters (1957) recognized that pregnancy and parenthood are crisis events for the mothers as well as for the fathers. He stated that the birth of the first child forces the couple to move from an adult-centered pair to a triadic relationship. His research, although poorly controlled, was important in prompting other researchers to explore parenthood as a crisis period. S. Leonard (1977) also described the father's transition to parenthood as a period of crisis. She defined crisis as "a time when identities are changing and new roles are being explored" (p. 8). Le Masters (1957), Greenberg and Morris (1974), Gollob (1976), S. Leonard (1976, 1977), and Taubenheim (1981) indicated that fathers are an important influence on their infants. They described the relationship as a reciprocal one with infants and fathers influencing each other.

Assumptions

The assumptions of this study were as follows:

1. Fathers can form bonds with their infants (Greenberg & Morris, 1974; Klaus & Kennell, 1976); and
2. The role of fathers in infant development is an active and important one (Biller, 1971; Howells, 1969; Jones, 1981; Nash, 1965).

Hypotheses

For this study, the following hypotheses were considered:

- H_{01} : There will be no significant difference in the perceptions of their first born infants between fathers who are present and those who are not present at the deliveries of their infants as measured at 24 to 72 hours and at two weeks using the Broussard (1979) Neonatal Perception Inventories.
- H_{a1} : There will be significant differences in the perceptions of their first born infants between fathers who are present and those who are not present at the deliveries of their infants as measured at 24 to 72 hours and at two weeks using the Broussard (1979) Neonatal Perception Inventories.
- H_{02} : There will be no significant difference in bother (annoyance) between fathers who are present and those who are not present at the deliveries of their infants as measured at one week using the Degree of Bother Inventory.

- H_{a2}: There will be significant differences in bother (annoyance) between fathers who are present and those who are not present at the deliveries of their infants as measured at two weeks by the Degree of Bother Inventory.
- H_{o3}: There are no significant differences in the perceptions of groups of fathers according to personal variables.
- H_{a3}: There will be significant differences in the perceptions of groups of fathers according to personal variables.
- H_{o4}: There is no significant relationship between personal variables and perception scores of the fathers.
- H_{a4}: There will be a significant relationship between personal variables and perception scores of the father.

Definition of Terms

For the purpose of this study, the following terms were defined:

1. Attachment--an affectionate, enduring, and primarily reciprocal, parent \rightleftharpoons infant, relationship between the parent and the infant which develops gradually during the first year of life. This relationship is facilitated by factors such as the quality, timing, and pacing of parent-infant interactions (Ainsworth, 1969; Bowlby, 1969; Campbell & Taylor, 1979).
2. Bonding--a rapid process, within the first few hours or days after birth, and primarily unidirectional, parent \rightarrow infant, facilitated by physical contact, such as skin-to-skin contact, suckling, mutual visual regard, or fondling (Campbell & Taylor, 1979).
3. Early paternal-infant contact--the presence of the father in the delivery room at the time of birth.
4. Engrossment--an absorption, preoccupation, and interest the father displays toward his infant (Greenberg & Morris, 1974); it is also synonymous with attachment and bonding (Klaus & Kennell, 1976).

5. Family-centered care--a concept of maternal-child nursing practice that provides for the participation of the father in the childbearing experience, including opportunity for attendance at prenatal classes, presence in the labor and delivery room, and visitation on the postpartum floor (Cronenwett & Newmark, 1979).
6. Father--the male half of the parental unit.
7. Father's absence from the delivery--the physical absence of the father from the delivery room at the time of birth preventing his opportunity to look at, touch, or hold the newborn at birth.
8. Father's presence at delivery--the physical presence of the father in the delivery room at the time of birth allowing him to look at, touch, or hold the newborn.
9. Newborn--the first born infant from birth to four weeks of age, free of any defect requiring special care.

10. Perception--the awareness a father has about his infant, obtained through the senses and based upon previous experiences (English & English, 1962; Forgione, 1977; Wolman, 1973) as measured by the Broussard (1979) Neonatal Perception Inventories.
11. Transition to parenthood crisis--a turning point or critical period after the birth of the first born in which new behavior patterns occur (Le Masters, 1957; Webster's, 1981).

Limitations

A limitation of this study was use of a convenience sampling technique. Another limitation was the use of a small sample size. Therefore, results cannot be generalized beyond the sample.

Summary

In this chapter the problem statement, justification, conceptual framework, assumptions, hypotheses, definitions, and limitations for this study were presented. Research relating to the father-infant relationship was documented, indicating that the father plays a significant role in child development. The concepts of attachment, bonding, and engrossment were discussed in order to enhance the understanding of the father-infant relationship. Finally, crisis was recognized as an event happening to mothers as well as to fathers.

CHAPTER 2

REVIEW OF LITERATURE

In this chapter the role of the father and the nature of the father-infant relationship are discussed. The purpose of this review is to examine past and present research and ideas on the relationship of the father and his infant. Much of the research cited is observational in its method rather than experimental. Nash (1965) explained that this is a difficult area in which to construct studies using control groups.

Role of the Father

The role of the father is traced from several areas of the literature. Historical perspectives of his role are discussed along with the patriarchal father, fathers in the United States, the father role, the childbearing role, and father absence.

Historical Perspectives

There is fragmented evidence in the literature of several styles of human fatherhood throughout the world. In an attempt to clarify this fragmented historical perspective, Lynn (1974) explored historical roots

of fatherhood from Western Europe to America. According to Lynn (1974) and supported by Nash (1965) the modern father's role originated in Greek, Hebrew, and Roman patriarchs. Patriarchy was defined by Lynn (1974) as a family situation in which the father dominated the household. This domination was described as complete or present with specific power limitations.

The authority of the Greek father was derived from the basic family unit as a family trustee and a priest of worship. As priest of his household, the father offered sacrifices for his family. Even though the patriarch's power stemmed from the family, it was immense. The father had the authority to reject an infant at birth by condemning it to death. He had the right to sell his son or daughter or exercise authority over them until his death (Lynn, 1974).

The Hebrew father obtained power in the family by his own right. In earliest days he could sacrifice children on the altar. This was later forbidden by Mosaic Law. However, he continued control over his children by ordering them to marry whomever he saw fit or by selling them as slaves. His control continued even after their marriage. The Hebrew patriarch had tremendous power but also responsibilities to the family. He reared his children with knowledge of Hebrew law. It was his duty to teach his son a

trade or to hire an artisan to do so (Bloom-Feshbach, 1981; Lynn, 1974).

According to Lynn (1974), the Roman father was the most extreme example of patriarchy that existed. The father's power was awesome. He had the power of life and death over his wife, children, and slaves. When his sons married, his power extended over their wives and children. His children did not own property separate from their father.

The present paternal pattern was also traced to the Anglo-Saxon and Germanic tribes of Europe. The Germanic fathers were less patriarchal in comparison to the Greek, Hebrew, and Roman patriarchs. According to Lynn (1974) they were enormously powerful by today's standards. The relatives of both the father and the mother were involved in the households when children married, although the paternal relatives had more rights.

Limitations to paternal power became evident at this time. The father had power over the life of an infant before he tasted milk or honey. No restriction for the Greek or Roman father had existed, but the Anglo-Saxon father could not sell his child into slavery after the age of seven. However younger children could be sold, owing to poverty.

During the Middle Ages (around 400 to 1450 A.D.), seven year old children were placed in the care of families other than their own. The purpose of this family was to teach the child details of a trade or to send him to school. The child was boarder, servant, and apprentice. The master transmitted knowledge, experience, and values to the child. He served as a role model for the boy and a representative of manhood for the girl.

In the 15th century a transformation in values occurred. As a result the child did not have to contribute economically to the family; instead, the family provided for the welfare of the child. This transformation heralded the modern concept of the family, and consequently, the role of the father.

During the Civil War, military service disrupted white families, while Emancipation disrupted black families. After Emancipation black men moved about freely seeking work, since stable work opportunities were difficult to find. Better and more stable opportunities were available for black women. Mother-centered families therefore increased during this period.

After the Civil War, other social forces undercutting the patriarchal family included industrialization, immigration, and the Feminist Movement (Bloom-Feshbach, 1981; Lynn, 1974; Phillips & Anzalone, 1982).

Industrialization induced a non-nurturing environment in which the father, and often the mother and child, worked long and miserable hours. Subsequently, legislative restrictions on the employment of children and compulsory education forced the family into an economic position dependent upon the father. As a result, the mother became responsible for the majority of child-rearing activities. Linton, Berle, Grossi, and Jackson (1961) demonstrated this phenomenon in a Manhattan slum. They administered the Bene-Anthony Family Relations test to 69 children. They found that the criterion of a good father was his ability to be a provider.

While child-labor laws and compulsory education placed the father in a position of great economic responsibility toward the family, he lost a great deal of control over his wife in the Feminist Movement during the early 19th century. Finally, immigration interfered with the patriarchal family through an upward mobility drive. Old world values were rejected by the young in their determination to survive in a competitive environment (Lynn, 1974; Nash, 1965; Phillips & Anzalone, 1982).

Roles of the Patriarchal Father

Many cultures have practiced patriarchy. Lewis (1960) identified two Spanish speaking cultures of which patriarchy

was a component. In the village of Tepoztlan in Mexico, the father was depicted as domineering over the family through formality, social distance, and restraint. Contact of children with the father was described as obedient and inhibited. Lewis also found that in rural, low-class Manicaboa, Puerto Rico, the father was also unquestionably the head of the household. He was responsible for the welfare of the family and was a model of hard work, responsibility, and hospitality. However, he was also directly involved with his children in play and work.

The father of the middle-class Japanese family was characterized by Vogel (1963) as patriarchal. Historically, the role of the Japanese father was to serve as a tie between private and public life, while the mother's role was child care. After the downfall of the Emperor and rapid industrialization of the country after World War II, Japanese loyalties and identification transferred to firms that employed the father. Industrial firms incorporated paternalistic features: salaried men had security, a regular income, and leisure time. The father invested more time in the firm after the children were born, while the mother devoted herself to the children. The father was described as an honored guest in his own home, where he was an authority figure and a worldly representative. It was viewed favorably for him to spend time away from the home

with office personnel and to be a lavish spender among friends. His relationship with the wife and children was equated by Lynn (1974) to the "boss" and the workers.

Fathers in the United States

Hoffman (1963) indicated that diversity within the role of the American father has been partially attributed to socioeconomic status. A father's power in the family was described as varying directly with the income and prestige of his work. A powerful father role for the working man was described as domineering, autocratic, arbitrary, and unconcerned with childrearing. In comparison, the well-educated, executive-professional man received power based on his personality and salary.

According to Lynn (1974) the role of the father also varied according to minority group. Differences in the characteristic features of Jewish, Catholic, Mexican-American, and Black fathers depicted this point. The Jewish father contributed to the child's favorable self-image and enhanced self-esteem through support and warmth (Rosenberg, 1963). The Catholic father, on the other hand, was viewed as authoritarian or autocratic (Elder, 1962; Lynn, 1974).

In the traditional Mexican-American family the father had patriarchal authority. The concept of machismo was used by Lynn (1974) to define his role, based on the assumption

that he was stronger, more reliable, and more intelligent than the female. He was depicted as an initially adoring and affectionate father, who grew firm and authoritarian with his children as they reached puberty (Lynn, 1974).

In modern America, black families have remained matri-centered ". . .to the extent that there is a higher proportion than among whites of one-parent families headed by the mother" (Lynn, 1974, p.95). In 1971, Rosenthal (cited by Lynn, 1974) found a proportionate increase of black families headed by women in the 1960's to a level three times that of white families. Ten Houten (1970) stated that about 27% of black families were headed by women as compared to 9% of white families in 1970. Whether black families were matriarchal when the family was intact remains to be studied.

The Father Role

The role of the father in the family was characterized by Landis (1962) as vital to the cohesive family unit. He surveyed 3,000 middle-to-upper-class college students to determine the values their families held and the relationship the students had to each of their parents. Of the students who rated their parents' marriage as happy, 85% rated a close relationship with their mother, while 56% of the men and 73% of the women whose parents had divorced,

rated a close relationship with their mother. Conversely, 63% of the men and 71% of the women whose parents were happily married rated a close relationship with the father, while only 24% of the men and 33% of the women whose parents had divorced rated a close relationship with the father. Landis (1962) concluded that the father-child relationship was more predictive of the well-being of the family than the mother-child relationship.

Nash (1965) reviewed studies suggesting that matri-centered child-rearing carried higher risks for troubled child development. He cited the work on maternal overprotection by Levy in 1943 in which only 1 out of 20 cases was female. Nash (1965) concluded that maternal overprotection brought males to seek help from counselors more frequently than females. He also concluded that paternal overprotection was rare; when it did occur, it involved females more often than males (Levy, 1943; Nash, 1965).

New Fathers

Lynn (1974) suggested that part of the motivation of fatherhood was perhaps the inexperience of youth. "For a man, having a child may be like going to war: if he were capable of accurately visualizing the full implications of what he was getting into, he would not go" (p.225).

Immortality was proposed as a possible motivation for fatherhood. Having a child was one way the father could make certain that a part of him carried on after his death. Other means of ensuring his existence included belief in life after death and a creative contribution to his culture so that a part of him would exist after his death.

The adjustment to fatherhood as described by Lynn (1974) was more difficult than the adjustment to marriage. This adaptation was categorized as coping with changing role definitions, changing values regarding fatherhood, decreased preparation for parenthood, and increasing isolation and separation from support systems. Variables listed that relate to adaptation were age, perceptions of birth experience, early parent-infant separation, social stress, support systems, self-concept, maternal illness, infant temperament, infant illness, parent's own parenting experiences, and the events of pregnancy (Curry, 1983).

Le Masters (1957) supported this in his study. In his convenience sample of 46 couples, 38 (83%) couples confirmed his hypothesis that extensive or severe crisis existed in adjusting to the first child. The crisis event related to the fact that roles had to be reassigned, status positions changed, and values adjusted. Although this study was not well designed, it did serve to stimulate further research in the area. Dyer (1963) modeled his study of 32 urban,

middle-class couples on the Le Masters' (1957) study. In his convenience sample, Dyer found crisis to be less common than previously thought, with 28% rating extensive crisis, and 25% severe crisis.

Hobbs (1965) studied a random sample of white, urban, first-time parents in the Greensboro, North Carolina area. He found the incidence of crisis to be lower than did Le Masters (1957) or Dyer (1963), with 86.5% of the parents scoring slight crisis, 13.2% moderate crisis, and none scoring extensive or severe crisis. Among the fathers, 75% reported that they were bothered by an interruption of routine such as sleeping and going places, and 60% were bothered by money problems.

Difficulty in adjusting to expectant fatherhood was documented by Hartman and Nicolay (1966) as a crisis, manifesting itself in antisocial reactions. They investigated the association between expectant fathers and antisocial behavior of arrested men. Their experimental group consisted of 91 married men who were arrested during their wives' pregnancy. Their control group comprised 91 married men. The control group was drawn from the same population as the experimental group and was matched according to age, race, and year of offense. Their data indicated that 45% of the expectant fathers were arrested for sex offenses as compared to 17.6% of the control group.

The difference in number of sex offenses was statistically significant ($\chi^2=15.96$, $df=1$, $p \leq .01$). Types of deviant sexual behavior observed included exhibitionism, pedophilia, rape, homosexual acts, transvestism, obscene phone calls, and indecent letter writing.

Liebenberg (1967) supported the concept of fatherhood as a crisis period in her evaluation of case work intervention with 60 primiparas and their husbands. She found that pregnancy was a time when many of the men needed their own mothers and telephoned their parents more often than usual.

In a descriptive study involving a convenience sample of 20 healthy primiparas, Curry (1983) assessed numerous variables in addition to adaptation to motherhood. Some of the variables that she observed were age, educational level, previous experience with children, planning of the pregnancy, and plans for childbirth education. She controlled for marital status, maternal illness, early maternal-infant separation, and breastfeeding. Data was collected during the third trimester in a clinic, 36 hours after delivery in the hospital, and in the home when the infant was 3 months old. Fifteen (75%) of the mothers were categorized as easy adapters, and five (25%) were ranked as difficult adapters based on their Tennessee Self-Concept Scale score. No significant differences were found between

the two groups according to age, education, planning of the pregnancy, or perceptions of their infant's characteristics. Curry stated that the difficult adapters showed less maternal attachment behavior toward their infants than the easy adapters. All of the easy adapters stated previous experience with children, while only one of the difficult adapters had previous experience with children. Therefore, the distinguishing variable between the two groups was determined to be previous experience with children.

Contrary to these findings, Celotta (1982) found Minnesota Multiphasic Personality Inventory (MMPI) scores on four scales for primiparas to be within normal ranges. Her study consisted of 23 middle-class, white primiparas whose average age was 27 years. The pre- and post-MMPI test means were as follows: physical complaints, 50.9 and 48.3, ego-strength, 56.6 and 59.8, depression, 56.2 and 54.7, and anxiety, 47.4 and 46.4. She summarized that new motherhood for these women was not a time of crisis.

Childbearing Role

Traditionally in western society, the expectant father was discouraged from active participation in the childbearing process. Society placed a greater emphasis on the expectant mother, and in her ability to bear and suckle her young. An implication of this trend was that the father

was no more than a biological necessity for the continuation of the species. His role was termed "planting the seed" (Handshin, 1981, p.50). Antle (1975) suggested that the father's childbearing role did not cease at the procreative function but continued through family-centered care.

L. Leonard (1977) found that most fathers wanted to participate in childbearing but felt unprepared for the pregnancy. She interviewed 20 caucasian fathers in a Canadian hospital one to five days after the birth of their infants to determine perceptions about labor and delivery. All of the fathers had attended prenatal classes. Of the group, 18 fathers were present at the birth, and 18 (not necessarily the same 18) were first-time fathers. The infants were healthy newborns who were delivered vaginally. Responses to the labor and delivery experience were rated on a scale ranging from an excellent experience (a positive four) to a very bad experience (a negative four). The mean score for labor experience was positive, and the mean score for delivery experience was positive. Most of the fathers explained their role during labor and delivery in terms of providing support, encouragement, and physical care to their wives. The author explained that this was the reason many fathers chose to stay with their wives without taking breaks. The fathers described the experience as a meaningful and valuable one.

Handshin (1981) stated that approximately 1 in every 10 fathers exhibits psychosomatic discomfort of pregnancy or "mitleiden". Symptoms included nausea, backaches, restlessness, and pain. She observed that the demonstration of "mitleiden" indicated the need for expectant fathers to participate in the pregnancy and delivery process. According to Handshin (1981) the role of the father in childbearing was poorly defined in the past. Consequently, fathers are presently trapped by the traditional ideas of fatherhood and paternal participation in childbearing. She further suggested that Western society is one of the few cultures that prescribes a role of idleness and nervousness at this time.

The couvade ritual developed in other cultures is a means of relieving paternal anxiety through participation. Couvade was defined by Handshin (1981) as "to hatch or lie down" (p.51). She described the ritual among the Mohave Indians in which transvestites mimic the labor and ceremonially deliver stones. Mead (1935) indicated that among the Arapesh the father was involved in childbearing by bringing articles for use in caring for the infant and in warding off evil. Conversely, Mead (1935) documented the role of the father in New Guinea as one in which he is forbidden to take an active role in childbirth. She

commented that the relationship between the mother and father was tense.

The question of whether an expectant father should be allowed to participate in the birth of his child has been of recent concern. Handshin (1981) pointed out that fathers could be an invaluable aid to the mother through comforting measures and providing support and companionship. In L. Leonard's (1977), study most fathers strongly believed that it was their right to attend the birth. A smaller group felt that it was not their right, but they felt that they wanted to be present. The fathers interjected that if their presence interfered with the work of the health care providers, they would not choose to be present at the delivery. In response to presence during the birth of a malformed or ill infant, 19 fathers stated that they preferred to be present. They added that they did not want their wives to be with strangers and that they wanted to share the difficult experience.

Handshin (1981) stated that nurses, with an increased understanding of paternal feelings, could encourage family-centered care and be able to prepare the father for his childbearing role. The father could experience the childbirth as a positive and rewarding event through the integration of his role in the family-centered approach.

Father Absence

Many of the early researchers who observed the father's role focused on father absence. Recently interest in this area has intensified since over 20% of the children (more than 10 million) in the United States live in fatherless families. Divorce has been listed as the most frequent cause of father absence (Biller, 1971).

Most initial researchers who were concerned with children whose fathers were absent did not differentiate the types of father-absence. Therefore, there has been controversy over the consequences of father absence. Lamb (1976) stated that the deleterious effects of father absence have included abnormal child development in numerous areas including sex role adaptation, academic performance, inhibition of aggression, formation of cognitive styles, moral development, inability to delay gratification, and delinquency. Conversely, Biller (1971) stressed that father absence does not necessarily lead to developmental deficits or render the child whose father is absent inferior to the child whose father is present. The many factors requiring consideration in evaluation of the father's absence were listed as: type (constant, intermittent, temporary); length; cause; the child's age and sex; his constitutional characteristics and developmental status; the mother's reaction to husband-absence; the quality of

the mother-child interaction; the family's socioeconomic status; and the availability of surrogate models. Biller (1971) concluded that the child whose father was absent was not paternally deprived if an adequate father-surrogate was present, or was less paternally deprived than many children whose fathers were present.

Nature of the Father-Infant Relationship

The nature of the father-infant relationship is discussed during the newborn period and beyond the newborn period. Extraneous variables identified in this study are addressed.

In the Newborn Period

Studies of attachment theory have previously dominated research on the father-infant relationship. According to attachment theorists (Ainsworth, 1969; Bowlby, 1969), infants are born with a biological tendency to seek proximity to adults. The concept of monotropy was introduced to indicate that infants focus their proximity seeking behaviors on a specific individual. This individual becomes the primary attachment figure and was identified by the investigator as the mother. Bowlby (1969) identified the father mainly as a source of emotional support to the mother.

The assumption of limited paternal importance was tested by comparing infant response to the mother and with responses to the father (Kotelchuck, 1976). The purpose was to examine the child's behavior in an unfamiliar playroom in relation to the presence or absence of mother, father, or an unfamiliar female. The study group consisted of 120 middle-class, first born children in the Boston area (12 boys and 12 girls each in groups of 6, 9, 15, 18, and 21 months of age). The investigators concluded that infants and toddlers protest the departure of both parents, but not the departure of a stranger. Both boys and girls decreased play when the mother and father left the room, and increased play when the stranger departed ($F(2,240)=74.09, p \leq .001$). Results of the study contradicted Bowlby's (1969) previous findings that the mother-child bond was unique. The author concluded that children were not monotropically matri-centered.

The existence of a "sensitive period" in the development of a paternal-infant bond was explored by a few researchers. Rodholm (1981) studied two groups of father-infant pairs. All of the infants were born by cesarean-section. The control group consisted of 16 father-infant pairs for whom there was little contact. The infant was routinely placed in an isolette for 24 hours after delivery, while the father was instructed that he

could watch but not touch. The control group was called the non-contact group. The experimental group was comprised of 29 father-infant pairs. These infants were presented to the father 15 minutes after delivery on a blanket and under a heating lamp. The father could hold the infant for 10 minutes and then observe while a nurse cared for the infant. The experimental group was termed the contact group. When the infant was three months old, the father-infant interaction was video-taped in a play situation in the home. The author found that contact fathers touched their infants more often than the non-contact fathers ($z=2.04$, $p \leq .05$). No differences were found in the way the fathers played with male or female infants.

The nature of the father-infant interaction was explored by Greenberg and Morris (1974). They questioned two groups of fathers regarding their feelings about their newborn 48 to 72 hours after the child's birth. One group consisted of 15 fathers who were present in the delivery room. The second group was made up of 15 fathers who were not present at the birth. The two groups were similar in age, socioeconomic characteristics, and amount of previous experience in child care. On the questionnaire, 97% of the total sample of fathers rated their paternal feelings as average to very high and indicated that they were happy with the sex of their baby. In both groups of fathers, 90% felt

that they were able to distinguish their newborns from other infants by the way they looked. Although fathers present at the birth felt that they were able to identify their infants all of the time, fathers not present at the birth thought they were able to do so only part of the time (0.1 level of significance). Most of the fathers (77%) indicated that they picked up their newborns often or sometimes; however, fathers present at the birth felt more comfortable holding their baby.

The results of the Greenberg and Morris (1974) study suggested the importance of early father involvement with their infants. Furthermore, the father-infant interaction was described in behavioral terms by Parke, O'Leary, and West (1972). The behavior of 19 fathers in the family triad was observed for 10 minute sessions on the first three days after birth. The authors stated that results indicated that the fathers were as involved with their infants as the mothers were. Fathers tended to hold and rock their infants more than the mothers. Uncontrolled extraneous variables included: the supporting presence of the mother, the father's attendance at Lamaze classes, his presence at delivery, a high education level and middle class status.

In order to overcome the limitations in the original study (Parke et al., 1972), a more stringent test of father-infant involvement was conducted (Parke & O'Leary,

1976). Eighty-two lower class fathers who neither attended childbirth classes nor were present during the delivery were first observed within 48 hours after their child's birth, then alone with their infants, and finally with the mothers present. Three types of observations were made in 10 minute sessions: mother-infant; mother-father-infant; and father-infant. Inter-rater reliability was established at 85% and 99% for infant and parent behaviors. Fathers were found to be interested and active participants. They were equally active in both settings, alone and with the wife. Fathers touched, looked at, vocalized to, and kissed their newborns as often as the mothers did. Moreover, the authors indicated that the father showed more nurturant behavior in the triadic situation than the mother, and an equal amount when alone with the baby.

Palkovitz (1982) found contrasting information in his study of the effects of father participation in delivery. He observed 40 couples and their infants at five months of age. All but one of the fathers planned to attend the birth. Thirty fathers attended the delivery (2 cesarean, 28 vaginal). Ten fathers did not attend the birth due to cesarean birth (8), rigid work schedule (1), and illness (1). The author hypothesized that presence at the birth and extended contact with the infant were associated with greater father-infant interaction five months later.

He found, contrary to his hypothesis, that fathers who were not present at their child's birth had more physical contact ($t(38)=-3.31$, $p \leq .003$) and more vigorous play with their infants ($t(38)=-2.08$, $p \leq .04$) when mothers were present than did fathers who attended the birth. He explained this finding as indicating compensation for the exclusion or loss at birth attendance. Compensation took the form of physically touching the infant more or playing more vigorously with the infant when mothers were present. Support for compensation was indicated in the observation that there was no significant difference in the behavior of fathers who attended the delivery and fathers who did not when their wives were absent.

Fathers who attended the birth engaged in more non-interactive behavior (watching television, reading) when mothers were present than fathers who did not attend the birth ($t(38)=2.13$, $p \leq .04$). Palkovitz (1982) speculated that fathers attending the birth had already demonstrated involvement at the critical time of birth. Now, they could exercise liberty in not interacting with the child. He summarized that the father who was absent from the delivery was more involved with his infant when the mother was present in order to placate her.

Lamb (1981) summarized the element of the early father-infant interaction in stating that stimulatory and

affectionate behavior was dependent upon the opportunity to hold the infant. If the father had the opportunity to hold the infant, he equalled or exceeded the mother in display of those behaviors. The author stated that fathers as well as mothers were interested in, nurturant toward, and stimulating for the newborns.

Beyond the Newborn Period

According to Parke, Power, Tinsley, and Hymel (1979) many of the characteristics of the father-infant interaction in the newborn period were also present in later infancy. Early differences between maternal and paternal interactions were evident in the home caretaking studied by Kotelchuck (1976). Findings from his study showed that fathers were present for 3.2 hours, while mothers were present for 9.0 hours ($p \leq .001$). Mothers spent more time feeding (1.45 hours) than fathers (0.25 hour, $p \leq .001$) and spent more time cleaning the child than fathers (.92 hour versus .15 hour, $p \leq .001$). Fathers spent a larger percentage of time (37.5%) in play than the mothers did (25.8%).

Emerging from this report was a sex differentiation. Fathers played approximately one-half hour longer a day with their firstborn sons than with their firstborn daughters ($p \leq .01$). Kotelchuck (1976) stated that by 21 months of age, boys played more with their fathers than with their mothers.

Parke et al., (1979) stated that it is not only the quantity of time that differentiates mother and father interaction in infancy but also by the quality of the activity. Differences in mother-infant and father-infant play were demonstrated by Yogman, Dixon, and Tronick (1979). Mothers, fathers, and strangers were compared in a situation with infants. Each of five infants was observed once between two weeks to six months of age in two minutes of interaction with its mother, father, and a stranger. The infant and the adult faced each other, with the latter instructed to play without using toys and without removing the infant from an infant seat. The encounter was video-taped and scored in order to analyze patterns of interaction. The adults displayed differing vocal and tactile patterns in playing with the infants. Mothers vocalized more often (47%) with soft, repetitive, imitative burst-pause talking than did fathers (20%) and strangers (12%). Fathers rhythmically touched their infants more often (44%) than mothers (28%) or strangers (29%). Although this was a small study, they deduced that this method of approach was beneficial in discriminating subtle differences in interaction styles.

Stylistic differences in mother-father play with young children were observed in the home by Lamb (1977). Twenty infants were observed (at 15, 18, 21, and 24 months of age)

in unstructured home contexts with their mother, father, and an unfamiliar investigator. The unfamiliar investigator dictated detailed accounts of the infant's behavior and the contingent behaviors of others present. They deduced from the findings that fathers played more physical games and engaged in more parallel play with their infants. Mothers engaged in conventional play such as peek-a-boo and pat-a-cake. They also concluded that the early emergence of fathers as play partners was reciprocated by the infants in the first two years.

This review indicated that the father plays an important and unique role in relation to his infant. The pattern of early interaction between the father and infant was demonstrated to have a powerful influence on the infant's development. The nature of the father's influence was considered within the family as fathers influenced their infant's development directly and indirectly.

Summary

Historical roots of the father's role were traced to Greek, Hebrew, and Roman patriarchs. There has been a steady decrease in paternal power since that time with a sharp decline during the Industrial Revolution. Examples of Latin and Japanese patriarchy were given. A close father-child relationship was associated with a cohesive family. The adjustment to fatherhood was discussed as a crisis. The

father's role in childbearing was characterized traditionally as the act of impregnation, while a modern viewpoint was discussed as incorporating an expanded role through a family-centered approach. The controversial topic of father absence was discussed in relation to its effect on child development. Finally, extraneous variables identified for this study were discussed along with the nature of the father-infant relationship in the newborn period and beyond it.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

In this study the investigator assessed the effects of early paternal-infant contact on fathers' perceptions of their infants. A descriptive, nonexperimental, two-group design was used.

Setting

The study was conducted at a private 900 bed hospital within a medical complex in a large southwestern metropolitan area. The hospital was affiliated with a state medical school and several nursing schools, and had numerous programs in education and research. The labor and delivery unit consisted of 9 beds, while the postpartum floor consisted of 63 beds. The obstetric-gynecologic service had approximately 3,200 deliveries per year. Patient rooms in the hospital were used to gather data for the first phase of testing. The second phase of testing was completed by using a mail-out questionnaire. Therefore, there was no control over the environment in which the instruments in the second phase were completed.

Population and Sample

The original sample for this study was 75 first-time fathers. Of that original group, 51 fathers returned the mail-out questionnaire. The participants were between the ages of 21 to 39 years and were first time fathers of healthy infants born by uncomplicated pregnancy and labor. Fathers participating in the study were able to speak, read, and write in the English language. Fathers were included regardless of educational background or race. Extraneous variables for this study were addressed through inclusion in the Demographic Data Profile (Appendix A).

An accidental sampling technique was used to divide the fathers into one of two groups. Fathers were asked to participate in the study while visiting the mother's postpartum room. Those fathers who were present in the delivery room for the birth of their first born infants comprised the contact group. Those fathers who were not present in the delivery room for the birth of their first born infants comprised the non-contact group.

Protection of Human Subjects

Approval was obtained from Texas Woman's University, the hospital, and the affiliated university prior to the collection of data (Appendix B). In order to protect the subjects' rights, confidentiality of all records and all

communication, written and verbal, between the parents and the investigator was maintained. Code numbers were destroyed after the tabulation of the data. Fathers' names and addresses were used only for the purpose of mailing the second instrument and the results of the study. Subsequent to this mailing, all records of the fathers' names and addresses were destroyed.

All fathers who met the criteria were asked to participate in the study while visiting in the hospital 24 to 72 hours after the birth of their newborns. At this first meeting the following occurred:

1. The instruments were referred to as questionnaires in order to minimize test anxiety.
2. The first questionnaire was administered in the mother's postpartum room.
3. The purpose of the study was stated as: "The purpose of this study is to better understand how fathers get to know their newborns."
4. Data collection and the responsibility of the father were explained as: "While visiting here in the hospital between 24 and 72 hours after the birth of your baby you will be asked to complete a questionnaire. When the baby is one week old you will be asked to complete a second questionnaire which should be returned by mail to me in the enclosed, stamped envelope."

5. The father was informed that his participation was voluntary and that he could withdraw from the study at any time without affecting his wife's or infant's treatment.
6. The fathers were also informed that return of the questionnaire constituted their informed consent to act as subjects in this study.

Instruments

The Demographic Data Profile, designed by the investigator (Appendix A), was based on questionnaires used by S. Leonard (1976, 1977) and Taubenheim (1981). It was used in this study to determine the influence of those extraneous variables identified in the literature. The extraneous variables included the following: age of the fathers (Taubenheim, 1981); marital status (Greenberg & Morris, 1974); planning of the pregnancy (Leonard, 1976); sex of the infant (Jones, 1981; Taubenheim, 1981); breast-feeding (Leonard, 1976); the father's experience in child care (Lindsay, 1981; Taubenheim, 1981); expectations about the degree and character of the father-infant interaction (Pedersen & Robson, 1969); how the fathers were fathered (Peterson, Mehl, & Leiderman, 1979; Taubenheim, 1981); attendance at prenatal classes (Bowen & Miller, 1980; Lindsay, 1981; Taubenheim, 1981); and instructions

in infant care (Peterson et al., 1979; Taubenheim, 1981).

A review of the literature did not reveal tools specifically developed to measure paternal perception. Therefore, maternal perception inventories, the Broussard (1979) Neonatal Perception Inventories (NPI) (Appendix A), were used for measuring paternal perception. This instrument, although established for use with mothers, has been documented in the literature for its use with fathers (Jones, 1981).

The self-administered NPI is a projective technique designed to measure the adaptive potential of the mother-infant unit during the first month of life. The NPI consists of three inventories: NPI 1 (completed one to four days postpartum), NPI 2 (completed four to six weeks postpartum), and the Degree of Bother Inventory (DBI) (completed four weeks postpartum). The NPI 1 and 2 measure the subject's perception of his baby as compared to the idea of the Average Baby. The NPI 1 and 2 are comprised of four parts: the Average Baby Form I and II, and the Your Baby Form I and II. Each form is similar except for slight differences in wording, and each has six single-item scales which include behavioral items such as crying, spitting, feeding, elimination, sleeping, and predictability. The DBI was designed to assess the degree to which a person (termed self on the questionnaire) is bothered by the infant's

behavior in regard to the same six behavioral items as are covered on the NPI 1 and 2. The DBI is an experiential tool and is to be completed after the infant is four weeks of age.

Likert-type scales are used for each item on the NPI 1 and 2. Values from 1 to 5 are assigned to each scale item with "none" having a value of 1 and "a great deal" having a value of 5. The NPI score is derived by summing the ratings of the Your Baby and of the Average Baby Forms. A discrepancy score is obtained by subtracting the Your Baby score from the Average Baby score. If the discrepancy score is rated as better than average (a score of one or greater), the perception is considered positive and the infant is classified as low-risk for subsequent emotional disorder. If the discrepancy score is not rated as better than average (a score of zero, or a negative score), the perception is considered negative and the infant is classified as high-risk for subsequent emotional disorder. Broussard (1979) described the subsequent emotional disorder as significant psychopathology requiring psychiatric intervention.

Likert-type scales are used for each item on the DBI. Values from 1 to 4 are assigned to each item with "none" having a value of 1 and "a great deal" having a value of 4. The DBI score is derived by summing the values. A high DBI

score indicates a great amount of bother while a zero or low DBI score indicates no bother or a low amount of bother, respectively.

Content validity was established by Broussard (1979) in selecting the six single items on the NPI 1 and 2 scales based on clinical experience with the concerns of young mothers about their infants. Initial findings of the research with 318 mothers indicated that on NPI 1, 46.5% rated their infants as better than average, and on NPI 2, 61.2% rated their infants as better than average. The higher score at one month (NPI 2) indicated that scores at this time were more positive than at 1-4 days postpartum. Maternal perception at one week (NPI 1) was not correlated with problems at one month of age (DBI). A negative maternal perception at one week (NPI 2) was correlated with higher DBI scores (χ^2 significant at $p \leq .001$) indicating a greater amount of bother. A mother who rated her infant as positive was less bothered by her infant's behavior than the mother who rated her infant as negative.

Reliability for the NPI was established through test-retest over a 20-24 hour period with 20 primiparas (first delivery) and 20 multiparas (previous deliveries) (Freese & Thoman, 1978). The NPI was administered at 24 hours while the NPI 2 was administered at two days postpartum. The authors concluded that the only significant

value was for NPI 2 with primiparas. Test-retest reliability coefficients for the NPI 1 were $\underline{r}=.22$ for primiparas and $\underline{r}=.70$ with multiparas, and for the NPI 2, $\underline{r}=.82$ for primiparas and $\underline{r}=.70$ for the multiparas.

Predictive validity for the NPI 1 and 2 was established in longitudinal studies. At four and a half years of age, 120 children of the original population were evaluated by two psychologists who had no knowledge of previous NPI ratings. Children who were classified as low-risk for subsequent emotional disorder at one month of age (NPI 2) had less emotional disorder than did those classified as high-risk ($\chi^2 = 4.09$, $p \leq .05$). NPI 1 was not related to emotional disorder at four and one half years. Of the 120 children evaluated, 85 of these had a diagnosis established with classifications as follows:

1. 60 percent--healthy responses,
2. 30.6 percent--development deviations,
3. 3.5 percent--psychotic disorder (mild), and
4. 5.9 percent--psychoneurotic, psychophysiologic, personality, and reactive disorders. (Walker, 1982, p. 165)

At the ages of 10 to 11 years, 104 first borns of the original group were evaluated clinically by psychiatrists who then rated their evaluations using the Probability of Mental Disorder Scale. A statistically significant association ($\chi^2 = 4.09$, $p \leq .05$) was found between predictive risk rating at one month (NPI 2) and emotional development at the ages of 10 to 11 years. There was no statistically

significant association between NPI 1 and clinical evaluations at the ages of 10 to 11 years (Broussard, 1979).

Data Collection

The investigator approached the first-time fathers of healthy infants in the mother's room within 24 to 48 hours after the delivery. An Introductory Letter (Appendix C) was left in the room in the morning with an index card (3x5) stating the name and room number. The introductory letter explained that the study was about how fathers get to know their infants. Those fathers consenting to participate in the study returned the card by 4 o'clock in the afternoon to the nursing station. The Demographic Data Profile and the NPI 1 were administered in the mother's postpartum room after the father had consented to participate. Verbal explanations of the written instructions were given with responses to any questions which subjects wished to ask. It took approximately 15 minutes to complete the questionnaires.

The NPI 2 and the DBI were mailed to the fathers at two weeks post delivery. Although Broussard (1979) described administration of these questionnaires at four weeks post delivery, they were administered at this earlier time to assess during the period defined as a crisis period.

A cover letter (Appendix C) in which the instruments were explained and a self-addressed, stamped envelope were included with the questionnaires. Consent to participate in the study at this time consisted of the father's return of the questionnaire. A follow-up letter (Appendix C) was sent after one week to those fathers who did not return the instruments.

Treatment of Data

The dependent variable, paternal perception, was assessed in relation to the independent variable, presence at or absence from the birth of the first born. The dependent variable was measured using the Broussard (1979) Neonatal Perception Inventories (NPI). Analysis of variance (ANOVA) for repeated measures was used to test the null hypothesis stating that there was no difference in the perception of their firstborns between fathers who were present and those who were not present at the deliveries of their infants as measured at 24 to 72 hours and at two weeks using the NPI 1 and 2. The ANOVA was used to test the null hypothesis stating that there was no difference in bother between fathers who were present and those who were not present at the deliveries of their infants as measured at two weeks using the DBI. Percentages were used to describe the extraneous variables.

Statistical analysis of continuous variables such as age of the father and age of the mother were performed using the Pearson Product Moment Correlation Coefficient. For all two level variables such as sex of the baby and planning of the pregnancy, statistical analyses were done using a Mann-Whitney U test. For the variables with three or more levels: marital status and experience in handling and/or taking care of a newborn, statistical analysis involved the use of the Kruskal-Wallis test. If significant differences among groups were detected, multiple comparison studies were conducted using Dunn's Method.

Reliability was measured for the NPI since this analysis was not calculated in the studies using the NPI with fathers. It was calculated in this study using the Coefficient Alpha.

Summary

In this chapter the setting, population and sample, protection of human subjects, instruments, data collection, and treatment of data were discussed. This was a descriptive study in which a two group design with repeated measures was employed. The perceptions of fathers of their newborns were assessed using the Neonatal Perception Inventories.

CHAPTER 4

ANALYSIS OF DATA

In this study 51 first-time fathers comprised the sample. Thirty-two fathers who were present at the delivery of their first born infants made up the contact group. Nineteen fathers who were not present at the birth composed the non-contact group. Data describing the sample is provided using mean, percentage, and range.

Description of Sample

The sample consisted of 51 fathers. The infants were the first children for all of the fathers as well as for all of the mothers. The fathers ranged in age from 21 to 39 years with a mean age of 27.7. The mothers' ages ranged from 18 to 35 years with a mean age of 25. The ages of the fathers and the mothers are presented in Table 1. Forty-eight (94.1%) fathers were married, and 3 (5.9%) were single (Table 2). The sample was composed of 30 (58.8%) caucasians, 11 (21.6%) blacks, 7 (13.7%) Hispanics, 1 (2%) oriental, and 2 (3.9%) other (Indian, Arabic) (Table 3). Educational level varied from completion of the third grade (2%) to completion of four years of graduate school (3.9%) with a mean education level of 14.8 years (Table 4).

TABLE 1
Distribution of Fathers (N=51) and Mothers (N=51)
According to Age

Age Groups	Total Fathers		Total Mothers	
	Number	Percent	Number	Percent
18-20 years	0	-	8	15.7
21-25 years	21	41.1	21	41.1
26-30 years	18	35.3	17	33.3
31-35 years	8	15.6	5	9.9
36-39 years	4	7.9	0	-

TABLE 2
Distribution of Fathers
According to Marital Status (N=51)

Marital Status	Number	Percent
Married	48	94.1
Single	3	5.9

TABLE 3
Distribution of Fathers
According to Ethnic Group (N=51)

Race	Number	Percent
Black	11	21.6
Hispanic	7	13.7
Oriental	1	2.0
White	30	58.8
Other	2	3.9

TABLE 4
Distribution of Fathers
According to Educational Level (N=51)

Highest Level Completed	Number	Percent
Third Grade	1	2.0
High School Diploma	10	19.6
1 to 3 Years College	15	29.3
Graduated College	16	31.4
Attended Graduate School	9	17.7

The 19 (37.3%) female and 32 (62.7%) male full-term infants of these fathers were delivered vaginally after an uncomplicated pregnancy and labor (Table 5). Of these infants 38 (74.5%) were breast fed and 13 (25.5%) were bottle fed (Table 6). In response to planning of the pregnancy, 34 (66.7%) fathers reported that this pregnancy was a planned one, while 17 (33.3%) reported that it was not planned (Table 7). Thirty-nine (76.5%) fathers attended prenatal classes, while 12 (23.5%) did not (Table 7). The number of prenatal classes attended ran from zero to nine with a mean class attendance of 4.3 classes (Table 8). Of those fathers who attended prenatal classes, 11 (21.6%) attended a class on baby care (Table 7). In response to a question on experience with children, 12 (23.5%) fathers indicated none, while 30 (58.8%) stated some, and 9 (17.6%) claimed considerable experience (Table 9). Responses to the question regarding experience with a newborn infant

included: none, 37 (72.5%), some, 13 (25.5%), and considerable, 1 (2%) (Table 9). Answers to a question about confidence in taking care of their babies included: some, 18 (35.3%) and considerable, 33 (64.7%) (Table 9). These responses (some, considerable, and none) were not quantified. Therefore, these questions were answered according to the fathers' understanding of the responses. Preference for sex of the baby included: girl, 4 (7.8%), boy, 16 (31.4%), and no difference, 31 (60.8%) (Table 10).

TABLE 5

Distribution of Fathers According to
Sex of the Baby (N=51)

Sex of Baby	Number	Percent
Girl	19	37.3
Boy	32	62.7

TABLE 6

Distribution of Fathers According to
Type of Feeding (N=51)

Type of Feeding	Number	Percent
Breast	38	74.5
Bottle	13	25.5

TABLE 7

Distribution of Fathers According to Planning
of Pregnancy, Prenatal Class Attendance,
and Baby Care Class Attendance (N=51)

Variable	<u>Yes</u>		<u>No</u>	
	Number	Percent	Number	Percent
Planned Pregnancy	34	66.7	17	33.3
Attended Prenatal Class	39	76.5	12	23.5
Attended Baby Care Class	11	21.6	40	78.4

TABLE 8

Distribution of Fathers According to
Number of Prenatal Classes Attended (N=51)

Number of Prenatal Classes	Number	Percent
None	12	23.5
1 to 2	4	7.9
4 to 6	28	54.9
7 to 9	7	13.7

TABLE 9

Distribution of Fathers According to
Experience with Children, Experience
with Newborns, and Confidence in
Taking Care of Baby (N=51)

	<u>Considerable</u>		<u>Some</u>		<u>None</u>	
	Number	Percent	Number	Percent	Number	Percent
Experience with Children	9	17.6	30	58.8	12	23.5
Experience with Newborns	1	2.0	13	25.5	37	72.5
Confidence in Taking Care of Baby	33	64.7	18	35.3	0	0

TABLE 10

Distribution of Fathers According to
Preferred Sex of Baby (N=51)

Preferred Sex of Baby	Number	Percent
Girl	4	7.8
Boy	16	31.4
No Difference	31	60.8

The contact group consisted of 32 fathers who were present at the birth of their first borns. The non-contact group was comprised of 19 fathers who were not at the birth of their first borns (Table 11). Of the fathers present at the delivery, 29 (56.9%) watched their baby being born, 28

(54.9%) held their baby, and 29 (56.9%) touched their baby while in the delivery room (Table 11). The following was tabulated from responses by the non-contact fathers in reference to when the infants were initially seen: in the recovery room or within the first hour after birth, 3 (5.9%), and at 2 to 4 hours old, 3 (5.9%), 4 to 12 hours, 6 (11.8%), 12 to 24 hours, 5 (9.8%), and 24 to 48 hours, 2 (3.9%) (Table 12). All of the fathers visited their wives and babies in the hospital. Forty-eight (94.1%) fathers visited each night, while one (2%) reported visiting twice and two (3.9%) reported visiting once (Table 13). In response to what activity the father had with the infant while in the hospital, 19 fathers (37.3%) held and fed their infants, 12 (23.5%) diapered the infant, and 10 (19.6%) simply held their infants (Table 14). In response to a question about how the father was fathered, 21 (41.2%) fathers stated that their fathers shared the child-rearing responsibility with their wives (Table 15).

TABLE 11
Distribution of Fathers According to
Activity in the Delivery Room (N=51)

	Yes		No	
	Number	Percent	Number	Percent
Present at Delivery	32	62.7	19	37.3
Watched the birth	29	56.9	22	43.1
Held the infant immediately after birth	28	54.9	23	45.1
Touched the infant immediately after birth	29	56.9	22	43.1

TABLE 12
Distribution of Fathers According to
When the Baby Was Seen (N=51)

When	Number	Percent
Immediately	32	62.7
In first hour	3	5.9
2 to 4 hours	3	5.9
4 to 12 hours	6	11.8
12 to 24 hours	5	9.8
24 to 48 hours	2	3.9

TABLE 13
Distribution of Fathers According to
Number of Visits (N=51)

Visits	Number	Percent
One	2	3.9
Two	1	2.0
Each night	48	94.1

TABLE 14

Distribution of Fathers According to
Activity with the Baby (N=51)

Activity	Number	Percent
None	3	5.9
Watched baby	1	2.0
Watched wife hold	1	2.0
Held baby	10	19.6
Held & Fed baby	19	37.3
Burped baby	1	2.0
Diapered baby	12	23.5
Rocked baby	2	3.9
Played with baby	2	3.9

TABLE 15

Distribution of Fathers According to
the Relationship with their Fathers (N=51)

Father's Relationship with his Father	Number	Percent
Little active participation	10	19.6
Fairly active participation	17	33.3
Shared responsibility	21	41.2
Had most of the responsibility	1	2.0
Not present	2	3.9

The NPI 1 test scores ranged from -1 to 8 while the NPI 2 scores ranged from -10 to 13 (Table 16). The NPI 1 scores were mostly positive (one -1 and one zero) and clustered in their distribution as compared to NPI 2 scores which had a wide negative and positive distribution. The DBI scores ranged from 6 to 21 (Table 17). This statistic depicted a wide distribution of scores for how much the father was bothered by his infant.

TABLE 16
Distribution of Fathers According to
NPI 1 and NPI 2 Scores (N=51)

Score	<u>NPI 1</u>		<u>NPI 2</u>	
	Number	Percent	Number	Percent
-10	0	-	1	2.0
-6	0	-	1	2.0
-4	0	-	1	2.0
-3	0	-	2	3.9
-2	0	-	4	7.8
-1	1	2.0	4	7.8
0	7	13.7	5	9.8
1	12	23.5	5	9.8
2	16	31.4	5	9.8
3	3	5.9	6	11.8
4	2	3.9	8	15.7
5	5	9.8	1	2.0
6	2	3.9	0	-
7	2	3.9	2	3.9
8	1	2.0	2	3.9
10	0	-	1	2.0
11	0	-	2	3.9
13	0	-	1	2.0

TABLE 17
Distribution of Fathers According to
DBI Scores (N=51)

Score	Number	Percent
6	2	3.9
7	3	5.9
8	3	5.9
9	1	2.0
10	2	3.9
11	3	5.9
12	5	9.8
13	6	11.8
14	3	5.9
15	5	9.8
16	9	17.6
17	4	7.8
18	1	2.0
19	1	2.0
20	2	3.9
21	1	2.0

Findings

Analysis of variance with repeated measures was used to analyze the NPI 1 and NPI 2 test scores and attendance at delivery. The fathers present and not present had similar mean scores on NPI 1 (2.37 and 2.26, respectively). The fathers who were present at the birth had an increase in their mean responses on NPI 2 (3.46), while those not present had a decline in their mean response on NPI 2 (-0.21) (Table 18). No significantly different ($p \leq .247$) test scores for the total group were found over the two week time period. The Null hypothesis 1 stating that there was

no difference in perception, measured at 24 to 72 hours and two weeks, according to whether the father was present at or absent from the delivery, was accepted (Table 19).

TABLE 18

Means for Father's NPI 1 and NPI 2 Scores

Means	Present at Delivery (N=32)	Not Present at Delivery (N=19)
NPI 1	2.37	2.26
NPI 2	3.46	-0.21

TABLE 19

Analysis of Variance with Repeated Measures
for Father's NPI 1 and NPI 2 Scores (N=51)

Source	Sum of Squares	df	Mean Square	F	P
Delivery	85.67	1	85.67	7.19	.009
Error	583.58	49	11.90		
R	11.35	1	11.35	1.37	.247
RD	75.86	1	75.86	9.14	
Error	406.72	49	8.3		

An analysis of variance was used to analyze the DEI scores and attendance at delivery. The F value, which was 7.27, was significant at the $p \leq .01$ level. The Null hypothesis 2 stating that there was no difference in bother scores between fathers who were present and those who were not present at the delivery of their infants was rejected.

The alternate hypothesis stating that there was a significant difference in both scores between fathers who were present and those who were not present at the deliveries of their infants was retained (Table 20).

TABLE 20

Analysis of Variance for Father's DBI Scores (N=51)

Source	Sum of Squares	df	Mean Square	F	Significance of F
Main effects Delivery	92.32	1	92.32	7.27	.01

Using the Kruskal-Wallis test, no significant differences were found in test scores (NPI 1, NPI 2, DBI) based on marital status, race, educational level, experience with children, experience with newborns, confidence in taking care of their newborns, preferred sex of the baby, number of times the father visited, and how the fathers were fathered. A significant difference was noted on NPI 2 ($p \leq .04$) and DBI ($p \leq .03$) scores depending on when the father saw his infant for the first time (Table 21). A significant difference ($p \leq .035$) was also found in DBI scores according to activity the father had with the baby. These findings indicated a significant difference in how the father perceived his baby and how annoyed he was by his infant.

TABLE 21
Kruskal-Wallis One-Way ANOVA for Father's Personal
Characteristics with NPI 1, NPI 2, DBI Scores (N=51)

Characteristic	NPI1	NPI2	DBI
Marital Status			
ChiSquare ^a	0.707	0.524	0.680
<u>p</u>	.4	.469	.409
Race			
ChiSquare	6.650	3.896	4.284
<u>p</u>	0.156	0.420	0.369
Educational Level			
ChiSquare	4.202	1.827	3.199
<u>p</u>	.379	.767	.525
Experience with Children			
ChiSquare	0.795	1.659	0.397
<u>p</u>	.672	.436	.820
Experience with Newborn Baby			
Chi Square	1.699	2.569	0.330
<u>p</u>	.428	.277	.848
Confidence in taking care of Baby			
Chi Square	2.387	0.759	0.039
<u>p</u>	.122	.384	.843
Preferred Sex of the Baby			
Chi Square	2.012	0.786	3.827
<u>p</u>	.366	.675	.148
When the Father saw the Baby			
Chi Square	9.215	11.641	11.720
<u>p</u>	.101	.040*	.039*
Number of Visits			
Chi Square	1.970	1.687	0.227
<u>p</u>	.373	.430	.893
Activity with Baby			
ChiSquare	8.824	9.374	16.562
<u>p</u>	.357	.312	.035*
Father's Relationship with his Father			
Chi Square	4.251	4.396	7.302
<u>p</u>	.373	.355	.121

^aConverted to Chi Square for large samples *significant

Multiple comparisons were calculated using Dunn's Method for those significant mean ranks on the Kruskal-Wallis test (Appendix D). A comparison of mean rank scores of NPI 2 according to when the father saw the infant revealed that fathers who saw the birth (immediately) had more positive NPI 2 scores than fathers who saw their infants at all other times except for at 2 to 4 hours. The NPI 2 scores of fathers who saw their infants at birth were not significantly different from those of fathers who saw their infants at 2 to 4 hours after birth ($p=.05$). Fathers who saw their infants at 2 to 4 hours had more positive NPI 2 scores than fathers who saw their infants at all later times. Fathers who saw their infants in the recovery room or 1 hour after birth had more positive scores in comparison to fathers who saw their infants at 24 to 48 hours. The scores of these fathers were not significant when compared to fathers who saw their infants at 4 to 12 hours and 12 to 24 hours. There were no significant differences in scores of fathers who saw their infants at 12 to 24 hours in comparison to 24 to 48 hours and 4 to 12 hours. There were no significant differences in scores of fathers who saw their infants at 4 to 12 hours and those who saw their infants at 24 to 48 hours (Appendix D, Table A). Therefore, fathers who saw their infants up to 2 to 4 hours after the birth had significantly different ($p=.05$) NPI 2 scores than

fathers who saw their infants later.

In comparing mean rank scores of the DBI according to when the father initially saw the infant, significant differences were found among those fathers who watched the delivery and saw the infant in the recovery room or 1 hour after birth in comparison to all other times when the fathers saw their infants (Appendix D, Table B). Fathers who saw their infants in the recovery room or 1 hour after birth had lower degree of bother scores when compared to fathers who saw their infants at 2 to 4 hours, 4 to 12 hours, 12 to 24 hours, and 24 to 48 hours. There was no significant difference between scores of fathers who saw their infants being born (immediately) and those who saw their infants in the recovery room ($p=.05$). Fathers who saw their infants at 2 to 4 hours and 4 to 12 hours had lower bother scores than fathers who saw their infants at 12 to 24 hours and 24 to 48 hours. Scores of fathers who saw their infants at 2 to 4 hours were not significantly different when compared to those who saw their infants at 4 to 12 hours. Fathers who saw their infants at 24 to 48 hours had lower bother scores when compared to those who saw their infants at 24 to 48 hours.

Since the Kruskal-Wallis One-Way ANOVA indicated significantly different mean ranks for the DEI and the activity which the father had with the baby while visiting

in the hospital, multiple comparisons were calculated using the Dunn's Method (Appendix D, Table C). Fathers who played with their infants had significantly lower bother scores as compared to all other types of activity. Fathers who held, diapered, burped, and watched their wives feed and hold the infants had significantly lower scores when compared to fathers who held and fed, rocked, watched the infant, and had no activity with the baby. Fathers who held, fed, and rocked their infants had significantly lower scores than fathers who watched the infant and those who had no activity with the baby indicating less bother. Those fathers who had no activity with the baby had significantly lower scores than those who watched the infant indicating less bother. Since there were significant differences in perception scores among fathers according to personal characteristics the Null hypothesis 4 was rejected.

Pearson Product-Moment Correlations were calculated to examine the relationship of the age of the fathers and mothers with the test scores. There were no significant correlations between age of the father or age of the mother and NPI 1, NPI 2, and DBI scores (Table 22). Therefore the Null hypothesis 3 stating that there were no significant differences in the perceptions of groups of fathers according to personal characteristics was accepted.

TABLE 22

Pearson Product Moment Correlation for NPI 1, NPI2, and DBI Scores with Age of Father (N=51) and Mother (N=51)

	NPI 1	NPI 2	DBI
Age of Father			
$\frac{r}{p}$	0.1876	0.1098	-0.1647
	.094	.221	.124
Age of Mother			
$\frac{r}{p}$	0.1276	0.1948	-0.0196
	.186	.085	.446

A comparison using the Mann-Whitney U-test did not show significant differences among the test scores (NPI 1, NPI 2, DBI) with respect to the sex of the baby, type of feeding, planning of the pregnancy, prenatal classes, or baby care classes (Table 23). There were significant differences in NPI 2 and DBI scores of fathers according to whether or not they watched the birth. Fathers who did not view their infants at delivery had an NPI 2 mean rank of 18.52, while fathers who watched their infants being born had a mean rank of 31.67. Fathers who did not watch the birth had a DBI mean rank of 33.64, while fathers who saw the birth had a mean rank of 20.21. Therefore, the fathers who watched the births of their infants had higher NPI 2 scores and scored lower on the DBI indicating a more positive perception and lower degree of bother.

TABLE 23

Mann-Whitney U for Personal Characteristics of the
Father with NPI 1, NPI 2, and DBI Scores

		Fathers Present (N=32)	Fathers Not Present (N=19)		
		Mean Rank	Mean Rank	<u>z</u> ^a	<u>p</u>
<hr/>					
Sex of Baby					
	NPI1	26.63	25.63	-0.2395	0.8107
	NPI2	29.03	24.20	-1.1254	0.2604
	DBI	25.66	26.20	-0.1273	0.8987
Type of Feeding					
	NPI1	27.63	21.23	-1.3730	0.1697
	NPI2	28.21	19.54	-1.8239	0.0682
	DBI	24.09	31.58	-1.5750	0.1153
Planning of the Pregnancy					
	NPI1	26.31	25.38	-0.2150	0.8298
	NPI2	26.26	25.47	-0.1807	0.8566
	DBI	25.03	27.94	-0.6628	0.5075
Prenatal Class Attendance					
	NPI1	25.87	26.42	-0.1138	0.9094
	NPI2	25.99	26.04	-0.0112	0.9911
	DBI	25.87	26.42	-0.1116	0.9111
Baby Care Class					
	NPI1	21.45	27.25	-1.1733	0.2407
	NPI2	27.64	25.55	-0.4141	0.6788
	DBI	20.59	27.49	-1.3696	0.1708
Delivery					
	NPI1	26.66	24.89	-0.4192	0.6751
	NPI2	31.05	17.50	-3.1609	0.0016
	DBI	21.70	33.24	-2.6925	0.0071
Watching the Delivery					
	NPI1	27.22	24.39	-0.6918	0.4891
	NPI2	31.67	18.52	-3.1430	0.0017
	DBI	20.21	33.64	-3.2114	0.0013

TABLE 23 continued

		Mean Rank	Mean Rank	<u>z</u> ^a	<u>p</u>
Holding					
	NPI1	29.55	21.67	-1.9299	0.0536
	NPI2	31.20	19.67	-2.7670	0.0057
	DBI	22.71	30.00	-1.7504	0.0800
Touch					
	NPI1	28.71	22.43	-1.5297	0.1261
	NPI2	31.72	18.45	-3.1717	0.0015
	DBI	22.52	30.59	-1.9307	0.0535

^aU value converted to Z for large samples.

Reliability was calculated for the NPI and DBI using the Coefficient Alpha for internal consistency (Table 24). Using a minimum criterion of 0.70, the r value was not acceptable for the NPI 1 Average Baby Form ($r=0.59$) and the NPI 2 Your Baby Form ($r=0.66$). It was acceptable for the NPI 2 Average Baby Form ($r=0.78$) and DBI ($r=0.82$) indicating that these measurements were more reliability (Table 24).

TABLE 24

Reliability Coefficients for NPI 1 and NPI 2

Test	Your Baby Form	Average Baby Form
NPI1	0.72	0.59
NPI2	0.66	0.78

Summary

In this chapter a description of the 51 first-time fathers who participated in this study was presented in relation to the demographic variables. Thirty-two fathers were present at the delivery and made up the contact group. Nineteen fathers were absent from the birth and constituted the non-contact group. The findings were given according to the hypotheses. The Null hypothesis 1 stating that there was no difference in perception according to whether the father was present at or absent from the delivery was accepted based on a $p=.247$ level of significance. The Null hypothesis 2 stating that there was no difference in bother scores between fathers who were present and those who were not present at the delivery of their infants was rejected at $p<.01$. The Null hypothesis 3 stating that there were no significant differences in the perceptions of fathers according to personal variables was accepted. The Null hypothesis 4 stating that there were no significant relationships between personal variables and perception scores of the fathers was rejected.

CHAPTER 5

SUMMARY OF THE STUDY

The following summary is presented to review the hypotheses, discuss the findings, and summarize the study. Conclusions have been presented in order of hypotheses. Implications are drawn, and recommendations given for further study.

Summary

This study was conducted at a large private hospital to investigate the relationship between a father's presence at the delivery and his perception of his newborn. Fifty-one fathers consented to participate. The contact group was made up of 32 fathers who were present at the delivery of their first-borns. The non-contact group consisted of 19 fathers who were not present at the birth of their first-borns. A total of four questionnaires were administered to each subject. A demographic data questionnaire and NPI 1 were completed by the fathers while in the mother's room at 24 to 72 hours after the birth. The NPI 2 and DBI were completed as mail-out questionnaires two weeks after the delivery.

Discussion of Findings

In comparing the two groups of fathers with respect to scores on the NPI 1 and NPI 2, significant differences ($p \leq .009$) in mean scores were found. The contact fathers had a positive perception ($\bar{X}=2.37$) at 24 to 72 hours and increased their positive perception ($\bar{X}=3.46$) over the two week period. The non-contact fathers started with a similar positive perception ($\bar{X}=2.26$) but decreased their perception to a negative ($\bar{X}=-0.21$) over the same period of time. However these differences were not statistically significant. Being present at the delivery did not make a significant difference in how the fathers perceived their infants. This finding was supported by existing literature on father participation in the delivery and his perception of his infant. Jones (1981) found no significant difference between fathers who received early contact and those who did not depending on their perception at 24 to 72 hours and one month. However, this finding was in contrast to previous research on the mother's perceptions of her infant. Hall (1980) found significant ($p \leq .05$) differences in the mother's perception of her infant when the mother attended classes on the NPI's six behavioral items.

According to Broussard (1970), infants who were rated by their mothers as better than the average baby (a score of positive one or greater) were listed as low-risk for

possible difficulty in child adjustment. Conversely, infants who were rated by their mothers as below the average baby (a score of zero or below) were classified as high risk for subsequent difficulty in development. The contact fathers as a group in this study perceived their infants as better than the average baby. The contact father-infant pair in this study is classified, according to Broussard's (1970) definitions, as an adaptive one and low-risk for subsequent infant psychosocial difficulty (NPI 2, $\bar{X}=3.46$). On the other hand, the non-contact father-infant pair is characterized as a maladaptive one and high-risk for subsequent infant psychosocial difficulty (NPI 2, $\bar{X}=-0.21$).

The DBI was administered at two weeks along with the NPI 2 to determine how much the father was bothered by his infant based on selected behavioral items. In this sample there was a significant ($p \leq .01$) difference in DBI scores depending on whether or not the father was present at the birth.

Significant differences were found in mean rank scores between NPI 2 and activity the fathers had with their babies. Watching the birth or seeing the infant 2 to 4 hours afterwards made significant differences in the father's perception of their infants at two weeks. Significant differences in the mean rank scores on the DBI according to when the father saw his infant after the birth

were also found. Those fathers who watched the delivery or saw the infant within the first hour were less bothered by their infants at two weeks. Those fathers who saw their infants at 2 to 4 hours and 4 to 12 hours had lower bother scores when contrasted with fathers who saw their infants at later times. These findings indicated that the earlier the contact of the fathers with their infants, the higher the perception scores and the lower the degree of bother scores at two weeks. These findings correspond with those of Greenberg and Morris (1974) who found that father contact with his infant in the first hour after birth was critical for engrossment. Other authors (Peterson, Mehl, & Leiderman, 1979; Rodholm, 1981) stressed that early father-infant contact determined father-infant bonding and attachment. These results paralleled studies pertaining to mothers which showed that extended mother-infant contact immediately after birth was critical for bonding and attachment (de Chateau, 1976; Hales, Lozoff, Sosa, & Kennell, 1977; Klaus & Kennell, 1970, 1976). Seeing the infant in the recovery room or 1 hour after the birth was significant only in comparison to seeing the infant at 24 to 48 hours.

Significant differences in the mean rank scores between the DBI and the activity the father had with the baby were found. Fathers who played with their infants while visiting

in the hospital were less bothered by their infants at two weeks. Fathers who held, diapered, burped, or watched their wives feed and hold the infant were less bothered by them at two weeks than fathers who held fed, rocked, and watched their infants. These results showed that any activity involving holding and touching the infant made a significant difference in how much the fathers were bothered by the infants. This finding was consistent with previous findings of Lamb (1981) and Parke, O'Leary, and West (1972).

The relationship between test scores and the following variables were not significant: age of the father, age of the mother, marital status, race, educational level, sex of the baby, type of feeding, planning of the pregnancy, prenatal classes, baby care classes, experience with children, experience with newborns, confidence in taking care of their newborns, number of times the father visited the mother and baby at the hospital, and how the fathers were fathered. Hall (1980) and Taubenheim's (1981) findings were similar to these findings.

Reliability was adequate for the NPI 2 Average Baby Form ($r=0.78$) and DBI ($r=0.82$) using 0.70 as a minimum criterion. These instruments were judged as being reliable for this study. Reliability was not adequate for the NPI 1 Average Baby form ($r=0.59$) and the NPI 2 Your Baby Form ($r=0.66$). These instruments were judged as not being

reliable for this study. These findings were similar to those of Freese and Thoman (1978) who found the tool inadequate except for primiparas on NPI 2.

Conclusions and Implications

This sample was small and non-random. However, the findings have significance for future investigators in this area. The conclusions and implications of this study based on the results are as follows:

1. The fathers' presence at the delivery of their first borns does not affect their perceptions of their infants.
2. The perceptions of fathers who watch the delivery and see the infant soon after the birth are more positive than fathers who do not watch the birth and see the infant soon afterward.
3. Since the reliability coefficient for NPI 1 Average Baby Form and the NPI 2 Your Baby Form when used with this sample were judged to be low, the results of this study should be cautiously interpreted.

4. The concept of a critical time for the father at birth and immediately afterward was not supported. Instead, the concept of family-centered care and paternal participation (watching the delivery, seeing the infant, and having activity with the infant) was supported.
5. Clinically, the NPI may be used to identify areas that concern or disturb the father.

Recommendations for Further Study

Recommendations for further study based on the results of this study include:

1. A larger sample size and experimental design are recommended for future studies.
2. Research regarding the father's participation at delivery (presence, absence, and activity) is advised as there are few existing studies about the topic.
3. An exploration of approaches to include the father with the mother and the infant at this important time is recommended.
4. Further investigation using a longitudinal design is recommended to explore the long-term effects of presence at the delivery (Jones, 1981).

5. A prospective study of personalities before and after the delivery to determine what causes a better perception is also indicated.
6. Undergraduate education of nurses should include the importance of the father in the family system and at the birth of his infant (Jones, 1981; Leonard, 1976).
7. Further assessment of the reliability of the Broussard (1979) Neonatal Perception Inventory for use with fathers is recommended.

APPENDIX A
QUESTIONNAIRE PACKET

Code Number _____

Date _____

Please circle answer or fill in the blanks as appropriate.

1. Date of delivery _____
2. Age _____ 3. Age of wife _____
4. Marital status: Married Single Divorced
5. Race: Black Hispanic Oriental White Other _____
6. Last grade completed in school:

<u>4 5 6 7 8 9 10 11 12</u>	<u>1 2 3 4</u>	<u>1 2 3 4</u>
Grammar School	High School	College Post Graduate
7. Is this the first child for

you including any from previous marriage?	Yes	No
your wife including any from previous marriage?		
	Yes	No
8. Sex of baby: Girl Boy
9. How is your baby being feed? Breast Bottle
10. Was this a planned pregnancy? Yes No
11. Did you attend prenatal classes? Yes No

If yes, number of classes attended _____	
Did you attend a class on baby care?	Yes No
12. How much experience have you had in handling and/or taking care of young children such as babysitting or caring for younger brothers or sisters?

Considerable	Some	None
--------------	------	------

13. How much experience have you had in handling and/or taking care of a newborn baby?
Considerable Some None
14. Do you feel confident to take care of your baby?
Considerable Some None
15. Before your baby was born, did you want to have a:
Girl? Boy? It made no difference.
16. Were you present with your wife in the delivery room?
Yes No
17. If you were present in the delivery room, did you;
watch your baby being born? Yes No
hold your baby while there? Yes No
touch your baby while there? Yes No
18. If you were not present in the delivery room, when did you touch your baby for the first time?
-
19. Did you visit your wife and baby during the times allowed by the hospital? Yes No
20. When visiting in the hospital, what did you actually do with your baby? Please describe. (For example, did you hold or feed him, watched wife feed him?)
-

21. As far as you know, what part did your father take in child-rearing in your home?
- a. There was very little active participation on his part.
 - b. He participated fairly actively in child-rearing.
 - c. He shared the responsibility of child-rearing about equally with your mother.
 - d. He took most of the responsibility himself for child-rearing.
 - e. Father not present.

NEONATAL PERCEPTION INVENTORY I

AVERAGE BABY

How much crying do you think the average baby does?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

NEONATAL PERCEPTION INVENTORY I

YOUR BABY

How much crying do you think your baby will do?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble do you think your baby will have feeding?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much spitting up or vomiting do you think your baby will do?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much difficulty do you think your baby will have sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much difficulty do you expect your baby to have with bowel movements?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble do you think that your baby will have settling down to a predictable pattern of eating and sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

NEONATAL PERCEPTION INVENTORY II

AVERAGE BABY

How much crying do you think the average baby does?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

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

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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NEONATAL PERCEPTION INVENTORY II

YOUR BABY

How much crying has your baby done?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble has your baby had feeding?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much spitting up or vomiting has your baby done?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty has your baby had in sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much difficulty has your baby had with bowel movements?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much trouble has your baby had in settling down to a predictable pattern of eating and sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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You have had a chance to live with your baby for about two weeks now. Please check the blank you think best describes how much you were bothered by your baby?

	DEGREE OF BOTHER INVENTORY			
<i>Crying</i>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<i>Spitting up or vomiting</i>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<i>Sleeping</i>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<i>Feeding</i>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<i>Elimination</i>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<i>Lack of a predict- able schedule</i>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<i>Other (specify):</i>				
<u> </u>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<u> </u>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<u> </u>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none
<u> </u>	<u> </u> a great deal	<u> </u> somewhat	<u> </u> very little	<u> </u> none

APPENDIX B
APPROVAL FORMS

The University of Texas
Health Science Center at Houston



The Committee for the
Protection of Human Subjects

P.O. Box 20036 Houston, Texas 77225-0036 (713) 792-5048

Samuel Dreizen, D.D.S., M.D., Chairperson

NOTICE OF APPROVAL

☒ To Initiate Research
☐ To Initiate Changes

FROM: Samuel Dreizen, D.D.S., M.D.
Chairperson

RE: HSC-TWU-83-003 - "The Effect of Fathers' Presence During Delivery on
Their Perceptions of Their Newborns"
P.I.: Lisbeth Connolly, MS student

REVIEWED: February 18, 1983 ☒ Convened Meeting ☐ Other

PROVISIONS:

This proposal has been reviewed by the Committee for the Protection of Human Subjects. Any requested revisions have been approved and all supporting documentation received. This proposal is in accord with CPHS guidelines and approval is granted for the Principal Investigator(s) (P.I.) to initiate this proposal, subject to any noted provisions.

By engaging in this research, the P.I. acknowledges agreement to the following:

CHANGES - Changes, including those required by the sponsor, which would affect human subjects, including changes in methods or procedures, numbers or kinds of human subjects, or revisions to the informed consent document or process, will not be initiated prior to approval by the CPHS, nor will new P.I.s be named prior to such approval. The P.I. will notify the CPHS upon leaving the institution.

UNANTICIPATED RISK OR HARM, OR ADVERSE DRUG REACTIONS - The P.I. will immediately inform the CPHS of any unanticipated problems involving risks to subjects or others, of any serious harm to subjects, and of any adverse drug reactions.

RECORDS - Adequate records, including signed consent documents if required, will be maintained in a manner which ensures confidentiality. Records of student research will remain with the supervisor or advisor. The P.I. will refer all requests from an outside agency or sponsor for review and inspection of the research records/names of subjects to the CPHS.

SUBSEQUENT REVIEW - This research will be reviewed by the CPHS on not less than an annual basis. Reprints of articles resulting from this research which appear in scientific publications will be sent to the CPHS.

copies: Office of the Dean/Director
Special Assistant for Scientific Affairs, UTHSCH
Contracts and Grants Management, UTHSCH
Principal Investigator(s)
☒ Executive Director, Hermann Hospital
☐ Pharmaceutical Services, Hermann Hospital

HERMANN HOSPITAL

MEMORANDUM

TO: Committee for the Protection of Human Subjects

FROM: William F. Smith, FACHA
Executive Director *[Signature]*

SUBJECT: "The Effect of Fathers' Presence During Delivery on
Their Perceptions of Their Newborns."
P.I.: Lisbeth A. Connolly

I have reviewed the protocol for the above mentioned study and would like to endorse the proposal.

Hermann Hospital will cooperate in whatever way we can. Commencement of this project is subject to approval by the Committee for the Protection of Human Subjects of the UTHSC on which Hermann Hospital has representation.

cc: *[Signature]* Lisbeth A. Connolly
2701 North Blvd #27
Houston, Texas 77098

/lm



1203 Ross Sterling Avenue
Houston, Texas 77030
Phone (713) 797-4011

Affiliated with The University of Texas
Medical School at Houston

PERMISSION TO USE THE NEONATAL PERCEPTION INVENTORIES

Permission is hereby granted to use the Neonatal Perception Inventories in the study as outlined by you on the form entitled "Information Regarding Proposed Use of the Broussard Neonatal Perception Inventories," dated 1/14/83, with the following conditions:

- 1) that the NPI be administered in accordance with the method described on that form;
- 2) that you provide me with the results of your study, including the individual raw data scores of the Neonatal Perception Inventories.

I HAVE READ THE ABOVE AND AGREE TO THE CONDITIONS OUTLINED.

Signed: Lizabeth Ann Connolly 1-14-83
date

Witness: Lucy A. Blocker 1/25/83
date

Permission
Granted: ER Broussard MD 1/28/83
Elsie R. Broussard, M.D. date

APPENDIX C
LETTERS

Dear New Father,

I am a graduate student at Texas Woman's University in Maternal-Child Health Nursing. I am conducting a research study on first-time fathers and how they get to know their newborn babies. Participation is voluntary and involves answering two questionnaires. The first questionnaire will be answered while visiting here in the hospital.. The second questionnaire will be mailed to you in one week. Refusal to participate or withdrawal from the research study at any time will not affect the care your wife or baby receives while in the hospital.

If you are willing to participate in this research study, would you please place the attached index card at the nursing station by 4 o'clock this afternoon. Any questions about this research study can be answered by contacting me at 522-0932.

Sincerely,

Liz Connolly

This research study has been reviewed by The Committee for the Protection of Human Subjects/The University of Texas Health Science Center at Houston(792-5048).

Dear Mr.

I am the graduate student at Texas Woman's University in Maternal-Child Health Nursing whom you met one week ago prior to your departure from the hospital with your wife and new baby. I hope that you are adjusting and enjoying the new addition to your family.

When I met with you in the hospital you agreed to participate in a research study that I am conducting concerning how fathers get to know their newborn babies. This research study involves answering this second questionnaire. You will notice that this second questionnaire is similar to the first one you answered except for slight wording differences. Again, it is very important that you try to answer each question and that you do not discuss the questionnaire with anyone until after you have completed it. Would you please complete the attached questionnaire and return it to me in the enclosed, self-addressed and stamped envelope within 2 days?

Any questions about this research study can be answered by contacting me at 522-0932. Thank you again for your time and cooperation. Good luck with your new baby!

Sincerely,

Liz Connolly

I Understand That My Return Of This Questionnaire Constitutes My Informed Consent To Act As A Subject In This Research Study. It is further understood that no medical service or compensation is provided to subjects by Texas Woman's University as a result of completing the questionnaires.

This research study has been reviewed by The Committee for the Protection of Human Subjects/The University of Texas Health Science Center at Houston(792-5048).

Dear Mr.

I am the graduate student at Texas Woman's University in Maternal-Child Health Nursing whom you met a few weeks ago prior to your departure from the hospital with your wife and new baby. I hope that you are adjusting and enjoying the new addition to your family.

When I met with you in the hospital you agreed to participate in a research study that I am conducting concerning how fathers get to know their newborn babies. This research study involves answering this second questionnaire. I have enclosed another copy of this questionnaire in the event that the first one was lost in the mail. You will notice that this second questionnaire is similar to the first one you answered except for slight wording differences. Again, it is very important that you try to answer each question and that you do not discuss the questionnaire with anyone until after you have completed it. Would you please complete the attached questionnaire and return it to me in the enclosed, self-addressed and stamped envelope within 2 days? A prompt response will be greatly appreciated.

Any questions about this research study can be answered by contacting me at 522-0932. Thank you again for your time and cooperation. Good luck with your new baby!

Sincerely,

Liz Connolly

I Understand That My Return Of This Questionnaire Constitutes My Informed Consent To Act As A Subject In This Research Study.
It is further understood that no medical service or compensation is provided to subjects by Texas Woman's University as a result of completing the questionnaires.

This research study has been reviewed by The Committee for the Protection of Human Subjects/The University of Texas Health Science Center at Houston(792-5048).

APPENDIX D
MULTIPLE COMPARISON TEST
USING THE DUNN'S METHOD

TABLE A
Multiple Comparison Test Using Dunn's Method for NPI 2
Scores According to When the Father first saw the Baby

Time When Father First Saw Baby	24 to 48 hour	4 to 12 hour	12 to 24 hour	In Recovery Room or 1 hour after	2 to 4 hour	Immediately
Mean Rank	13.50	14.92	16.20	17.83	27.17	31.05
24 to 48 hour 13.50	0	1.42	2.7	4.33	13.67	17.55
4 to 12 hour 14.92		0	1.28	2.91	12.25	16.13
12 to 24 hour 16.20			0	1.63	10.97	16.20
In Recovery Room or one hour after birth 17.83				0	9.34	13.22
2 to 4 hour 27.17					0	3.88
Immediately 31.05						0

Note: $z=2.638$; critical value=3.896; $p=.05$.

TABLE B
Multiple Comparison Test Using Dunn's Method for DBI
Scores According to When the Father First Saw the Baby

Time When Father First Saw Baby	In Recovery Room or 1 hour after	Immediately	2 to 4 hour	4 to 12 hour	12 to 24 hour	24 to 48 hour
Mean Rank	19.67	21.70	32.00	32.17	38.90	44.50
In Recovery Room or 1 hour after birth 19.67	0	2.03	12.33	12.50	19.23	24.83
Immediately 21.70		0	10.30	10.47	17.20	22.80
2 to 4 hour 32.00			0	0.17	6.9	12.50
4 to 12 hour 32.17				0	6.73	12.33
12 to 24 hour 38.90					0	5.60
24 to 48 hour 44.50						0

Note: $z=2.638$; critical value=3.896; $p=.05$.

TABLE C
Multiple Comparison Test using Dunn's Method
for DBI Scores According to Activity with Baby

	Play	Hold	Diaper	Burp	Watch Wife Feed, Hold	Hold, Feed	Rock	None	Watch
Mean Rank	4	18.65	21.88	22.50	22.50	30.47	34.50	41.67	51.00
Play 4	0	14.65	17.88	18.50	18.50	26.47	30.50	37.67	47.00
Hold 18.65		0	3.23	3.85	3.85	11.82	15.85	23.02	32.35
Diaper 21.88			0	0.62	0.62	8.59	12.62	19.79	29.12
Burp 22.50				0	0	7.97	12.00	19.17	28.50
Watch Wife Feed, Hold 22.50					0	7.97	12.00	19.17	28.50
Hold, Feed 30.47						0	4.03	11.20	20.53
Rock 34.50							0	7.17	16.50
None 41.67								0	9.33
Watch 51.00									0

Note: $z=2.773$; critical value=5.015; $p=.05$.

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