

PATERNAL INVOLVEMENT IN THE INTERACTIVE
BEHAVIORAL ASSESSMENT PROCESS

A DISSERTATION
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

BY
SHERYL ANN THALMAN BOYD, B.S., M.S.

DENTON, TEXAS
DECEMBER 1980

The Graduate School
Texas Woman's University
Denton, Texas

November 10, 1980

We hereby recommend that the Dissertation prepared under
our supervision by Sheryl Ann Thalman Boyd
entitled Paternal Involvement In the Interactive
Behavioral Assessment Process

be accepted as fulfilling this part of the requirements for the Degree of
Doctor of Philosophy.

Committee:

Patricia N. Mahon, PhD

Chairman

Anita J. Stafford

Margie N. Johnson

Anne M. Gudmundsson

Glenn Jennings

Accepted:

Robert R. Smith

Dean of The Graduate School

ACKNOWLEDGEMENTS

The completion of this research was made possible by the guidance and assistance of many people. It is to these individuals that I wish to express my sincere gratitude.

The expertise and support of my dissertation committee is truly appreciated. To Dr. Patricia Mahon, who has spent numerous hours not only in providing advice and critique of my work but also listening and encouraging me in my endeavor, I express a very special thanks. I am grateful to Dr. Margie Johnson for inspiring me as I began to explore the subject area addressed in this research. To Dean Anne Gudmundsen I offer my sincere thanks for always being available to discuss my research and to provide support. The wisdom and expertise of Dr. Anita Stafford was especially helpful as I gained the knowledge to pursue this project. And to Dr. Glen Jennings I extend my appreciation for providing his unique perspective and contributions to my work.

I am particularly grateful to Dean Carol Lindeman, whose encouragement and thoughtful critique was instrumental as this project became a reality. I also wish to thank my faculty colleagues at the University of Oregon Health Sciences Center for their support and assistance, especially Dr. Barbara Gaines, Dr. Joanne Hall, Dr. Mary Ann Curry,

Ellen Gara, and Marie Duncan. The compassion and humor of these individuals provided a never-ending source of energy to me.

My appreciation is extended to Emanuel Hospital for the use of their facilities. The cooperation of the nursing staff was essential to the success of this study. I am grateful for the time and resources which Shirley Beaver, Maternal-Child Nursing Coordinator, shared with me. To the families who were willing to share the very special moments of early parenthood, I am deeply indebted.

The invaluable expertise of Dr. Dave Marshall in the statistical analysis of the data is deeply appreciated. Your knowledge blended with your humor were an irreplaceable resource.

Merlene Lorenz is gratefully acknowledged for typing this manuscript. Your ability to smile as I continued to bring changes was especially appreciated.

Finally, I would like to thank those members of my family who were so giving of themselves during the past three years. To my mother and father I am deeply grateful for their always being ready and willing to help. To my children Nathan and Aaron, who consider Mommy's school a natural part of a child's life, I am thankful for many special and relaxing moments which I might not have

experienced without you. Your own growth and development during these years has made me one proud and happy mother. And to my husband Doug, whose ability to parent was the motivating factor for this project, my most loving thanks are given. Your encouragement, support, strength, and love were a necessity, as were your cooking and housecleaning skills!

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.	iii
TABLE OF CONTENTS	vi
LIST OF TABLES.	x
LIST OF FIGURES	xii

CHAPTER

1.	INTRODUCTION.	1
	Background of the Problem	2
	Significance of Problem	3
	Statement of Problem.	5
	Summary	6
2.	A REVIEW OF THE RELATED LITERATURE.	7
	The Development of Fathering Research	7
	Parent-Infant Attachment.	10
	Studies of Maternal-Infant Attachment.	10
	Studies of Paternal-Infant Attachment.	15
	Studies of Infant-Father Attachment.	20
	Summary.	26
	Father-Infant Interaction	27
	Paternal Involvement in and Attitudes Toward Parenting Behaviors	28
	The Infant's Contribution.	36
	Factors Influencing Father- Infant Interaction	42
	Summary.	44

Table of Contents (Cont.)

CHAPTER

	Parent Educational Intervention.	44
	Summary.	54
3.	THEORETICAL FRAMEWORK.	55
	Attachment Theory.	56
	Social Learning Theory	57
	General Aim of the Study	59
	Statement of Hypotheses	60
	Definition of Terms	61
	Basic Assumptions	62
	Summary.	62
4.	METHODOLOGY.	63
	The Setting.	64
	Sample Criteria.	65
	Method of Recruitment.	65
	Sample Recruitment.	66
	Independent Variable	68
	Dependent Variables.	72
	Paternal Attitudes.	72
	Paternal Participation in Infant Caretaking Activities.	75
	Intervening Variables.	75
	Research Procedure	77

Table of Contents (Cont.)

CHAPTER

	Procedure Prior to Experimental Treatment.	77
	Implementation of Treatment	80
	Home Visitation	81
	Analysis of Data.	82
	Summary.	83
5.	RESULTS.	84
	Sample Characteristics	84
	Demographic and Paternal Data	86
	Obstetrical and Infant Data	92
	Summary	97
	Instrument Reliabilities	97
	Hypotheses	98
	Hypothesis 1.	99
	Hypothesis 2.	102
	Additional Findings.	104
	Relationship of Paternal Attitudes and Behaviors	104
	Further Analysis of Paternal Attitude Scores.	105
	Additional Analysis of Paternal Variables.	107
	Participation in Infant Caretaking Activities	110
	History and Maturation Variables.	110
	Summary.	112
6.	DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS.	113
	Discussion	114

Table of Contents (Cont.)

CHAPTER

Conclusions and Limitations.	121
Implications for Nursing Practice.	124
Recommendations for Further Study.	126
Summary.	128

APPENDICES

A. Human Subjects Review Forms.	129
B. Informed Consent Form.	132
C. Brazelton Neonatal Behavioral Assessment Scale Scoring Sheets.	135
D. Paternal Attitude Scale.	152
E. Self Report Form	159
F. Father's Data Sheet.	162
G. Teaching Plan for BNBAS Demonstration.	168

REFERENCE LIST	175
--------------------------	-----

LIST OF TABLES

TABLE

1.	Research Design: Schedule for Data Collection.	79
2.	Means, Standard Deviations and F-Ratios on Demographic Variables by Group	86
3.	Description of Income by Group.	88
4.	Description of Religious Preference by Group	88
5.	Means, Standard Deviations and F-Ratios on Child Care Experience by Groups. . . .	90
6.	Means, Standard Deviations, and F-Ratios on Subjects' Rating of Relationship with Father	91
7.	Comparison of Paternal Attitude Scale Pretest Scores Between Groups One and Three.	92
8.	Comparison of Groups on Sex of Infant . . .	93
9.	Comparison of Groups on Infant Feeding Method at Birth	94
10.	Means, Standard Deviations and F-Ratios on Infant Variables by Group.	95
11.	Means, Standard Deviations and F-Ratios on Results of BNBAS by Group.	96
12.	Analysis of Variance: Comparison of Groups on the Effects of Pretesting on Posttest Scores on Paternal Attitude Scale.	100

List of Tables (Cont.)

TABLE

13.	Original and Adjusted Means of Groups One and Three Posttest Scores for the Paternal Attitude Scale. . .	101
14.	Analysis of Covariance: Comparison of Groups One and Three on the Posttest Scores of the Paternal Attitude Scale.	101
15.	Comparison of Participation Behaviors Between Groups One and Three.	103
16.	Comparison of Participation Behaviors Between Groups Two and Four	103
17.	Comparison of Participation Behaviors Between Combined Experimental and Control Groups	104
18.	Comparison of Paternal Attitude Scale Posttest Scores Between Groups Two and Four.	106
19.	Comparison of Paternal Attitude Scale Posttest Scores Between Combined Experimental and Control Groups	106
20.	Spearman Correlation Coefficients for Paternal Variables and the Dependent Variables . . .	109

LIST OF FIGURES

FIGURE

1. Median Values for Paternal Participation
in Infant Caretaking Activities. 111

CHAPTER 1

INTRODUCTION

The role of the father in the nuclear family is in the process of change. The literature of twenty years ago rarely mentioned the father's role in childrearing. Emphasis was on the mother's functions and interactions with the child. In the past ten years, the father has been identified as more than an economic provider; he is now considered to be an important factor in the development of his children. Three changes have occurred in our culture which have influenced the significance of the father in the family unit: "recognition of the emotional importance of fatherhood, changing family structures, and shifts in the cultural definition of masculinity" (Roehner, 1976, p. 14).

The affectional attachment between mother and infant has become recognized as vital to the development of the child. Such an attachment is learned primarily through interaction and contact with one another (Bowlby, 1977). It has been proposed that a similar attachment occurs between father and infant. Because of the recent recognition of the father's importance to the future

development of the child, paternal-infant interaction was chosen as the focus of this study.

Background of the Problem

Research in the area of parent-infant attachment has centered primarily on the examination of the mother-infant relationship (Ainsworth, 1972; Bowlby, 1959, 1969; Klaus & Kennell, 1976). Although maternal-infant interaction continues to be a major area of study, the focus has extended to include father-infant relationships. As researchers have begun to investigate paternal-infant attachment, findings have indicated that fathers display behaviors during first contact with their infant similar to those identified in studies of mothers and infants (McDonald, 1978; Rodholm & Larsson, 1979).

Another relatively new area of study has been the infant's contribution to the parent-infant relationship. The infant was once considered to be a passive recipient of caretaking behaviors by the parent. However, studies of parent-infant interaction have indicated that one of the major components which effects the development of attachment between parent and infant is reciprocal interaction, in which the behaviors of the infant influence the parent, just as the behaviors of the parent influence the infant

(Brazelton, 1974; Korner, 1974; Greenberg & Morris, 1974; Parke, 1974). Albeit there are multiple variables which effect the reciprocal interaction between parent and child, one important variable is the ability of the parent to interpret the behaviors or cues of the infant (Brazelton, Koslowski, & Main, 1974; Erickson, 1978). Hence parents may or may not be able to see the impact of the environment on their infant or to perceive themselves as "the most significant resource persons of their baby" (Erickson, 1978, p. 101). Research concerning the concept of reciprocal interaction has been conducted primarily with mothers and infants. In order to extend the knowledge regarding parent-infant attachment, the relationship between the concepts of fathering and reciprocal interaction was selected for investigation, thereby further delimiting the focus of the study.

Significance of Problem

The emphasis of parenting education in prenatal classes and in teaching programs during postpartum hospitalization is most frequently the mother and infant relationship. Few parenting programs aid the new father in his transition to parenthood. "The information the father gains about his infant is impeded because he has few

structured opportunities to learn about his offspring. This restriction effectively creates an artificial barrier diminishing chances for acquaintance and parental bond formation" (Gollober, 1976, p. 19).

In order to prepare the father for his new and changing role, his needs must be met as well as the needs of the mother and infant. Nurses have the unique opportunity to involve the new father as an integral member of the family unit during the postpartum hospitalization period. Hospitals are the territory of nurses and physicians; a place for the mother, as a patient, has been allowed. However, fathers continue to have a "second-class citizenship" which does not encourage nurturing of the infant by the father. Nurses need to be aware of this and consider the effects it may have on the entire family (Marquart, 1976). Facilitating the father's commitment to his infant "may lead to a stronger bond with his child" (Gollober, 1976, p. 20).

The restrictions that the American culture places on the fathering role are currently decreasing. Fathers are finding themselves more involved in the parenting role, but have they been adequately prepared for these changes? Does the father understand the significant impact that he has on his infant? Does he understand the impact his infant has on him? Teaching the father can be especially

relevant when he is learning with his own infant. For this reason, the postpartum unit can be an ideal setting for intervention, when the family unit is together and available. Structured learning opportunities need to be made available to the father during the postpartum hospitalization period. One approach to increasing the ability of the parent to interpret the behaviors or cues of the infant, and thereby increasing reciprocal interaction, is the involvement of the father in the interactive behavioral assessment of the infant. The involvement of the father would include his observation of the assessment as well as ongoing communication with the investigator, which would allow for questions by the father. It is anticipated that such an intervention with the father would effect his attitudes and participation in parenting.

Statement of Problem

The specific research question is: What effect does the involvement of the father in the interactive behavioral assessment of his infant have on the father's attitude toward parenting behaviors? In addition to attitudes of the new father, another dependent variable which will be examined is paternal participation in parenting behaviors. Thus, a second research question which will be investigated

is: What effect does the involvement of the father in the interactive behavioral assessment of his infant have on the father's participation in parenting behaviors?

Summary

The recognition of the father as an important figure in the future development of the child was a major factor in the selection of paternal-infant interaction as the focus for this study. Further delimitation has narrowed the problem area for investigation: how the father's involvement in the behavioral assessment process effects attitudes toward and participation in parenting behaviors. The literature which is pertinent to the area selected for study, is reflected in review form in the following chapter.

CHAPTER 2

A REVIEW OF THE RELATED LITERATURE

The Development of Fathering Research

Until the last decade, research concerning the role of the father in the family has been sparse. When the father's role was studied, information was gathered from the mother of children rather than by direct contact with the father. Parke and O'Leary (1975) identified two reasons for the limited research on fathers: 1) unavailability of the father to the researcher and 2) the secondary position the father has been assigned by the culture and by psychological theorists. An example of the latter occurred in Erikson's (1963) discussion of basic trust versus mistrust: "The amount of time derived from earliest infantile experience does not seem to depend on absolute qualities of food or demonstrations of love, but rather on the quality of the maternal relationship" (p. 249). Because of this matricentric viewpoint adopted by theorists, the father has been ignored in research concerning child growth and development.

The involvement of the father in child care has only recently become an issue in American culture. Society has

viewed childrearing as the woman's responsibility with the primary role of the father being that of breadwinner.

David Sawin (1978) discussed three factors which account for matricentric infant care. There is a historical factor which has assigned the father the role of the provider outside the home environment, while mothers stayed in the home. Biological factors, such as feeding and hormone processes, attribute to the attitude that mothers are more suitable parents. Finally, there are theoretical factors which involve the theories of attachment based on drive inductions, as the mother's ability to reinforce hunger drive. In this regard, mankind tends to generalize animals to humans without considering the adult human as a cognitive organism that can consider social learning, impact of learning, or the ability to adopt values about parenting. Sawin identified research and parent training for fathers as a means of changing these views and breaking down the traditional sex roles in infant care.

An extensive review of the literature by Nash (1965), discussing the father in contemporary culture, proposed matricentricity as a result of industrialization. Fathers became the full support of the family as the mother became the primary individual in childrearing. Nash further stated that society's matricentric view has been supported by the

matricentric literature available to parents as well as professionals. He proposed that the current trend of increased interest in the father seems to indicate that fathers are more aware of their role and are taking a more active interest in their children. The father's increased involvement may also be influenced by the economic necessity for mothers to contribute to the household income. In a more recent review of the literature on fathering, Earls (1976) reported, "While there is a recognizable trend toward males being more involved in their wives' pregnancies, especially among the middle class, it seems fair to say that the rearing of infants and children is still primarily thought of as a feminine concern" (p. 211). It was the contention of Earls that as men begin to seek more responsibility in infant and child care, health care professionals need to be aware of the male's role in the family and provide a permissive and supportive environment that encourages respect for their roles as fathers.

The amount of research regarding the father or fathering remains small in comparison to the subject of mothers. However, the significance of fathering has emerged as an increasing number of researchers have begun to investigate the father-child relationship. Continued study is needed to identify methods of promoting and encouraging the

father's involvement in the family. In the following sections of the review of literature, research related to the development and significance of the father-infant relationship will be examined.

Parent-Infant Attachment

Research in the area of parent-infant attachment has developed primarily through the examination of the mother-infant relationship. In recent years, the focus has extended to include the father-infant relationship. This section will briefly discuss the theoretical basis of maternal-infant attachment and then examine the extension of attachment studies to include the father. In addition, investigations which explored infant attachment behaviors toward the father will be reviewed.

Studies of Maternal-Infant Attachment

Mother-infant attachment has been discussed throughout child development literature in signifying the importance of the mother-child relationship. Research in this area has been abundant in the past quarter century. Maternal-infant attachment has been defined as an affectional tie which develops between mother and infant (Ainsworth, 1972; Bowlby, 1958). Ainsworth (1973) has specified several characteristics of attachment: attachment endures over time and space,

attachment is discriminating and specific, attachment can occur with more than one person at a time, and attachment implies affection and love. The behaviors of the individuals involved in the attachment are a primary focus of the theoretical basis of attachment. Ainsworth (1973) stated, "The hallmark of attachment is behavior that promotes proximity to or contact with the specific figure or figures to whom the person is attached" (p. 2). Three categories of attachment behavior are identified by Ainsworth:

- (a) signaling behaviors, such as crying or smiling;
- (b) orienting behaviors, such as following or approaching;
- and (c) physical contact behaviors, such as embracing or clinging.

Extensive research has been conducted by Klaus and Kennell (1976) on the behaviors related to maternal attachment. These authors define attachment as "a unique relationship between two people that is specific and endures through time" (p. 2). They contend that early mother-infant contact will effect the attachment behaviors of the mother. Optimal timing and duration of the early contact are variables for which definitive data does not presently exist (Curry, 1979). In the first early contact investigation, Klaus and Kennell were involved with other researchers in utilizing extended contact in the early postpartum period

as the treatment variable (Klaus, Kreger, McAlpine, Steffa, & Kennell, 1972). Twenty-eight primiparous women from low socioeconomic backgrounds comprised the extended contact group and the control group of the study. The extended contact group was allowed to hold their infants for one hour within the two hour period following birth. Their infants were nude in order for skin-to-skin contact to occur. These mothers were also provided with five extra hours of contact with their infant during the first three postpartum days. The control group received routine care, consisting of a brief glimpse of their infant after birth and contact at feedings which consisted of 20 to 30 minutes every four hours. At one month after delivery the mothers were interviewed, videotaped, and observed at the time of the first pediatric examination. Significant differences between these two groups of mothers were found. The extended contact group demonstrated more time face-to-face and fondled their infants more. During the examination, these mothers also soothed their infants more frequently. At a one year follow-up, the mothers were observed using a one-way mirror for over an hour in a number of different situations. Findings were similar; the extended contact group again spent significantly more time in face-to-face contact, fondled their infants more and

soothed them more when they cried (Kennell, Jerauld, Wolfe, Chesler, Kreger, McAlpine, Steffa, & Klaus, 1974). One problem is that the design of the study eliminates the possibility of determining which experimental variable, early contact or extended contact, or combination of the variables was responsible for the observed effects. Comparable studies have resulted in similar findings (Carlsson, Danielsson, Fagerberg, Gundewall, Horneman, Larsson, Rodholm, & Schaller, 1978; deChateau, 1976; Hales, Lozoff, Soa, & Kennell, 1977; Kontos, 1978).

From their studies on maternal attachment, Klaus and Kennell (1976) have identified seven critical components in the process of attachment: 1) A sensitive period exists in the first hours after birth when it is optimal for mother and father to have close contact with their infant; 2) When the mother and father are first given their infant, there appears to be species-specific responses to the infant; 3) The mother and father attach optimally to only one infant at a time; 4) It is necessary for the infant to respond to the mother by some signal such as body or eye movement; 5) The attachment process is enhanced by watching the birth process; 6) It is difficult for some individuals to go through the process of attachment while mourning the loss of the same or another person; and 7) Early events, such as

anxieties about temporary disorders of the infant, may have long-lasting effects. Although the majority of Klaus and Kennell's research regards mother-infant relationships, it can be seen that some generalizations are made concerning father and infant.

The involvement of the parent in the caretaking role has been closely associated with attachment. Klaus and Kennell (1976) stated,

The power of this attachment is so great that it enables the mother or father to make the unusual sacrifices necessary for the care of their infant day after day, night after night - changing dirty diapers, attending to his cry, protecting him from danger and giving feedings in the middle of the night despite a desperate need to sleep (p. 1).

In Ainsworth's (1969) discussion of maternal attachment behavior, she identified the amount of care given to the infant as highly correlated with strong infant attachments. Ainsworth and Bell (1969) further stated that the mother's infant care practices are generally representative of the quality of interaction with her infant and may therefore influence how the infant's attachment to her develops.

Schafer and Emerson (1964) reported that the availability of the individual is not the primary factor, as they found infants formed attachments to persons who were not available for long periods but who did interact fairly intensely when present. These authors recognized the father as one of the

primary attachment figures for the infant.

Studies of Paternal-Infant Attachment

It has only been in the past decade that investigators have begun to examine the attachment between father and infant. When attachment was first being described, authors such as Bowlby (1958) emphasized attachment between mother and infant with almost the total exclusion of the father-infant relationship. The research on attachment followed this same pattern. However, fathering has recently become a concept of immense research interest. Attachment is currently recognized as an interactional process involving mother, father and infant (Yogman, 1977).

Greenberg and Morris (1974) have employed the term "engrossment" when they discuss the attachment characteristics they observed in two groups of first time fathers. The first group of fifteen fathers had their first contact with their infants in the delivery room. The other group, also consisting of fifteen new fathers, were shown their infants by nursing personnel after the delivery. Questionnaires were given to the fathers between 48 and 72 hours after delivery. Then approximately half of the fathers were interviewed following the administration of the questionnaire. From the research data, these authors described the characteristics of the bond between the father and the

infant during the early period after delivery. The characteristics of engrossment identified include: visual awareness of the infant which is manifested by perceiving the infant as attractive or beautiful, tactile awareness of the infant which is manifested by a desire to touch or hold the infant, a sense of perfection in the newborn, awareness of the newborn's individual or distinct characteristics, a strong attraction to the newborn which prompts the father to focus his attention on his infant, feelings of elation following the delivery which were described by some fathers as a "high", and increased self-esteem of the father after seeing his infant for the first time. Although there were no highly significant differences between the two groups, the authors proposed that "the greater the early physical contact with the infant, the more likely it is that engrossment will occur" (p. 527). Because the infant experiences a period of activity during the first hour after birth, the father receives reinforcement by the infant's responses and this enhances the engrossment. In discussing the importance of engrossment to nursing, Judd (1976) stated that the nurse can facilitate engrossment by being father-oriented and supporting a hospital environment that permits engrossment to occur. Such an environment would encourage the father to ask questions and express feelings. She

suggested further research in this area by nurses, as "nursing is in the consummate position to research the family and parenting" (p. 22).

Parke (1974) agreed that the parent-infant bond is initially formed in the first days after birth, which signified the necessity of the father having extensive early exposure to the infant. For this reason, Parke stated that it is imperative that, "the care of infants be acknowledged as natural and appropriate male behavior" (p. 63).

Two research studies of mother-father-infant interaction during the postpartum period were reported by Parke and O'Leary (1975). The major difference in the studies was the population. The first study involved middle class parents, of which at least half had attended prenatal classes, and all but one father was present in labor and delivery. The second study consisted of lower class couples who did not attend prenatal classes and the fathers were not present in labor and delivery. In both studies, father-mother-infant and mother-infant interaction was directly observed by two observers for ten minutes. Specific behaviors of the mother, father, and infant were recorded at 15 second intervals. Father-infant interaction was observed as well in the second study. The

results indicated that fathers are active participants. Statistical analysis revealed that the father was "more likely than mother to hold and visually attend to the infant and to provide physical and auditory stimulation...Only in smiling does the mother outdistance the father" (p. 659-60). The authors proposed that because the father may not be as biologically or culturally primed for the parenting role, the opportunity for early interaction in the hospital setting may be particularly important to the development of the parent-child relationship. They also suggest that providing opportunities for the father to learn and practice caretaking skills during the newborn period will not only make it more likely he will share these responsibilities, but that he will execute these tasks effectively and view these behaviors as role consistent (p. 662). As the changing roles in the family are becoming more prevalent with the employment of women increasing and men finding it necessary to help in the home, the father will benefit by being prepared for his fathering role. A positive introduction to his baby and the skills which are necessary to care for the baby will help to prepare the father.

Studies of the father-infant relationship have recognized behavioral responses of the father similar to those between mother and infant which are associated with

attachment. McDonald (1978) videotaped the reactions of seven couples during the nine minutes after the birth of their infants in a homelike birth environment. The fathers received instructions in the delivery techniques and were active participants in the vaginal birth of their infant. Parents and infant were allowed unrestricted contact after the birth process. An analysis of the films revealed seven specific paternal behaviors were predominant: hovering, visual contact, prolonged gazing, pointing, face-to-face behaviors, fingertip contact, and palming contact. As their visual contact increased in intensity to exceed 10 continuous seconds, it was termed prolonged gazing. Pointing was the term employed when the father was not actually touching his infant, but held his hand and fingers in a "ready position" directed toward the infant. Touching the infant progressed from fingertip contact to palm contact with the infant. Face-to-face behavior (*en face*) occurred when the father aligned his face in the same vertical plane as the infant's face.

A comparable study was carried out by Rodholm and Larsson (1979). Their sample consisted of 15 fathers who were presented their cesarean delivered infant within 15 minutes after the birth. The contact took place in a special room and the mother was not present. The father

and infant were photographed with a time-lapse camera, taking one picture per second during the first seven minutes of contact. Results were similar to those of McDonald. An orderly progression of behavior was observed. The father began by fingertip touching of the extremities, then used his palms and finally the dorsal sides of his fingers. En face behavior was observed in 80% of the fathers. An increase in eye-to-eye contact was observed over the seven minutes.

The behaviors observed in these studies were similar to those identified in studies of mothers and infants (deChateau, 1976; Klaus, Kennell, Plump, & Zuehkle, 1970; Klaus et al., 1972; and Rubin, 1963). Such behaviors have been identified as facilitating the establishment of affectionate ties between mother and infant (Carlsson et al., 1978; Klaus et al., 1972; and Kennell et al., 1974). The results of McDonald's and Rodholm and Larsson's studies extend the reports of the existence of highly stereotyped behavior in response to a newborn infant to include the father as well as the mother.

Studies of Infant-Father Attachment

Several investigations have examined the attachment behaviors of the infant in response to the father. The behaviors of the infant which were observed in order to

operationalize attachment of the infant to father vary from study to study. A study by Lamb (1976b) investigated infants' responses to their mothers, fathers, and strangers. Ten girls and ten boys and their parents comprised the sample. Each family was observed twice in their homes, once when the infants were seven months old and again at eight months of age. The parents were encouraged to continue with their routines as one investigator observed and another investigator attempted to interact with the parents and child as any visitor to the home would. The infant discriminated the visitor from both parents, but did not discriminate between parents. Infants related to their mothers primarily as sources of security, whereas the fathers were related to as a source of security and, in addition, were the focus of more frequent distal affiliation behaviors (behaviors other than those indicating a desire to be held or comforted, such as smiling). Lamb attributed these results to the type of play the father engaged in with the infant, which was of greater variety, more unpredictable, and rougher than mother-infant interactions. The differences of father-infant and mother-infant interaction needs to be explored more extensively in order to determine how the socialization of the child is influenced.

Several studies have investigated the reactions of

children to separation from mother and/or father. When Campos and Cohen (1974) separated 10, 13, and 16 month old children from their fathers, they observed strong reactions, but the reactions were even stronger when separated from their mothers. The sample included 10 females and 10 males in each group for a total of 60 subjects. The infants were observed twice for one minute in each of three situations: (a) the mother, father, and stranger in the room; (b) the father and two strangers in the room; and (c) the mother and two strangers in the room. Seven behaviors of the child were used as dependent variables to determine the effects of the experimental situations. These included: (a) time in proximity to each person (the room was divided into zones of proximity for each person); (b) time touching each person; (c) latency to touch each person; (d) latency to locomote; (e) distress vocalization; (f) travel time to each parent; and (g) eye contact with stranger while in the zone of proximity of either mother or father. Results indicated that all responsiveness toward the father was significantly higher than towards the stranger, but the mother elicited stronger attachment behaviors when separated as well as in the situation with the father. It was believed that this was evidence that the father was a definite attachment object,

but his attachment was not as strong as between mother and infant. The authors interpreted the findings as denoting that there are elements in the father-infant relationship which are lacking but are present in the mother-infant relationship. A better understanding of the antecedents of attachment are needed in order to identify these elements. Could it be possible that fathers' exposure to the same quantity and quality of parenting education might be one such antecedent?

Kotelchuck, Zelazo, Kagan, and Spelke (1975) observed infants' protest to separation from mother, father, and stranger. There was no protest to separation from any person at six and nine months of age. The infant protested mother's departure at 12 months, and at 15 and 18 months protested either mother's or father's departure. By 21 months, protest began to lessen. In another study by the same group (Spelke, Zelazo, Kagan, & Kotelchuck, 1973) separation protest of the one-year-old was examined in relation to high-father-interaction, medium-father-interaction, and low-father-interaction families. The assignment of families to one of these three groups was based on five variables: (a) the amount of time the father spent with the child; (b) extent of the father's participation in child care; (c) sensitivity of the father

to the child's signals; (d) the father's sense of importance as an interacting parent; and (e) the father's general responsiveness to the child. These groups were determined prior to separation of child and parent. Results indicated that infant protest was similar when left by either mother or father. However, infants of the low-interaction fathers protested more when left than did the infants of high-interaction fathers. The authors theorized that one factor which might affect the child's reaction to separation is the child's level of cognitive development. When both parents have high-interaction, cognitive development is likely to occur earlier, and thus lead to less separation protest, as these children are "able to assimilate the discrepant experience" (p. 89).

Another study by Lamb (1976) explored two year old children's reactions to separation and reunion with mother and father. No differences were found in separation from mother or father. One difference was found upon reunion of the two year olds with parents: 67% of the children attempted to engage their fathers in play, whereas only 14% of the mothers were approached in this manner. Lamb's studies give support to the hypothesis that young children associate fathers, more than their mothers, with play and pleasurable activities.

A recent study by Parke and Sawin (1980) examined differences in mother-infant and father-infant interaction during the first three months after delivery. Forty families participated. Half of the sample consisted of female infants and half were males; each sex was further subdivided in equal numbers between first-born and later-born infants. Father-infant and mother-infant interactions were observed in the postpartum hospitalization period and at three weeks and three months in the home. Findings indicated that the mother and father demonstrated a high degree of similarity in their behaviors. However, there were mother-father differences. Mothers engaged more in routine caretaking than fathers, whereas fathers engaged in more social interaction than mothers. These differences emerged in the early newborn period and were still evident at three months. Parke and Sawin stated that such parental behaviors may be the precursor of father's emerging role as a playmate, as indicated in Lamb's research.

In an effort to determine if there was a correlation between sociability of the child with his mother and his sociability with his father, Lamb (1975) studied interactions among mothers, fathers, and two year olds. Of the 19 behaviors observed, nearly all correlations were in the positive direction, of which 12 were significant. Lamb's

interpretation of these findings is that "the happiest children are those who establish satisfying relationships with both parents from the beginning of their social lives" (p. 187). Lamb (1977) concluded that infants develop different expectations and behavioral patterns from each parent. Further research is necessary to differentiate between mother-infant and father-infant interaction and the eventual effects on personality development.

Studies of father-infant separation generally indicate that attachment exists between father and infant, as well as mother and infant. One difference appeared to be the type of interaction which occurs between parents and infant when reunited. The consensus by the researchers is that the father does play an important role in the development of the child, however, further studies need to be conducted in order to determine what factors influence father-infant attachment.

Summary

Although attachment was originally viewed as an exclusive bond between mother and infant (Bowlby, 1969), recognition of paternal-infant attachment is presently occurring. In the development of the theoretical basis of attachment, it has been acknowledged that attachment begins as species-specific responses which become complex through

learning, imitation, identification, and the use of symbols (Walters & Wilhoit, 1976). Each individual involved in the attachment process contributes to the development of the attachment which has been described as "an enduring affectional relationship that organizes our explanations of behavior and exists independent of time and space" (Campbell & Taylor, 1979, p. 6). As such, the awareness of the antecedents and influences of attachment may direct the interventions of professionals who hope to promote healthy parent-infant relationships.

Father-Infant Interaction

Early interaction between father and infant has been identified as an important factor in the attachment process (Greenberg & Morris, 1974; Klaus & Kennell, 1976; Parke, Power, Tinsley, & Hymel, 1979). The development of the father-child relationship is not based solely on the behaviors of the father or solely on the behaviors of the child. Instead it is a combination of the effects of the behaviors of one on the behaviors of the other. The following sections will explore the effect of the fathers attitudes and behaviors, the contributions of the infant to the parent-child relationship, and then examine other factors which may have an effect on the father-infant interaction.

Paternal Involvement in and
Attitudes Toward Parenting Behaviors

The current trend is for fathers to become increasingly aware of their role as father and have an increased active interest in their children (Nash, 1965). However, the lack of research on the father has limited the understanding of his role within the family unit. Hines (1971) defined the father as the forgotten man, stating,

Although several theories have been advanced and some studies have been undertaken, there is a dearth of solid data on fathers. The role of the father is of great importance in terms of family dynamics and its effect on the child. It will be necessary to do much more research before we can have a definite picture and this research will have to include more direct studies of fathers themselves, even though it means that researchers will have to work evenings and weekends to collect their data (p. 197).

Several authors have identified the concept of fathering. Kiernan and Scoloveno (1977) described fathering as a psychological response that emotionally bonds father and child. These authors did not state how this response occurs. In a study of 20 expectant fathers by Obrzut (1976), the fathers reported their concept of fathering as complimentary to mothers, each having unique aspects. It was unclear what these unique aspects were; however, many fathers identified socialization and providing as major

responsibilities of the father. Obrzut emphasized "fatherliness" as a developmental process. Howells (1970) stated that "fathering is an element in family life as distinct as mothering" and "as significant as mothering" (p. 46), although most components of fathering and mothering are in common. Howells did not discuss how the concepts are distinct or different. Hott (1976) also distinguished fathering as "a separate entity" from mothering but failed to explain in what way. A better understanding of the concept of fathering is definitely necessary.

Research which describes the types of interactions between fathers and their young children is extremely limited. One of the first studies which examined the role of the father in the family by direct investigation was conducted with the father by Tasch (1952). Eighty-five fathers were interviewed to obtain information concerning their activities, satisfactions, problems and attitudes regarding their concept of the paternal role. Seventy-five percent of the fathers reported that they were involved in activities relating to routine daily care, intellectual and motor development, recreational activities, and development of social standards, conduct, and control. Tasch concluded from her research that "it is not necessarily how much time they (fathers) spend but rather doing things with their

children in the time they have which is important" (p. 352). Other authors have come to the same conclusions regarding father-infant interactions. In a review of the literature on the fathering role, Lamb (1975) stressed that the available research does not indicate that the daily separations of father and infant will be harmful to their relationship if the working father utilizes other available time interacting with his infant. It has been hypothesized by other researchers that the "novelty" of the father to the infant may create relatively more stimulus value of the father. In other words, because the father's activity with the infant provides a break in normal routine, the significance of these interactions may be greater for the infant (Pederson & Robinson, 1974). Fathers need not feel that because the time they are with their young child is limited, that their relationships will not be as strong or as important to the child. Instead, it must be stressed that fathers can effectively form a parent-child relationship by spending a portion of their non-working hours with the family. The question posed in this research is how can the health care professional influence active involvement of the father in child caretaking?

Hanks and Rebelsky (1971) did a descriptive study in which 10 fathers' verbal interactions with their infants

were recorded during the first three months of life. When the recordings were analyzed it was found that fathers vocalized infrequently and for only short periods of time. The average number of interactions per day was 2.7, and the average length of the interactions was 13.9 seconds. Comparisons indicated that vocalization by the father varied according to the age and sex of the infant: as age increased vocalization decreased; female infants were vocalized to more frequently than male infants. The authors did not discuss the effects of tape recording these interactions, which might have been significant. It was mentioned that the physical interaction needs to be investigated, as fathers may be more physical than verbal with their infants.

Several interesting findings were noted in the longitudinal study by Clarke-Stewart (1978) which examined fathers' behavior in interaction with their young children. Fourteen families were followed over a 15 month period. Data were collected by natural observations, semi-structured situations, assessment of attachment, daily records kept by mothers, attitude questionnaires, the Bayley Mental Development Scale and the Minnesota Child Development Inventory. Children were observed at approximately 15, 20 and 30 months of age. Attachment was operationalized by

observing the 20 month old child's reactions to separation from mother and father. Results indicated there was no differentiation between separation from mother or father. Another result was that children at 20 months were more responsive to play initiated by their fathers than by their mothers. This preference was even stronger at 30 months. Daily records demonstrated a predominance of the mother in caretaking activities; however, her role as caretaker diminished as the child's age increased. No significant differences were found in the parents' attitudes toward their children.

In order to examine the actual involvement of the father in child care activities, Leonard (1977) mailed questionnaires four weeks after delivery to 50 of the couples who had participated in her previous study (1976), which identified factors that influenced the father's involvement in child care. Eighty-four percent returned the questionnaire which was designed to investigate family support systems, helpfulness of infant care classes, participation in infant care, feelings about his baby, husband-wife relationship, and changes in life-styles. Leonard found that the majority of fathers participated frequently in the categories of holding, talking-to, and changing wet diapers. Many fathers were also involved in

feeding and babysitting their infants. The only activity which the majority of the fathers reported never being involved in was bathing the baby.

Similar results were reported by Manion (1977) in another study of fathers and infant caretaking. Forty-five couples returned questions which reflected "Baby's Typical Day" at six weeks after birth. Manion's population also reported the majority of fathers were involved in holding the infant. The amount of participation in feeding and diapering the infant varied. The majority of these fathers were also not involved in bathing their infants. Manion observed that as the task became more difficult, the number of fathers participating in the activity decreased. It was interesting that fathers who scored high in participation at birth also scored higher in participation in infant care activities. Also, those fathers who had daughters and those fathers who reported their own parents as being nurturing were more involved with their own infants. Further research is needed to determine whether early interventions that encourage father-infant interaction effect the amount of involvement of the father in caretaking activities.

Rendina and Dickerscheid (1976) observed 40 first-time fathers in the home environment. Twenty fathers had infants 5.5 to 6.8 months of age and the other 20 fathers had

infants 11.3 to 15 months of age. There was an equal number of female and male infants in each group. Fathers were observed on two separate home visits for 1.5 hours at each visit. Mothers were present and infants were awake during the observations. Findings indicated that fathers were more involved in social activities than in physical caretaking. No significant differences in the amount of time fathers were involved in caretaking was found to be related to sex, developmental level, or temperament of the infant.

A study completed by Richards, Dunn, and Antonis (1977) in Great Britain used the method of interviewing mothers to investigate the father's involvement in child caretaking. The data were derived from interviews during home visits when the infants were 30 and 60 weeks of age. The sample subjects were part of an ongoing follow-up study of 80 first or second born children. At 30 weeks, 66 mothers were interviewed and at 60 weeks, 68 mothers participated. It was found that the majority of fathers played with their children regularly, but only a minority participated in caretaking on a regular basis. Fathers participated more at 60 weeks than at 30 weeks. Changing diapers and bathing the child were the activities in which fathers participated the least. Although no differences were found in participation related to the sex of the child at 30 weeks, fathers

of sons were more likely to be only moderately involved or non-participant in caretaking at 60 weeks. Thus, the findings of several studies indicate similarities of paternal involvement in child care activities during the first year.

Bigner (1977) compared father's attitudes toward fathering with the amount of father-child activity in which the father was involved. The sample consisted of 77 middle class fathers of preschool children who were enrolled in a university human development program. Three questionnaires were utilized to operationalize fathering activities and fathering attitudes: Background Information, Attitudes Toward Fathering Scale, and Father-Child Activity Scale. Attitudes were differentiated as being developmental or traditional in their orientation toward fathering. Father-child activities included child-care activities in the home, school and community and interpersonal interactions. A positive correlation was found between fathering attitudes and the degree of the father-child activities. No significant differences were found in relation to the age of the father or the sex of the child. It was determined that the father became more developmental in his attitude with second and third children. Overall, it was found that fathers in this study expressed developmental attitudes

toward fathering. Bigner's study also adds support to the assumption that behavior is a component of attitude (Zimbardo & Ebbesen, 1970). Those fathers who had more positive or developmental attitudes toward involvement in parenting activities, as operationalized by the Attitude Toward Fathering Scale, reported a higher degree of child-care activities. The descriptive studies by Leonard, Manion, and Bigner have explored the attitudes and behaviors of fathers involved in father-infant interactions. Experimental studies are needed in order to determine which variables might influence the father's attitudes and behaviors.

The Infant's Contribution

The importance of the infant's responses to the parent and the environment is an aspect of the attachment process which cannot be overlooked.

For so long there has been an almost exclusive emphasis on the parents' effect on the child's development without considering what the child represents as a stimulus to his caregiver...We are just beginning to document the degree to which the child's characteristics effect the caregiver". (Korner, 1974, p. 117-18).

Several authors have developed categorizations of infant behaviors. Thomas and Chess (1977) used the word "temperament" to describe the behavioral style of the child. Temperament was clustered into three general types according

to the characteristics displayed: the easy child, the difficult child, and the slow to warm up child. Brazelton (1969) categorized infant behavior as quiet, average or active. Such broad categorizations, however, do not always distinguish the individual characteristics of the infant.

Yogman (1977) noted the influence each infant has on his parents to elicit caretaking occurs in a very individualized fashion. Thus, the infant can actively shape and stabilize those around him. Bell (1974) identified behaviors which different infants may initiate to signal the parent when sensory and fatigue limits have been reached; such as fussing and crying, lethargy in some infants, or startles and sustained distress reactions in other infants. At other times infants give behavioral signals which contribute to launching periods of social interaction; such as widened eyes, stillness, and other alerting behaviors. Richards (1974) contended that any change in the behavior of the infant, such as a sneeze or burp, is capable of eliciting a response from the caretaker.

Individual differences in the infant which have been described include soothability, sensory responsiveness, differences in infant state and state arousal, and self-stimulation (Als & Brazelton, 1975; Brazelton, 1974; Korner, 1974; Osofsy, 1976). It has been stated that a mother's

ability to interpret the infant's signals and cues will effect the quality of her interactions with her infant as well as her own feelings of competence (Clark & Affonso, 1976; Yarrow & Goodwin, 1965). The father's ability to interpret the infant's signals may influence his response to the infant just as it does the mother. In their discussion on parent-infant interaction, Sawin and Parke (1979) stated,

Success in caretaking and affection-giving is dependent, to a large degree, on the parents' ability to correctly 'read' or interpret the infant's behavior and affect so that their own behavior can be meaningfully reciprocal (p. 512).

One of the primary components Klaus and Kennell (1976) have identified in their studies of attachment is reciprocal interaction. In their studies with mothers and infants, multiple interactions simultaneously occurring between mother and child were identified.

Each is intimately involved with the other on a number of sensory levels. Their behaviors complement each other and serve to lock the pair together. The infant elicits behaviors from the mother which in turn are satisfying to him, and vice versa, the mother elicits behaviors in the infant which in turn are rewarding to her (p. 69).

Brazelton et al., (1975) reported that results from numerous studies indicate that parent-infant interaction is "A reciprocally organized system in which the infant makes skillful adjustment of his action and manifests appropriate

emotional expressions to the displays of his partner" (p. 138). Even in his earliest interactions with the social and non-social environment, the infant is capable of self-regulating himself and interacts intentionally. Brazelton (1974, 1976) stated that the infant's contribution as an individual who influences the outcome of the parent-infant relationship should not be underestimated. He further identified reciprocity as an interdependency developing between parent and infant which the infant can learn. This is essential for parent-infant attachment and communication. Walters and Wilhoit (1976) agreed that the infant learns to become attached to someone, as in the beginning no attachment exists for the infant.

When a reciprocal interaction results, parent and infant appear to be sensitive to these behavioral cues. Brazelton, Koslowski, and Main (1974) filmed the interactions of five mother-infant pairs at one week intervals from the 2nd to 20th weeks. Detailed film studies coded for mother and infant behaviors revealed the infant had periods of attention, build-up of excitement, then disruption and attention in which the infant would withdraw from interaction. The purpose of withdrawal appeared to be a period needed by the infant in order to maintain physiological and psychological homeostasis. The most sensitive

mother was felt to be the one who allowed the infant to have this withdrawal period by decreasing her own behaviors and being sensitive to the infant's behaviors or cues. The outcome of this type of reciprocal interaction resulted in the infant directing longer periods of attention to the mother. The authors concluded that, "This interdependency of rhythms seemed to be at the root of their 'attachment' as well as communication" (p. 74).

A more recent publication by Brazelton (1979) described the ongoing research at Children's Hospital Medical Center in Boston, examining reciprocal interaction between infants and both of their parents. Father-infant interaction as well as mother-infant interaction is being filmed between the 2nd and 24th weeks. Brazelton stated that there appears to be a reliable difference between mothers and fathers as they perform within the reciprocal interaction system. Mothers are smoother and more low-keyed, seeming to respond in a more cyclic manner with the infant. Mothers use behaviors such as touching, patting, smiling, and talking to initiate early responses such as smiling, vocalizing, and reaching. Mothers usually do not hurry the baby for these reactions to develop and are extremely sensitive to the completing physiological demands of the infant. Fathers generally present "a more playful, jazzing-up approach"

(p. 42). They too display behaviors which are rhythmic in timing and quality although they seem to be expecting a more playful response, and interestingly, they get it. Thus far findings indicate that infants of two to three weeks of age are more wide-eyed, playful and bright-faced toward their father than to their mother. This publication reported only a descriptive assessment of the films and did not include statistical data to support the findings. Brazelton (1979) also reported that work currently in progress indicates that demonstrating the neonate's behavioral repertoire to the parents in the first few days after delivery has been found to alert parents to the individual assets of the newborn. In addition, parents "behave in a significantly more nurturant fashion thereafter" (p. 43). Further description of this research and the research findings need to be reported in order to evaluate the strength of the statements in the article.

Thus, the infant is not a passive recipient in the parent-child relationship. Each individual is unique and will make different demands on his environment. Awareness of the reciprocity in the parent-infant attachment process can help parents to realize the importance of understanding their own infant's cues.

Factors Influencing Father-Infant Interaction

One of the most frequently mentioned factors which is recognized as effecting the father-infant interaction is the social influence. Society has dictated the childrearing role of both mother and father (Levine, 1976; Lott, 1973). Stereotyping of the role of the father does injustice to all members of the family. Tasch (1955) stated, role typing may tend to be restrictive to the fullest potential of the person so typed" (p. 63). The father's stereotyped role may limit his forming relationships with his children or sharing childrearing experiences with his wife. Traditionally, society has viewed fathering as unmasculine and made it difficult for the father to express emotions (Josselyn, 1956; May, 1975). The problems caused by work schedules were identified as a major interference in establishing the parent-infant relationship; for instance, the difficulty many men have in attaining time off to be with their wife during birth and the days following birth (Fein, 1976b; Heise, 1975).

In addition to what society dictates the role to be, other factors may influence the father's involvement with his family. Several authors suggested that what is expected of a male by his family and what he learned as a child about fathering will effect the paternal role (Kiernan &

Scoloveno, 1977; Manion, 1977; and Seymour, 1977). The background experience mentioned most frequently in relation to parenting is the family. Schroeder (1977) identified a woman's own mother as the major model for the mothering role. Man's experience of being fathered has been acknowledged by May (1978) as the primary source of learning about fathering.

Leonard (1976) conducted a study in which she examined fathers' attitudes toward their infants at birth. It was found that positive attitudes correlated directly with the amount of experience the father had with children. Those fathers who had enjoyed taking care of young children while they were growing up were also found to have positive attitudes. Fein (1976) also found that prior to delivery, men who had more experience caring for children expected to be more involved in infant care than men who had not had previous experience. In a follow-up interview after delivery, it was discovered that those men who expected to be more involved actually were.

Race, educational level, and socioeconomic level were not found to have any effect on the father's attitude towards the parental role (Leonard, 1976; Price-Bonham & Skeen, 1978; Richards et al., 1977). Findings varied on whether or not the sex of the infant was related to paternal

involvement in parent-child activities (Bigner, 1977; Hanks & Rebelsky, 1971; Manion, 1977; Parke & Sawin, 1980; Rendina & Dickerscheid, 1976; Richards et al., 1977). Further investigation of this variable is needed. Age of the father did not effect his attitudes toward parenting (Bigner, 1977; Leonard, 1976). However, Bigner's findings indicated age did have a positive correlation with time spent in interaction with the child. He hypothesized that as the father's age increased his occupational demands decreased, which allowed more time for father-infant interaction. Thus, the literature indicated that the role of the father may be dependent on experiential and social factors.

Summary

As can be seen from the literature, the father-infant relationship is effected by parental and infant factors as well as social factors and past experiences. These factors were reviewed in order to provide an understanding of the variables which effect the father-infant interaction.

Parent Educational Intervention

The need for fathers to have more parenting instruction was identified in one of the first studies in which fathers were given the opportunity to discuss their own view of the

role of the father in the family. Tasch (1952) concluded from this study that fathers of every educational group and occupational background need more information on child growth and development. In a report at the Adult Education Research Conference, Anderson (1977) suggested that because new fathers are frequently establishing occupational roles, which can be extremely time consuming, fathers need to be instructed on ways to enhance the quality of time spent with their children. An exploratory study in which fathers were interviewed regarding the weeks before birth and the first six weeks after the birth of their first child, emphasized the need for more parenting education programs that give men the opportunity to learn about children and child care as a "legitimate activity for men." Suggestions for such classes include elementary, high school and college parenting preparation courses, early parent education groups where parents can share experiences and exchange support, and mother's and father's groups. Parke and Sawin (1976) concluded their observation studies of father-infant interaction stating:

The next task is to provide cultural supports for these potential activities--by modifying hospital visiting arrangements, providing paternity leaves, making available training classes so that fathers will have the opportunity to both learn and practice caretaking skills. In turn, fathers will be more likely not only to share these responsibilities, but

execute these tasks effectively and view these behaviors as role consistent. By providing this type of support, fathers will no longer be viewed as a mere "biological necessity" but be recognized as playing an important, influential and continuing role in the development of the infant (p. 370).

In discussing the concept that the ability to care for a child can be learned, deChateau (1976, 1977) emphasized the care-routines which are positive for one family may not be positive for another family. Thus, individualization and flexibility of parenting education should be considered when establishing programs.

Clearly, the need for education or training of the male for the role of father is widely accepted. However, there are few programs which actually include the father. In fact, the literature concerning education of mother and/or father of the newborn is limited. Several articles describe informal teaching, but descriptions of formal programs which are in existence are rare. Very little research has been completed to identify the effectiveness of the parenting education presently being utilized.

Some individuals consider prenatal classes as the answer to preparation, not only for the birth process, but also for the care of their infants. However, Cronenwett and Newmark (1974) reported that fathers who had attended

prenatal classes did not portray any measurable differences in paternal-child relationships in the first few days after delivery than fathers who had not attended classes. It is possible that if these fathers were observed again in a few months that differences might be present. In another study, when infants were seven months old, fathers who attended Lamaze classes were compared to fathers who had not attended prenatal classes. Both groups had attended labor and delivery. "Lamaze fathers did not report an easier, more positive adjustment to their babies in any area" (Wente & Crackenberg, 1976, p. 356). Brown (1977) also reported that the effects of attendance at natural childbirth classes on the attitudes, feelings, and behaviors of the new father appeared to be nonexistent. The results of these three studies suggest that prenatal classes do not provide fathers with information that increases their functioning in the fathering role, nor do prenatal courses pretend to fulfill this objective.

Fifteen first-time fathers were interviewed on the 2nd or 3rd postpartum day to examine the concerns of expectant fathers (McNall, 1976). One of the major implications of this study which McNall identified was the need for postnatal classes, as the fathers reported many concerns pertaining to fatherhood, discipline and

childrearing.

Jordan (1971) did an extensive study comparing traditional maternity care (TMC) with family centered maternity care (FCMC). FCMC included having fathers present in labor and delivery and open visitation policies for fathers. One of the major findings of Jordan's study was that FCMC fathers reported more self-confidence in handling their infants. One of the recommendations of her study was that fathers be included in the formal and informal instruction and practice of infant care. In another hospital, fathers and mothers were given informal instructions about specific aspects of nursing care--bathing, diapering, cord-care, and feeding. Effectiveness, however, has not been determined by formal research (Babies Have Fathers, Too, 1971). At Wilford Hall Medical Center in San Antonio, fathers can rock their infants under the warming unit and are allowed to give the first bath and feeding to the infant (Matt & Perkins, 1978). Although many hospitals are now offering such experiences to new parents, how often and to what degree are parents really involved in the instruction? What does informal instruction mean? Do parents already have enough knowledge to ask for this informal instruction? Are high-risk parents sought out in an effort to insure that the informal parenting

instructions are provided to them? How do we know such programs are effective?

One nurse devised a postpartum teaching guide to use in the hospital. Such a guide was found to be necessary because nurses were only covering a few areas in their teaching, which was being repeated by various nurses, sometimes with inconsistencies. An outline form of the guide was given to patients, which allowed them to choose topics in which they were interested and about which they wanted more information. It is interesting to note that fathers were especially interested in the reflex behaviors of their infants (Schmidt, 1978).

In recent years a new tool has been utilized in teaching parents about their infant, the Neonatal Assessment Scale, developed by T. Berry Brazelton (1973). This scale measures the neurological capacities of the infant and the infant's responses to specific stimuli. It is

based on the conceptualization of the neonate as complexly organized, capable of defending himself from negative stimuli, or controlling interfering motor and autonomic responses in order to attend to important external stimuli, and of eliciting stimulation from his environment necessary for his species-specific motor, emotional, social, and cognitive development. The examination attempts to assess these capacities by providing typical interaction situations (Als et al., 1977, p. 27).

Including parents in the assessment of their infants, provides them with the basis for asking meaningful

questions, the acquaintance process can be encouraged, and parent-infant interaction can be observed by the person administering the scale. In addition, parents are able to see the impact their voice and touch has on the infant, thus helping parents to

...perceive themselves early as the most significant resource persons of their baby, being capable of altering certain of his behaviors and of helping him to gain mastery of his early environment and to experience greater amounts of positive input from it (Erickson, 1978, p. 101).

A study by Riesch (1979) indicated that although mothers expected the behaviors which the BNBAS measured, there was lack of understanding as to the purpose or function of the behaviors. For instance, mothers were unaware that newborns could select the stimuli to which they respond or that infants used specific behaviors to console themselves. Riesch concluded that introducing parents to the functional aspects of the neonate's behavior may aid in enhancing parent-infant social interaction. In an ongoing study, Snyder, Eyres, and Barnard (1979) found that many expectant mothers were unaware of the potential their newborns have for reacting to the outside world. As in the previous study, these authors recommended teaching parents about newborn behavior.

Coll (1977) discussed a study in which the Neonatal Behavioral Assessment Scale was demonstrated to a group of

10 mothers in a neonatal intensive care unit and then compared to a control group of 10 mothers who received routine care and instructions. When the mothers were interviewed concerning their reactions to their infants' crying, the most common response of the control group was that they gave their baby a bottle. The most frequent response of the experimental group was that they tried to assess the needs of the infant and how they could make him more comfortable. The authors stated that more research needed to be carried out to determine whether or not the assessment process was a factor in the increased responsiveness of the experimental group.

Pannabecker (1977) used a modified version of the BNBAS as a portion of the experimental treatment in a study with white, middle-class fathers. Sixteen fathers were recruited from prenatal childbirth courses during the last trimester of their wives' pregnancy. These fathers were randomly assigned to one of two experimental groups. Sixteen other fathers were recruited during the postpartum hospitalization period to be in the control group. Thus one limitation of the study is that subjects did not have an equal opportunity to be in any one of the three groups. The fathers in the experimental groups were exposed to instructional intervention consisting of a session discussing physical

characteristics of the infant and infant exercise and a session demonstrating the modified BNBAS. The difference between the experimental groups was that with one group Pannabecker did the sessions with the father's own baby present whereas the second group viewed videotapes of a normal newborn discussing the same information. The control group received no treatment. At four weeks, the parents and infant were videotaped during a well-child physical examination. Four different situations were filmed: both parents alone with their infant, father observing a physical examination, father dressing the infant, and both parents during the administration of immunizations. In each situation, 36 behaviors were measured from the videotape recordings. Eighty-five analyses of variance were computed comparing the three groups with only two reaching a 0.05 level of significance. Therefore, Pannabecker concluded that following intervention there was no significant difference in the three groups. Two other methodological problems of the study may have effected the results. Pannabecker was not certified in the use of the BNBAS. Secondly, the effectiveness of the scale may have been altered since only selected items of the assessment were used.

Anderson (1979) recruited first-time mothers during the

postpartum hospitalization period to participate in a study using the BNBAS as the treatment variable. Thirty subjects were randomly assigned to one of three groups: Group A was demonstrated the BNBAS on their own infants; Group B received an oral report of their infant's performance on the BNBAS; and Group C, which served as the control group, received information regarding infant furnishings. These groups were compared by observing the reciprocity between the mother-infant during interaction which was measured using the Maternal Infant Adaptation Scale. Anderson found that the group of mothers to whom the BNBAS was demonstrated showed significantly higher increases in mother-infant reciprocity over the first 10 to 12 days postpartum than the control group or the other experimental group in which mothers were given only a verbal report of their infants' performance on the BNBAS.

The use of the Brazelton Neonatal Behavioral Assessment Scale in parenting education appears to be a valuable intervention tool. However, additional research is necessary to investigate its potential. Would fathers who are involved in the assessment process develop more positive attitudes toward their parenting role?

This section of the review of literature has established that fathers do have an important role within the

family system. Parent education is one method of helping fathers to become more involved in child caretaking. Professionals who are planning and implementing programs for the parents of infants need to take into consideration the background of the father and the attitudes and values placed upon fathering in today's society. Further research which assesses and evaluates these programs of parenting education is a necessity.

Summary

Parent-infant attachment has been reviewed with an emphasis on the extension of the theoretical basis of attachment to include the father. Paternal attitudes and behaviors were examined in relation to the father's involvement in child care activities. In addition, the contributions of the infant to the parent-infant interaction were reviewed. Parent educational interventions which have attempted to improve parent-infant relationships were identified. It is evident from this review of literature that the study of the father's role within the family is a popular topic which has only recently attained ample research interest. In the next chapter a theoretical framework for the examination of father-infant interaction is presented.

CHAPTER 3

THEORETICAL FRAMEWORK

The father's relationship with his new infant is dependent on numerous factors, some of which reflect his past experiences and life history that cannot be changed. Yet other factors which are of utmost importance to the development of healthy father-infant interaction are more adaptable. One such alterable factor is the father's ability to interpret the behaviors and cues of his infant, which may effect the reciprocal interaction between father and child. The theoretical framework from which the research problem exploring the relationship between reciprocal interaction and paternal attitudes and behavior is derived includes attachment theory and social learning theory. Following a review of the proposed relationship of the concepts derived from attachment theory, social learning theory will be examined in order to clarify the cognitive process involved in parent-infant attachment. The general aim of the study will be the last section of this chapter, in which hypotheses, definitions of terms, and assumptions of the study will be presented.

Attachment Theory

The development of the affectional relationship between parent and child is the focus of attachment theory. Bowlby (1969) is the major individual responsible for the establishment of attachment as a theory. More recently, authors such as Klaus and Kennell (1976) have added empirical evidence to support the propositions of the theory. Although Bowlby described attachment primarily in reference to the mother and infant relationship, the theory is currently being extended to include the father-infant relationship. As reported in the review of literature, research continues to provide evidence that attachment exists between father and child.

Reciprocal interaction was one of the major concepts of attachment theory identified by Klaus and Kennell (1976). Reciprocal interaction occurs when parent and child are correctly interpreting each others behaviors and responding with complimentary behaviors. The ability of the parent to interpret the infant's behaviors and cues will influence the development of attachment.

Bowlby (1977) has associated the theory of attachment closely with cognitive psychology. He reported that cognitive learning is an essential component of the attachment process. The parent and infant learn to respond to

each other in an affectionate manner. In other words, they are "active partners in the development of a reciprocal system of interaction" (Campbell & Taylor, 1979, p. 8).

Although these authors refer primarily to the female parent, the present investigation examined the father-infant relationship in regard to the effects that the father's exposure to the interpretation of his infant's behaviors and cues will have on his own parenting behaviors and attitudes.

Social Learning Theory

The learning which occurs in the development of attachment between parent and child occurs primarily through interaction and contact with one another. The framework of social learning theory helps to clarify this learning process.

In Bandura's (1977) theory of social learning; there are three interdependent factors which operate as interlocking determinants of learning: behavior, personal factors, and environmental factors. An example of each factor which relates to the present study will help to clarify the meaning of each. Environmental factors would include those experiences which are available to the new father, such as the assessment of the interactive behaviors of the infant. Personal factors include such components as past family

experience, previous experiences with children, age, and cognitive ability; all of which are unique characteristics of the individual. Behavior in the present study would refer to the actions of the individual in reference to fathering; for instance whether or not the father chooses to become involved with the infant and acts upon this decision. Within the continuous interaction of these factors, new behaviors can be learned. There are three processes which are prominent in regard to the interdependent factors: vicarious, symbolic, and self-regulatory processes. First, learning can be a vicarious process. Bandura established that it would be costly and hazardous if all learning were to occur by trial and error. Instead, some complex behaviors are learned indirectly, such as through observation of modeling. Parenting is a good example of a complex behavior which is learned through modeling. One type of modeling which Bandura identified was abstract modeling, in which the observer extracts the common principles or features exemplified by the model and then later applies them in a situation which is new or unfamiliar. In the present study, the father will observe the interactive behavioral assessment, from which principles can be extracted and later applied to father-infant interactions. The symbolic process is dependent on the cognitive

ability of the individual to preserve the experience in representational form as a guide for future behavior. Representational form is generally in word symbols, for instance as the father describes the assessment to his wife. In the present situation, visual imagery may also be useful to the father as he later reviews the assessment process to himself and attempts to demonstrate portions of the procedure to his wife. The self-regulatory process is the individual's selection, organization and transformation of the stimuli that impinge upon him. The way in which the father utilizes the experience of the assessment process in his own fathering behaviors will depend on how the father organized and transformed the experience. An important aspect of social learning theory is the self-regulation, as learning is dependent upon the father selecting and utilizing the experiences which are available.

General Aim of the Study

The aim of this research is to investigate the involvement of the father in the family unit. The study is designed to determine if the involvement of the father in the interactive behavioral assessment of his infant will:

1. effect the father's attitude toward parenting behaviors.

2. effect the father's participation in child care activities.

Statement of Hypotheses

The null hypotheses to be tested are:

1. There is no significant difference in attitude toward parenting, as measured by the scores on the Paternal Attitude Scale between fathers who were and fathers who were not involved in the interactive behavioral assessment of their infant.
2. There is no significant difference in participation in infant care activities, as measured by scores on the Self-Report Form, between fathers who were and fathers who were not involved in the interactive behavioral assessment of their infant.

The treatment variable to be utilized is the performance of the Brazelton Neonatal Behavioral Assessment Scale. It will be used in this research study by involving the father in the process of the assessment of his infant. The primary focus of the researcher during the assessment will be father-infant interaction. The dependent variables will be the scores from the Paternal Attitude Scale and the

Self-Report Form. These variables will be discussed in detail in the next chapter.

Definition of Terms

Definition of terms used in this study include:

1. Involvement: The father will be present and observe the interactive behavioral assessment of his infant. Communication between the researcher and father will be ongoing during the assessment process.
2. Interactive Behavioral Assessment: The demonstration to the father of the Brazelton Neonatal Behavioral Assessment Scale on his infant.
3. Parenting Behaviors: The behaviors displayed by the male in direct response to his infant. Parenting behaviors will be operationalized by scores on the Self-Report Form.
4. Attitude: "A mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related" (Allport, 1967, p. 8). In this study, attitudes toward paternal involvement in parenting behaviors will be examined. Attitude will be

operationalized by scores on the Paternal Attitude Scale.

Basic Assumptions

This study rests on the following assumptions:

1. Fathering is a learned role.
2. The child receives positive effects when fathering occurs.
3. Each infant displays unique and individual behaviors and cues at birth.
4. Demonstration of the Brazelton Neonatal Behavioral Assessment Scale is an effective means of identifying the unique and individual characteristics of the neonate.

Summary

The theoretical framework for investigating the effects of the father's involvement in the interactive behavioral assessment of his infant on paternal attitudes toward and participation in parenting behaviors was presented. The general aim of this study, null hypotheses, definition of terms, and assumptions were stated. The following chapter will discuss the methodology which was used to test the research hypotheses.

CHAPTER 4

METHODOLOGY

A Solomon Four-group research design was used to measure the effect of the independent variable and the pretest on the dependent variables. The Brazelton Neonatal Behavioral Assessment Scale, which was demonstrated to each experimental father as it was administered to his infant during the postpartum hospitalization period, was the independent variable. There are two dependent variables: the Paternal Attitude Scale and the Self-Report Form. The Solomon Four-group research design was chosen in order to be able to determine whether or not the pretest measure influenced the effects of the treatment variable. In this study, it was necessary to examine the effects of the Paternal Attitude Scale as a pretest on the father's involvement in the assessment process.

The Solomon Four-group design consists of two experimental and two control groups. One experimental group and one control group was administered the pretest measure and the remaining two groups were not. All four groups received the same posttest measures. Thus, it was possible to examine the historical and maturational threats to validity

as well as the effect of the pretest measure on the treatment variable (Campbell & Stanley, 1967).

The Setting

All data were collected in April through September, 1980 at Emanuel Hospital, which is a 550 bed private hospital located in Portland, Oregon. The obstetrical services of the hospital are available to patients of private physicians as well as clinic patients. Emanuel hospital was designated as a Level III Perinatal Center in July, 1979. Although this hospital is located near the downtown area of Portland, low risk patients come from the entire metropolitan area and high risk patients are referred from throughout the state of Oregon. Approximately twenty percent of the 220 deliveries per month are classified as high risk. The husband, or other chosen support person is permitted to remain with the woman during labor. These individuals can also attend vaginal or repeat cesarean deliveries, when permission has been obtained.

The postpartum unit consists of 34 beds. The father, or other support person is allowed to be with the mother and infant throughout the day and can participate in caring for the infant. The average time of discharge is between

24 and 72 hours after delivery when no complications have occurred.

Sample Criteria

The sample was comprised of first-time fathers and mothers. To control for the effects of witnessing and participating in labor and delivery, only fathers who had been with their wives during all or part of the labor period and were present at delivery were allowed to participate in this study. Another control on the sample population was that the father had the ability to read English. Only fathers whose infants had a normal physical examination were admitted to the study. All infants in the study were delivered vaginally. Another requirement was that fathers planned to live in the home with mother and infant. Families were removed from the sample if, between the time of delivery and the four week home visit, physical or psychosocial problems of any family member developed or the family could not be visited when the infant was four weeks old.

Method of Recruitment

Permission to conduct the study was obtained from the Human Research Review Committee of the Texas Woman's

University (Appendix A). Permission to conduct the study at Emanuel Hospital was obtained from the hospital's Human Research Committee, the Executive Committee of Emanuel Hospital Staff, the Department of Obstetrics and Gynecology, and the Department of Pediatrics (Appendix A). Nurses employed on the postpartum and newborn nursery units of the hospital were contacted by the Maternal-Child Nursing Coordinator and staff conferences were arranged in which the investigator described the study to registered nurses, licensed practical nurses, and nursing assistants from both units. Cooperation of the staff was elicited at these conferences.

Sample Recruitment

Beginning April 25, 1980, fathers who met the sample criteria which could be ascertained from the hospital records, were approached by the investigator. The fathers and their wives were told that a study was being conducted with first-time fathers concerning the feelings and behaviors of new parents. If fathers were interested, it was explained that the hospital records and charts did not contain information regarding the father's previous parent-experiences, nor was it consistently noted whether the father did or did not participate in labor and delivery.

Therefore, this information had to be clarified in order to establish whether or not all criteria to be included in the study were met. The father was told that if he accepted participation in the study, he would be randomly assigned to one of the four groups in the study. He was told that involvement in the study would include the completing of a demographic data sheet on the first or second postpartum day and a home visit by the investigator four weeks after delivery for the purpose of administering two other short questionnaires regarding his feelings about parenting and his activities with his baby, which would take approximately 25 minutes. It was made clear that depending on which group he was assigned to, he would participate in neither, one, or both of the following procedures during the postpartum hospitalization period: completion of the questionnaire concerning his feelings about parenting and/or the interactive behavioral assessment of his infant. The father was informed that he could discontinue his participation in the study at any point. All of this information, plus additional statements concerning confidentiality, were further clarified on the informed consent form which the father was requested to carefully read and sign (See Appendix B).

Fathers were asked if it was likely that their family would be moving during the next six weeks. If the answer was yes, the father was given a postcard addressed to the investigator to insure that any change of address was recorded prior to the home visitation. This recruitment procedure was followed until the final sample size of 12 in each group was attained in August, 1980.

Only two fathers that were approached refused to be in the study. One man stated that he and his wife were very personal people and he felt such a study would be an invasion of privacy. Another father felt that he had a very busy schedule and wanted to spend any free time he had with his wife and child. All of the fathers who agreed to participate in the study completed the entire research procedure.

Independent Variable

The independent variable consisted of exploring the infant's behaviors and cues which affect reciprocal interaction between parent and infant. This was operationalized by demonstrating the Brazelton Scale to the father on his own infant. The Brazelton Neonatal Behavioral Assessment Scale (BNBAS) was developed by T. Berry Brazelton (1973): The BNBAS was:

developed for the purpose of observing, making judgements, and scoring selected reflexes, motor responses, and interactive behavioral responses of newborn infants. The main emphasis of the scale is on the observation and rating of an infant's interactive behavior (Erickson, 1976, p. 50).

The scale measures the neurologic capacities of the infant and the infant's responses to specific stimuli.

The newborn's behaviors are his succinct mode of communication and the sensitive adult responds to this communication. The BNBAS helps one become aware of the richness and complexity of the newborn's behaviors and teaches one to read the infant's cues more accurately. It takes the infant's behaviors as indicators of his regulation, his organismic intention, and as means to gain understanding of his processes of functioning and adaptation (Als, Lester & Brazelton, in publication).

The BNBAS has been utilized in numerous settings for a variety of purposes. Research which has used the scale in the assessment of neonates includes studies of high risk infants, the effects of maternal obstetrical medication, cross cultural comparisons of infant behavior, and the relation of neonatal behavior and the effects of intervention programs. More recently the scale has been utilized as a resource and guideline for teaching parents about their infant's state changes, temperament, and individual behavior patterns (Als et al., in publication).

During the half hour assessment, the newborn was manipulated in such a way as to exhibit motor, cognitive,

social and temperamental as well as psychophysiological reactions. The procedure attempts to recapitulate experiences which will be typical of future interactive situations (Als et al., in publication). Thus, through the demonstration process, the investigator modeled the interpretation of the infant's responses to environmental stimuli such as voice and touch.

It is the aim of the assessment procedure to provide optimum conditions which will elicit the newborn's best performance. Scoring based on the best performance of the infant was adopted by Brazelton as a means of overcoming the problems caused by temporal events which may be beyond the control of the examiner (Brazelton, 1973).

Thus, a poor response may be due to the fact that the newborn cannot produce a better one, or it may be that the examiner's maneuvers were not effective enough. So the examiner must always be sensitive to the infant's particular state of consciousness and he must learn the necessary maneuvers to adapt his procedures to the baby (Als, Tronic, Lester, & Brazelton, 1979).

This investigator completed reliability training and certification at Children's Hospital Medical Center in Boston, in order to insure that the proper technique was utilized during this study.

When using the BNBAS, scoring of the infant should be completed immediately after the Procedure (Appendix C).

The infant is scored on 20 reflex items such as rooting, sucking, Babinski, the tonic neck reflex, etc. Overall organization is based on the behavioral dimensions of Need for Stimulation and Attractiveness (which refers to the social attractiveness, i.e., how much the examiner has to contribute and how the infant responds). The majority of the examination assesses interactive behavior by scoring 26 behavioral items on a nine-point scale. Each nine-point scale differs. The 26 items can be divided into four behavioral dimensions: interactive capacities, motoric capacities, organizational capacities in relation to state control, and organizational capacities in relation to physiological responses to stress. In order to insure scores, ordering of the assessment items is a primary consideration as well as environmental conditions (Als et al., 1979). Scoring of the infant was completed directly after the BNBAS was performed. The father was not involved in the scoring process.

The Brazelton Neonatal Assessment Scale was used as a method in which parents and child care professionals can explore together the strengths of the infant in order to promote optimal parent-infant interactions. Implementation of the assessment process can be an effective means of helping parents learn individual characteristics about their

infant. For instance, the parents can learn how external stimuli effect their infant, effective use of voice and touch, positioning the baby, and consoling in graduated degrees to obtain the most favorable responses from their baby. In other words, they begin to perceive themselves as valuable resource persons to their baby (Erickson, 1976). For this reason,

The data obtained from the assessment must be shared with parents; it is not enough to chart that, according to the scale, the infant performs adequately...Furthermore, the scale can be used to help parents recognize the ways in which their infant begins to orient to his environment and interact with it, to show beginning signs of attachment, and to give cues that influence the early parent-infant acquaintance process (Erickson, 1978, p. 101-103).

Dependent Variables

Paternal attitudes toward parenting behavior were measured in two groups as a pretest and in all four groups as a posttest measurement. The father's participation in infant caretaking activities was measured at four weeks after delivery. Each variable will be discussed separately in the following sections.

Paternal Attitudes

The Paternal Attitude Scale (Appendix D), was utilized to measure the father's attitudes toward parenting

behaviors. The scale was developed by this author. It consists of 38 Likert items which are responded to on a five point bipolar scale: strongly disagree, disagree, uncertain, agree, and strongly agree. The instrument's content validity was established by having seven experts rate the original 60 items from one to 60 according to which one best measured the father's attitude toward parenting behavior. Those ten items which were rated consistently low were removed from the scale. In addition, slight changes were made on five other items as a result of comments by these experts.

Reliability of the Paternal Attitude Scale was established by administering a 50 item form to 119 fathers. The alpha reliability coefficient was 0.93. Further item analysis was utilized to determine: (a) which items were best discriminating between fathers with high scores and fathers with low scores, and (b) which items had the highest correlation with total scores. According to these criteria, 12 items were eliminated. Therefore, the scale contains 38 items which cover a wide range of parent-infant activities and comprehensively reflect the attitude being measured. Thus, the scale has been designed with the aim that all fathers can relate to the items to some degree.

For ease of administration, the five-point response scale follows each item.

Scoring, utilizing the five alternative responses for each item, is accomplished by assigning values of one to five to the five responses with three being assigned to the uncertain response, five to the response indicating favorable attitudes toward involvement in parenting activities and one to the unfavorable attitudes; this was held consistent through the scale. Thus, if the item was stated in such a manner as to reflect an unfavorable attitude, such as item number one, five was assigned to the strongly disagree response, four to the disagree response, two to the agree response, and one to the strongly agree response. If the item was positive, such as item number three, the responses would be scored in the reverse order, i.e., five being assigned to the strongly agree, etcetera. After scoring each item, the total score was obtained by adding the item scores.

The Paternal Attitude Scale was administered as a pretest to one of the experimental groups and one of the control groups. All four groups were posttested with the Paternal Attitude Scale. It took approximately 10 to 15 minutes to complete the scale.

Paternal Participation in Infant Caretaking Activities

The participation of the father in infant caretaking activities was operationalized by the portion of the Self-Report Form (Appendix E), which requests fathers to indicate the number of times they participated in the 13 infant caretaking activities listed. This portion of the questionnaire was submitted to four experts for their review and comments. Only minor revisions were necessary. This questionnaire was administered to all fathers during the four week home visit. The Self-Report Form required approximately 10 minutes for administration.

Scoring to obtain a sum score was similar to the Paternal Attitude Scale. Each response category was given a score of one to six with one being assigned to the never category. The addition of all item scores resulted in a total or sum score for paternal participation in infant caretaking activities.

Intervening Variables

The major variables which were identified as influencing the father-infant interaction were discussed in the review of the literature. Criteria for recruitment as well as randomization of the assignment of fathers to groups was utilized in an attempt to control for these variables. In

addition, demographic characteristics and pretest attitude scores were measured in order to examine the variance among the groups prior to the implementation of the independent variable to the experimental groups.

The Father's Data Sheet (Appendix F) was used to collect demographic data from the father during the postpartum hospitalization period. This instrument also contained items which explored such intervening variables as the father's previous experience with young children and infants, the father's perception of his relationship with his father, the prenatal preparation of the father. Those statements which ask the father to circle the response which best describes his father or significant male figure were adapted from a tool developed by Manion (1975). The Father's Data Sheet was completed by all fathers during the postpartum hospitalization period, and prior to the administration of the treatment variable to the experimental groups. Most fathers completed the scale within 10 minutes.

The scoring sheets (Appendix C) for the Brazelton Neonatal Behavioral Assessment Scale (Brazelton, 1973) were utilized to obtain further information concerning the infant and the labor and delivery experience. The data were retrieved from the mother's and infant's charts by the investigator.

Besides the data concerning paternal participation in infant caretaking activities, the Self-Report Form included items examining current diet and sleep habits of the infant and employment status of the parents. The Self-Report Form was completed by all fathers during the four-week home visit.

Research Procedure

The remaining sections of this chapter will review the collection of data. This will be followed by a brief discussion of the analysis of data procedures.

Procedure Prior to Experimental Treatment

Prior to beginning data collection, random assignment to groups was accomplished by using a table of random numbers. The numbers one through four were used to symbolize the experimental group with pretest, the experimental group without pretest, the control group with pretest, and the control group without pretest respectively. Thus, subjects numbered one through 48 were randomly assigned to one of these groups before the data collection process actually began.

The method of recruitment was discussed in a previous section of this chapter. Once the subject had agreed to

participate and had signed the consent form, he was randomly assigned, according to his research number, to one of the four groups described above.

Subjects were assured of anonymity. All research tools were coded with identification numbers to maintain confidentiality and only the informed consent had the parents' names. On a separate card the patient's name, address, telephone number and identification number was placed and was available solely to the investigator.

Table 1 provides a visual schema of the research design. During the postpartum hospitalization period, the Father's Data Sheet was completed by fathers in all four groups. Fathers assigned to groups one and three also completed a Paternal Attitude Scale during this period. A time was arranged with the family for the investigator to demonstrate the Brazelton Neonatal Behavioral Assessment to the fathers who were in the experimental groups. The investigator obtained the information for the Brazelton scoring sheets from the mother's and infant's hospital charts prior to implementation of the treatment variable. Parents were told that the investigator would contact them in approximately three weeks to arrange a definite time for the home visitation.

Table 1

Research Design: Schedule for
Data Collection

Group Assignment	Postpartum Hospitalization Period		Four Week Home Visit
	Pretests	Treatment ^a	Posttest
Group 1	Father's Data Sheet Paternal Attitude Scale	BNBAS	Self-Report Form Paternal Attitude Scale
Group 2	Father's Data Sheet	BNBAS	Self-Report Form Paternal Attitude Scale
Group 3	Father's Data Sheet Paternal Attitude Scale		Self-Report Form Paternal Attitude Scale
Group 4	Father's Data Sheet		Self-Report Form Paternal Attitude Scale

^aTreatment indicated only when BNBAS demonstrated to father.

Implementation of Treatment

The Brazelton Neonatal Behavioral Assessment Scale (BNBAS) was described previously. The assessment was demonstrated in a quiet room on the postpartum unit to fathers in groups one and two. A sign was posted on the door requesting no interruptions during the assessment process. The father was encouraged to ask questions during the assessment.

Throughout the demonstration, the investigator explained the stimuli being presented to the infant as well as the infant's behavioral responses and cues. It was necessary to delay talking during the response decrement items, as talking at this time would be an additional stimulus which could confound the infant's response. Strengths of each infant were stressed with the fathers. When the infant responded in a less than optimal manner, the investigator stressed the individual differences in infants and reinforced the positive responses of the infant. As the infant contributed responses to the interaction, the investigator modeled and/or explained how these responses could provide cues to the parent. For instance, when the infant quieted when held tightly, this response was described as a cue which the infant was giving the parent, that is, the infant liked this type of handling. The parent

who recognizes such a cue is then able to alter his own behavior in response to the infant. It was suggested that the father demonstrate what he had observed to his wife, thereby reinforcing the modeled behaviors of response to the infant's cues. A more detailed description of the teaching plan can be found in Appendix G.

Home Visitation

All subjects were called prior to the fourth postpartum week in order to arrange a definite appointment for home visitation. The investigator identified herself and asked when the most convenient time for a home visit would be that was within one to two days of the infant's four-week birthday. Parents were reminded that the purpose of this visit was to have the father complete two more follow-up questionnaires which would require approximately 25 to 30 minutes. At this visit, the fathers again completed the Paternal Attitude Scale and the Self-Report Form.

Upon completion of the questionnaires, the parents were asked if they had any further questions about the study or their new infant. The majority of parents took this opportunity to ask questions about their infant. The most frequent topics discussed were related to feeding and sleep habits. Subjects were thanked for their participation in the study at the end of the home visit.

Analysis of Data

The aim of this study was to determine the effects, if any, of the father's involvement in the interactive behavioral assessment of his infant on paternal attitudes toward and participation in parenting behaviors. A two-way analysis of variance on the Paternal Attitude Scale posttest scores of the four groups was computed to determine whether the pretest utilization of the scale had interfered with the effects of the treatment variable. The 0.05 level was set as level of significance. Analysis of covariance was used to determine the effects of the treatment variable on the Paternal Attitude Scores while controlling for any pretest differences between the groups. A t test was computed to determine the effects of the treatment variable on the scores for the fathers' participation in infant caretaking activities. In order to determine if the four groups differed significantly on variables measured on the Father's Data Sheet, the Self-Report Form, and the BNBAS scoring sheet, analysis of variance or chi square techniques were computed to examine between group variance. The specific technique used depended upon whether the variables were considered to be interval or ordinal data. Similarly, either the Pearson correlation coefficient or the Spearman

correlation coefficient was computed to analyze correlations between variables.

Summary

The methodology which was utilized to study the relationship between the father's involvement in the interactive behavioral assessment process and his attitudes toward and participation in parenting was presented in this chapter. The findings of the study will be presented in the next chapter.

CHAPTER 5

RESULTS

The general purpose of this study was to investigate an intervention designed to enhance father-infant interaction and thus provide data to nurses and other professionals which could be used in the future development of parent-infant interventions. The specific aims were (a) to determine if the father's involvement in the interactive behavioral assessment of his infant effected his attitudes toward the participation in parenting behaviors and (b) to determine if pretesting subjects effected the outcome of the treatment.

The results of data analysis will be reported in this chapter. These findings will be presented in the following order: data describing the sample characteristics, data supporting the reliability of the research instruments, data relating to the study's hypotheses, and data supporting other findings.

Sample Characteristics

Forty-eight fathers were recruited for the study. Although all of the fathers completed the study, the

investigator elected to drop four subjects prior to data analysis. The decision was made to exclude the 22nd subject after the pretest measurements due to his and his wife's familiarity with the subject area and measurement procedures. It was evident that the validity of his self-ratings was questionable and that a bias existed because of their knowledge. Since the subject expected to participate in the entire study, the investigator continued the remainder of the research procedure, including the home visitation. Subject number 26 was dropped as he could not be contacted until his infant was six weeks old due to an unexpected and prolonged vacation of his family. As in the previous case, the research procedure was completed although the data were discarded. Two other subjects were dropped due to crisis situations. Upon home visitation to subject number 29, it was learned that besides moving in the four weeks since delivery, his wife's father had suddenly died the previous week and at the time of the visit, the infant had rubella. The investigator was informed during the home visitation of subject 37 that their infant had returned home the preceding day from the hospital after surgical repair for pyloric stenosis. Subjects numbered 22, 26, 29 and 37 had been randomly assigned to groups one, two, three and four respectively prior to beginning data collection.

Thus, the final sample consisted of eleven subjects in each group.

Demographic and Paternal Data

One-way analysis of variance procedures were used to test for differences in demographic variables among the four groups. Table 2 summarizes this data. No significant differences were found between groups on any of the following characteristics: paternal age, maternal age, number of years married, or number of years of education for the father.

Table 2
Means, Standard Deviations and F-Ratios
on Demographic Variables by Group

		Group 1	Group 2	Group 3	Group 4	F*
Paternal Age	<u>M</u>	26.46	25.09	26.46	26.73	0.33
	<u>SD</u>	3.96	3.59	3.73	5.55	
Maternal Age	<u>M</u>	25.91	23.36	24.55	24.91	0.66
	<u>SD</u>	4.61	3.78	3.21	5.24	
Years Married	<u>M</u>	3.68	2.20	3.32	3.00	0.69
	<u>SD</u>	3.64	1.59	2.41	1.99	
Education (Years)	<u>M</u>	14.27	13.09	13.82	14.36	0.60
	<u>SD</u>	2.20	2.74	2.60	2.38	
Prenatal Classes	<u>M</u>	5.46	3.73	5.73	6.18	1.30
	<u>SD</u>	3.59	2.72	3.17	2.93	

*F needed for significance 2.86; $p < 0.05$; 3, 40 df

Subjects ranged in age from 19 to 37 years of age. Their wives also had an 18 year age range, the youngest was 17 and the oldest was 35. Although there was not significant variance between groups, there was a wide range in the educational levels of the fathers: nine years to 20 years.

Two of the couples in the study were not married, but were living together. Four other couples had been married for six months or less. Five couples had been married for over six years, with 12 years as the longest period for one of these couples.

Using the chi square procedure, no significant differences were found at the 0.05 level of significance on the following variables: annual family income, religious preference, or national origin. According to Minium (1970), when more than 20% of the cells have expected frequencies of less than five, the validity of the significance test of the chi square statistic is questionable. Therefore, the reader may prefer to regard these three variables which did not meet this criteria only in terms of the descriptive data presented. Annual family income for these couples ranged from the \$5,001-10,000 category to more than \$20,000. (See Table 3). All of the fathers in the study were caucasian except for two. Both of these fathers were in

group three; one was of Spanish-American heritage and the other was Oriental. Table 4 shows that the groups did not vary greatly in religious preferences.

Table 3
Description of Income by Group

Income Level	Group 1	Group 2	Group 3	Group 4
20,000 or more	n = 0	n = 1	n = 1	n = 3
15,001-20,000	n = 2	n = 3	n = 4	n = 0
10,001-15,000	n = 3	n = 2	n = 3	n = 3
5,001-10,000	n = 6	n = 5	n = 3	n = 5
0-5,000	n = 0	n = 0	n = 0	n = 0

Table 4
Description of Religious Preference by Group

Religious Preference	Group 1	Group 2	Group 3	Group 4
Other	n = 4	n = 4	n = 2	n = 4
Protestant	n = 0	n = 1	n = 0	n = 0
Jewish	n = 4	n = 4	n = 4	n = 3
Catholic	n = 3	n = 2	n = 5	n = 4

As noted in Table 2, participation in prenatal classes did not vary significantly between groups. Only 11% of the fathers ($n = 5$) reported attending a class on baby care. However, almost half of the fathers (47.7%) reported reading one or more books on baby care.

Analysis of variance revealed no significant differences among groups in the amount of time the father's employment required him to be "out of the house". Similarly, there were no significant differences among groups on the number of evenings per week that fathers were away from home.

An attempt was made to assess the amount of experience with younger siblings or other children that the subjects had had prior to the birth of his first infant. The fathers responded to three questions on the Father's Data Sheet which sought this information and analysis of variance techniques were used to determine if there were differences among the groups (See Table 5). Findings indicate that groups two, three and four were a homogenous subset that had more experience with younger siblings, while group one had significantly less experience. In examining experience babysitting children under one year of age, group two was found to have significantly more experience while groups one, three and four formed a

homogeneous subset with less experience. No significant differences were found between groups on experience baby-sitting children aged one to five. Therefore, it appears that group two may have had the most experience and group one the least experience.

Table 5

Means, Standard Deviations, and F-Ratios
on Child Care Experience by Groups

		Group 1	Group 2	Group 3	Group 4	F*
With Younger Siblings	<u>M</u>	1.36	3.55	3.09	2.73	4.72
	<u>SD</u>	0.81	1.57	1.38	1.79	
With Infants (0-1 Year)	<u>M</u>	2.10	3.10	1.46	1.37	5.46
	<u>SD</u>	1.30	1.64	0.52	0.67	
With Children (1-5 years)	<u>M</u>	2.64	3.46	2.36	2.36	1.72
	<u>SD</u>	1.43	1.44	0.81	1.43	

Note: Higher values indicate more child care experience.

*F needed for significance 2.86; $p < 0.05$; 3, 40 df

Another variable which was examined to identify any differences which may exist among the groups prior to treatment was the father's relationship with his own father. The subject was asked to identify the response which best described his own father in relation to showing love, understanding problems, giving affection at bedtime, comforting when upset, and giving care and attention. The

responses ranged from never to very frequently and were given values of one to six; higher values indicating display of the behavior more frequently. No significant differences were found among groups on any single item or on the summation score of the five items (See Table 6).

Table 6

Means, Standard Deviations, and
F-Ratios on Subjects' Rating
of Relationship with Father

		Group 1	Group 2	Group 3	Group 4	F*
Showed Love For Me	<u>M</u>	4.18	5.18	4.46	4.18	1.83
	<u>SD</u>	1.08	0.98	1.13	1.40	
Understood My Problems	<u>M</u>	4.18	4.36	4.09	3.91	0.22
	<u>SD</u>	1.40	1.43	1.38	1.14	
Affectionate To Me At Bedtime	<u>M</u>	3.91	4.55	4.27	4.00	0.32
	<u>SD</u>	1.70	1.64	1.79	1.61	
Comforted Me When Upset	<u>M</u>	4.00	4.64	3.91	3.55	1.08
	<u>SD</u>	1.27	1.69	1.58	1.21	
Gave Me Care and Attention	<u>M</u>	4.18	5.27	4.46	3.19	2.05
	<u>SD</u>	1.08	1.19	1.75	1.60	
Summation Score ^a	<u>M</u>	20.45	24.00	21.18	19.46	1.093
	<u>SD</u>	6.02	5.53	6.97	6.15	

Note: Higher values indicate more frequent display of the behavior.

^aSummation score indicates sum of the five item scores.

*F needed for significance 2.86; $p < 0.05$; 3, 40 df

Finally, fathers in the pretested groups were compared on the Paternal Attitude Scale pretest scores. As shown in Table 7, no significant differences existed between these groups of subjects on the paternal attitude variable prior to treatment.

Table 7
Comparison of Paternal Attitude
Scale Pretest Scores Between
Groups One and Three

Group	Mean	Standard Deviation	<u>t</u> Value	p*
Group 1 (Experimental)	160.36	12.847	0.37	0.712
Group 3 (Control)	158.36	12.242		

*Programs used in this study compute exact p value.

Obstetrical and Infant Data

All of the fathers in the study were with their wives during all or part of the labor experience and were present at the delivery of their infant. One-way analysis of variance indicated no significant difference on length of labor. The types of anesthesia used for delivery included: spinal, pudendal, epidural, paracervical, and local. Again

there were no significant differences between the groups.

All fathers in the study held their infants within 24 hours after delivery. Seventy-five percent had held their infants within one hour after birth. Analysis of variance revealed no significant effects between groups on this variable.

The sex of the infants did not vary significantly among the four groups (See Table 8). The majority of the infants in the study were breast fed at birth, only three infants were bottle fed (See Table 9). However, at four weeks, 13 infants were being fed only by bottle.

Table 8
Comparison of Groups
on Sex of Infant

	Group 1	Group 2	Group 3	Group 4	<u>p</u> *
Female	n = 8	n = 7	n = 6	n = 7	0.85
Male	n = 3	n = 4	n = 5	n = 4	

*chi square (df = 3)

Table 9

Comparison of Groups on Infant
Feeding Method at Birth

	Group 1	Group 2	Group 3	Group 4	p*
Breast	n = 11	n = 10	n = 9	n = 11	0.26
Bottle	n = 0	n = 1	n = 2	n = 0	

*chi square (df = 3)

The weight of the infant as well as the age of the infant at the time of the assessment and at the time of the home visitation did not vary significantly between groups (See Table 10). Each infant in the study had a physical examination by a pediatrician and was diagnosed as a normal newborn prior to recruitment.

The 25 items on the BNBAS were used to test for equivalence of the four groups of infants. Table 11 reports the results of one-way analysis of variance on each item. Two items, pull-to-sit and rapidity of buildup, were found to have F-ratios which differed significantly at the 0.05 level. However, the other 23 items indicated no significant differences among the four groups of infants.

Table 10

Means, Standard Deviations and F-Ratios
on Infant Variables by Group

		Group 1	Group 2	Group 3	Group 4	F*
Infant Weight (Kilogram)	<u>M</u>	3.68	3.40	3.32	3.69	1.92
	<u>SD</u>	0.51	0.42	0.47	0.39	
Age at BNBAS (Hours)	<u>M</u>	32.55	41.18	37.09	44.64	1.60
	<u>SD</u>	10.82	10.23	15.93	16.54	
Age at Home Visit (Days)	<u>M</u>	29.00	28.91	28.45	28.73	0.31
	<u>SD</u>	1.61	0.94	1.51	1.55	

*F needed for significance 2.86; $p < 0.05$; 3, 40 df

Table 11

Means, Standard Deviations, and F-Ratios
on Results of BNBAS by Group

Item	Group 1		Group 2		Group 3		Group 4		F*
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
1	6.6	0.98	6.7	1.03	6.6	1.13	7.1	1.13	0.50
2	7.4	0.54	6.8	0.75	7.5	0.93	7.9	0.84	2.03
3	8.1	0.69	7.7	1.07	7.1	1.07	7.8	1.04	1.54
4	5.0	2.37	4.3	1.95	5.6	2.11	4.4	1.91	1.01
5	6.6	1.21	6.3	0.91	6.6	0.81	6.2	0.60	0.62
6	6.6	1.50	6.0	1.79	6.8	0.98	6.7	1.01	0.82
7	7.2	1.33	6.7	1.01	6.7	0.79	6.6	0.69	0.84
8	7.4	1.37	6.8	1.78	7.5	0.69	7.5	0.69	0.69
9	5.7	1.90	5.6	2.01	5.5	1.64	5.4	1.91	0.09
10	6.2	0.41	6.0	0.89	6.6	0.67	6.4	0.51	1.94
11	5.8	1.17	5.9	1.38	4.6	1.37	5.5	1.21	2.59
12	6.3	1.68	6.2	1.40	4.9	1.22	4.8	1.25	3.50*
13	5.4	0.67	5.2	0.40	5.5	1.57	5.6	1.69	0.30
14	7.0	1.00	6.9	1.45	6.4	0.92	7.2	0.60	1.27
15	6.4	1.84	6.5	1.69	5.1	1.45	5.9	1.64	1.58
16	5.3	1.19	5.5	1.13	5.5	1.13	5.4	0.81	0.13
17	3.1	1.51	5.5	1.97	4.3	2.00	4.6	1.21	3.65*
18	3.9	1.87	5.3	1.68	5.0	1.55	5.5	1.29	2.18
19	4.7	0.65	5.0	0.77	5.3	1.12	5.2	0.75	1.14
20	2.5	1.86	2.5	2.07	3.5	2.50	3.5	2.25	0.84
21	4.4	1.97	4.3	1.56	4.4	1.75	5.2	1.40	0.71
22	4.5	0.82	5.1	0.54	4.7	0.65	4.9	0.94	1.43
23	1.9	0.70	2.5	0.52	2.2	1.08	2.4	0.50	1.49
24	6.4	1.24	5.3	1.90	5.3	2.00	4.6	2.06	1.60
25	6.2	2.52	4.9	2.21	5.2	1.99	4.3	2.65	1.25

*F needed for significance 2.86; $p < 0.05$; 3, 40 df

Summary

In summary, the only difference which was evident among the fathers in the four groups prior to intervention procedures was previous experiences in child care. Fathers in group two had more experience with infant care than the other groups and fathers in group one had less experience taking responsibility for younger siblings. Infants in the study were homogeneous on 23 of the 25 behavioral characteristics measured on the BNBAS. Thus, the four groups had only a small number of differences which could be expected when examining numerous variables.

Instrument Reliabilities

The alpha reliability coefficient was again computed to establish the reliability of the Paternal Attitude Scale. As stated in a previous chapter, the alpha coefficient was 0.93 for the 50 item form which was administered to 119 fathers. The scale has since been reduced to 38 items by eliminating those items which had low correlations with the total score and were least discriminatory. The alpha coefficient of the 38 item scale when administered to 44 subjects as a posttest was 0.91. Although the sample size was greatly reduced, the scale maintained a satisfactory reliability level.

An alpha coefficient of 0.81 was computed on the 13 participation items included in the Self-Report Form. This indicates that this scale also had a fair degree of internal consistency when it was administered to the 44 subjects during the home visit. At four weeks of age, 27% of the sample continued to be breast fed with no supplementation by bottle. For this reason, the items "give a bottle to" and "feed solid foods" were discarded and another alpha coefficient computed. This did not appear to change the reliability as the alpha coefficient remained 0.81. Thus, the original scale of 13 items appears to be adequate even though some infants are breast fed only.

Hypotheses

Two hypotheses related to the effects of an intervention aimed at increasing the father's ability to interpret the behavioral responses and cues of his infant will be discussed. The null hypotheses were stated as follows:

1. There is no significant difference in attitude toward parenting as measured by the scores on the Paternal Attitude Scale, between fathers who were and fathers who were not involved in the interactive behavioral assessment of their infant.

2. There is no significant difference in participation in infant care activities, as measured by scores on the Self-Report Form, between fathers who were and fathers who were not involved in the interactive behavioral assessment of their infant.

Hypothesis 1

First analysis was done to determine whether the Paternal Attitude Scale pretest measurement influenced the effects of the treatment variable. As indicated in Table 12, two-way analysis of variance on the posttest scores indicated that there was no significant main effect of pretesting nor was there an interactive effect at the 0.05 level of significance. In addition, main effect of the treatment variable was found to be non-significant ($F(1,40) = 1.815$ $p = 0.186$) at the 0.05 level.

Since the main and interactive effects of pretesting were negligible, analysis of covariance on the posttest scores of the Paternal Attitude Scale was computed on those groups which were both pretested and posttested. The pretested scores of these subjects on the Paternal Attitude Scale were used as the covariates. Thus, the first hypothesis was tested to determine if there were any significant differences between means of the experimental

and control groups on the dependent variable after the means of the two groups had been adjusted (See Table 13).

Table 12

Analysis of Variance: Comparison of Groups on
the Effects of Pretesting on Posttest Scores
on Paternal Attitude Scale

Source of Variation	Sum of Squares	df	Mean Squares	F	p*
Main Effects	397.682	2	198.841	0.98	0.38
Treatment vs. No Treatment	366.568	1	366.568	1.82	0.19
Pretesting vs. No Pretesting	31.114	1	31.114	0.15	0.70
Interaction	205.114	1	205.114	1.02	0.32
Error	8080.796	40	202.000		

*Programs used in this study compute exact p value.

Table 13

Original and Adjusted Means of Groups
One and Three Posttest Scores for
the Paternal Attitude Scale

Group	Original Mean	Adjusted Mean
Group 1: Experimental	165.818	165.104
Group 3: Control	155.723	156.441

Table 14

Analysis of Covariance: Comparison of Groups
One and Three on the Posttest Scores of
the Paternal Attitude Scale

Source of Variance	Sum of Squares	df	Mean Squares	F	p
Group 1 (Treatment) vs. Group 3 (Control)	415.718	1	415.718	4.546	0.046
Covariate (pretest)	1614.696	1	1614.696	17.658	
Error	1737.450	19	91.445		

Significant effects were revealed by the analysis of
covariance as operationalized by the Paternal Attitude

Scale. As can be seen in Table 14, the level of significance was 0.046 and was therefore less than the level identified to reveal significant differences ($p < 0.05$). Hence, the first null hypothesis was rejected.

Hypothesis 2

Using the sum score of the participation items on the Self-Report Form as the dependent variable, no significant differences were found between experimental and control groups one and three. The mean sum scores of the 13 participation items of each group were analyzed by t tests as shown in Table 15. Experimental and control groups two and four were compared (See Table 16) and then experimental groups were combined and compared to the combined control groups (See Table 17). Again, t tests were used to analyze the dependent variable and there were no significant findings. It should be noted that when the larger sample was analyzed by combining experimental and control groups, the computed t value approached significance. However, the differences did not achieve significance and therefore the second hypothesis failed to be rejected.

Table 15

Comparison of Participation Behaviors
Between Groups One and Three

Group	Mean	Standard Deviation	<u>t</u> Value	p
Group 1 (Experimental)	49.45	4.108	1.55	0.14
Group 3 (Control)	44.45	9.842		

Table 16

Comparison of Participation Behaviors
Between Groups Two and Four

Group	Mean	Standard Deviation	<u>t</u> Value	p
Group 2 (Experimental)	48.55	9.964	1.20	0.25
Group 4 (Control)	43.27	10.697		

Table 17

Comparison of Participation Behaviors Between
Combined Experimental and Control Groups

Group	Mean	Standard Deviation	<u>t</u> Value	p
Experimental (Groups 1 & 2)	49.00	7.451	1.93	0.061
Control (Groups 2 & 4)	43.86	10.049		

Additional Findings

Additional findings derived from the research will be discussed in this section. Further discussion will include: the relationship between the dependent variables, further analysis of paternal attitude scores from unused data of Solomon Four-Group research design, the relationship of intervening paternal variables to dependent variables, and a more detailed examination of the activities in which fathers are participating.

Relationship of Paternal Attitudes and Behaviors

Analysis was done to determine the relationship between paternal attitudes toward and participation in

infant caretaking activities as operationalized by the scores on the Paternal Attitude Scale and the participation items on the Self-Report Form. Only posttest scores of the attitude scale were used for this comparison. A Pearson product moment correlation was computed and a correlation coefficient of 0.5535 ($p = .001$) was obtained indicating that a relationship does exist.

Further Analysis of Paternal Attitude Scores

According to the Solomon Four-Group research design, if pretesting has negligible main or interactive effects, the pretest is used as a covariate in examining the effects of the treatment variable on experimental and control groups. Thus, the data from the experimental and control groups which are not pretested are not used in determining the effects of the treatment. No further analysis is necessary on the groups which are not pretested.

It was the decision of the investigator, however, to further analyze these data. First a t test was done to compare effects of treatment on the paternal attitude post-test score of the groups which were not pretested. Another t test was used to compare combined experimental and control groups. As can be seen in Table 18 and Table 19, no significant differences between groups existed in either analysis.

These findings will be discussed further in the next chapter.

Table 18

Comparison of Paternal Attitude Scale Posttest
Scores Between Groups Two and Four

Group	Mean	Standard Deviation	<u>t</u> Value	p
Group 2 (Experimental)	159.92	11.179	0.22	0.83
Group 4 (Control)	158.36	19.033		

Table 19

Comparison of Paternal Attitude Scale Posttest
Scores Between Combined Experimental
and Control Groups

Group	Mean	Standard Deviation	<u>t</u> Value	p
Experimental Groups (1 & 2)	162.82	11.536	1.36	0.18
Control Groups (3 & 4)	157.02	16.214		

Additional Analysis
of Paternal Variables

As reported earlier in this chapter, no significant differences between groups existed on the items which measured the subject's relationship with his own father. Using Pearson product moment correlation procedures, further analysis was done to determine if the sum scores of these items were correlated to either the posttest attitude scores or to the participation scores. Correlation coefficients of 0.02 and 0.03 were computed respectively, neither of which were significant at the 0.05 level.

Relationships were examined between the father's time-out of the house due to his job and participation in infant care activities. The Spearman correlation coefficient was computed and indicated a negative correlation of -0.16 which was not significant at the 0.05 level. When the number of evenings per week that a father was away from home was correlated with participation scores, the Spearman correlation coefficient of -0.26 was significant at the 0.05 level (See Table 20).

The amount of time which elapsed before the father held the infant and the dependent variables had a negative correlation. In other words, the older the infant was when held by the father, the lower the father's scores on the

Paternal Attitude Scale and the participation items. As indicated in Table 20, the Spearman correlation coefficients were not significant.

Responsibility for younger siblings did not have a significant relationship with the dependent variables. However, babysitting with infants or with children one to five years of age did correlate positively at a significant level with the attitude scores and with the participation scores (See Table 20). There appears to be a stronger correlation when babysitting is with the younger aged child.

Using the Pearson correlation coefficient, no significant correlations were found between either the age of the father or his educational level and the dependent variables. Nor was the number of years the couple had been married significantly correlated to attitude score or participation scores. Another variable which was examined in terms of its relationship with the dependent variables was the number of prenatal courses attended. Again, no significant relationships existed between the identified intervening variable and the dependent variable. Finally, the relationship of the variable of infant sex to each of the dependent variables was examined. Using the Spearman correlation coefficient, neither correlation was significant at the 0.05 level.

Table 20

Spearman Correlation Coefficients
for Paternal Variables and
the Dependent Variables

		Posttest Attitude Scores	Participation Scores
Amount of Time Until Infant Held	$\frac{R^a}{p}$	-0.22 0.07	-0.19 0.11
Hours Out of House Due To Job	$\frac{R}{p}$	-0.28* 0.03	-0.16 0.15
Number of Evenings Away From Home	$\frac{R}{p}$	-0.22 0.07	-0.26* 0.04
Responsibility For Younger Siblings	$\frac{R}{p}$	-0.04 0.30	-0.08 0.31
Babysitting Infants	$\frac{R}{p}$	0.47 0.001*	0.34 0.01*
Babysitting Children One to Five	$\frac{R}{p}$	0.27 0.04*	0.32 0.02*

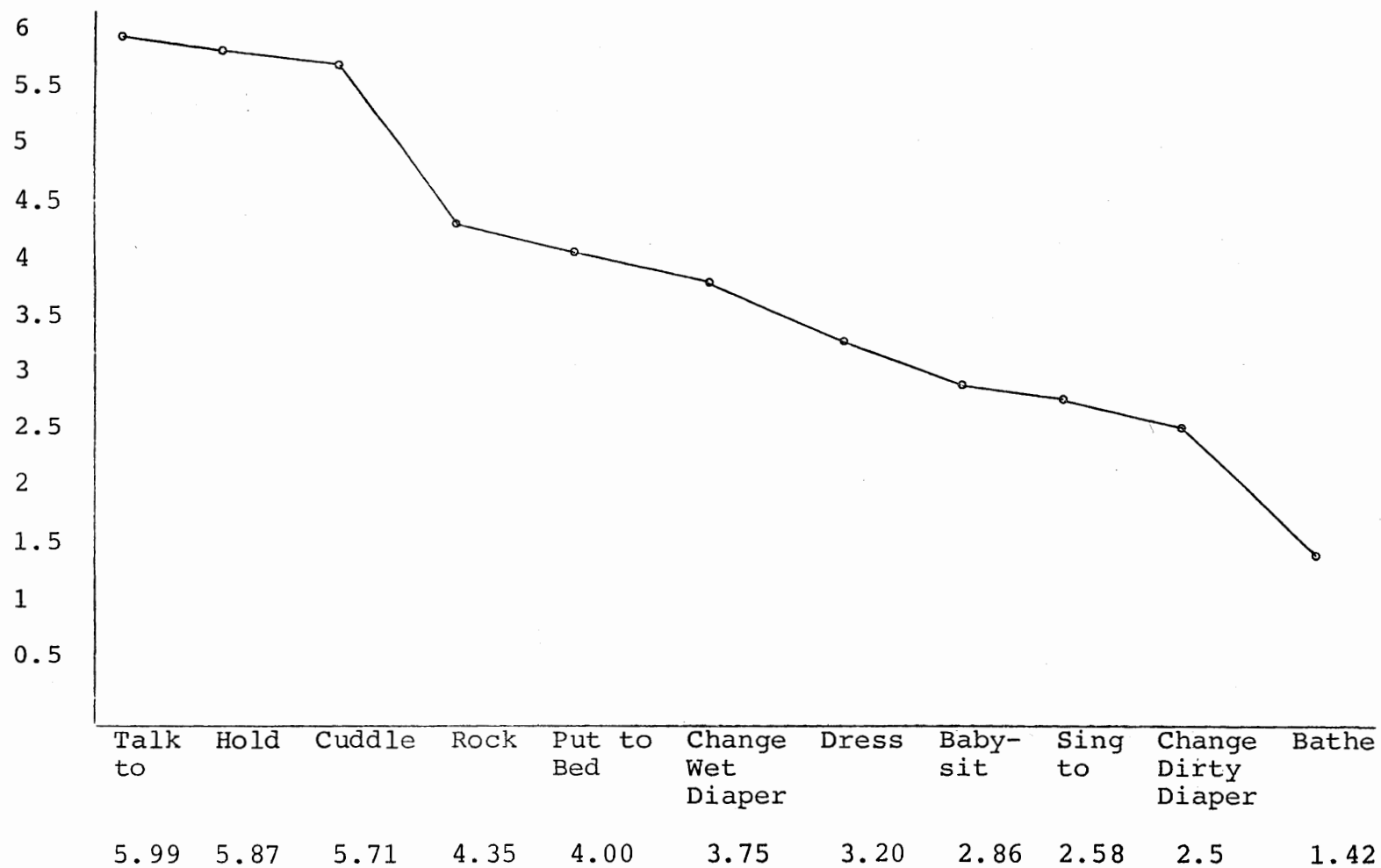
^aSpearman Correlation Coefficient

Participation in Infant Caretaking Activities

All fathers participated in some of the infant care-taking activities. As can be seen in Figure 1, activities that were generally less complex were participated in more frequently with the exception of singing. For instance, all but one father reported talking to his infant 13 or more times in one week, whereas, 55% of the fathers reported never bathing their infant.

History and Maturation Variables

Analysis of variance of groups one and three pretest scores on the Paternal Attitude Scale and group four posttest scores revealed no significant effects due to history or maturation confounded with the effect of the experimental variable (Campbell & Stanley, 1967). In other words, the Paternal Attitude Scale posttest scores of the group who had not been pretested nor had received any treatment were compared with pretest scores. This analysis indicated that neither maturation as a function of time or specific events between the postpartum hospitalization period and the four week home visit were found to significantly confound the effect of the experimental variable.



111

Figure 1. Median Values for Paternal Participation in Infant Caretaking Activities

Summary

Analysis of data indicated that Null Hypothesis One was rejected. There was a significant difference in the father's attitude toward parenting, as measured by the scores on the Paternal Attitude Scale, between fathers who were and fathers who were not involved in the interactive behavioral assessment of their infant.

Null Hypothesis Two failed to be rejected. There were no significant differences in the father's participation in infant care activities, as measured by scores in the Self-Report Form, between the experimental and control subjects.

Other findings included satisfactory reliability coefficients for the Paternal Attitude Scale and for the participation items on the Self-Report Form. Analysis of the participation items indicated that as the activity becomes more complex, fathers are less likely to participate in the activity.

The next chapter contains a discussion of the findings which have been reported. Conclusions will be reviewed and some implications for the practice of nursing and recommendations for further research will be set forth.

CHAPTER 6

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The results of this study will be discussed as they contribute to the understanding of father-infant interaction. The theoretical framework developed to explore the concepts of fathering and reciprocal interaction included attachment theory and social learning theory. Within this framework it was the aim of the study to add to the empirical base of attachment theory further evidence which supports the early development of the father-infant relationship. Reciprocal interaction was identified as a concept of attachment theory which could be facilitated by early intervention aimed at increasing the parent's ability to interpret the behavioral responses and cues of his infant. As a part of the theoretical framework, social learning theory helped to clarify the cognitive process which occurs in the development of attachment between parent and infant.

The specific research questions addressed were: What effect does the involvement of the father in the interactive behavioral assessment of his infant have on the father's attitude toward parenting behaviors? What effect

does the involvement of the father in the interactive behavioral assessment of his infant have on the father's participation in parenting behaviors? As a result of these research questions, two hypotheses were formulated. It was hypothesized that fathers to whom the interactive behavioral assessment of their infant was demonstrated would have more positive attitudes toward paternal involvement in parenting behaviors: and secondly, that these fathers would participate more in child care activities.

The major findings related to these hypotheses will be discussed in the next section of this chapter. Limitations of the study, implications for nursing, and recommendations for further research will also be discussed.

Discussion

Analysis of covariance procedures revealed a significant difference between fathers in the experimental and control groups who were pretested. Those fathers who were involved in the demonstration of the BNBAS scored significantly higher on the posttest Paternal Attitude Scale when the scores of the non-pretested subjects were eliminated. According to the Solomon Four-group research design, a preliminary step of this analysis was a two-way analysis of variance which had identified no significant main or

interaction effects of the pretest. That is, the pretest was found not to have sensitized subjects to the experimental treatment. Additional analyses revealed that history or maturation effects did not significantly confound the effect of the experimental stimulus.

These findings support the hypothesis that fathers who obtain information through involvement in the behavioral assessment will have more positive attitudes toward involvement in parenting behaviors. One explanation may be that these fathers actually did become more comfortable with their infants due to an increased ability to interpret their behavioral responses and cues and thus developed more positive attitudes about interaction with their infants. However, other explanations cannot be discounted. For instance there is the possibility that a Hawthorne effect was present due to the experimental subjects having more interaction with the investigator.

Although the Solomon Four-group research design does not require any further analysis of non-pretested subjects, a t test on these subjects indicated that there was no significant differences in posttest attitude scores between groups two and four. One interpretation of these findings may be that there was indeed a latent effect of the pretest which did sensitize subjects to experimental treatment.

These observations do not reduce the strength of the results of the analysis of covariance, but only indicate that caution should be used when analyzing treatment effects any time pretest measures are a part of the research design. Another explanation for the lack of significant differences between the non-pretested subjects may be related to the data which indicated group two fathers had significantly more experience babysitting infants, as data analysis found this experience to have a significant positive correlation with posttest attitude scores. The only other difference found between fathers prior to treatment was that group one subjects had significantly less responsibility for younger siblings. An explanation of the effects of these factors can be drawn from the theoretical framework. The self-regulatory process of learning was identified in Chapter 3 as an important aspect of social learning theory. Each individual selects, organizes and transforms the stimuli with which he comes into contact. Hence, learning is dependent on the individual's selection and use of the experiences available to him. In this study, it could be possible that those fathers who have had previous experience may not be as open to new information as they may not feel a need for it.

Although two explanations have been offered for the differences in results, neither explanation is definitive. Further research examining the effects on paternal attitudes of the BNBAS as an intervention with fathers is needed.

The second hypothesis was not supported by the findings. Analysis of the data indicated no significant differences between experimental and control groups on the variable of paternal participation in infant care activities. However, the mean of the experimental groups was higher and the t value did approach significance (See Table 15). The time interval between the treatment and the posttesting may have been too short to allow for variability in behaviors to appear. It is possible that for internalization of the new learning to occur, a longer time period between intervention and evaluation is necessary. Although unlikely, it is also possible that treatment effected attitudes but had no effect on behavior. Another possibility is that the effect of treatment on behavior is extremely short term and had thereby disappeared before four weeks. Other explanations for lack of differences between experimental and control groups on the variable of paternal participation included the potentiality of mothers discouraging the father's active involvement. Although no

data was formally collected on this factor, several fathers mentioned after completing the questionnaires at the four-week home visit that their wives made fun of the way they held or fed their baby. During one home visit, the investigator observed a mother take the infant from the father because he was not "holding her right". Another father wrote on the Self-Report Form after checking "never" on a participation item, "because she (wife) won't let me". These observations have led to the identification of another variable which needs further examination: effect of mother's behavior on paternal participation and paternal attitudes.

A major finding of the study was the positive correlation between paternal attitudes toward and participation in child care activities. These findings were similar to those of Bigner (1977), who found that the attitudes of fathers of preschool children correlated with their involvement in father-child activities. Evidently the relationship between paternal attitudes and behaviors is present very early and continues into at least early childhood.

All of the fathers in the study participated in the infant care activities, but in varying degrees. There were two activities in which 100% of the fathers participated:

talking to and holding their infants. The only activity in which the majority of the fathers never participated was bathing. These findings were similar to those of other studies (Leonard, 1977; Manion, 1977) examining the father's involvement in child care activities in that as the task became more complex, fewer fathers participated. None of the mothers in this study had returned to work at the time of the four week home visit. It would be interesting to explore how the father's involvement in child care activities changes, if and when the mother does return to work.

Contradictory to what the literature states (Kiernan & Scoloveno, 1977; Leonard, 1977; Manion, 1977), the findings of this study indicated that there was not a significant relationship between the subject's early relationship with his own father and his attitudes toward or participation in parenting behaviors. It must be recognized that the method of measuring the relationship between the subject and his father may be inadequate. In addition, the changing conceptions regarding the fathering role today may be a source of more critical examination of their own childhood experiences. Whereas fathers today see themselves as becoming more involved with their children, they may look upon their fathers as being uninvolved.

It was interesting that time away from home did not correlate significantly with participation in child care activities, but the number of evenings away from home did have a significant indirect relationship. That is, fathers who were away from home fewer evenings were significantly more involved in infant care. This suggests that being away from home due to employment does not effect involvement in child care to the extent that being gone in the evening does. Several factors may be involved. First, fathers who are home in the evening may have more opportunity to interact with their infants. Secondly, being away from the home in the evening may be a choice the father makes either consciously or unconsciously which decreases his opportunity to be involved in child care activities.

No significant relationships were found between the dependent variables and the age of the father, his educational background, or the number of years he had been married. Similarly, sex of the infant was not related to paternal attitudes toward or participation in parenting. The findings of Brown (1977); Cronenwett and Newmark (1974); and Wente and Crackenberg (1976) indicated that the father's attendance at prenatal classes did not influence his fathering behaviors. The lack of a significant correlation

between the number of prenatal classes attended and the dependent variables further supports their findings.

A very important aspect in this study was that the Paternal Attitude Scale maintained an adequate measure of reliability ($\alpha = 0.91$). In addition, it was determined that the use of the scale as a pretest measure did not sensitize the subjects to the experimental treatment. However, as noted earlier, any measurement of the subjects could effect outcomes and should therefore be managed cautiously. Another positive aspect was that the Paternal Attitude Scale had a significant positive correlation with the participation items on the Self-Report Form. It would be expected that the attitudes toward a behavior and the actual behavior would be related. The reliability coefficient for the participation items was not as high ($\alpha = 0.81$). Continued revision and testing of the items was necessary.

Conclusions and Limitations

The results of this study indicate that the use of the Brazelton Neonatal Behavioral Assessment Scale as a demonstration intervention can be an effective means of parenting education for fathers. Using a Solomon Four-group research design, the experimental fathers differed significantly from

the control fathers four weeks after the intervention had occurred. The experimental group mean score on the Paternal Attitude posttest was higher, indicating a more positive attitude toward paternal involvement in parenting behaviors.

All fathers in the study participated in some of the infant care activities, but as the complexity of the activity increased, fewer fathers were involved. Although the mean of the combined experimental groups was higher than the combined control groups' mean, the difference was not significant at the 0.05 level. One of the major limitations of the study is readily apparent when examining the findings related to the second hypothesis. Further investigation is necessary in order to determine if the behavioral effects of the treatment would become apparent if there were a longer interval between treatment and post-treatment measurement. A limitation of the study just described was the short time period between demonstration of the BNBAS and posttest data collection. A further limitation is that there is only one time period for post-treatment measurement. Since attachment was identified as being a learned process which endures over time, it is likely that the relationship between parent and child continues to develop and grow. Therefore, continued

measurement after the four week period would provide greater information concerning the development of attachment and the effects of intervention strategies.

Another major limitation of the study was that measurement of the dependent variables relied solely on self-report methods. One of the primary difficulties of self-report measures is that an individual may attempt to present himself in a socially desirable manner or may try to answer so as to please or impress the investigator (Cook & Selltitz, 1964). A more accurate measurement of the father-child interaction may have been realized with a combination of self-report and observational measurements. Such a combination of methods may have provided more precise measurement of the effects of the BNBAS demonstration.

The study was limited to one population of fathers who volunteered to be in the study. Generalizations from the results should be made with caution.

Finally, the focus of the study was limited to the father. The treatment as well as the measurements were directed entirely to the father with the exclusion of the new mother. The infant's behaviors were assessed as part of the treatment variable, but no further efforts were made to assess the effects of father-infant interaction on the infant.

Implications for Nursing Practice

It has been recognized that the role of the father is in the process of change. Studies such as this one have indicated that fathers are to varying degrees, actively involved in the care of their children. It has only been within the past two decades that the literature has recognized the importance of fathers, and only in the past decade has nursing begun to recognize and include the father in the birth process and the following postpartum hospitalization period. Prior to that time, research as well as parenting education programs were focused on the mother-child relationship. But now as fathers are becoming more involved, there has been an increased demand by parents to include the father in programs and practices that were once limited to mothers. Thus, nursing has become increasingly involved in providing opportunities for the father to be involved in the experiences of early parenthood. It is important that as nurses begin to implement new programs and interventions with fathers, their practice is developed from a knowledge base which is supported by empirical evidence.

Although further study is needed, the results from this study indicate that involving fathers in the interactive behavioral assessment is an effective means of enhancing the father's attitudes toward involvement in

parenting behaviors. The Brazelton Neonatal Behavioral Assessment Scale is a tool which nurses can readily become proficient in administering. In addition to the other effects, using the assessment scale with fathers as well as mothers will help to relate the significance of the father's role within the family.

The postpartum hospitalization period is an especially relevant time for nurses to use the BNBAS as a part of their nursing practice. It is a unique opportunity for the nurse to interact with both parents. This may be one of few opportunities which the nurse will have to involve the new father in parenting education unless he is highly motivated and takes the initiative to find other sources of information.

Understanding the concept of reciprocal interaction and being able to inform parents about behavioral responses and cues of their infants may also help parents to feel better about their own parenting skills. It may be this positive feeling which enhances the attitude of the parent toward involvement in parenting activities.

Previous experiences with infant and child care were variables which were related to more positive attitudes and participation in child care. The nurse needs to recognize those fathers who have had less experience and provide them

with opportunities to become acquainted with their infant and participate in infant care activities. Experience with their infant, while in the presence of a professional, could add to the fathers' feelings of self-confidence, especially if they were given positive reinforcement as they interacted with their infant. Another implication of the study is that mothers may not view their husbands as competent in handling their infant. Nurses can stress to both parents the need for practice to develop self-confidence and competence. In addition, providing information concerning the strengths and defensive capabilities of the infant may alleviate the mother's fear that the father may accidentally harm the infant.

Finally, nurses must be aware of each individual father's readiness to learn. Just because the father is available for parenting education programs does not mean that he will learn. A willingness to accept information is essential.

Recommendations for Further Study

Based on the findings of this study, further research is recommended in these areas:

1. Replication of the study with a larger sample size and with different populations needs to be done in

order to broaden the scope of the generalizations. In addition, father-infant interaction needs to be measured by observational methods as well as self-report. Relationships between the two methods of measurement need to be established.

2. Further studies need to be carried out which examine the effectiveness of the BNBAS when used with both mother and father as a family unit. Thus far studies using the BNBAS as a teaching tool have focused on only one parent.
3. It is recommended that studies be undertaken which examine how the mother and father influence each other's parenting role. The effect of the marital relationship on parent-infant reciprocity could be an interesting aspect of these studies.
4. Studies of parent-infant interaction with a longitudinal design could provide information concerning the development of attachment and the differences between father-infant and mother-infant relationships.
5. Further studies which investigate the effectiveness of parenting education strategies with new parents are needed. The timing of the introduction of such

studies is another variable which needs to be examined.

6. It is recommended that the effectiveness of the BNBAS be investigated when used with special groups of parents, such as teenage parents or adoptive parents.

Summary

In this research study, an intervention which included the father's involvement in the interactive behavioral assessment of his infant during the postpartum hospitalization period was investigated. The data indicated that fathers in the experimental group had more positive attitudes toward paternal involvement in parenting activities. However, there were no significant differences in the participation in infant care activities between the experimental and control groups. The study did find that the attitudes of these fathers toward parenting were correlated to their actual participation in caretaking activities. The findings of this research contributed to the empirical evidence which indicates that the Brazelton Neonatal Behavioral Assessment Scale can be used as an effective strategy for educating new parents.

APPENDIX A
Human Subjects Review Forms

TEXAS WOMAN'S UNIVERSITY
Box 22487, TWU Station
Denton, Texas 76204

HUMAN RESEARCH REVIEW COMMITTEE

Name of Investigator: Sheryl T. Boyd Center: Denton
Address: 2725 S.E. Hacienda Dr. Date: January 17, 1980
Boring, Oregon 97009

Dear Sheryl T. Boyd

Your study entitled Paternal Involvement in the Interactive Behavioral
Assessment Process

has been reviewed by a committee of the Human Research Review Committee
and it appears to meet our requirements in regard to protection of the
individual's rights.

Please be reminded that both the University and the Department
of Health, Education, and Welfare regulations require that written
consents must be obtained from all human subjects in your studies.
These forms must be filed with the Human Subjects Review Committee..

Furthermore, should your project change, another review by the
Committee is required, according to DHEW regulations.

Please add the following statement to your Informed Consent Form:
"No medical service or compensation is provided to subjects by the
University as a result of injury from participation in research."

Sincerely,

Marilyn Hanson

Chairman, Human Research
Review Committee

at Denton

Fathers Signature must be witnessed.

April 18, 1980

Sheryl Boyd, R.N., M.S.
12715 S.E. Hacienda Drive
Boring, Oregon 97009

Dear Ms. Boyd:

I am very happy to inform you that your study on "Paternal Involvement in the Interactive Behavioral Assessment Process" has been approved by the Department of Obstetrics and Gynecology and Pediatrics. It was also accepted by the Executive Committee of Emanuel Hospital staff pending approval of these two departments.

I hope that your study produces meaningful information which will be helpful to you in completing your degree for Doctor of Philosophy at Texas Woman's University.

Sincerely,



Homer H. Harris, M.D.
Pathologist, Chairman Human Research Committee

HHH: jm

APPENDIX B
Informed Consent Form

TEXAS WOMAN'S UNIVERSITY

Consent to Act as a Subject for Research and Investigation
Principal Investigator: Sheryl Boyd, R.N., M.S.

I hereby authorize Sheryl Boyd, Doctoral Candidate, Texas Woman's University to perform the following investigation: Paternal Involvement in the Interactive Behavioral Assessment Process.

I will complete the demographic data sheet approximately twelve to thirty-six hours after the birth of my baby. Depending on the research group to which I am assigned, I will participate in neither, one, or both of the following procedures during the postpartum hospitalization period: completion of the questionnaire concerning feelings about parenting and/or the interactive behavioral assessment of my infant. When my baby is approximately four weeks old, the investigator will visit our home to readminister the questionnaire concerning feelings about parenting and a self-report form.

The investigation listed above has been explained to me by Sheryl Boyd. I have been assured that all information collected in this study will be kept confidential.

I understand that the potential benefits of this study include helping me to gain information about how my baby interacts with his environment. In addition, this research will aid in the development of parenting education programs which will prepare individuals for the role of parenthood.

The only discomfort would be the possibility of the remembrances of distressing experiences related to the parenting role.

I acknowledge that no medical service or compensation is provided to subjects by the university as a result of injury from participation in this research.

Sheryl Boyd has offered to answer any questions I might have regarding the study. I understand that I may terminate my participation in the study at any time.

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

Father's Signature

Date

Witness

Date

APPENDIX C

Brazelton Neonatal Behavioral Assessment Scale

Scoring Sheets

BRAZELTON NEONATAL BEHAVIORAL ASSESSMENT SCALE

Infant's Name _____ Sex _____ Age _____ Born _____
Date _____ Hour _____

Mother's Age _____ Father's Age _____ Father's S.E.S. _____
Apparent Race _____

Examiner(s) _____ Place of Examination _____
Date of Examination _____

Conditions of Examination:

Birth Weight _____ Current Weight _____ Length _____ Head Circ. _____

Time Examined _____ Time Last Fed _____ Type of Feeding _____

136

Information from Chart:

Type of Delivery _____ Apgar _____

Length of Labor _____ Birth Order _____

Type, amount and timing of medication given mother _____

Anesthesia _____ Abnormalities _____

EXAMINATION

Initial State: Observe 2 minutes (Prechtl's Scoring)

1	2	3	4	5	6
deep	light	drowsy	alert	active	crying

Predominant States (mark two)

1	2	3	4	5	6
---	---	---	---	---	---

ELICITED RESPONSES

DESCRIPTIVE PARAGRAPH (Optional)

	O	L	M	H	A
Plantar grasp	1	2	3		
Hand grasp	1	2	3		
Ankle clonus	1	2	3		
Babinski	1	2	3		
Standing	1	2	3		
Automatic walking	1	2	3		
Placing	1	2	3		
Incurvation	1	2	3		
Crawling	1	2	3		
Glabella	1	2	3		
Tonic deviation of head and eyes	1	2	3		
Nystagmus	1	2	3		
Tonic Neck Reflex	1	2	3		
Moro	1	2	3		
Rooting (intensity)	1	2	3		
Sucking (intensity)	1	2	3		
Passive movement					
Arms R	1	2	3		
L	1	2	3		
Legs R	1	2	3		
L	1	2	3		

Attractive	0	1	2	3
Interfering variables	0	1	2	3
Need for stimulation	0	1	2	3
What activity does he use to quiet self?				
Hand to mouth				
Sucking with nothing in mouth				
Locking onto visual or auditory stimuli				
Postural changes				
State changes for no observable reason				

COMMENTS:

BEHAVIORAL SCORING SHEET

Initial State _____
Predominant State _____

Scale (Note State)	1	2	3	4	5	6	7	8	9
1. Response decrement to light (2, 3)									
2. Response decrement to rattle (2, 3)									
3. Response decrement to bell (2, 3)									
4. Response decrement to pinprick (1, 2, 3)									
5. Orientation inanimate visual (4 only)									
6. Orientation inanimate auditory (4, 5)									
7. Orientation animate visual (4 only)									
8. Orientation animate auditory (4, 5)									
9. Orientation animate visual & auditory (4 only)									
10. Alertness (4 only)									
11. General tonus (4, 5)									
12. Motor maturity (4, 5)									
13. Pull-to-sit (3, 5)									
14. Cuddliness (4, 5)									
15. Defensive movements (4)									

Scale (Note State)	1	2	3	4	5	6	7	8	9
16. Consolability (6 to 5, 4, 3, 2)									
17. Peak of excitement (6)									
18. Rapidity of buildup (from 1, 2 to 6)									
19. Irritability (3, 4, 5)									
20. Activity (alert states)									
21. Tremulousness (all states)									
22. Startle (3, 4, 5, 6)									
23. Lability of skin color (from 1 to 6)									
24. Lability of states (all states)									
25. Self-quieting activity (6, 5 to 4, 3, 2, 1)									
26. Hand-mouth facility (all states)									
27. Smiles (all states)									

Brazelton Neonatal Behavioral Assessment Scale

Summary of Scale Scoring Definitions

1. Response Decrement to Light (States 1, 2, 3)

- 1 No diminution in high responses over the 10 stimuli.
- 2 Delayed startles and rest of responses are still present, i.e., body movement, eye blinks, respiratory changes continue over 10 trials.
- 3 Startles no longer present but rest are still present, including body movement in 10 trials.
- 4 No startles, body movement delayed, respiratory and eye blinks same in 10 trials.
- 5 Shutdown of body movement, some diminution in blinks and respiratory changes in 9-10 stimuli.
- 6 _____ in 7-8 stimuli
- 7 _____ in 5-6 stimuli
- 8 _____ in 3-4 stimuli
- 9 _____ in 1-2 stimuli

NA No response hence no decrement.

2. Response Decrement to Rattle (1, 2, 3)

- 1 No diminution in high responses over the 10 stimuli.
- 2 Delayed startles and rest of responses are still present, i.e., body movement, eye blinks, respiratory changes continue over 10 trials.
- 3 Startles no longer present but rest are still present, including body movement in 10 trials.
- 4 No startles, body movement delayed, respiratory and blinks same in 10 trials.
- 5 Shutdown of body movements, some diminution in blinks and respiratory changes in 9-10 stimuli.
- 6 _____ in 7-8 stimuli
- 7 _____ in 5-6 stimuli
- 8 _____ in 3-4 stimuli
- 9 _____ in 1-2 stimuli

NA No response hence no decrement.

3. Response Decrement to Bell (1, 2, 3)

- 1 No diminution in high responses over the 10 stimuli.
- 2 Delayed startles and rest of responses still present, i.e., body movement, eye blinks, respiratory changes continue over 10 trials.
- 3 Startles no longer present but rest are still present, including body movement in 10 trials.
- 4 No startles, body movement delayed, respiratory and blinks same in 10 trials.
- 5 Shutdown of body movements, some diminution in blinks and respiratory changes in 9-10 stimuli.
- 6 _____ in 7-8 stimuli
- 7 _____ in 5-6 stimuli
- 8 _____ in 3-4 stimuli
- 9 _____ in 1-2 stimuli

NA No response hence no decrement.

Response Decrement to Pinprick (1, 2, 3) (Not used in Study)

- 1 Response generalized to whole body, and increases over trials.
- 2 Both feet withdraw together. No decrement of response.
- 3 Variable response to stimulus. Response decrement but return of response.
- 4 Response decrement after 5 trials. Localized to stimulated leg. No change to alert state.
- 5 Response decrement after 5 trials. Localized to stimulated foot. No change to alert state.
- 6 Response limited to stimulated foot after 3-4 trials. No change to alert state.
- 7 Response limited to stimulated foot after 1-2 trials. No change to alert state.
- 8 Response localized and minimal. Change to alert state (4).
- 9 Complete response decrement. Change to alert state (4).

NA No response hence no decrement.

4. Orientation Response-Inanimate Visual (4 only)

- 1 Does not focus on or follow stimulus.
- 2 Stills with stimulus and brightens.
- 3 Stills, focuses on stimulus when presented, brief following.
- 4 Stills, focuses on stimulus, following for 30° arc, jerky movements.
- 5 Focuses and follows with eyes horizontally for at least a 30° arc. Smooth movement, loses stimulus but finds it again.
- 6 Follows for 30° arcs, with eyes and head. Eye movements are smooth.
- 7 Follows with eyes and head at least 60° horizontally, maybe briefly vertically, continuous movement, loses stimulus occasionally, head turns to follow.
- 8 Follows with eyes and head 60° horizontally and 30° vertically.
- 9 Focuses on stimulus and follows with smooth, continuous head movement horizontally, vertically, and in a circle. Follows for 120° arc.

5. Orientation Response-Inanimate Auditory (4, 5)

- 1 No reaction.
- 2 Respiratory change or blink only.
- 3 General quieting as well as blink and respiratory changes.
- 4 Stills, brightens, no attempt to locate source.
- 5 Shifting of eyes to sound, as well as stills and brightens.
- 6 Alerting and shifting of eyes and head turn to source
- 7 Alerting, head turns to stimulus, and search with eyes.
- 8 Alerting prolonged, head and eyes turn to stimulus repeatedly.
- 9 Turning and alerting stimulus presented on both sides on every presentation of stimulus.

6. Orientation-Animate Visual (4 only)

- 1 Does not focus on or follow stimulus.
- 2 Stills with stimulus and brightens.
- 3 Stills, focuses on stimulus when presented, brief following.
- 4 Stills, focuses on stimulus, follows for 30° arc, jerky movements.
- 5 Focuses and follows with eyes horizontally for at least 30° arc. Smooth movement, loses stimulus but finds it again.
- 6 Follows for two 30° arcs, with eyes and head.
- 7 Follows with eyes and head at least 60° horizontally, maybe briefly vertically, partly continuous movement, loses stimulus occasionally, head turns to follow.
- 8 Follows with eyes and head 60° horizontally and 30° vertically.
- 9 Repeatedly focuses on stimulus and follows with smooth, continuous head movement horizontally, vertically, and in a circle. Follows for 120° arc.

7. Orientation-Animate Auditory (4, 5)

- 1 No reaction.
- 2 Respiratory change or blink only.
- 3 General quieting as well as blink and respiratory changes.
- 4 Stills, brightens, no attempt to locate source.
- 5 Shifting of eyes to sound, as well as stills and brightens.
- 6 Alerting and shifting of eyes and head turn to source.
- 7 Alerting, head turns to stimulus, and search with eyes.
- 8 Alerting prolonged, head and eyes turn to stimulus repeatedly.
- 9 Turning and alerting to stimulus presented on both sides on every presentation of stimulus.

8. Orientation Animate-Visual and Auditory (4 only)

- 1 Does not focus on or follow stimulus.
- 2 Stills with stimulus and brightens.
- 3 Stills, focuses on stimulus when presented, brief following.
- 4 Stills, focuses on stimulus, follows for 30° arc, jerky movements.
- 5 Focuses and follows with eyes horizontally for at least a 30° arc. Smooth movement, loses stimulus but finds it again.
- 6 Follows for two 30° arcs, with eyes and head.
- 7 Follows with eyes and head at least 60° horizontally, maybe briefly vertically, partly continuous movement, loses stimulus occasionally, head turns to follow.
- 8 Follows with eyes and head 60° horizontally and 30° vertically.
- 9 Repeatedly focuses on stimulus and follows with smooth, continuous head movement horizontally, vertically, and in a circle. Follows for at least a 120° arc.

9. Alertness (4)

- 1 Inattentive - rarely or never responsive to direct stimulation.
- 2 When alert responsivity brief and generally quite delayed - alerting and orientation very brief and general.
- 3 When alert responsivity brief and somewhat delayed-quality of alertness variable.
- 4 When alert responsivity somewhat brief but not generally delayed though variable.
- 5 When alert responsivity of moderate duration and response generally not delayed and less variable.
- 6 When alert responsivity moderately sustained and not delayed. May use stimulation to come to alert state.
- 7 When alert episodes are of generally sustained duration, etc.
- 8 Always has sustained period of alertness in best periods. Alerting and orientation frequent and reliable. Stimulation brings infant to alert state and quiets infant.
- 9 Always alert in best periods. Stimulation always elicits alerting, orienting. Infant reliably uses stimulation to quiet self or maintain quiet state.

10. General Tonus (4, 5)

- 1 Flaccid, limp like a ragdoll, no resistance when limbs are moved, complete head lag in pull to sit.
- 2 Little response felt as he is moved, but less than about 25% of the time.
- 3 Flaccid, limp most of the time, but is responsive about 25% of the time with some tone.
- 4 Some tone half the time, responds to being handled with some tone less than half the time.
- 5 Tone when handled, lies in fairly flaccid state in-between handling.
- 6 Variable tone in resting, responsive with good tone as he is handled approximately 75% of the time.
- 7 Is on the hypertonic side approximately 50% of the time.
- 8 When handled he is responsive with hypertonicity about 75% of the time.
- 9 Hypertonic at rest (in flexion) and hypertonic all the time (abnormal).

11. Motor Maturity (4, 5)

- 1 Cogwheel-like jerkiness, overshooting of legs and arms in all directions.
- 2 Jerky movements and/or mild overshooting.
- 3 Jerky movements, no overshooting.
- 4 Only occasional jerky movements predominating 45° arcs.
- 5 Smooth movements predominate, arcs are predominately 60° half the time.
- 6 Smooth movements, arcs predominately 60°.
- 7 Smooth movements and arcs of 90° less than 50% of the time.
- 8 Smooth movements and unrestricted arms laterally 90° most of the time.
- 9 Smoothness, unrestricted (90°) all of the time.

12. Pull-To-Sit (3, 5)

- 1 Head flops completely in pull to sit, no attempts to right it in sitting.
- 2 Futile attempts to right head but some shoulder tone increase is felt.
- 3 Slight increase in shoulder tone, seating brings head up once but not maintained, no further efforts.
- 4 Shoulder and arm tone increase, seating brings head up, not maintained but there are further efforts to right it.
- 5 Head and shoulder tone increase as pulled to sit, brings head up once to midline by self as well, maintains it for 1-2 seconds.
- 6 Head brought up twice after seated, shoulder tone increase as comes to sit, and maintained for more than 2 seconds.
- 7 Shoulder tone increase but head not maintained until seated, then can keep it in position 10 seconds.
- 8 Excellent shoulder tone, head up while brought up but cannot maintain without falling, repeatedly rights it.
- 9 Head up during lift and maintained for 1 minute after seated, shoulder girdle and whole body tone increases as pulled to sit.

13. Cuddliness (4, 5)

- 1 Actually resists being held, continuously pushing away, thrashing or stiffening.
- 2 Resists being held most but not all of the time.
- 3 Doesn't resist but doesn't participate either, lies passively in arms and against shoulder (like a sack of meal).
- 4 Eventually molds into arms, but after a lot of nestling and cuddling by examiner.
- 5 Usually molds and relaxes when first held, i.e., nestles head in crook of neck and in elbow of examiner. Turns toward body when held horizontally, on shoulder he seems to lean forward.
- 6 Always molds initially with above activity.
- 7 Always molds initially with nestling, and turning toward body, and learning forward.
- 8 In addition to molding and relaxing, he nestles and turns head, leans forward on shoulder, fits feet into cavity of other arm, i.e., all of body parti-

cipates.

- 9 All of the above, and baby grasps hold of examiner to cling.

14. Defensive Movements (4)

- 1 No response.
- 2 General quieting.
- 3 Nonspecific activity increase with long latency.
- 4 Same with short latency.
- 5 Rooting and lateral head turning.
- 6 Neck stretching.
- 7 Nondirected swipes of arms.
- 8 Directed swipes of arms.
- 9 Successful removal of cloth with swipes.

15. Consolability with Intervention (6 to 5, 4, 3, 2)

- 1 Not consolable.
- 2 Pacifier in addition to dressing, holding and rocking.
- 3 Dressing, holding in arms and rocking.
- 4 Holding and rocking.
- 5 Picking up and holding.
- 6 Hand on belly and restraining both arms.
- 7 Hand on belly steadily.
- 8 Examiner's voice and face alone.
- 9 Examiner's face alone.

16. Peak of Excitement (6)

- 1 Low level of arousal to all stimuli. Never above state 2, does not awaken fully.
- 2 Some arousal to stimulation - can be awakened to state 3.
- 3 Infant reaches state 4 briefly, but predominately is in lower states.
- 4 Infant reaches state 5, but is predominantly in state 4 or lower.
- 5 Infant reaches state 6 after stimulation once or twice, but predominantly is in state 5 or lower.
- 6 Infant reaches state 6 after stimulation, but returns to lower states spontaneously.
- 7 Infant reaches state 6 in response to stimuli, but with consoling is easily brought back to lower states.
- 8 Infant screams (state 6) in response to stimulation, although some quieting can occur with con-

soling, with difficulty.

- 9 Infant achieves insulated crying state. Unable to be quieted or soothed.

17. Rapidity of Buildup (from 1, 2 to 6)

- 1 No upset at all.
- 2 Not until TNR, Moro, prone placement and defensive reactions.
- 3 Not until TNR, Moro, prone placement or defensive reactions.
- 4 Not until undressed.
- 5 Not until pulled to sit.
- 6 Not until pinprick.
- 7 Not until uncovering him.
- 8 At first auditory and light stimuli.
- 9 Never was quiet enough to score this.

18. Irritability (3, 4, 5)

Aversive Stimuli

uncover	pinprick
undress	TNR
pull to sit	Moro
prone	defensive reaction

- 1 No irritable crying to any of the above.
- 2 Irritable crying to one of the stimuli.
- 3 Irritable crying to two of the stimuli.
- 4 Irritable crying to three of the stimuli.
- 5 Irritable crying to four of the stimuli.
- 6 Irritable crying to five of the stimuli.
- 7 Irritable crying to six of the stimuli.
- 8 Irritable crying to seven of the stimuli.
- 9 To all of them.

19. Activity (alert states)

Score spontaneous and elicited activity separately on a four point scale: 0 = none, 1 = slight, 2 = moderate, 3 = much. Then add up the two scores.

- 1 = a total score of 0.
- 2 = a total score of 1.
- 3 = a total score of 2.
- 4 = a total score of 3.
- 5 = a total score of 4.
- 6 = a total score of 5.
- 7 = a total score of 6.
- 8 = continuous but consolable movement.
- 9 = continuous, unconsolable movement.

20. Tremulousness (all states)

- 1. No tremors or tremulousness noted.
- 2 Tremors only during sleep.
- 3 Tremors only after the Moro or startles.
- 4 Tremulousness seen 1 or 2 times in states 5 or 6.
- 5 Tremulousness seen 3 or more times in states 5 or 6.
- 6 Tremulousness seen 1 or 2 times in state 4.
- 7 Tremulousness seen 3 or more times in state 4.
- 8 Tremulousness seen in several states.
- 9 Tremulousness seen consistently in all states.

21. Amount of Startle During Exam (3-6)

- 1 No startles noted.
- 2 Startle as a response to the examiner's attempts to set off a Moro reflex only.
- 3 Two startles, including Moro.
- 4 Three startles, including Moro.
- 5 Four startles, including Moro.
- 6 Five startles, including Moro.
- 7 Seven startles, including Moro.
- 8 Ten startles, including Moro.
- 9 Eleven or more startles, including Moro.

22. Lability of Skin Color (as infant moves from 1-5)

- 1 Pale, cyanotic, and does not change during exam.
- 2 Good color which changes only minimally during exam.
- 3 Healthy skin color; no changes except to slight blue around mouth or extremities when uncovered, or to red when crying; recovery or original color is rapid.
- 4 Mild cyanosis around mouth or extremities when undressed; slight change in chest or abdomen, but rapid recovery.
- 5 Healthy color but changes color all over when uncovered or crying; face, lips, extremities may pale or redden, mottling may appear on face, chest, limbs; original color returns quickly.
- 6 Change in color during exam, but color returns with soothing or covering.
- 7 Healthy color at outset, changes color to very red or blue when uncovered or crying; recovers slowly if covered or soothed.
- 8 Good color which rapidly changes with uncovering; recovery is slow but does finally recover when dressed.
- 9 Marked, rapid changes to very red or blue, no recovery to good color during rest of exam.

23. Lability of States (all states)

The score corresponds to the frequency of swings:

- 1 = 1-2 swings over 30 minutes.
- 2 = 3-5.
- 3 = 6-8.
- 4 = 9-10.
- 5 = 11-13.
- 6 = 14-15.
- 7 = 16-18.
- 8 = 19-22.
- 9 = 23 on up.

24. Self-quieting Activity (6, 5 to 4, 3, 2, 1)

- 1 Cannot quiet self, makes no attempt, and intervention is always necessary.
- 2 A brief attempt to quiet self (less than 5 seconds) but with no success.
- 3 Several attempts to quiet self, but with no success.
- 4 One brief success in quieting self for a period of 5 seconds or more.
- 5 Several brief successes in quieting self.
- 6 An attempt to quiet self which results in a sustained successful quieting, with the infant returning to state 4 or below.
- 7 One sustained and several brief successes in quieting self.
- 8 At least 2 sustained successes in quieting self.
- 9 Consistently quiets self for sustained periods.

25. Hand to Mouth Facility (all states)

- 1 No attempt to bring hands to mouth.
- 2 Brief swipes at mouth area, no real contact.
- 3 Hand brought to mouth and contact, but no insertion, once only.
- 4 Hand brought next to mouth area twice, no insertion.
- 5 Hand brought next to mouth area at least 3 times, but no real insertion, abortive attempts to suck on fist.
- 6 One insertion which is brief, unable to be maintained.
- 7 Several actual insertions which are brief, not maintained, abortive sucking attempts, more than three times next to mouth.
- 8 Several brief insertions in rapid succession in an attempt to prolong sucking at this time.
- 9 Fist and/or fingers actually inserted and sucking on them for 15 seconds or more for several brief insertions.

26. Smiles (all states)

Recorded number observed.

APPENDIX D
Paternal Attitude Scale

1. When I stay out of the way, my wife can do a better job taking care of our baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

2. I am afraid I will hurt my baby when I hold her/him.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

3. It is just as much my responsibility as my wife's to change the diapers.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

4. I enjoy just sitting and holding my baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

5. When our baby cries during the night, it will be my wife's responsibility to see what is wrong with him/her.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

6. As long as my wife cuddles and hugs our baby, it really won't be necessary for me to cuddle the baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

7. If it is necessary, my wife should be the one to take our baby's temperature.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

8. Babies like to be held by their fathers, as well as their mothers.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

9. Helping take care of our baby will be a big source of satisfaction for me.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

10. When our baby begins to eat cereal, feeding the baby will be my wife's task.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

11. I should stay home with my baby sometimes and let my wife go out.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

12. I am just as capable of giving our baby a bath as my wife.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

13. My wife can do a better job of taking care of our baby when I am involved.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

14. Fathers and mothers should share equally in the child-rearing decisions.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

15. During infancy, the father's role in the family is not nearly as important as the mother's role.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

16. Employers should allow fathers time off from work for the first few days after the baby comes home.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

17. Singing to our baby is part of my wife's role and not my role.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

18. Babies need to be held frequently by both their mother and father.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

19. Fathers need to spend several hours a week with their baby.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

20. It is not necessary that I know what to do when my baby cries, as my wife will know how to calm her/him.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

21. The father's main function in child care is playing with the baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

22. Fathers should not have to decrease their activities outside the home to become more involved with their babies.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

23. Children develop better when the mother solves most of the child-rearing problems.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

24. It is my wife's responsibility to arrange for baby-sitting.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

25. I am not afraid to hold my baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

26. My wife should not have to take full responsibility for raising the children.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

27. Fathers should not have to be involved in the planning for the needs of the baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

28. Discipline of the small child should be the role of the mother.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

29. Fathers should share the task of getting up in the night with their crying baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

30. I obtain a great deal of pleasure from rocking my baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

31. Fathers should not have to assume babysitting responsibilities.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

32. I believe babies should be hugged and cuddled by their fathers.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

33. Babies should have a lot of care and attention from their fathers.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

34. It will be safer if my wife bathes the baby.

<u>strongly</u> disagree	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	------------------	--------------	--------------------------

35. When our baby is sick, I can care for her/him just as safely as my wife can.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

36. Women instinctively know more about babies than men do.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

37. Helping my wife with the baby will make adjustment to the baby a lot easier for both of us.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

38. The father's role is to provide financial security and the mother's role is to provide emotional security.

<u>strongly</u>	<u>disagree</u>	<u>uncertain</u>	<u>agree</u>	<u>strongly</u>
disagree				agree

APPENDIX E
Self-Report Form

Code _____
Date _____

SELF-REPORT FORM

What type of feeding is
your baby now receiving?

1. Bottle only
2. Breast only
3. Both, but mostly breast
4. Both, but mostly bottle

Is your baby taking any
foods other than milk or
formula?

1. Yes
2. No

When you put your baby to
bed at night, what is the
longest period of time
he/she usually sleeps?

1. Less than 3 hours
2. 3-4 hours
3. 5-6 hours
4. 7-8 hours
5. More than 8 hours
6. Not sure

How many times a week do you do each of the
following activities with or for your baby?

Talk to	Never	1-2	3-5	6-8	9-12	13 or more
Hold	Never	1-2	3-5	6-8	9-12	13 or more
Cuddle	Never	1-2	3-5	6-8	9-12	13 or more
Give a bottle to	Never	1-2	3-5	6-8	9-12	13 or more
Feed solid food	Never	1-2	3-5	6-8	9-12	13 or more
Dress or change clothes	Never	1-2	3-5	6-8	9-12	13 or more
Rock	Never	1-2	3-5	6-8	9-12	13 or more
Sing to	Never	1-2	3-5	6-8	9-12	13 or more
Change wet diaper	Never	1-2	3-5	6-8	9-12	13 or more
Change dirty diaper	Never	1-2	3-5	6-8	9-12	13 or more
Bathe	Never	1	2	3	4	5 or more
Babysit	Never	1	2	3	4	5 or more
Put to bed at night	Never	1	2	3	4	5 or more

Do you have the same job you
had at the time of your
baby's birth?

1. Yes
2. No

Does your job require you to be out of the house?

1. Less than 40 hours per week
2. 40-50 hours per week
3. 50-60 hours per week
4. More than 60 hours per week

How many evenings a week are you usually away from home?

1. None
2. One
3. Two
4. Three
5. Four or more

Is your wife working outside the home presently?

1. Yes
2. No

If yes, how many hours per week?

1. 10 hours per week
2. 10-20 hours per week
3. 21-30 hours per week
4. 31-40 hours per week
5. More than 40 hours per week

If yes, who takes care of your baby?

1. Father
2. Grandparent
3. Other relative
4. Friend
5. Child care center or private home
6. Other _____

Where does your baby go while your wife is working?

1. Stays in our home
2. Goes to private home
3. Goes to child care center
4. Other _____

APPENDIX F
Father's Data Sheet

Code _____
Date _____

FATHER'S DATA SHEET

Address _____

Phone _____

Age _____ Age of wife _____

Number of years married to present wife _____

Present Occupation _____

Religious Preference: 1. Cathlolic
2. Jewish
3. Protestant
4. Other _____

National Origin: 1. Anglo-American
2. Spanish-American
3. Afro-American
4. American Indian
5. Oriental
5. Other _____

Education: Last grade completed: 4 5 6 7 8
grade school
9 10 11 12
high school
1 2 3 4
college
1 2 3 4 5
post-graduate

Annual Family Income: 1. Less than \$5,000
2. \$5,001-10,000
3. \$10,001-15,000
4. \$15,001-20,000
5. More than \$20,000

Family: Number of older brothers you have _____
 Number of younger brothers you have _____
 Number of older sisters you have _____
 Number of younger sisters you have _____

Did you ever have responsibility for the care of younger brothers or sisters during your childhood?

1. Never
2. Seldom (less than 5 times)
3. Sometimes (6-15 times)
4. Often (16-25 times)
5. Very often (more than 26 times)

Did you ever babysit
for children under one
year of age?

1. Never
2. Seldom (less than 5 times)
3. Sometimes (6-15 times)
4. Often (16-25 times)
5. Very often (more than 26 times)

Did you ever babysit for children between the ages of one and five?

1. Never
2. Seldom (less than 5 times)
3. Sometimes (6-15 times)
4. Often (16-25 times)
5. Very often (more than 26 times)

Were you brought up by:

1. Both your parents
2. Your mother only
3. Your father only
4. Relatives or friends
5. Other

For the following five items, circle the response to the statement which best describes your father as you remember him:

Believed in showing his love for me.

1. Never
2. Very seldom
3. Seldom
4. Sometimes
5. Frequently
6. Very frequently

Understood my problems and helped me with them

1. Never
2. Very seldom
3. Seldom
4. Sometimes
5. Frequently
6. Very frequently

Hugged or kissed me goodnight when I was small.

1. Never
2. Very seldom
3. Seldom
4. Sometimes
5. Frequently
6. Very frequently

Was able to make me feel better when I was upset?

1. Never
2. Very seldom
3. Seldom
4. Sometimes
5. Frequently
6. Very frequently

Gave me a lot of care and attention.

1. Never
2. Very seldom
3. Seldom
4. Sometimes
5. Frequently
6. Very frequently

During your wife's pregnancy, did you want a:

1. Boy
2. Girl
3. Either

Was this pregnancy:

1. Planned
2. Unplanned

How soon after the birth of your baby did you get to hold him/her?

1. Within 30 minutes
2. Within 1 hour
3. Within 6 hours
4. Within 12 hours
5. Within 24 hours
6. No opportunity yet

Does your job require you to be "out of the house?"

1. Less than 40 hours per week
2. 40-50 hours per week
3. 50-60 hours per week
4. More than 60 hours per week

How many evenings a week are you usually away from home?

1. None
2. One
3. Two
4. Three
5. Four or more

Does your wife plan on working after delivery?

1. Yes
2. No
3. Undecided

If yes, how soon after delivery will she return to work?

1. Less than 4 weeks
2. 5-8 weeks
3. 9-12 weeks
4. Later than 12 weeks

Did you attend prenatal classes?

1. Yes
2. No

How many classes did you attend?

Did you attend the class on baby care?

1. Yes
2. No

Did you attend any other classes on baby care other than the prenatal classes?

1. Yes
2. No

Have you ever taken a course on child care or child development?

1. Yes
2. No

If yes, was it in one of the following:

1. Junior high school
2. High school
3. College
4. Community or adult education classes

How many books on baby
care did you read?

1. None
2. 1-2
3. 3-4
4. More than 4

APPENDIX G

Teaching Plan for BNBAS Demonstration

Teaching Plan for BNBAS Demonstration

Fathers in the experimental groups observed the investigator performing the Brazelton Neonatal Behavioral Assessment on their own infants. During the demonstration fathers received an explanation of the stimulus and the response of their infants and were encouraged to ask questions. The following is a description of the sample teaching plan. In the actual demonstration, the baby's name was used frequently. Responses such as crying, color change, and body tone were constantly observed for and explained to the father.

I am going to show you some of the ways your baby responds to different things in his environment. As you know, each baby is an individual; just like each adult is different, each baby is different. During the next few minutes I will demonstrate to you how your baby responds when I introduce different sights and sounds to him. Many of these will be things which will be a part of your son's daily environment. From this assessment we will gain information about what your son is capable of doing and about his own unique ways of reacting to his world.

During the first part we will need to be quiet so he does not respond to our voices. But after that feel free to talk and to stop me to ask questions at any time. First

I want to show you how babies are capable of decreasing their response or shutting out stimulation which occurs in their every-day world. This is the baby's way of coping with the many things going on around him. When I first shine this light in his eyes, watch his movements, especially his facial expression and eyelids. Watch how the movements decrease. Then we will observe for the same decrease in response to two separate auditory stimuli, the shaking of the rattle and then the ringing of the bell. Some babies are able to shut out light better than noises, and other babies react just the opposite. After your baby goes home, try to watch how he responds to different noises, lights and other stimulation that goes on around him.

As I proceed with the assessment, I will describe and demonstrate some of the reflexes which are normal in the newborn. You may have noticed how he takes hold of your finger when you put it in his hand. Well, he also has a similar reflex in his feet if you touch the sole of his foot just below his toes.

Now watch how strong his grasp is in his hands and watch the strength of his shoulders as I pull him up (pull-to-sit). His head may fall back or forward, but watch his shoulders and neck as he attempts to move it. Because he

does not have complete control of these muscles, you need to support his head during the first few weeks when you are holding him.

Another activity which is reflexive in nature is the newborn's ability to put weight on his feet. In addition, he can put one foot in front of another as if he were walking if you hold him up like this. We call this a stepping or walking reflex at this age. If you touch the top of his foot watch how he spreads his toes and places the foot out. This is just another of the many reflexes babies are born with. Many of these will disappear within the first few weeks as his behavior and responses become more and more purposeful. (Other reflex behaviors were explained in a similar manner, describing the baby's behavior and the significance of it).

Now watch how he holds himself when I pick him up and put him over my hand. His body does not just hang limp, instead, he is able to raise his head and hold his body pretty straight. As he becomes stronger he will be able to keep his head up like that for longer periods.

Now that he is awake and alert let's examine how your son responds to or tunes in some different stimuli. We call this orientation to a stimulus. Infants vary a great deal in how they react to sounds and sights depending on

what else is going on around them, whether or not they are hungry, or tired, as well as how the stimulation is presented to them. We will try this first with the rattle and bell. Infants may not respond at all or they may brighten and focus on the object, and some infants will repeatedly turn their head to the stimulus.

Similarly, infants vary in the way in which they respond to the human voice and face. Some will prefer the visual stimulation whereas others prefer noises. Usually infants will respond more to human voices and faces than they do other nonhuman sights and noises. (For each of the stimuli which this infant is exposed to, the investigator will describe the specific response of the infant). In addition, many babies will respond to both voice and face more than to either one separately.

Babies vary in the length of time they remain alert. Factors which effect an infant's alertness include hunger, fatigue and external stimulation. In most instances, babies are alert for only short periods of time. Your son. ..(description of how the investigator perceived the infant's alertness).

Another behavior which we assess is the ability of infants to quiet themselves when they are upset. Babies have many different behaviors which indicate self-quieting.

See how your baby... (describe behavior such as, attempts to put his fist in his mouth and suck on it). There may be times when newborns are unable to quiet themselves and need some assistance or consoling. The amount of consoling necessary to quiet an upset infant is another individual characteristic. In some cases all that is needed is to talk to the baby, others need to be wrapped and held closely while rocking to quiet them. You may have noticed just then when your baby was crying that it was necessary to...

Another real difference in babies is their cuddling behavior. Some babies prefer being held tightly while others do not. Some prefer being held in your arms, while others like to be held over the shoulder. Babies also differ in the amount of nestling or molding which they display. The very cuddly baby will even grasp or cling to you. The other extreme is the baby who pushes away or resists the closeness of cuddling. You can see that your baby...

(The ordering of the assessment procedure is fairly standard, but did need to be altered slightly according to the responses of each infant. In this way, the individuality and uniqueness of each individual is recognized).

REFERENCE LIST

- Ainsworth, M. Attachment and dependence: A comparison.
In J. Gewertz (Ed.), Attachment and dependency. New York: John Wiley and Sons, 1972.
- Ainsworth, M. Infancy in Uganda: Infant care and the growth of love. Baltimore: John Hopkins University Press, 1969.
- Ainsworth, M. The development of infant-mother attachment.
In B. Caldwell & H. Ricciuti (Eds.), Review of child development literature. Chicago: The University of Chicago Press, 1973.
- Ainsworth, M., & Bell, S. Some contemporary patterns of mother-infant interaction in the feeding situation.
In J. Ambrose (Ed.), Stimulation in early infancy. London: Academic Press, 1969.
- Allport, G. Attitudes. In M. Fishbein (Ed.), Attitude theory and measurement. New York: John Wiley and Sons, Inc., 1967.
- Als, H., & Brazelton, T. Comprehensive neonatal assessment.
Birth and the Family Journal, 1975, 2, 3-9.
- Als, H., Lester, B., & Brazelton, T. Dynamics of the behavioral organization of the premature infant: A theoretical perspective. In T. Field (Ed.), The high risk newborn. New York: Spectrum Publications, in publication.
- Als, H., Tronick, E., Lester, B., & Brazelton, T. The Brazelton Neonatal Behavioral Assessment Scale.
Journal of Abnormal Child Psychology, 1977, 5, 215-231.
- Als, H., Tronick, E., Lester, B., & Brazelton, T. The Brazelton Neonatal Behavioral Assessment Scale (BNBAS). To appear in J. Osofsky (Ed.), Handbook of Infant Development. New York: John Wiley and Sons, 1979.

- Anderson, C. Informing mothers about the behavioral characteristics of their infants: The effects on mother-infant interaction. (Doctoral dissertation, The University of Texas at Austin, 1979). Dissertation Abstracts International. (University Microfilms No. 79-20, 076).
- Anderson, C. Parenting and perceived sex role of rural Iowa fathers. Minneapolis, 1977. (ERIC Document Reproduction Service No. ED 141 508).
- Babies have fathers, too. American Journal of Nursing, 1971, 71, 1980-1981.
- Bandura, A. Social learning theory. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977.
- Bell, R. Q. Contributions of human infants to caregiving and social interaction. In M. Lewis & L. Rosenblum (Eds.), The Origins of Behavior (Vol. 1). New York: John Wiley and Sons, 1974.
- Bigner, J. J. Attitudes toward fathering and father-child activity. Home Economics Research Journal, 1977, 6, 198-106.
- Bowlby, J. Attachment and loss: Vol. 1. Attachment. New York: Basic Books, Inc., 1969.
- Bowlby, J. Nature of a child's tie to his mother. International Journal of Psychoanalysis, 1958, 39, 350-373.
- Bowlby, J. The making and breaking of affectional bonds. British Journal of Psychiatry, 1977, 130, 201-210.
- Brazelton, T. Behavioral competence of the newborn. Seminars in Perinatology, 1979, 3, 35-44.
- Brazelton, T. Does the neonate shape his environment? Birth Defects, 1974, 10, 131-140.
- Brazelton, T. Infants and mothers. New York: Dell Publishing Co., Inc., 1969.
- Brazelton, T. Neonatal Behavioral Assessment Scale. Clinics in Developmental Medicine, No. 50. Philadelphia: J. B. Lippincott, 1973.

- Brazelton, T. The parent-infant attachment. Clinical Obstetrics and Gynecology, 1976, 19, 373-389.
- Brazelton, T., Koslowski, B., & Main, M. The origins of reciprocity: The early mother-infant interaction. In M. Lewis & L. Rosenblum (Eds.), The Origins of Behavior (Vol. 1). New York: John Wiley and Sons, 1974.
- Brazelton, T., Tronick, E., Adamson, L., Als, H., & Wise, S. Early mother-infant reciprocity. Parent-Infant Interaction. Ciba Foundation Symposium 33, Amsterdam: Elsevier Publishing Company, 1975.
- Brown, S. The effects of natural childbirth classes on the early father-child relationship. Unpublished doctoral dissertation, University of Washington, 1977.
- Campbell, D. & Stanley, J. Experimental and quasi-experimental designs for research. Chicago: Rand McNally College Publishing Company, 1967.
- Campbell, S. & Taylor, P. Bonding and attachment: Theoretical issues. Seminars in Perinatology, 1979, 3, 3-13.
- Campos, J. & Cohen, L. Father, mother, and stranger as elicitors of attachment behaviors in infancy. Developmental Psychology, 1974, 10, 146-154.
- Carlsson, S., Danielsson, G., Fagerberg, H., Gundewall, C., Horneman, G., Larsson, K., Rodholm, M., & Schaller, J. Effects of various amounts of contact between mother and child on the mother's nursing behavior. Developmental Psychobiology, 1978, 11, 143-150.
- Clark, A. & Affonso, D. Infant behavior and maternal attachment: Two sides of the coin. American Journal of Maternal Child Nursing, 1976, 1, 94-99.
- Clarke-Stewart, K. And daddy makes three: The father's impact on mother and young child. Child Development, 1978, 49, 466-478.
- Coll, C. Facilitating a positive interaction between parent and infant in the neonatal intensive care unit. Atlanta: Interdisciplinary Conference on Parenting, 1977. (ERIC Documental Reproduction Service No. ED 140-971).

- Cook, S. & Selltiz, C. A multiple indicator approach to attitude measurement. Psychological Bulletin, 1964, 62, 36-55.
- Cronenwett, L. & Newmark, L. Father's responses to child-birth. Nursing Research, 1974, 23, 210-217.
- Curry, M. The effect of skin-to-skin contact between mother and infant during the first hour following delivery on the mother's maternal attachment behavior and self concept. (Doctoral dissertation, University of California, 1979). Dissertation Abstracts International. (University Microfilms No. 79-26, 645).
- deChateau, P. The influence of early contact on maternal and infant behavior in primiparae. Birth and the Family Journal, 1976, 3, 149-155.
- deChateau, P. The importance of the neonatal period for the development of synchrony in the mother-infant dyad: A review. Birth and the Family Journal, 1977, 4, 10-22.
- Earls, F. The fathers (not the mothers): Their importance and influence with infants and young children. Psychiatry, 1976, 39, 209-255.
- Erickson, M. Assessment and management of developmental changes in children. St. Louis: C. V. Mosby Co., 1976.
- Erickson, M. Trends in assessment: The newborn and his parents. American Journal of Maternal Child Nursing, 1978, 3, 99-103.
- Erikson, E. Childhood and society (2nd ed.). New York: W. W. Norton and Company, Inc., 1963.
- Fein, R. Men's entrance to parenthood. The Family Coordinator, 1976, 25, 341-148.
- Fein, R. The first weeks of fathering: The importance of choices and support for new parents. Birth and the Family Journal, 1976b, 3, 53-58.

- Gollobner, M. A comment on the need for father-infant postpartal interaction. Journal of Obstetrical and Gynecological Nursing, September-October, 1976, 5, 17-20.
- Greenberg, M. & Morris, N. Engrossment: The newborn's impact upon the father. American Journal of Orthopsychiatry, 1974, 44, 520-531.
- Hales, D., Lozoff, B., Soa, R., & Kennell, J. Defining the limits of the maternal sensitive period. Developmental Neurology, 1977, 19, 454-461.
- Hanks, C. & Rebelsky, F. Fathers' verbal interaction with infants in the first three months of life. Child Development, 1971, 42, 63-68.
- Heise, J. Toward Better preparation for involved fatherhood. Journal of Obstetric and Gynecological Nursing, 1975, 4, 32-35.
- Hines, J. Father - the forgotten man. Nursing Forum, 1971, 10, 176-200.
- Hott, J. The crisis of expectant fatherhood. The American Journal of Nursing, 1976, 76, 1436-1440.
- Howells, J. Fallacies in child care: That fathering is unimportant. Acta Paedopsychiatric, 1970, 3, 46-55.
- Jordan, A. Evaluation of a family-centered maternity care program. Unpublished report, Calgary, Alberta, 1971.
- Josselyn, I. Cultural forces, motherliness and fatherliness. American Journal of Orthopsychiatry, 1956, 26, 264-271.
- Judd, J. M. Nursing implications. Nursing Digest, 1976, 4, 22.
- Kennell, J., Jerauld, R., Wolfe, H., Chesler, D., Kreger, N., McAlpine, W., Steffa, M., & Klaus, M. Maternal behavior one year after early and extended postpartum contact. Developmental Medicine and Child Neurology, 1974, 16, 172-179.

- Kiernan, B. & Scoloveno, M. A. Fathering. Nursing Clinics of North America, 1977, 12, 481-489.
- Klaus, M. & Kennell, J. Mother-infant bonding. St. Louis: C. V. Mosby Company, 1976.
- Klaus, M., Kennell, J., Plump, N., & Zuehlke, S. Human maternal behavior at the first contact with her young. Pediatrics, 1970, 46, 187-192.
- Klaus, M., Kreeger, R., McAlpine, H., Steffa, M., & Kennell, J. Maternal attachment: Importance of the first postpartum days. The New England Journal of Medicine, 1972, 286, 460-463.
- Kontos, D. A study of the effects of extended mother-infant contact on maternal behavior at one and three months. Birth and the Family Journal, 1978, 5, 133-140.
- Korner, A. The effect of the infant's state, level of arousal, sex, and ontogenetic stage on the caregiver. In M. Lewis & L. Rosenblum (Eds.), The Origins of Behavior (Vol. 1). New York: John Wiley and Sons, 1974.
- Kotelchuck, M., Zelazo, P., Kagan, J., & Spelke, E. Infant reaction to parental separations when left with familiar and unfamiliar adults. The Journal of Genetic Psychology, 1975, 126, 255-262.
- Lamb, M. Father-infant and mother-infant interaction in the first year of life. Child Development, 1977, 48, 167-181.
- Lamb, M. Fathers: Forgotten contributors to child development. Human Development, 1975, 18, 245-266.
- Lamb, M. Interactions between two-year-olds and their mothers and fathers. Psychological Reports, 1976, 38, 447-450.
- Lamb, M. Interactions between eight-month-old children and their fathers and mothers. In M. Lamb (Ed.), The role of the father in child development. New York: John Wiley and Sons, 1976b.

- Lamb, M. The sociability of two-year-olds with their mothers and fathers. Child Psychiatry and Human Development, 1975, 5, 182-188.
- Leonard, S. How first-time fathers feel toward their newborns. American Journal of Maternal Child Nursing, 1976, 1, 361-365.
- Leonard, S. Transition to fatherhood. Issues in Comprehensive Pediatric Nursing, 1977, 2, 6-21.
- Levine, J. Who will raise the children: New options for fathers. New York: J.B. Lippincott, 1976.
- Lott, B. Who wants the children? American Psychologist, 1973, 28, 573-582.
- Manion, J. Identification of factors related to fathers' participation in caretaking of their infants. Unpublished Thesis. University of Iowa, 1975.
- Manion, J. A study of fathers and infant caretaking. Birth and the Family Journal, 1977, 4, 1974-1979.
- Marquart, R. Expectant fathers: What are their needs? American Journal of Maternal Child Nursing, 1976, 1, 32-36.
- Matt, L. & Perkins, P. A family, not a vacuum. Medical Service Digest, July-August, 1978, 29, 18-19.
- May, K. Active involvement of expectant fathers in pregnancy: Some further considerations. Journal of Obstetrical and Gynecological Nursing, March-April, 1978, 7, 7-12.
- May, K. Psychologic Involvement in Pregnancy by expectant fathers. Journal of Obstetrical and Gynecological Nursing, 1975, 4, 40-42.
- McDonald, D. Paternal behavior at first contact with the newborn in a birth environment without intrusions. Birth and the Family Journal, 1978, 5, 123-132.
- McNall, L. Concerns of expectant fathers. In L. McNall & J. Galaneer (Eds.), Current practice in obstetric and gynecologic nursing (Vol. 1). St. Louis: C. V. Mosby Company, 1976.

- Minium, E. Statistical reasoning in psychology and education. New York: John Wiley and Sons, 1970.
- Nash, J. The father in contemporary culture and current psychological literature. Child Development, 1965, 36, 261-297.
- Obrzut, L. Expectant fathers' perception of fathering. The American Journal of Nursing, 1976, 76, 1440-1442.
- Osofsky, J. Neonatal characteristics and mother-infant interactions in two observational situations. Child Development, 1976, 47, 1138-1147.
- Pannabecker, B. The effect of extended contact of father-newborn interaction (Doctoral dissertation, University of Colorado at Boulder, 1977). Dissertation Abstracts International. (University Microfilms No. 77-29, 960).
- Parke, R. Father-infant interaction. In M. Klaus, T. Leger, & M. Trause (Eds.), Maternal attachment and mothering disorders: A round table. Sponsored by Johnson and Johnson, Sausalito, California, 1974.
- Parke, R. & O'Leary, S. A family interaction in the newborn period: Some findings, some observations, and some unresolved issues. In K. Riegel & J. Meacham (Eds.), The developing individual in a changing world (Vol. 2). The Hague, Mouton, 1975.
- Parke, R., Power, T., Tinsley, B., & Hymel, S. The father's role in the family system. Seminars in Perinatology, 1979, 3, 25-34.
- Parke, R. & Sawin, D. The family in early infancy: Social interactional and attitudinal analyses. In F. Pedersen (Ed.), The father-infant relationship: Observational studies in the family setting. New York: Praeger Publishers, 1980.
- Parke, R. & Sawin, D. The father's role in infancy: A re-evaluation. The Family Coordinator, 1976, 25, 365-371.
- Pederson, F. & Robson, K. Father participation in infancy. American Journal of Orthopsychiatry, 1974, 39, 466-472.

- Price-Bonham, S. & Skeen, P. A comparison of black and white fathers with implications for parent education. The Family Coordinator, 1978, 28, 53-59.
- Rendina, I. & Dickerscheid, J. Father involvement with first-born infants. The Family Coordinator, 1976, 25, 373-378.
- Richards, M. Social interaction in the first weeks of human life. Psychiatria, Neuralgia, Neurochirurgia, Amsterdam: Elsevier Publishing Company, 1974, 74, 35-52.
- Richards, M., Dunn, J., & Antonis, B. Caretaking in the first year of life: The role of fathers, and mothers' social isolation. Child: Care, Health and Development, 1977, 3, 23-36.
- Riesch, S. Enhancement of mother-infant social interaction. Journal of Obstetrical and Gynecological Nursing, 1979, 8, 242-246.
- Rodholm, M. & Larsson, K. Father-infant interaction at the first contact after delivery. Early Human Development, 1979, 3, 21-27.
- Roehner, J. Fatherhood: In pregnancy and birth. Journal of Nurse Midwifery, Spring, 1976, 21, 13-18.
- Rubin, R. Maternal touch. Nursing Outlook, 1963, 11, 828-831.
- Sawin, D. Parental interaction. Paper presented at Conference on Parenting, University of Texas at Austin, March 30-31, 1978.
- Sawin, D. & Parke, R. Fathers' affectionate stimulation and caregiving behaviors with newborn infants. The Family Coordinator, 1979, 28, 509-513.
- Schaffer, H. & Emerson, P. The development of social attachments in infancy. Monographs of the Society for Research in Child Development, 1964, 29, 1-77.
- Schmidt, J. Using a teaching guide for better postpartum and infant care. Journal of Obstetrical and Gynecological Nursing, May-June, 1978, 7, 23-26.

- Schroeder, M. A. Is the immediate postpartum period crucial to the mother-child relationship. Journal of Obstetrical and Gynecological Nursing, May-June, 1977, 6, 37-40.
- Seymour, R. Developing aspects of fatherhood. Midwife Health Visitor and Community Nurse, 1977, 13, 390-391.
- Snyder, D., Ayres, S., & Barnard, K. New findings about mothers' antenatal expectations and their relationship to infant development. The American Journal of Maternal Child Nursing, 1979, 4, 354-357.
- Spelke, E., Zelazo, P., Kagan, J., & Kotelchuck, M. Father interaction and separation protest. Developmental Psychology, 1973, 9, 83-90.
- Tasch, R. Interpersonal perceptions of fathers and mothers. The Journal of Genetic Psychology, 1955, 87, 59-65.
- Tasch, R. The role of the father in the family. Journal of Experimental Education, 1952, 20, 319-363.
- Thomas, A. & Chess, S. Temperament and development. New York: Brunner/Mazel Publishers, 1977.
- Walters, C. & Wilhoit, P. Social development. In C. Walters (Ed.), Mother-Infant Interaction. New York: Human Sciences Press, 1976.
- Wente, A. & Crockenberg, S. Transition to fatherhood: Lamaze preparation, adjustment difficulty and the husband-wife relationship. The Family Coordinator, 1976, 25, 351-357.
- Yarrow, L. & Goodwin, M. Some conceptual issues in the study of mother-infant interaction. American Journal of Orthopsychiatry, 1965, 35, 473-486.
- Yogman, M. Early Mother-Father-Infant Relationships. Paper presented to the American Academy of Pediatrics, General Session, November 8, 1977, New York.
- Zimbardo, P. & Ebbesen, E. Influencing attitudes and changing behavior. Reading, Massachusetts: Addison-Wesley Publishing Company, 1970.