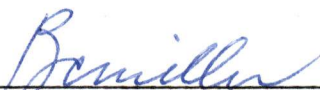


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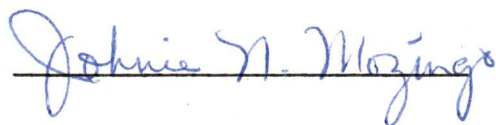
I am submitting herewith a thesis written by Shelia McCormick Bowen entitled "Fathers' Attachment Behavior as Related to Parenthood Classes, Presence at Delivery and Infant State." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Child and Family Studies.



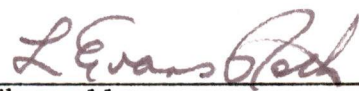
Brent Miller, Major Professor

We have read this thesis and
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FATHERS' ATTACHMENT BEHAVIOR AS RELATED TO
PREPARENTHOOD CLASSES, PRESENCE AT
DELIVERY AND INFANT STATE

A Thesis

Presented for the

Master of Science

Degree

The University of Tennessee, Knoxville

Sheila McCormick Bowen

August 1978

1363242

DEDICATION

This thesis is dedicated to my father, Thomas Dwyer McCormick, and to my husband, George Edgar Bowen, both of whom exemplify the highest standards in the art of fathering. It was their relationships with their children that provided the inspiration for this study.

ACKNOWLEDGMENTS

The author wishes to express her grateful appreciation to all those persons without whom this study would not have been possible. Faye Sigman, my research assistant and Betty Kincaid, obstetrical supervisor, St. Mary's Medical Center were instrumental in the conduction of the study itself. Appreciation is also expressed to my committee members Priscilla White and Johnie Mozingo for their guidance and encouragement. A special word of thanks to Brent Miller, my advisor for his guidance and patience throughout this study.

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ABSTRACT

The phenomenon of attachment in regard to fathers and newborns has been a neglected area of study. This study explored father-infant attachment and how it was related to preparenthood classes, presence at delivery and infant state. The study sample consisted of 48 fathers and their infants who were observed in the mother's hospital room between twelve and seventy-two hours after delivery. The fathers were divided into three groups: 1. those who took classes and were present at delivery, 2. those who were present at delivery but did not take classes, and 3. those who neither took classes nor were present at delivery. Fathers who were present at delivery demonstrated more social attachment behavior than fathers who were not present. Presence at delivery was also significant in regard to total attachment scores. Sleeping infants elicited significantly less attachment behavior from fathers. Preparenthood classes were not related to fathers' attachment behavior. This study supports the theory of a sensitive period shortly after birth for the development of the parental-infant bond. It also demonstrates, indirectly, that alert, awake infants do elicit certain attachment behaviors from fathers.

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CHAPTER I

INTRODUCTION

Problem

There is a general consensus of opinion in the area of family research that the female perspective of the wife/mother has been over-represented (Ruano et al., 1969). A similar view is held by researchers more specifically interested in the transition to parenthood (Coley, 1976; Fein, 1976; Lamb, 1976; Leonard, 1976; Reiber, 1976; Rendina, 1976). Although pleas to include the father continue to be voiced and general agreement exists that the father contributes to his children's development, a relative paucity of information is available about the nature of his relationships to his children, especially during infancy. (See, however, the bibliography compiled by Price-Bonham, 1976.) The information available about father participation with infants has been obtained primarily from retrospective accounts or indirectly from mothers of infants (Rendina, 1976). Cronenwett and Newmark (1974) state:

There is a severe dearth of objective data concerning the father, particularly with respect to childbirth and his acquisition of new roles. . . . During this trend toward increased participation by the father in the childbearing experience research has been focused on negating the technical objections raised to the father's presence and participation. Little systematic study has been done to demonstrate exactly what is to be gained. Why is the father's presence at delivery beneficial? What difference does it make if he is prepared for a role in the childbirth process? (p. 210)

Childbearing couples today are expressing more and more interest in prepared parenthood and a shared experience in the childbirth process.

There is no information available however on the effects of this experience. Studies to date on fathers in the neonatal period have been primarily retrospective and have employed either questionnaires or interviews. Recent observational studies by Klaus and Kennell (1976) suggest that mothers who interact early with their infants demonstrate more attachment behavior toward the infant. Fathers, however, have never been observed in regard to the phenomenon of attachment and the development of the paternal infant bond.

Rationale

Taking into account the need for research on fathers in general and the specific need for empirical data on his participation in the childbearing process, it was decided that the emergence of fatherhood would be a logical focus of study. The beginning of the father-infant relationship is also a major adjustment period in family life. This concept of adjustment during the transition to parenthood appears repeatedly in family literature (LeMasters, 1957; Levine, 1959; Hobbs, 1965; Rappoport & Rappoport, 1968; Libenberg, 1968; Jacoby, 1969; Coley & James, 1976; Wente, 1976). In reviewing this literature it is apparent that this adjustment period in family life is characterized by several tasks, some of which are: changes in existing roles, adaptation to new roles, alterations in identity, and formation of an attachment bond between parent and infant. This bond is essential for the nurturant care and survival of the infant.

Reiber (1976) in her study of the nurturing behavior of fathers observed that "fathers tended to exhibit toward their infants nurturing

behaviors similar in nature to those of their wives" (p. 396). This concept is further elaborated by Gollob (1976):

The functions of fatherhood, fatherliness and providing parallel the functions of motherhood, motherliness and nurturing. Thus, inherent qualities found in fatherliness and motherliness are not sexually restricted but are common to both sexes. These qualities which encompass these new role definitions include the display of warmth, love, tenderness and a readiness to respond to a child's needs. The qualities of fatherliness then, have instinctive biological roots which have been molded, often distorted or repressed by socioeconomic events in Western society. (p. 18)

Mead (1965) suggested that the role of the father is less instinctive than it is socially and culturally determined. In other words, fathers must learn how to be fathers whereas mothers' initial behavior with their infants tends to be more instinctive. If father-infant attachment is partly based on biological drives or instincts then perhaps father nurturance and attachment would be triggered or facilitated if men were provided with preparation for and involvement in the birth process. If, on the other hand, there is no paternal or fathering instinct and these are simply learned behaviors, it would be of value to determine which factors, if any, can enhance the experience of learning to father.

Fein (1976) noted in his study of fathers that men's relationships with their wives and infants were perceived to be positively affected by their involvement in the birth process. He further pointed out the need for research in three major areas concerning man's entrance to parenthood. These areas are: 1. preparation for parenthood, 2. involvement in the birth process, and 3. men's options to shape and share in their family lives.

Purpose

The father-infant relationship is a neglected area of study. One major task facing the new father is that of forming an attachment bond to the infant. Because it is important to the father in adapting to his new role and to the infant who needs nurturance in order to survive, it is the purpose of this study to explore the degree to which certain experiences enhance father-infant attachment. More specifically, going back to Fein's (1976) suggestions, the father's preparation for parenthood and his involvement in the birth process will be examined in relation to father-infant attachment. This study explores the relationship between attendance at preparenthood classes and subsequent father-infant bonding. It also explores the relationship between being present at delivery and subsequent father-infant bonding. Various other characteristics of fathers and infants will also be examined particularly the state of the infant as related to early attachment behaviors in fathers.

CHAPTER II

LITERATURE REVIEW

Attachment

Most studies on the process of attachment focus on the maternal-infant bond. However, in view of observations reported by Reiber (1976), Gollobier (1976), and Mead (1965), the attachment process could be considered either maternal or paternal. In other words, attachment is a human phenomenon characterized by certain behaviors. The definition of attachment as stated by Ainsworth (1969) and reported by Bell (1970) is an "ongoing condition of an organism and refers to its propensity to behave in ways characteristic of that organism which serve to maintain proximity to or an interaction with a particular figure—the object of attachment" (p. 292). Rosenthal (1973) further expanded and clarified this definition. "Attachment is not a 'thing' resulting from an interaction (p. 202). . . . Attachment should be viewed as patterns of interaction between two human beings and not as a thing which results from such interaction" (p. 206). Attachments imply strong affect, and in this sense they are significant relationships. The behavioral goal of attachment is proximity to or contact with the attachment figure. The process of attachment thereby affects the responses of the individual. These responses involve a behavioral act and can therefore be observed. Thus, attachment behavior can be seen as a discriminating, differential, affectional relationship which is established with a

person and tends to evoke a response from that person. It can be observed in a chain of interactions that serves to consolidate the affectional relationship. These behavioral exchanges may be initiated either by the infant's behavior to which the parent responds or by the parent's behavior that evokes a response in the infant (Cropley et al., 1976).

Rubin (1963) has noted that not only are these behaviors observable but they tend to occur in an orderly, sequential and possibly developmental manner. In her studies on maternal-infant touch she describes this orderly process as starting with just the mothers fingertips as she explores her infant. Touching then includes the hand and direction is from the periphery inward. She draws the infant progressively closer to her.

In addition to these studies on maternal-infant attachment Lamb and Lamb (1976) have demonstrated that infants are attached to both parents but perhaps in different ways. Lamb and Lamb (1976) state, in regard to infants:

the relationships they experience with their fathers and mothers differ in quality, involve different sorts of interaction, and consequently, that fathers, like mothers have the potential for a significant and differential impact on the psychological and social development of their infants from early in infancy. (p. 381)

Infant State

Bowlby (1969) in his extensive observations on infants has demonstrated that the newborn is far from passive. At the moment of birth every sensory system in the infant is working. Newborns elicit

behavior from adults in that they maximize the kinds of stimuli that emanate from humans. These stimuli are auditory, tactile, olfactory and visual in nature. Newborn infants will listen to a human voice and display a tendency to look at and prefer patterns which resemble a human face. They also demonstrate a preference for looking at things that move rather than things that are static. Wolff (1965) who has also done extensive observations on newborns describes six separate states of consciousness in the infant ranging from deep sleep to screaming. Of particular interest is his state four, which he describes as a quiet, alert state. This quiet, alert state characteristically occurs for a period of 45-60 minutes during the first hour after birth. It has been determined that during this period an infant can see, that he has visual preferences, and that he will turn his head toward voices. After this hour, however, the infant typically goes into a deep sleep for 3-4 hours. Babies' eyes are often puffy and closed for several days after birth also. Thus for one hour after birth the infant appears to be ready for the first important meeting with his parents.

Sensitive Period

These observations of newborns suggest the possibility of a period immediately after birth during which the infant is in a state of high receptivity. There is also evidence that early parental-infant interaction results in the demonstration of more attachment behavior. Klaus (1976) notes that fathers who undressed their infants and established eye-to-eye contact during the first days of life demonstrated increased caregiving activity during the first three months of life.

Klaus further states: "On the basis of this evidence, we strongly believe that an essential principle of attachment is that there is a sensitive period in the first minutes and hours after the infant's birth for parent-infant interaction" (p. 65). Thus, it has been suggested that there is an especially sensitive period shortly after birth during which the parent-infant bond can be maximally established.

Comparative animal studies also lend credence to the idea of a sensitive period shortly after birth. Lorenz's famous study on ducklings discovered a process which he labeled "imprinting" (Brecher, 1969). This phenomenon has been found by other researchers in a variety of species including insects, fish, guinea pigs, sheep, deer, and buffalo. It has also been noted that chicks develop three quite disparate forms of imprinted behavior during the first three days of life. Chicks and ducklings develop to maturity more rapidly than humans but given this evidence plus the concept of critical periods in child development, it is possible that a similarly sensitive period exists for the human neonate.

In summary, current literature states that attachment is a process rather than a single occurrence, and it is based on sets of interactions. Furthermore, these sets of interactions are characterized by certain observable behaviors, namely those behaviors which exemplify proximity, contact and nurturance. It is also believed that these behaviors are clearly demonstrated when there is early parental-infant interaction.

Hypotheses

Based on the evidence presented thus far it would appear that there may be certain time periods during which father-infant interaction is especially important in developing attachment. The evidence suggests that this time period may occur as early as the first hour of life. If this is true then it is possible that fathers who interact with their infant during this first hour will demonstrate more attachment behavior than fathers who do not interact at this time. Thus, participation in the birth process may be a very significant factor in the formation of father-infant attachment. Participation in the birth process would be especially crucial if attachment is partly instinctual and triggered by early father-infant interaction. Regardless of whether father-infant attachment is entirely based on learning, instinct, or some combination thereof, parenthood preparation classes and early father-infant interaction seem likely to increase attachment behaviors in fathers. Thus, this study will focus on the importance of preparenthood classes and participation in the birth process in early father-infant attachment. Fathers having both of these experiences are expected to display more attachment behavior than fathers who have had neither. The following specific hypotheses will be tested:

1. Fathers who attend preparenthood preparation classes will have higher father-infant attachment scores than those who do not attend these classes.
2. Fathers who are present during delivery will have higher father-infant attachment scores than fathers who were not present during delivery.

CHAPTER III

METHODS

Design

The overall design for this study included observations of father-infant behavior in the first day or two of the infant's life followed by an interview with the father. Subjects were divided into groups based on the major independent variables in the study, namely, presence at delivery and participation in preparenthood classes.

Group I fathers participated in preparenthood classes and were present at delivery (prepared attenders).

Group II fathers participated in classes but were not present for delivery (prepared nonattenders).

Group III fathers did not participate in classes but were present for delivery (unprepared attenders).

Group IV fathers neither participated in classes nor were present for delivery (nonattenders).

Thus, the intended design was as depicted below:

		Presence at Delivery	
		YES	NO
Participation in classes	Yes	I Prepared Attendders	II Prepared Nonattendders
	No	III Unprepared Attendders	IV Nonattendders

Sample Selection and Characteristics

The most accessible place to find relatively large numbers of fathers with newborn infants is an obstetrical unit in a hospital. The hospital chosen for this study was St. Mary's Medical Center in Knoxville because of their cooperative administration and policies. St. Mary's obstetrical unit practices family centered maternity care and encourages active participation of fathers not only in the birth process but throughout the neonatal period.

Subjects for this study were men whose wives delivered at St. Mary's over a period of five consecutive weeks. The only criteria for inclusion in the study were an intact marriage, a normal healthy infant, and a normal postpartum course. Every father meeting these criteria was approached and asked to participate in the study.

Seventy-eight fathers were asked to participate and forty-eight were actually observed. Of the thirty who were asked to participate but not observed, twenty were discharged early before they could be studied. There were very limited times during which observations could take place and it was not uncommon to obtain permission from a couple to do an observation to find out upon returning the next day that the mother and infant had been discharged. Of the remaining ten fathers who were approached but not observed four refused to participate, three were unavailable due to work schedules or family obligations, one father was snowbound and two simply failed to show.

The forty-eight fathers who participated ranged in age from 18 to 39 years with a mean age of 27 years. In regard to educational

attainment, 14% of the fathers did not graduate from high school, 37% were high school graduates, 25% had some college, 6% were college graduates and 16% had some postgraduate education. The occupations of these fathers were 56% blue collar, 19% white collar and 25% professional. All but three of the fathers were in their first marriage. The average length of marriage was five years with a range from seven months to seventeen years.

Procedure

Administrative consent from St. Mary's Medical Center was obtained to do the study in the hospital. Each practicing obstetrician also provided consent for his patients to be observed. Nursing personnel were informed of the general nature of the study and any possible problems were then further discussed with the obstetrical supervisor and the head nurses in the newborn nursery and the postpartum unit. A small pilot study was done to eliminate any unforeseen problems. Since no problems arose during the pilot study those subjects were included in the final analysis of data.

It was decided that the mother's room was the best place in the hospital for the subjects to feel at ease during observation. The hospital rooms were small and usually dimly lit, eliminating the use of film recordings or videotapes. A single observer, sitting quietly in a corner, was considered to be the least obtrusive way to observe the fathers and infants. The dynamics of father, mother, and newborn interaction often took over completely, and the presence of the observer was soon forgotten.

Each subject was approached in the hospital room with his wife and given a verbal explanation of the general nature of the study and how it would be conducted. The couple was told that early family interaction was being observed and both husband and wife were asked to sign a consent form (see appendix A). Some observations took place immediately after consent was granted; others involved a time lapse ranging from fifteen minutes to twenty-four hours between consent and observation. Observations took place primarily after the early evening feeding since this was the time when most fathers were available. At this time also the infants were already in the rooms so that it was not necessary to make any special arrangements in order to do the observations.

It is important to note that the observations were done without knowing whether or not the father had attended preparenthood classes or been present for delivery. Thus, the observers were blind to the major independent variables while conducting each observation. Observations were followed by interviews to obtain background information which allowed the fathers to be classified into one of the four groups. The only information available to the observer prior to seeing the father was marital status, room number, and condition of the infant. This information was obtained from the nursing kardex and patients' admission forms. The delivery room record on each mother's chart also provided information such as infant sex, apgar scores, analgesia during labor, method of delivery, anesthesia for delivery, and method of infant feeding. Age of the infant at the time of observation was also recorded after each observation.

Both observers were female, registered nurses with several years experience in labor and delivery. They wore the blue hospital uniforms and couples were aware that they were nurses. In fact, the observers were often mistaken for staff members. This was a distinct advantage and helped the observations to be conducted as naturally as possible.

Measurement

An observation sheet (see appendix B), pen, clipboard, a pocketwatch with a sweepband and an interview schedule (see appendix C) were the only instruments used in this study. The observer attempted to situate herself in an inconspicuous location in the room but one which allowed good visibility of father and infant. Each observation lasted fifteen minutes and consisted of a time sample every thirty seconds. At each thirty second interval the father and infant behavior occurring was marked on the observation sheet. Each check mark was given the numerical value of 1. Thus, in a fifteen minute observation period with thirty time samples each individual behavior had a score ranging from 0 to 30. Since each behavior, as it was occurring, received a check every thirty seconds, behaviors which were continuous received higher scores than behaviors which were sporadic or of short duration. This is consistent with attachment theory which describes attachment behavior as that which "maintains proximity" (Bell, 1970, p. 292).

Infant state was recorded simultaneously with fathers behavior, receiving a check mark every thirty seconds. Infants' states were mutually exclusive; the infant could not be in more than one state at a time. Therefore the total infant score was always 30 but scores for

individual states on each infant varied. The infant scores were used simply to identify the relationship between infant state and total paternal attachment scores.

Specific attachment behaviors were observed and noted by using a (✓) check mark on the observation sheet. The six paternal attachment behaviors observed were:

1. Inspection - looking at the infant and making an effort to become more familiarized, (e.g. looking at head, body extremities), a general visual scanning of the infant.
2. Verbalization - making comments either directly referring to the infant (such as "He's cute") or directly addressing the infant.
3. Smiling - smiles at the infant.
4. Tactile Response - touches the infant with fingertips or hands.
5. En Face Position - attempting to look at the infant face-to-face and maintain eye-to-eye contact.
6. Holding - holding the infant either with hands or in the arms. It was noted in which arm the infant was held.

These behaviors have been described in the literature as the most frequently occurring observable behaviors in parents which demonstrate proximity to and contact with their infants. Klaus and Kennell (1976) described the following behaviors as being indicators of maternal attachment: fondling, gazing, kissing, holding close, and looking en face. They further state that these behaviors were not specific to the mother-infant relationship but may also be observed with others who interact with newborns. Cropley et al. (1976) in their observations of

maternal attachment behaviors noted that certain behaviors occurred in 100% of the subjects observed. The behaviors were inspection of infant, en face position, touching of head or extremities, fingertip touch, and stroking. Cannon (1977) described early mother-infant interaction as being characterized most frequently by the following observable behaviors: en face position, a "taking in" or generalized scanning of the infant, and verbalization. In addition to the behaviors of touching, vocalizing, looking and kissing, Parke and Sawin (1976) noted that smiling was a significant attachment behavior.

The six behaviors chosen to be observed in this study are a compilation of those behaviors most frequently described in literature on attachment behavior in the newborn period. A closer look at these behaviors shows that they can be grouped into those behaviors which are relatively distal (i.e. inspection, verbalization, smiling) and those which are more proximal (i.e. tactile response, en face position, holding). The distal behaviors are more social in nature as opposed to the physical nature of the proximal behaviors.

Since attachment behavior is not solitary and always implies the presence of another person, the activity or state of the infant was also considered during each observation. Infant state and activity have been described and categorized by Wolff (1966, pp. 9-11) as follows:

1. & 2. Sleep - infant lying still, minimal muscle activity, eyes closed (Wolff actually describes two sleep states but for the purpose of this study they will be combined).

3. Drowsiness - reduced activity, some brief spurts of writhing; eyes open and close intermittently; while open the eyes have a dull, glazed appearance, and unfocused and the eyelids appear to be "heavy."

4. Alert inactivity - (quiet, alert) relatively inactive, face relaxed—does not grimace or smile; eyes are open and have a bright, shining appearance.

5. Waking activity - frequent spurts of diffuse motor activity; infant may be silent, moaning, grunting or whimpering.

6. Crying - crying vocalization.

These infant behaviors appeared on the same observation sheet as the paternal attachment behaviors and were recorded simultaneously with the attachment behaviors.

Reliability

Interrater reliability was assessed by having two observers code the same father-infant behavior simultaneously. The second observer was given advance information regarding the purpose of the study and descriptions of the behaviors to be observed. The behaviors were discussed during a training session to clarify any questions. Seven of the forty-eight fathers were observed by both observers to estimate interrater reliability.

The paternal behavior observation sheet had 180 possible points of rater comparison (6 behaviors $\times$ 30 time samples). The actual error for each observation was obtained by determining the difference between the scores on each pair of observations. The actual error divided by the total possible error (points of rater comparison) resulted in the

percentage of agreement. Reliability for infant state was assessed in the same manner. The infant state observation sheet had 150 points of rater comparison or possible errors (5 behaviors $\times$ 30 time samples). These scores were summed and divided by 7 (the number of co-observations) to determine the mean reliability. Using this method it was determined that the reliability between two observers for paternal attachment behaviors was 94.5%. Reliability for infant state was 97.2%. In addition to the seven co-observations the second observer did six additional solo observations.

CHAPTER IV

RESULTS AND DISCUSSION

The first step in the analysis was placing the subjects into the groups previously mentioned based on whether the fathers had attended classes and been present for delivery. Group I was composed of 21 fathers who participated in classes and were also present during delivery. Group II was built into the design but only 2 fathers went to classes and then were not present during delivery. Of the two fathers in this group one had taken classes but chose not to be present for delivery. The other father had taken classes and planned to be present for delivery but was eliminated when his wife required an unexpected Caesarean section. It would appear then, that very few fathers who take classes would choose not to be present for delivery. In this study it was one out of twenty-three. This particular father could offer no clear cut reason for not being in the delivery room. He said he simply did not want to be there. Because reliable comparisons cannot be made with a group this small, these two subjects were dropped from the analysis.

Group III consisted of 8 fathers present at delivery but who had not participated in classes. Group IV included 17 fathers who neither participated in classes nor were present at delivery. Because the original Group II was dropped from the analysis, the Groups were

renumbered so that attachment scores of fathers could be compared with the least confusion. The groups were renumbered as follows:

Group I (N=21) fathers attended classes and were present at delivery (prepared attenders).

Group II (N=8) no classes, but fathers were present at delivery (unprepared attenders).

Group III (N=17) fathers neither attended classes nor were present at delivery (nonattenders).

Testing the Hypotheses

The mean attachment scores for fathers in each of the three groups are shown in Table I. By visually comparing the scores of the three groups, it is apparent that attachment behaviors of fathers in Groups I and II are relatively similar. Group III fathers, however, who did not attend preparenthood classes and were not present at delivery, generally had lower attachment scores. This is the case for distal attachment and total attachment scores, but there appears to be essentially no difference between the groups in proximal attachment behaviors (tactile, holding and en face).

The statistical significance of the differences between groups was determined by using a multivariate analysis of variance. With two degrees of freedom for groups, and 45 degrees of freedom for number of cases an F value of 3.2 or greater was significant at the .05 level. Fathers' inspection, verbalization and composite distal attachment behavior were significantly higher among Group I and II fathers than among Group III fathers. Total attachment behaviors were lower among

Table I
Mean Attachment Scores by Groups

	Group I	Group II	Group III	F*
	Delivery Room	Delivery Room	No Delivery Room	
	& Classes	But No Classes	No Classes	
	N = 21	N = 8	N = 17	
	$\bar{X}$	$\bar{X}$	$\bar{X}$	
a. Inspection	25	26	18	4.75**
b. Verbalization	16	17	8	6.56**
c. Smiling	17	19	12	2.27
Distal Attachment (a+b+c)	59	63	39	6.28**
d. Tactile Response	10	8	8	0.47
e. En Face Position	20	18	13	2.75
f. Holding	15	13	16	0.19
Proximal Attachment (d+e+f)	45	41	35	0.59
Total Attachment	104	104	77	3.09

*Significance for .05 level = 3.2 or more

**P < .01

Group III fathers at the .055 level of significance. None of the proximal behaviors were significantly different between the groups. The overall hypothesis then, that fathers who attended preparenthood classes and were present for delivery would have higher attachment scores than fathers who did neither, was supported by some of the attachment scores but not all of them. Because the fathers or infants in the three groups might have differed in ways which could affect attachment scores, some of the characteristics of fathers and infants were next compared.

Descriptive Characteristics of Fathers and Infants

Fathers in Group I had a mean age of 25 years with a range from 19 to 32 years. Group II fathers had a mean age of 28 years with a range from 19 to 36 years. Group III fathers also had a mean age of 28 years, the range being from 18 to 39 years. A majority of the fathers (76%) in Group III came from large families (3 or more siblings) and no fathers in Group III were only children. There were no only children in Group II either, but only 49% of these fathers had three or more siblings. Birth order of the father did not emerge as a significant variable in any of the groups (see Table II).

All educational levels were represented in Groups I and II. Group I had 76% with some college or more and Group III had 87% with only high school graduation or less. Occupation was evenly represented in Group I, whereas blue collar workers comprised 62% of Group II and 82% of Group III (see Table II). So, fathers in Group I (highest attachment scores) tended to be younger and better educated. Group III

Table II
Descriptive Characteristics of Fathers by Groups

	Group I Delivery Room Classes N = 21		Group II Delivery Room Only N = 8		Group III No Delivery Room No Classes N = 17	
	%	N	%	N	%	N
<u>Education</u>						
Non H. S. Graduate	0%	(0)	12%	(1)	35%	(6)
H. S. Graduate	23%	(5)	37%	(3)	52%	(9)
Some College	35%	(8)	25%	(2)	11.7%	(2)
College Graduate	9%	(2)	12%	(1)	-	-
Postgraduate	28%	(6)	12%	(1)	-	-
<u>Occupation</u>						
Blue Collar	33%	(7)	62%	(5)	82%	(14)
White Collar	33%	(7)	12%	(1)	5.8%	(1)
Professional	33%	(7)	25%	(2)	11.7%	(2)
<u>Length of Marriage</u>						
1 year or less	19%	(4)	12.5%	(1)	5%	(1)
1 to 5 years	57%	(12)	37.5%	(3)	35%	(6)
5 to 10 years	19%	(4)	12.5%	(1)	41%	(7)
Over 10 years	4%	(1)	37.5%	(3)	17%	(3)

fathers (lowest attachment scores) came from larger families, had less education and were predominantly blue collar workers.

All the infants in this study were full term with apgar scores not less than 8 at five minutes. Forty-three infants were delivered vaginally and three by Caesarean section. Anesthesia for delivery was predominantly regional (42) with most mothers receiving only small single doses of medication during labor. Only one mother received general anesthesia for a vaginal delivery. The other three mothers receiving general anesthesia had Caesarean sections. The fathers of all the infants whose mothers had general anesthesia were in Group III.

Groups I and III infants were about half males and half females, however Group II had 75% female infants. Most of the infants at the time of observation were less than 48 hours old. In Group I 52% of the infants were less than 24 hours old. In Group I 66% of the infants were breast-fed whereas in Group III 70% of the infants were bottle-fed (see Table III). In summary then, Group I infants were predominantly first-born, younger, and breast-fed. Group II infants were predominantly female, older and mostly second or third born. More Group III infants were bottle-fed and born to mothers who received general anesthesia.

In recording infant state for the three groups, it was noted that in Group I, 6 infants (30%) were in the quiet alert, waking active, or crying state for more than 50% of the observation. In Group II, 5 infants (62%) were awake and in Group III only 1 infant (5%) was awake for more than 50% of the observation.

In order to test for possible relationships between father attachment and the characteristics described above, a stepwise multiple

Table III
Descriptive Characteristics of Infants by Groups

	Group I Delivery Room Classes		Group II Delivery Room Only		Group III No Delivery Room No Classes	
	N = 21		N = 8		N = 17	
	%	N	%	N	%	N
<u>Sex</u>						
Male	52%	(11)	25%	(2)	41%	(7)
Female	47%	(10)	75%	(6)	58%	(10)
<u>Age of Infant at Observation</u>						
24 hours	52%	(11)	37%	(3)	11%	(2)
24-48 hours	28%	(6)	63%	(5)	64%	(11)
48-72 hours	14%	(3)	-	-	5%	(1)
72 hours	4%	(1)	-	-	17%	(3)
<u>Method of Feeding</u>						
Bottle	33%	(7)	63%	(5)	70%	(12)
Breast	66%	(14)	37%	(3)	29%	(5)
<u>Ordinal Position of Infant</u>						
1st	95%	(20)	12%	(1)	64%	(11)
2nd	5%	(1)	50%	(4)	17%	(3)
3rd	-	-	37%	(3)	11%	(2)
4th	-	-	-	-	5%	(1)

regression analysis was used. The variables occupation, education, family size, birth order, length of marriage, child number, sex, method of feeding, age of infant, presence at delivery and participation in preparenthood classes were run against attachment scores in order to determine which of these, if any, was significantly related to attachment behavior. As was found in the analysis of variance, again the most significant predictor for distal and total attachment scores was presence at delivery. Participation in preparenthood classes was not significantly related to any of the attachment scores in the regression analysis (see Table IV).

Presence at delivery explained distal attachment with an F value of 19.9, probability 0.0001. When the variable occupation was combined with presence the resulting $F = 10.7$, probability 0.0002. Presence explained total attachment with an $F = 9.5$, probability 0.0004. Presence, family size and birth order of the father combined explained total attachment with an $F = 7.1$, probability 0.0006.

Proximal attachment was more likely to be affected by the variables family size and length of marriage. Family size explained proximal attachment with an $F = 8.6$, probability 0.0052. The combination of these two variables explains proximal attachment with an $F = 5.6$, probability 0.0066.

Correlations were done on family size and birth order of fathers to examine more closely the relationship of these variables with proximal attachment and total attachment. There was an inverse relationship between family size and proximal attachment with a correlation

Table IV
Stepwise Multiple Regression Model for Dependent Variables
of Distal, Proximal, and Total Attachment

Dependent/Independent Variable	R^2 *	F	Probability
Distal Attachment/			
Presence at Delivery	.31	19.9	0.0001
Occupation	.33	10.7	0.0002
Proximal Attachment/			
Family Size of Father	.16	8.6	0.0052
Length of Marriage	.21	5.6	0.0066
Total Attachment/			
Presence at Delivery	.24	13.5	0.0006
Family Size of Father	.31	9.5	0.0004
Birth Order of Father	.34	7.1	0.0006

* R^2 = the amount of variance in the dependent variable explained by the independent variable(s).

coefficient of $-.41$, probability 0.005 . The correlation coefficient for family size and total attachment was also $-.41$, probability 0.005 .

Correlation coefficients for birth order were not significant.

The total attachment means for the variable family size indicate also that the larger a father's family of origin, the lower is his overall attachment score (see Figure 1). Other background information on these fathers did not appear to be significant. Of the nine fathers from large families (4 or more siblings) six were blue collar workers, two were white collar workers and one was a professional. Educational levels showed six high school graduates, two without high school graduation, and one with some college. When looking at the individual scores of each of these fathers from large families, six had total attachment scores lower than the grand mean for the entire sample ($\bar{X} = 72$). Of the three remaining fathers the highest total attachment score was 96. The highest total attachment score for the sample was 160.

Correlation coefficients for the five infant states with total attachment, distal attachment and proximal attachment indicate a significant inverse correlation between total attachment and infant state 1 (sleep). Proximal attachment and distal attachment were also negatively related to infant state 1 (see Table V).

The correlation coefficient for infant state 1 (sleep) and total attachment was $-.47$, probability 0.0009 . The correlation coefficient for infant state 1 and proximal attachment was $-.39$, probability 0.006 . The correlation coefficient for infant state 1 and distal attachment was $-.42$, probability 0.003 (see Table V).

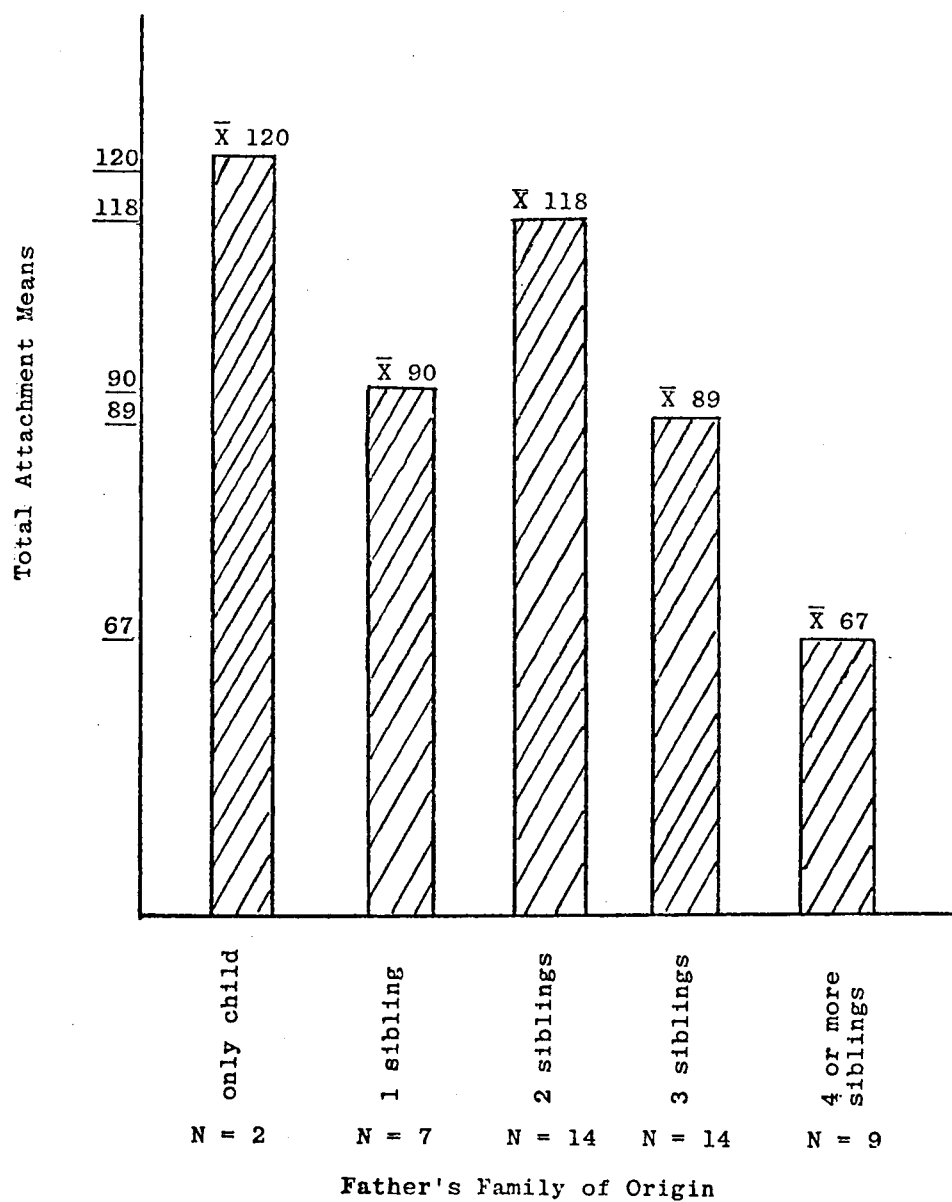


Figure 1. Mean Attachment Scores for Father's/Family Size

Table V
Correlation Coefficients—Infant State with Paternal Attachment

	State 1 & 2 Sleep	State 3 Drowse	State 4 Quiet Alert	State 5 Waking Activ.	State 6 Crying
Total Attachment	- .47	.27	.13	.28	.03
Probability	0.0009	0.06	0.37	0.05	0.79
Proximal Attachment	- .39	.13	.09	.34	.13
Probability	0.006	0.37	0.52	0.01	0.37
Distal Attachment	- .42	.34	.13	.15	- .06
Probability	0.003	0.02	0.36	0.30	0.67

Discussion

Presence at delivery clearly emerges as an important variable related to observable attachment behaviors of fathers of newborn infants. Hypothesis I—that there are differences in attachment between fathers who participate in the birth process and fathers who do not—is therefore accepted. There is, however, no statistical evidence to support Hypothesis II—that there are differences in attachment behavior between fathers who attend preparenthood classes and those who do not. Hypothesis II is therefore rejected.

Unfortunately group sizes were unequal and Group II ($N = 8$) was relatively small compared to Group I ($N = 21$) and Group III ($N = 17$). Despite the small number in Group II mean attachment scores were only one or two points different from scores in Group I. This might have been different had there been a larger number of cases in this group. It was not possible to randomly assign subjects to groups. Subjects self-selected since they themselves made the decision to attend classes and/or be present at delivery. It is therefore possible that there were other predisposing factors which caused them to make a particular decision.

Distal attachment was previously described as being comprised of inspection, verbalization and smiling behaviors. The behaviors are more social and less physical in nature. Distal attachment differences were greater between groups than either proximal or total attachment. The most significant single behavior was verbalization. Fathers who were present at delivery talked to their babies more. These fathers also

looked at their babies more. This behavior is significant in that fathers who were present at delivery were more engrossed in their infants than those who were not present at delivery. The fathers in Group I and II (present at delivery) looked at the infant longer. The fathers in Group III (not present at delivery) tended to be more distracted (e.g. watching T.V.) in the presence of the infant.

Occupation was also related to distal attachment. Fathers in blue collar jobs demonstrated significantly less social behavior with their infants. This is probably best explained by the sex role stereotyping which occurs to a greater extent in blue collar families. In other words, raising children is the woman's domain, whereas the man's job is to support the family. It is not known how many of the wives of these men worked outside the home. Education was also a factor in blue collar groups, the majority having no formal education beyond high school.

At least one observation in Group III was characterized by subject sensitization. The father, a truck driver, was holding the infant in his lap and rocking. Upon the appearance of the observer he immediately handed the infant to the mother and spent the entire time watching T.V. only glancing at the infant occasionally.

There was no significant difference between the three groups in proximal attachment behavior. Proximal attachment is more physical in nature and is comprised of the behaviors tactile response, holding and en face position. Fathers who were not present at delivery demonstrated no less proximal behavior than those who were present at delivery. The variables which did have a significant effect on proximal attachment

were family size and length of marriage. Fathers who were married longer demonstrated more proximal attachment but this variable did not correspond with the number of children. Many of these fathers were married several years and having their first child. It is possible that much of the difficult adjustment of early marriage had been resolved in these cases, thereby allowing for more attention to be focused on the infant. It is also probably more likely in the case of longer marriages that the child was planned and awaited with eager anticipation. These fathers were also older and more mature, their mean age being 33 compared with the sample mean age of 27.

There was an inverse relationship between family size and proximal attachment. The reason for this is unclear and one can only speculate as to why this relationship was demonstrated. The variables education, occupation, group, or age did not appear to be significant when combined with family size for these fathers. Perhaps fathers from large families do not interact as much with infants simply because there was a good deal of exposure to infants while growing up, and an additional infant in their lives, even though it is their own, is a rather ordinary event.

The manner in which fathers tend to hold their infants strongly suggests that there may be differences from birth in the ways infants are handled by mothers and fathers. The mother was more likely to hold the infant in her left arm when assuming the en face position and was more likely to adjust her own posture (turn her head) rather than adjust the position of the infant. Fathers on the other hand demonstrated no particular arm preference and were more likely to adjust the position of

the infant when assuming en face behavior. The father moved the baby in front of him to establish eye-to-eye contact. The mother, on the other hand, would turn her head to align with the infant's face thereby establishing eye-to-eye contact. Lamb and Lamb (1976) also note that mothers and fathers interact differently with infants. They specifically mention the father's "general influence on social competence" (p. 381), in regard to his relationship with his child. The demonstration of increased social interaction amongst fathers of infants in this study who were present at delivery supports the concept of the social nature of the father's relationship with his children. This social interaction would appear to have its origin very soon after birth, suggesting perhaps the instinctual nature of this social interaction.

Carrying this thought one step further, it could be that the essence of the maternal role is one which introduces the infant to a very personal and intimate relationship whereas the essence of the paternal role is one which introduces the infant to the broader spectrum of relationships found in the larger social realm.

Group Characteristics

Each group was characterized by a number of factors which are noteworthy but which were not specifically tested for significance. Group I (Present at delivery + classes) was characterized by a high number of first babies (95%) and the fathers were evenly represented in terms of occupation (see Table II, p. 23). Group I also had more (52%) youngest (< 24 hours old) infants.

Group II (present at delivery, no classes) was characterized on the other hand by the lowest (12%) number of first babies. Fathers in this group were predominantly (62%) blue collar workers. Since Group II had the same mean total attachment score as Group I, it is possible that child number for fathers is not a significant factor in terms of attachment behavior. In other words, fathers relate in a similar manner to every one of their infants and that parity, at least for fathers is not significant in the development of attachment behavior. Another interesting characteristic of Group II was the higher proportion (75%) of female infants. Perhaps fathers in this group demonstrated more attachment because there were more girls. It is interesting to note that Reiber (1976) in her study on nurturing behavior in fathers observed that fathers interacted more frequently with daughters and mothers interacted more frequently with sons. However, the evidence in regard to infant sex and parental interaction is still not conclusive. Parke and O'Leary (1975) reported that mothers and fathers touched male babies significantly more than female babies. On the other hand Rendina (1976) reported that infants sex had no bearing on the degree of parental involvement. Group II was also characterized by a higher proportion of awake infants (62%). In view of the negative correlations between sleeping infants and attachment behavior this is probably significant.

Group III (no delivery room, no classes) also had some unique characteristics worthy of mention. All three infants who were delivered by Caesarean Section had fathers in Group III. Prior to the onset of this study it was speculated by the researcher that fathers whose

infants were delivered by Caesarean Section would interact more with their infants simply because the mother, being postoperative and generally more uncomfortable, would interact less. This, however, did not prove to be the case.

Group III also had fewer (5%) awake infants. It is difficult to determine possible reasons for such a disproportionate number of sleepy babies in this group since the majority of the mothers of these infants did not receive large doses of analgesia during labor and only four out of seventeen received general anesthesia. One thought which comes to mind, however, is the high proportion (70%) of bottle-fed infants in this group. Is it possible that breast-fed infants, because of the difference in tactile stimulation, are actually more alert than bottle-fed infants?

CHAPTER V

SUMMARY AND CONCLUSIONS

The findings in this study indicate that being present at delivery is related to subsequent father-infant attachment behavior. The most significant individual behaviors were inspection and verbalization. Fathers who were present at delivery looked at their infants more and talked to their infants more.

Infant state apparently also affects the degree of attachment behavior demonstrated by fathers. There was an inverse correlation between sleeping behavior in infants and attachment behavior in fathers. So, sleeping infants did not elicit as much attachment behavior as did awake, alert infants.

Preparenthood classes appear to have little or no effect on attachment behavior of fathers with their infants. Eleven of the twenty-one fathers in this study who participated in preparenthood classes took a course in the Lamaze method of prepared childbirth. In a study done by Wente and Crockenberg (1976) fathers who had participated in Lamaze classes did not report easier adjustments after the birth of their child. This evidence suggests that preparenthood classes as they are currently being conducted might not meet the needs of men in their transition to the role of fatherhood.

The findings in this study support a growing research base which demonstrates that fathers are important and that they can and do relate

to infants in significant ways. In view of this evidence the importance of early father-infant interaction cannot be ignored. Fathers need to be supported and encouraged in their efforts to assume a responsible role as a parent. It is essential therefore for professionals working with families to recognize this need. It is essential also for institutions delivering care to perinatal families to make provisions for services which will provide families with the experience that they feel they need in order to make an optimal adjustment during this period. Some families will require more support than others. At this point in time it would not be recommended that all fathers be required to be present in the delivery room. All fathers who express any interest, however, should be encouraged. In the case of fathers who are not present at delivery it would be best to encourage father-infant interaction as soon as possible after delivery, preferably in the first hour. Since maternal-infant bonding is also occurring at this time, the new family—mother, father and newborn should be given ample time right after delivery to be together. These three need to be viewed as a whole and treated as such thereafter.

The lack of statistical significance for participation in preparenthood classes was surprising since most of the fathers who had taken classes expressed very positive feelings regarding this experience. The one point which was emphasized repeatedly was how the attitude of the hospital staff toward participation of fathers made the biggest impact on the couples' enjoyment of the experience.

The perinatal period is one which could be described as fragile in terms of a need for emotional support for parents and families. In a

time when kinship support systems are often far removed by distance, the task of support often falls upon a series of professionals. Because of the numbers of people providing care at this time the end result is often fragmented, resulting in a frustrating experience for the couples involved. Childbearing couples are becoming more and more aware of the positive effects of being involved in the birth process, of being awake and aware, and actively participating in the planning of their delivery and follow-up needs. It is essential to give couples at this time a sense of control over the events which are happening. Birth is an awesome experience but it need not be anticipated with fear. This is an area in which preparenthood classes play a vital role. The prepared couple usually experiences much less fear during the process of childbirth. For this reason, despite the findings of this study, it is stressed that preparenthood classes can play an essential part in the total adjustment for the perinatal family. Classes can provide a sense of control by reducing the fear which often accompanies childbirth. Active participation by the father before, during, and after birth also provides the couple with a shared experience and hopefully paves the way toward their developing a mutual support system. Fathers who participated in the birth process stated how good they felt regarding the experience and stressed that being included made them feel important. The majority of fathers who participated in classes also chose to be present in the delivery room. Thus it is possible that participating in classes may predispose fathers to be present at delivery. For these reasons, even though preparenthood classes may not contribute directly

to the development of father-infant attachment, they should still be considered a valuable support for perinatal families.

Taking evidence from this study and the reported lack of significance of Lamaze classes in total adjustment, it might be wise to take a look at the types of preparenthood classes currently being offered. Most of the classes are either specifically geared toward the process of childbirth or centered around the mother and the infant. Classes offered by hospitals tend to take place in large classrooms and are impersonal. In both cases the couple is "on their own" so to speak the minute they leave the hospital. If classes could be oriented to the perinatal period rather than just the prenatal they would probably better meet the needs of families during this difficult time. These classes should be kept small and informal and hopefully be comprised of couples at different stages of the perinatal period. This affords the transitional family the opportunity to discuss a variety of questions and problems with peers undergoing a similar experience. The emphasis of these classes needs to be oriented toward adjustments. There should be perhaps less emphasis on the caregiving role for fathers and more emphasis on his capacity for social interaction.

Observations of the social nature of fathers' behavior with their infants are not unique to this study. Other researchers, Rendina (1976), Lamb and Lamb (1976), and Mead (1965) have also noted the social nature of the interactions between fathers and infants. The social nature of the father-infant relationship has possible long range implications for the development of the child. Ainsworth, as recorded by Bowlby, states

in her comments on infant attachment that "the most important component of infant care is social interaction, not routine care" (1969, p. 319).

Recent observations of newborn infants indicate that they are far from passive in this interaction and behave in ways which elicit responses from adults. The fact that there were inverse correlations between the infant sleep state and attachment behavior indicates that the awake infant is indeed eliciting responses from those around him. Parents were especially interested in the infant's eyes. It is interesting too that newborn babies eyes are different from those of an older infant. The newborn's eyes are very dark and more shiny than those of an older baby. Perhaps there is a reason for this phenomenon in that it may be a means of eliciting responses and thereby a survival mechanism.

Most of the sleeping babies in this study had fathers in Group III, (no delivery room, no classes). Earlier it was speculated that perhaps there was a relationship between the method of infant feeding and alertness. In the case of infant alertness and fathers' attachment behavior it is difficult to establish causes. Perhaps the fathers demonstrated less attachment because the infants were sleeping. On the other hand, perhaps the infants slept more because the fathers demonstrated less attachment or stimulating behavior.

Evidence is growing to the effect that the period immediately surrounding birth is a time characterized by intense emotion and adjustment. It is a time characterized by extraordinarily dynamic events, the nature of which are just beginning to be explored. My

experience as a researcher observing these events was that I was involved in something, the scope of which was too complex to ever be recorded simply with pen and paper or even on film. There is an intense emotional high immediately following the birth of a child for all those involved in the process which seems to serve the purpose of insuring the survival of the infant. This phenomenon has also been reported by Klaus (1956) in his studies on maternal-infant bonding. The implications of this phenomenon are far reaching. If something very special is happening in regard to the attachment process right after birth, does the interruption of this process via separation have an effect on the future parent-child relationship? Could this effect on the parent-child relationship be a contributing factor in parenting disorders and child abuse? What is the best approach in handling the mother who wants to give her baby up for adoption? Or, on the other hand should adoptive parents be involved in the birth process?

Need for Further Study

The results of this study leaves many questions unanswered. There is evidence that participation in the birth process enhances the paternal infant bond but what of subsequent marital adjustment? Does this participation have a positive effect on the marriage; is there any difference in the quality of marriage for participating couples compared to those who have not had this experience?

Longitudinal studies are needed to determine significance of early father infant interaction. Considering the social nature of this interaction are there measureable effects on the child's I.Q., social

adjustment, personality, language skills, or psychosexual development? Another unanswered question is: do fathers interact differently with their infants than mothers? Can parents therefore serve in complimentary ways in contributing to their child's development?

The effects of infant state on parental interaction are still relatively unexplored and need to be examined more closely. There is also a need to look at the more complex interactions between mother, father and infant. It may be possible as has been suggested by Reiber (1976), that the father in his interaction with his infant takes many of his cues from the mother. Perhaps in this area women exert more power and the nature of a father's relationship with his infant is directly influenced by the mother. One final question concerns differences in infant responses which may correlate with the method of feeding. Is there a significant difference between the tactile stimulation of breast-fed infants and bottle-fed infants and could this result in a difference in alertness between these infants?

Implications for Practitioners

Many of the men in this study emphasized that the attitude of the hospital staff toward fathers was the most important factor in their enjoyment of the childbirth experience. They pointed out the need for an atmosphere in which fathers are accepted and included throughout the entire hospital stay. This atmosphere includes no rules regarding visiting for fathers. He may stay with his wife throughout labor and delivery and may see his wife and infant at any time convenient for him. He needs to be treated as though he belongs there and not as a visitor.

The attitudes of professionals toward the perinatal family need to be examined also. Most professionals can handle the usual supportive measures of imparting information and providing reassurance regarding doubts and fears for these couples. In addition to all this, a little enthusiasm goes a long way; for example being able to laugh or cry with a couple at the moment of birth. Childbearing couples need support from someone who is willing to get caught up and involved in the total experience. The attitude of the cold, aloof, detached "professional" is not appropriate here. These couples need to be allowed to feel unique and special and not part of a routine.

Ongoing, consistent and readily available communication between the family and staff is also a current need. Communication with these families is more than just conducting classes and passing out pamphlets. They need to know that a competent, knowledgeable person who is involved with their needs is available to discuss their plans for the perinatal period.

At the present time the majority of institutions in this country are offering a fragmented approach to perinatal care with staff divided between labor and delivery, postpartum and newborn nursery. Hospital administrators and Directors of Nursing need to reevaluate the way staffing of these areas is handled. Having to deal with a separate group of nurses in each of these areas can cause confusion and frustration. The staff in each of these areas tends to be specialized in their own particular area with very little knowledge of what happens in the other areas. In order to alleviate this, each couple when they

register to deliver at a given institution, should be assigned or allowed to choose a perinatal nurse clinician. Their nurse would start working with them during the prenatal period, through labor and delivery and postpartum. Her involvement would include home visits both before and after delivery.

After delivery the infant need never be separated from his parents and could "room in" immediately. The physician could then do his initial examination and evaluation of the infant in the presence of the parents. Also, in regard to the infant, the routine of instilling eye drops immediately after delivery needs to be reevaluated. In view of evidence presented thus far it would probably be better procedure to wait an hour before instilling the eye drops so that the infant can maximize the visual stimuli being presented. Since the newborn characteristically sleeps for 3-4 hours after this first hour the drops could be instilled as he/she is becoming drowsy.

In summary then, meeting the needs of perinatal families by professionals must be evaluated in terms of attitudes toward fathers, a personal, involved, enthusiastic approach which includes better communication, and a new look at the staffing assignments currently being practiced at most institutions.

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APPENDICES

APPENDIX A

CONSENT FORM FOR STUDY

I do hereby agree to participate in a study being conducted here at St. Mary's Medical Center by Ms. Sheila Bowen, R.N. The purpose of this study is to observe early family interaction.

Ms. Sheila Bowen, R.N. is not in any way affiliated with St. Mary's Medical Center but has obtained Administrative consent to conduct this study on their premises. St. Mary's Medical Center assumes no responsibility for any effects or problems which are a direct result of this study.

All information collected for this study is confidential.

Participants have the right to withdraw from this study at any time as they see fit.

Witness:

Signature:

Date: _____

APPENDIX B

minutes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
seconds	0	30	0	30	0	30	0	30	0	30	0	30	0	30	0	Total
Paternal Behavior																
Inspection																
Verbalization																
Smiling																
Tactile																
En Face																
Holding																
Total																
Infant State																
Sleeping																
Drowsy																
Quiet Alert																
Waking Activity																
Crying																
Additional Comments:																

APPENDIX C

INTERVIEW SCHEDULE

I.D. Number _____

1. Age (father) _____

2. Present Occupation _____

3. Educational Level (check one)

☐ Non high school grad.

☐ High school grad.

☐ Some college

☐ College grad.

☐ Post grad.

4. How many brothers and sisters do
you have? (enter number in box)

☐

5. Are you (check one)

☐ Oldest?

☐ In the middle?

☐ Youngest?

6. How long have you been married?
☐ (specify number of years)

7. Is this your first marriage?

☐ Yes (go to 10)

☐ No (continue below)

8. Do you have children by a
previous marriage?

☐ Yes (continue below)

☐ No (go to 10)

9. How many children do you have
from your previous marriage?

☐ Enter number

10. Many expectant parents express
a preference for either a girl
or a boy. Did you have such a
preference?

☐ Boy

☐ Girl

☐ Either

11. Was this pregnancy planned?

☐ Yes

☐ No

12. Is this your first child?

☐ Yes (go to 14)

☐ No (answer below)

13. Which child?

☐ (enter number in box)

14. Were you present during your wife's
labor and delivery?

☐ Yes

☐ No

15. Why?

I.D. Number _____

16. Did you take preparenthood classes?

☐ Yes

☐ No (go to 19)

17. Where did you take these classes?
(state briefly)

18. Were the classes helpful?

☐ Yes

☐ No

Non-Class participants only

19. Were you aware of the existence of
preparenthood classes?

☐ Yes (go to 20)

☐ No

20. Why did you choose not to
take the classes?

Clinical Information

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21. Sex of Infant

☐ Boy

☐ Girl

22. Apgar Scores (enter numbers)

☐ 1 minute

☐ 5 minutes

23. Length of Labor

☐ Hours

☐ Minutes

24. Method of anesthesia for delivery

25. Medications during labor. (list)

26. Method of Infant feeding.

VITA

Sheila McCormick Bowen was born in New York, New York, June 26, 1938. She is the oldest of eight children and the mother of four daughters. In June 1960 she received a Bachelor of Science degree in Nursing from Mount Saint Agnes College, Baltimore, Maryland. As a registered nurse she worked in a variety of hospitals including San Francisco General Hospital, Georgetown University Hospital, University of Virginia Hospital and University of Tennessee Hospital. In 1963 she completed postgraduate work in Nursing of Children at Children's Medical Center, Washington, D. C. Her working experience also included responsibilities ranging from staff nurse to supervisor of Emergency Room and Intensive Care at Georgetown University Hospital, Washington, D. C.

From 1974 to 1978 Ms. Bowen was employed by University of Tennessee Memorial Hospital and Research Center in the department of Labor and Delivery. She is currently a member of the Board of Directors for The Children's Center, Knoxville and the National Council on Family Relations. Ms. Bowen will be employed with the University of Tennessee, Knoxville, College of Nursing.

She is married to George Edgar Bowen, Director of Research, Graduate School of Planning, University of Tennessee, Knoxville.