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A Comparison of Three Approaches and the Effect on Observable Maternal Behaviors in Adolescent-infant Bonding

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A COMPARISON OF THREE APPROACHES AND THE EFFECT ON OBSERVABLE MATERNAL BEHAVIORS IN ADOLESCENT-INFANT BONDING

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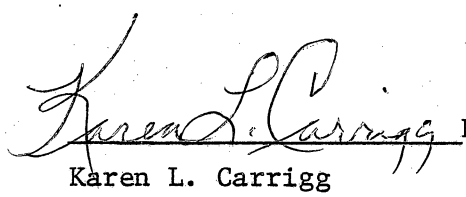
The person whose signature appears below certifies that this nonthesis project in her opinion is adequate, in scope and quality, as a project for the degree Master of Science in Nursing.



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Chapter 1

THE PROBLEM

Every year ten percent of American adolescent girls (mostly unmarried) get pregnant (Fisher, 1983, p. 70). Many factors contribute to the sexual contacts leading to illegitimate pregnancy such as the inability to resist pressure from the male, self differentiation from the family, and peer pressure.

Young unwed mothers are described as experiencing low self-esteem, humiliation, emptiness, and rage. An adolescent mother is likely to be ambivalent about her relationships with others and inconsistent in her behavior and attitudes. The self-concept may not be well-established in this age group (Balsam, 1969, p. 450).

Adolescent mothers are endeavoring to develop an affectional bond with their infant at the same time that they are developmentally differentiating from their parents. For this reason they may not be strongly bonded to their children or they may be ambivalent in their expressing of maternal behavior in the bonding process.

Perhaps one way to help facilitate maternal behaviors in the bonding process would be to increase the contact the adolescent mother has with her infant during the days immediately following delivery.

Background and Need of the Problem

Until about fifteen years ago, emphasis was placed on the process by which the human infant becomes attached to its mother. At that time there was an increase in the intensive studies of the mother-to-infant bonding (Marano, 1981, p. 61). It was observed that there was a high incidence of premature infants that had been battered and abused by their parents returning to emergency rooms.

The human baby must rely on the parents for physical and psychological survival. The mother-infant bond is the psychological basis for all the infant's subsequent attachments. The quality of this attachment will affect the quality of all future attachments (Wilson and Kneisel, 1979, p. 220).

The mother's associations with the birth experience and separation can affect her maternal behavior and her ability to develop an affectional bond with her infant. The consolidation of the affectional bond is facilitated by the physical presence of the baby and the responsiveness of the baby to the mother's behaviors and to her feelings (Peterson and Mehl, 1978, p. 1171).

Immediate postpartum contact with the newborn can facilitate bond formation, which in turn is supportive of confident loving maternal-care behavior that facilitates optimum infant development. The affectional bonding which is formed during this period can be seen in the quality and to a lesser extent quantity of the mother's social interaction (Parkes and Stevenson-Hinde, 1982, pp. 23, 79).

Animal studies have shown that there exists a special period immediately following birth in animals which may be critical to the bonding of the mother to the infant. Separation of the mother and infant animals after birth for a period as short as one to four hours has caused aberrant mothering behavior. In contrast, if they are kept together for the first four days and then separated on the fifth day for as long a period, the mother resumes the mothering behavior characteristic of her species (Klaus, 1972, p. 460).

Mothers of premature infants are slower in becoming acquainted with their infants. It takes the mothers several visits to move from stroking and touching extremities to touching the infants trunk. Mothers of full term infants do this naturally within minutes of first greeting their infants (Marano, 1981, p. 65). In a study by O'Connor extended contact in the first two days of life appeared to reduce parenting disorders, improve the child's health, and decrease the number of cases of child neglect (1978, p. 233). Although some studies show that early contact hasn't improved bonding beyond the first few months of life (McCall, 1980, p. 92; Senechel, 1979, p. 516), several previous studies suggest that early physical contact may effect the development of mother-to-infant bonding (Curry, 1979, p. 230; Lewis, 1980, p. 104; Stevens, 1978, pp. 17, 33).

A need that has not been fully explored is the area of adolescent mothers. Adolescent mothers, because of their developmental stage, need special attention and just as much support as their older counter-

parts. As these adolescents become mothers, they are faced with caring for a young infant who is just as dependent upon them as these adolescents are on their own family network (Kennell and Klaus, 1981, p. 128).

Many adolescent mothers have unrealistic expectations of a newborn, often imagining the infant to be like a doll or toy. Some adolescent mothers wish that the infant will fill her own needs. These wishes make it more difficult for the adolescent mother to accept the newborn's individuality (Wise and Grossman, 1980, p. 455). These young mothers tend to be an intolerant, impatient, insensitive group. They are irritable and prone to use physical punishment with their children (Babikian, 1971, p. 760; Lissovay, 1973, p. 22).

Adolescents who become mothers have been identified as a population at risk. Adolescent mothers are at an educational and socioeconomic disadvantage at the societal level. Although a few studies have been done on adolescent parenting, it has generally been assumed that these mothers and children are also at a developmental disadvantage (Wise and Grossman, 1980, p. 454). Since there is an increase in adolescent pregnancies, nurses are having to care for adolescents that have special needs and need a lot of support. Nurses need to understand how to better help the adolescent mother to bond with her infant and how nurses can intervene in this process thereby promoting optimal bonding and improved parenting skills.

The Problem Statement

The purpose of this study is to discover the effect of immediate

extended contact and immediate extended contact with role modeling on the adolescent mother's bonding behavior with her infant. This will be compared with the bonding behavior of adolescent mothers who have received routine contact with their infants following delivery. The results of such a study will contribute to the knowledge concerning the process by which the adolescent mother becomes better bonded to her infant. The information gained from such a study would have a two-fold significance. Nursing care given to both the adolescent mother and her infant during delivery and hospitalization could be improved. Adolescent mother-to-infant bonding could be strengthened which may lead to better mothering skills, positive parenting, and a positive emotional outlook which will enhance better parenting and adjusted children.

Objectives of the Study

This study will be concerned with the early bonding behaviors of adolescent primiparous mothers with their infants. Routine contact and interaction between mother and child during the first two days of life will be compared with more extended contact programs.

The objectives of the study are to:

1. Identify the activities through which nurses can better promote the bonding of the adolescent mother to her infant during the 48 hours following delivery.

2. Observe what differences in bonding behaviors will occur in the routine contact mother group, the extended contact mother group, and the extended contact with role modeling mother group.

Research Questions

This study will be based on the following research questions:

1. Is there a difference in the bonding behavior between the three mother groups (routine contact, extended contact, and extended contact with role modeling) when measured during hospitalization and after three and six months?

2. How can nurses better promote the bonding of the adolescent mother to her infant during the 48 hours following delivery?

3. What ways can nurses improve long term parenting skills by the interventions that can be implemented in the early postpartum period (while in the hospital)?

Theoretical Framework

The theoretical framework for this study is based on research that has been done in the areas of maternal bonding and developmental theory. An explanation of the concepts used in this study from each of these areas follows.

Maternal Bonding

When a mother first makes contact with her infant she examines the infant in a routine way. Rubin described this touching as progressing in a definite order (1963, p. 830). Klaus and Kennell found that if a mother is deprived of this touching, she may have problems developing affectional bonds which have started to form prenatally but may easily be altered after delivery (1970, pp. 1027-1029).

In the period immediately after delivery there is a maternal

sensitive period. This is considered to be an optimal time for a mother to form an affectional bond with her baby. The term sensitive period implies that an individual's characteristics can be more strongly influenced by a given event at one stage of development than at other stages (Parkes and Stevenson-Hinde, 1982, pp. 79-80). An adolescent mother having a baby, particularly her first child, can be thought of as an individual undergoing developmental change from adolescence to motherhood.

Immediate postpartum contact with the newborn facilitates rapid bond formation, which in turn is supportive of confident, loving maternal care behavior that facilitates optimum infant development. The affectional bond which is formed during this period can be seen in the quality and to a lesser extent quantity of the mother's social interaction (Parkes and Stevenson-Hinde, 1982, pp. 23, 79).

Several studies have suggested that early physical contact may effect the development of mother-to-infant bonding (Curry, 1979, p. 230; Lewis, 1980, p. 104; Stevens, 1978, pp. 17, 33). However, some studies have shown that early contact has not improved bonding beyond the first few months of life (McCall, 1980, p. 92; Senechel, 1979, p. 516).

Developmental Theory

There are several theories associated with human development. Each of these view humans as passing through various stages of development (Yussen and Santrack, 1978, p. 66). Each person needs to complete

each stage before he/she can successfully progress to the next stage. However, individual differences among people are so great that they enter and leave these stages at different times of life. People are often at one level in one area of development and in another level in another area (Papalia and Olds, 1978, p. 8). This is particularly true of the adolescent mother. Physically she's a mother but emotionally she is an adolescent and needs to deal with the issues of adolescence.

In adolescence there are four key interrelated issues: 1) formal operational thinking with its corresponding moral development; 2) physiological maturation with its corresponding heterosexual motivation; 3) separation from parents; and 4) the emergence of adult identity (Bloom, 1980, p. 42). Erickson defines the developmental task of adolescence as an identity crisis. The process of identity formation must be completed and the ego must integrate psychosexual and psychosocial factors and recently added identity elements with those already in existence. The struggle for identity imposes many conflicts (Wilson and Kneisl, 1979, pp. 205, 529).

Conflicts often develop as an adolescent moves from an undifferentiated person in the family that needs others to feel whole to a differentiated person that is emotionally mature, and has principles and beliefs of his or her own. Each small step toward the differentiation of self is opposed by emotional forces for togetherness. The

family system will move automatically to restore the family system to its equilibrium (Bowen, 1978, pp. 494-495).

By twelve or thirteen children have become expert at dealing with the issues of childhood. At pubescence, they feel torn between the security and lack of responsibility of childhood and the autonomy and esteem of adulthood. To become adults they must give up some of their attachment to their parents (Bloom, 1980, p. 42). The painful severance of this attachment or tie is a major task of early adolescence for the female. Their attempts to master this task contribute significantly to the sexual contacts leading to illegitimate pregnancy (Barglow, 1968, p. 683).

At the same time these adolescent mothers are attempting to sever their attachment to their parents they are having to form a bond with their own child. While these adolescent mothers are having to deal with the issues of adolescence and defining their adult role they are also having to cope with mothering and parenting issues and their role as a mother.

Theoretical Assumptions

For the purpose of this study it is assumed that:

1. Bonding is essential for healthy interaction between the adolescent mother and her infant.

2. Adolescent mothers are a population at risk to develop parenting disorders.

3. Pregnancy in an adolescent occurs during a time when the adolescent mother is self-differentiating from her own family.

4. Infant response to the mother, such as body or eye movements, is necessary for bonding to occur.

5. Parents exhibit species-specific responses to the infant when making contact.

6. A sensitive period exists during which close contact of the mother with the neonate may enhance the bonding process.

Null Hypothesis

When the observed bonding behavior frequencies are compared for the adolescent mothers for the 1) routine contact group, 2) the extended contact group, and 3) the extended contact with role-modeling group, there will be no significant difference in the mean frequencies and the mean scores of the three groups ($\alpha = .05$).

Variables

There are variables that can be controlled. The research sample will be delimited to adolescent (ages 15-17) primiparous mothers who are single, Caucasion, English speaking, no known health problems or chronic illness, no prenatal complications, no complications in labor or delivery, vaginal delivery, whose infant is full term, has an apgar of seven or better at five minutes, and a birthweight greater than 2500 grams. The total number of days hospitalized will be as nearly identical as possible within the three groups. The independent variable is the amount of contact that each group of mothers receives. The dependent variable is the

frequency of the adolescent maternal bonding behaviors.

There are extraneous factors that influence maternal behavior that could limit the findings. The factors are the mother's genetic background, level of emotional maturity, her relations with her family and the infant's father, the antepartal care and course of her pregnancy, her own mothering that she received as an infant, her experiences in her family, her experience with children, family support systems, educational level, and socioeconomic status.

Definition of Terms

Adolescent

Theoretical--A person between the ages of twelve and twenty experiencing considerable physical and psychosocial human development accompanied by conflicting ideas and feelings (Wilson and Kneisl, 1979, pp. 525, 811).

Operational--A person between the ages of fifteen and seventeen experiencing considerable physical and psychosocial human development accompanied by conflicting ideas and feelings (Wilson and Kneisl, 1979, pp. 525, 811).

Attachment

Theoretical--Attachment is the act of attaching or the condition of being attached. Attachment is also the fond regard or affection of one person to another person (Morris, 1980, p. 84).

Operational--Attachment is the emotional dependency of the infant to its mother which is specific and endures through time (Wilson and Kneisl, 1979, p. 219).

Bonding

Theoretical--Bonding is the forming of close, specialized human relationships (Morris, 1980, p. 150). Bonding is an interactive process in which two individuals commit themselves together (Wilson and Kneisl, 1979, pp. 219, 812).

Operational--Bonding is the interactive process in which the mother develops emotional ties to her infant.

En Face

Theoretical--Not delineated in research.

Operational--When the subject aligns her face in the same vertical plane as her infant she is en face with her infant.

Extended Contact

Theoretical--Extended contact is the coming together or relation of touching of two objects or surfaces that continues for a long period of time (Morris, 1980, pp. 286, 464).

Operational--In addition to routine contact the subjects will be given additional time for interaction with their infants. This extended contact will be comprised of one hour of interaction at delivery and 90 minutes of interaction every four hours at each feeding during the three

days following delivery.

Maternal Bonding Behavior

Theoretical--Bonding behavior is the manner in which a person acts or behaves when there is fond regard or affection for another person (Morris, 1980, pp. 84, 120).

Operational--Bonding behavior refers to the observed maternal behaviors that the subject does with her infant. These behaviors include smiling at her infant, encompassing, holding infant, affectionate touch, kissing infant, bubbling infant, rocking infant, patting infant, talking to infant, and looking en face, as measured by the Modified Maternal Behavior Rating Scale (Appendix A).

Role Modeling

Theoretical--The act of being a model portraying the characteristics and expected social behavior of an individual (Morris, 1980, pp. 843, 1125).

Operational--Three nurses with a Bachelor of Science in Nursing degree will assist the subjects in holding, bubbling, and responding to their infants' crying. The nurses will also reinforce appropriate developmental expectations for the infant up to six months of age.

Routine Contact

Theoretical--Routine contact is the prescribed and detailed course of action to be followed regularly in regards to the coming together or

relation of touching of two objects or surfaces (Morris, 1980, pp. 286, 1131).

Operational--Subjects who receive brief contact with their infants after delivery and visits of 30 minutes every four hours for feeding are considered to have had routine contact with their infants. This will be in accordance with the hospital's standard procedure for the contact of newborn infants and the mothers.

Chapter 2

REVIEW OF RELATED LITERATURE

Over the past forty years many researchers have studied the process by which the human infant becomes attached to its mother. Recently attention has been drawn to another significant factor--the events of the early postpartum days. This study reviews research that has been done in maternal bonding.

Animal Studies on Maternal Behavior

It has been found useful to study mothers and infants of many species during the neonatal period. Although certain aspects may vary from species to species, there are some overall trends and patterns which can be discerned. When found in a large number of species it is sometimes possible to extend the pattern to the human species.

In sheep, goats, and cattle when a mother is separated from her infant immediately following birth and then reunited later the mother may show aberrant mothering behavior, such as failure to care for her young and indiscriminate feeding of infants. If separated several days after birth and then reunited the mother returns to the maternal behavior characteristic of her species (Klaus and Kennell, 1976, pp. 23-28; Stevens and Mathews, 1978, p. 14). It seems then that there is a sensitive period immediately after delivery and that separation of the mother and her newborn infant can significantly alter maternal behavior. The effects of early separation vary with the species.

There are clear-cut species-specific maternal behavior patterns, such as nesting, retrieving, grooming, and exploring that have been observed in non-human mammalian mothers immediately after birth. In a study done with rhesus monkeys the female will explore her genitalia the last few days of her pregnancy. Just before birth she removes the mucous plug manually, then squats and helps to deliver the fetus. She immediately holds the infant close and licks it all over, ignoring it only briefly to eat the placenta. She avoids contact with others for several days. During the first month grooming and retrieving of the infant increase. During this time she spends a great deal of time cuddling and cradling the infant in her arms (Klaus and Kennell, 1976, p. 20; Bowlby, 1969, pp. 185-186). Therefore, for some period after birth animal mothers have characteristic orders and patterns of behavior. Ainsworth, after making careful observations in Uganda, suggested that there may be repeating sequences found in human mothers (Klaus and Kennell, 1970, p. 1019).

Maternal Behavior of the Human Mother

Components of the affectional bond have been pieced together from several sources: 1) clinical observations during medical care procedures, 2) naturalistic observations of mothering, 3) long-term indepth interviews by psychoanalysts of a small number of mothers, 4) structured interviews or observations, and 5) preliminary results of a small number of studies of the mothers of premature infants (Klaus and Kennell, 1970, p. 1020).

There are studies that have failed to replicate or support the value of early or extended contact. Early contact as defined in these studies is immediate maternal contact with the wrapped or unwrapped infant following delivery for a specified period of time. Extended contact has been defined as additional hours that the mother spends with her infant in the days immediately following delivery. The control mothers received the normal routine hospital care and were denied contact with their nude infants. The studies have been done on a population of mothers between the ages of 17 and 30 and have not dealt with adolescent mothers. The following is a review of some of these studies.

A study by Hopkins and Vietze studied primiparous mothers assigned to one of four treatment conditions: early contact; extended contact (rooming-in); both early contact and rooming-in; and routine care. Some group differences were evident in observations of maternal-infant pairs two days after delivery, but there were no differences in affectionate behavior. They also found that extended contact in the lying-in period did not have long-term effects (Lamb, 1982, pp. 764, 766).

The primiparous mothers in Carlsson's research group were given skin-to-skin contact with their infants immediately after delivery which the control group did not receive. No differences in maternal behavior were found at six weeks, even though differences favoring the early contact mothers were obtained during the first four days after delivery (Svedja, Campos, and Emde, 1980, p. 776).

Siegel studied black, unmarried women to attempt to assess the effects of both early and extended contact. Siegel found that early and extended contact did not affect the likelihood of reported abuse or the utilization of health care services. Contact thus appeared to have a trivial effect on maternal behavior (Lamb, 1982, p. 766).

Taylor observed two groups of middle-class mothers who were allowed different amounts of exposure to their infants after delivery. The results of the study showed that early contact had no effect on maternal perceptions of infant temperaments at age 8 months and had no effect on the security of attachment at age 12 months (Lamb, 1982, p. 766).

Svedja's research group studied thirty primiparous mothers between the ages of 17 and 30. The control group mothers received routine hospital care. The extra-contact group received early skin-to-skin contact with their infants immediately after delivery and extra-contact during feedings. There were no differences in maternal behavior obtained on 28 discrete response measures or on pooled sets of individual measures (1980, p. 777).

Although several studies have shown that early contact hasn't improved bonding beyond the first few months of life, several studies suggest that early physical contact may affect the development of mother-to-infant bonding. These studies have been done on a population of mothers between the ages of 17 and 30.

In a study done by Peterson and Mehl it was found that the birth experience and separation are important variables in maternal bonding. The mother's experience during labor and delivery can be either a period of crisis or creative stress. The mother's associations with labor and delivery will affect maternal behavior and affectional beliefs, which is then consolidated by the physical presence of the baby and the responsiveness of the baby to the mother's behaviors and feelings. The presence of the baby provides the concrete reality to the fantasized object, and both releases and concretizes maternal bonding. When the behavior of a mother is disrupted before consolidation has been completed, the behavior will be expressed when in a situation that elicits that behavior but it will be inappropriate. The sensitive period that Klaus discussed can, therefore, be seen as the period of consolidation of behavior (1978, p. 1171).

In a study conducted in Guatemala three groups were compared: routine care mothers (first contact with clothed infant at 12 hours); mothers who had 45 minutes of skin-to-skin contact 12 hours postpartum; and mothers who had 45 minutes of skin-to-skin contact immediately after birth. The mothers in the early contact group engaged in more en face behavior and thus seemed more affectionate than mothers in the control groups (Lamb, 1982, p. 763).

In a series of studies by de Chateau and Wiberg, 22 primiparas were allowed 15 minutes of extra skin-to-skin contact with their infants

shortly after delivery. These mothers were compared with 20 primiparas who received routine treatment which involved no skin-to-skin contact. The results showed that the early contact mothers kissed and held their three-month-old infants more in the en face position than the mothers in the control group. Also, the infants in the early contact group smiled/laughed more and cried less than the infants in the control group. At one year post-partum the early contact mothers held their infants closely more often, engaged in more non-functional touching and talked more warmly than did the control mothers (Lamb, 1982, p. 765).

Grossman studied 54 middle-class mothers in which the control group received neither early or extended contact; a second group received early contact starting within the first hour after birth; a third group received 5 hours of rooming-in each day; and a fourth group had early and extended contact with their infants. The main effect of early contact was associated with the amount of tender touch of mothers with planned pregnancies, who showed significantly more tender touch behavior. Also, the mothers with early contact cuddled more than the control mothers. After 8-10 days there was no significant difference in the number of times the mothers in the groups touched their infants (1981, p. 158).

The effects of early contact have often been subtle. In a study by Klaus and Kennell, marginally significant differences between groups of mothers have been obtained but only when several behaviors were combined (Svedja and Others, 1980, p. 776). Several additional studies

suggest that early physical contact of mother-to-infant may affect the development of the bonding process (Curry, 1979, p. 230; Lewis, 1980, p. 104; Stevens, 1978, pp. 19, 33).

Studies have not clarified how much of the effect may be due to the first hours and how much to the first days, but it would appear that additional contact in both periods may help mothers to become attached to their infants. Although there is increasing evidence from studies that there is a sensitive period that is important to the bonding experience, this does not imply that every mother develops a close tie immediately after the initial contact with her infant (Klaus and Kennell, 1982, p. 56).

Progressive Bonds in Maternal Behavior

There appears to be a period of courtship between a mother and her infant in which social interaction and communication develops. When a mother is first presented with her infant she makes contact in a routine way. Rubin describes this contact as occurring in stages. In the fingertip stage the contact is exploratory in nature and the involvement is tenuous. The stage of commitment is characterized by the mother searching for a sign of response from the baby that there is mutuality for a progressive relationship. The next stage is superimposed on the others. There is a difference in the manner of touch. The mother uses the whole hand for maximal contact with the infant's body (Rubin, 1963, p. 830). Mothers often sneak looks under the blankets if they are not permitted to unwrap the baby. "Typically, it is difficult for them to

touch before they have seen, to care for before they have touched." (Rubin, 1961, p. 686).

Klaus and Kennell found that if a mother is deprived of this touching, she may have trouble developing the maternal bonding that began during pregnancy but may easily be altered after delivery (Klaus and Kennell, 1970, pp. 1027-1029).

Readiness of Neonates and Adults for Interaction

An infant is born with many of its senses already functioning. Infants have the ability at birth to attend and follow. It will rotate its head to follow the movements of objects (Klaus and Kennell, 1970, p. 1027; Herbert, 1979, p. 33). It can see, focus, follow, and exhibit visual preferences. Infants choose to look at faces over other objects (Marano, 1981, p. 60; Lozoff and Others, 1977, p. 2). The visual attentiveness of the infant seems to matter the most to the parents. Mothers express an intensive interest in their infants' eyes along with the ability to attend and follow the first hour after birth (Marano, 1981, p. 65: Klaus and Others, 1972, p. 463). Mothers will shift themselves with the infant so that they have eye-to-eye contact with it (Marano, 1981, p. 66; Curry, 1979, p. 230). McCall states that mothers felt that they had really met their infants when they peered into their infants' eyes (McCall, 1980, p. 92).

Infants have the capacity at birth to interact non-verbally with

the speaking voice of the caregivers. They prefer the sound of the human voice. This responsiveness may encourage parental verbal interaction (Lozoff and Others, 1977, p. 2; Marano, 1981, p. 60). The infant controls its mother through its cries, glances, vocalizations, and expressions. Newborn infants respond more to the female than the male voice and rapidly develop a preference for it through her caregiving and interaction (Lozoff and Others, 1977, p. 3).

It has been shown that the human infant is in a state of alertness and heightened awareness after birth (Senechel, 1979, p. 511; Jones, 1981, p. 194). Because of observations done over the last 15 years certain investigators have called attention to the importance of this "sensitive" period.

In a tightly controlled study of 28 primiparous mothers and their full-term infants the results showed that the extended contact mothers were more likely to stand near their infants during physical exams. They also showed significantly more soothing behavior, engaged in more eye-to-eye contact and fondling, and were more reluctant to leave their infants with someone else (Klaus and Others, 1972, pp. 462, 463).

Barnett has done a long-term study in which the early contact mothers began caring for their infants within the first five days following birth. The late contact mothers are only allowed visual contact with their infants until after the first 20 days. In a follow-up one month after discharge the late contact mothers held their babies differently, changed position less, burped less, and were not as skillful as the early contact mothers (Klaus and Kennell, 1970, pp. 1022-1023).

Winters did a small but carefully controlled study on early contact. The mothers in which early contact was allowed reported increased success in breast feeding (Senechel, 1979, p. 512, Stevens, 1978, p. 16).

Klaus and Kennell studied two groups of mothers in Guatemala in 1974. The only difference in the two groups was the early contact of one group of mothers, as opposed to a delay of 24 hours before maternal-infant contact in the control group. It was found that there was greater success in breast feeding and less incidence of infection in infants of the early contact mothers (Stevens, 1978, p. 16).

O'Connor and Others have done a long-term study at Nashville General of 301 families. The results so far suggest that contact between parents and newborns during the first two days following delivery may be important to the future health and well-being of the child (1978, pp. 233-234).

In contrast to these findings, a study by Senechel revealed that mothers were found to prefer early maternal-infant contact but that it appeared to make no objective difference in long term effects on the maternal-infant relationship (1979, p. 515). In a study by Curry there was no significant difference between the mothers and infants skin to skin contact and those mothers with wrapped infants when they were compared 36 hours after delivery and three months after delivery. In other studies in which maternal bonding behaviors increased after skin to skin contact, it has been suggested that it may have been the amount and

timing of the contact which accounted for the observed differences (1979, pp. 230-232).

Adolescent Development and Mothering Behavior

There are several theories associated with human development. Each of these views humans as passing through various stages of development (Yussen and Santrack, 1978, p. 66). Each person needs to complete each stage before he/she can successfully progress to the next stage. However, individual differences among people are so great that they enter and leave these stages at different times of life. People are often at one level in one area of development and in another level in another area (Papalia and Olds, 1978, p. 8). This is particularly true of the adolescent mother. Physically she's a mother but emotionally she is an adolescent and needs to deal with the issues of adolescence.

In adolescence there are four key interrelated issues: 1) formal operational thinking with its corresponding moral development; 2) physiological maturation with its corresponding heterosexual motivation; 3) separation from parents; and 4) the emergence of adult identity (Bloom, 1980, p. 42). Erickson defines the developmental task of adolescence as an identity crisis. The process of identity formation must be completed and the ego must integrate psychosexual and psychosocial factors and recently added identity elements with those already in existence. The

struggle for identity imposes many conflicts (Wilson and Kneisl, 1979, pp. 205, 529).

Conflicts often develop as an adolescent moves from an undifferentiated person in the family that needs others to feel whole to a differentiated person that is emotionally mature, and has principles and beliefs of his or her own. Each small step toward the differentiation of self is opposed by emotional forces for togetherness. The family system may be disturbed when a member moves toward a slightly higher level of differentiation, and the family system will move automatically to restore the family system to its equilibrium (Bowen, 1978, pp. 494-495).

A major task of early adolescence for the female is the painful severance of the tie to the mother. Adolescents are ill equipped for this crucial step in their life. Their attempts to master this task contribute significantly to the sexual contacts leading to illegitimate pregnancy (Barglow, 1968, p. 683). Sexual relations frequently occurred in response to the inability to resist pressure from the male (Furstenberg, 1976, p. 150). Pregnancy was often a "byproduct" of these sexual relations. In one study there were several instances of a girl purposely getting pregnant because her best friends were pregnant (Balsam, 1969, p. 448).

Young girls who became pregnant and then mothers consistently experienced greater difficulty in realizing their life plans. A gaping

disparity existed between the goals that had been articulated by the adolescent mothers during their pregnancy and their actual experience following delivery (Furstenberg, 1976, p. 162).

Most young mothers have not seriously considered the prospect of raising a child and are not prepared for the responsibility. The wish to have a baby is so isolated in their minds from the fact that the baby will grow up. Child care ties them down, interferes with their schooling and hopes for self-improvement. Their needs for love and care are further frustrated and resentments deepened. A girl's chance of developing an adequate, self-sustaining personality structure amidst these conflicts is small (Balsam, 1969, p. 451). Some girls relate to their babies on the level of a five year old and tend to see their infants as a live doll. They play with the baby as a doll and are content to leave the greater responsibility of caring for the baby to their mothers (Balsam, 1969, p. 451; Crumidy, 1966, p. 1250). Furstenberg stated that a large number of young mothers reported that another individual shared with them the responsibilities of caring for the child (1976, p. 161).

The psychiatric studies of young unmarried mothers emphasize severe early deprivation, severe disturbance of family relationships and impulsive response to intra-familial and intra-psychic pressures. These factors often contribute to incompetence in the new mother role. In most accounts of young unwed mothers they are described as experiencing low self-esteem, humiliation, emptiness and rage (Balsam, 1969, p. 450). A school age mother is likely to be ambivalent about her relationships

with others and inconsistent in her behavior and attitudes. The self-concept may not be particularly well-established in this age group.

While most mothers are somewhat insecure in the parenting role with their first child the young mother is even more insecure. She loves her child and wants to care for it well but at the same time she does not want to be cut off from her friends who are caught up with adolescent pursuits that are antagonistic to childbearing (Williams, 1974, p. 72).

Special attention should be given to a mother under 17 and having her first baby (Valman, 1980, p. 309). Pregnant adolescents need just as much support as their older counterparts. As these adolescents become mothers, they are faced with caring for a young infant who is just as dependent upon them as these adolescents are on their own family network (Kennell and Klaus, 1981, p. 128).

Young mothers frequently have false expectations of normal infant developmental behavior. These mothers tend to be an intolerant, impatient, insensitive group. They are irritable and prone to use physical punishment with their children (Lissovay, 1973, p. 22). Often they express pride in the infant one moment only to express a flash of resentment the next moment (Barglow, 1968, p. 677). In a study by Williams some of the younger mothers were not particularly strongly attached to their children or were at least ambivalent in their attachment (1974, p. 74).

Adolescent mothers have been observed to prefer physical rather than visual or auditory stimulation in their interaction with their infants.

Few studies have been done on adolescent mothers and their parenting skills. In another study by Wise and Grossman the adolescent mothers whose infants showed greater motor maturity felt more bonded to their infants and the adolescent mothers of infants who showed better adjustment felt less depressed (1980, p. 463).

Summary

A summary of the literature review suggests that for human beings, as for other mammals, the amount and timing of the contact with the newborn in the hours and days after birth influence early maternal bonding. The infant's state of increased arousal may also be a factor in early contact. Although the mechanisms by which early and extra contact affect the mother-infant relationship are not yet understood, these studies indicate that the brief routine bodily separations of healthy mothers and infants may interfere with early maternal affection and responsiveness.

Chapter 3

RESEARCH METHODOLOGY AND DESIGN

This quasi-experimental study seeks to determine what relationship exists between adolescent mother-to-infant bonding and routine contact, extended contact, and extended contact with role modeling.

Research Design

The level of inquiry is causal-hypothesis testing. A quasi-experimental design will be used with a correlative component feature represented as follows:

X_1	O_1	O_2	O_3	O_4
X_2	O_{11}	O_{12}	O_{13}	O_{14}
X_3	O_{21}	O_{22}	O_{23}	O_{24}

This is a convenience sample with the groups systematically assigned where X_1, X_2, and X_3 are the treatment varieties (routine contact versus extended contact and extended contact with role modeling), and O_1 through O_{24} are the bonding behavior observations. Analysis will be made of the differences between each set of observations in each group (O_1 and O_{11} and O_{21} etc.).

Setting

The adolescents who will participate in this study will be patients at a community hospital in Southern California. The surrounding

community is urban, has a population of about 260,000 persons, two liberal arts colleges, one community college, and three major hospitals.

Sample

The sample will be a non-random convenience sample consisting of the first 75 adolescent prenatal patients who meet the specified criteria. It is believed that this sample is typical of demography as found in Southern California. The investigator will review the charts of the prenatal clinic to select a minimum of 75 pregnant adolescents who are at 32 to 36 weeks of gestation and fit the prenatal criteria for eligibility. The investigator will then meet with these adolescents individually at the times scheduled for their next prenatal appointment in a room designated for the investigator's use. Twenty-five subjects will be systematically assigned to Group A, B, or C on an alternating basis (every other one) as they are interviewed. If the subject is planning to breastfeed she will be assigned on an alternating basis to each group to match the groups as evenly as possible. During the interview the investigator will discuss with each subject the treatment the subject will receive and the oral explanation (see Appendix C) of the study and have the consent form signed (see Appendix D). A color will be assigned to each group and the subjects' charts will be flagged with the color of the group as they are assigned to the three groups. The treatment that each subject will receive will be typed on the colored label that is attached to the subject's chart. This will allow the nurses and physicians on the involved units to identify the group and the treatment to be given to the subject. The investigator

will call the delivery suites of the hospital daily to check if any of the subjects have delivered. After delivery those subjects which meet the post delivery sample criteria will remain in the sample. Those who receive routine contact with their infants will comprise Group A and will be the control group, those who receive extended contact with their infants will comprise Group B, while those who receive extended contact with their infants and role modeling will comprise Group C.

The prenatal sample criteria will be as follows:

1. Adolescent (ages 15-17) primiparous females.
2. Single.
3. Caucasion.
4. English-speaking.
5. No known health problems or chronic illness.
6. No prenatal complications.
7. Intend to keep their infant.

Those who give consent to participate in the study prenatally will remain in the sample if the following criteria is met following delivery:

1. No complications in labor or delivery.
2. Vaginal delivery.
3. Single birth.
4. Full-term infant.
5. Infant has an apgar of seven or better at five minutes.
6. Infant has a birthweight greater than 2500 grams.

A selective dropout will be made after the infant has been delivered in order to keep the subjects as close to the criteria as possible. The criteria for the dropout will include:

1. Hospital stay of more than three days.
2. Blood loss of subject necessitating blood replacement.
3. Puerperal infection as measured by a temperature elevation of above 100.4°F for 24 hours exclusive of the first 24 hours after delivery.
4. A condition that warrants subject's separation from the infant for more than 6 hours.
5. Congenital malformations or structural deformity in the infant.
6. Placement of the infant in the neonatal intensive care unit.

The recorded variables of the study subjects will be as follows:

1. Intrapartal medication.
2. Breast or bottle feeding the infant.
3. Educational level.
4. Days hospitalized.
5. Age.

(See Appendix B).

The following are the confounding variables:

1. Subject's perception of birth experience and parenting.
2. Level of emotional maturity of subjects.

3. Quantity and quality of past and present experiences with children.

4. Relationship with parents.

5. Presence and/or quality of the relationship with the infant's father.

6. Presence and quality of family and other support systems.

Instrumentation

The Maternal Behavior Rating Scale was developed by Brenda Y. Smith, R.N., M.N. for the observation of mothering behavior. There is no instrument copyright. The instrument has been used with more than 200 postpartum patients, both primigravida and multigravida. The tool was also used in a study which involved patients with a diagnosis of hypervalinemia. No interrelator reliability data was provided. Since the Maternal Behavior Rating Scale does consist of ten directly observable behaviors, the interrelator reliability should be high. The score on the instrument means that the indicated behavior is or is not present, not necessarily the quality of the behavior. Additional evidence regarding construct validity is needed before the total score can have real meaning (Ward and Lindeman, year not given, pp. 734-736).

The Maternal Behavior Rating Scale will be used to observe the bonding behavior of the adolescent mothers. The two activities of suckling and cleaning were deleted. Suckling was deleted since the observations will be made during feedings. Since cleaning is not as likely to occur during a feeding it was eliminated. The tool has been modified to

include two activities that are indicative of bonding behavior. Smiling and encompassing were added to the scale based on reading done by the investigator. The specific activities that will be observed in the Modified Maternal Behavior Rating Scale are smiling at infant, encompassing, holding infant, affectionate touch, kissing infant, bubbling infant, rocking infant, patting infant, talking to infant, and looking en face.

The scoring of the tool has also been modified so that the number of times an activity occurs in the observation period can be recorded. Behaviors will be tallied and comparisons of the means for each behavior may be made between Group A, Group B, and Group C (see Appendix A).

Protection of Human Subjects

Permission for the study will be obtained from the private medical physicians, the nursing administration of the hospital, and the head nurse on units to be involved in the study, after approval by Loma Linda University School of Nursing Research in Nursing Committee. The subjects will be contacted in the prenatal clinic and an informed consent (Appendix D) obtained from them and the private physician.

The informed consent will state the purpose of the study, the treatment each group will receive, and that they will be observed during infant feedings while in the hospital and at three months and six months during a home visit. The consent will also state that there is no risk to the mothers or infants and that all information obtained will be treated in a confidential manner.

Treatment

As discussed earlier the sample consists of a control group and two treatment groups. The treatment of each group will be as follows:

Group A, the control group, will receive routine contact with their infants during the first two days following birth. This contact will consist of brief contact with their infants shortly after birth and visits of 30 minutes with their infants every four hours for feeding during the two days following delivery.

Group B will receive extended contact with their infants during the first two days following birth. The extended contact will be comprised of one hour of interaction at delivery and 90 minutes of interaction every four hours at each feeding during the two days after delivery.

Group C will receive role modeling in addition to the same extended contact as Group B. The role modeling will be composed of three nurses with Bachelor of Science in Nursing degrees assisting the subjects in holding, bubbling, and responding to their infants' crying. The nurses will also reinforce appropriate developmental expectations for the infant up to six months of age. These subjects will also receive extended contact which is comprised of one hour of interaction at delivery and 90 minutes of interaction every four hours at each feeding during the two days after delivery.

A meeting will be held for the nurses on the units involved to

explain the treatment that each group of subjects and infants will receive, to explain the color coding of the charts, and to enlist their cooperation in ensuring that each subject will receive the correct treatment. Three nurses with Bachelor of Science in Nursing degrees will be chosen and an additional one hour training period will be provided so that they can demonstrate the role modeling that will be done with the Group C subjects and to review the developmental expectations of an infant up to six months of age. Arrangements will be made with the head nurse to have these three nurses assigned to the Group C subjects.

Data Collection

The subjects in all three groups will be observed twice during their hospital stay. The investigator will observe the subjects and their infants during one feeding for 30 minutes on the first and second days following delivery. The investigator will sit in the subject's room across the room from the subject by the door. The observations will be made when there is no family, visitors, or staff present. Hospital staff will be requested to help prevent interruptions during the thirty-minute observation period and a "Do Not Disturb" sign will be posted on the door of the subject's room. The investigator will use the Modified Maternal Behavior Rating Scale to record the observed activities.

At three and six months post delivery the investigator will contact the subjects by phone to arrange a time for a home visit in the subject's home during an infant feeding. The time chosen for the home

visit will be within one week before or after the stated time and will be when there will be no visitors or family present. During the home visit the investigator will observe the activities of the subject and her infant during a feeding for 30 minutes. The observed activities will be recorded on the Modified Maternal Behavior Rating Scale.

Pilot Study

The purpose of this study is to compare maternal bonding behaviors of adolescent primiparous mothers with their infants. A pilot study will be conducted on three patients to detect any flaws in methodology and to test the tool.

Analysis of Data

The means for each of the maternal behaviors will be compared between Group A, Group B, and Group C.

The comparisons of the results for Groups A, B, and C will be made through analysis of variance (ANOVA) for direct differences and correlated interactions. This method has two advantages:

1. It decreases the possibility of distortion of the probability level.
2. It is more convenient to perform one ANOVA than several t tests.

The null hypothesis for statistical analysis is that the obtained mean of differences between Groups A, B, and C is zero. That is, the

obtained difference mean is likely to occur with a probability greater than .05. Analysis of variance will be used to determine if the null hypothesis can be rejected in the direction of the Group B and/or Group C scores.

Methodological Assumptions

For the purpose of this study it is assumed that:

1. Attachment behavior can be observed and measured objectively.

2. Six months is an optimum time to evaluate the mothers' bonding behavior according to developmental theory.

3. The population that the sample is selected from is typical of demography as found in Southern California.

4. The selection process will random out and equalize the possible intervening variables in the three groups for normative interpretational purposes.

5. ANOVA will show direct differences and correlated interactions.

Limitations

The following may be considered limitations of this study:

1. The nursing care provided to the subjects may reduce the validity of the study findings.

2. The observation of maternal behavior has subjective elements which could possibly be biased but this will be offset by the use of a checklist.

3. There may be confounding variables which influence the findings of this study.

4. The research tool has not been standardized and may limit the validity of the findings.

5. A bias factor may occur due to the investigator having knowledge of which of the three groups the subjects are assigned.

Summary

This is a quasi-experimental study with a non-random convenience sample.

The adolescents (ages 15-17) who will participate in this study will be patients at a community hospital in Southern California. The subjects will be systematically assigned to Group A, B, or C on an alternating basis as they are interviewed until a sample size of 75 is reached.

The subjects in Group A will receive routine contact with their infants during the first two days following birth. Group B subjects will receive extended contact with their infants during the first two days following birth. Group C subjects will receive role modeling in addition to extended contact with the infants the first two days following birth. The subjects and their infants will be observed during one feeding on the first and second day following delivery. During a home visit at three and six months the investigator will check activities in mother-infant bonding behavior.

The means for each of the maternal behaviors will be compared between Group A, Group B and Group C. The comparisons of the results for Group, Group B, and Group C will be made through analysis of variance (ANOVA) for direct differences.

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APPENDIXES

APPENDIX A

MODIFIED MATERNAL BEHAVIOR RATING SCALE

MATERNAL BEHAVIOR	INCIDENTS NOTED	TOTAL
Looking en face		
Talking		
Patting		
Holding		
Rocking		
Encompassing		
Affectionate touch		
Smiling		
Kissing		
Bubbling		
Total		

The selected behaviors with definitions are as follows:

Looking en face: mother focuses eyes on infant's face
Talking: mother makes verbal statements to infant
Patting: mother strokes and caresses infant with her fingers and hands
Holding: mother positions infant close to her body with arm around infant's body (cradle hold)
Rocking: mother sways infant backward and forward in her arms

Encompassing: mother surrounds infant's body with hers forming a protective envelop

Affectionate touch: mother embraces and touches infant softly, especially on the face

Smiling: mother smiles at her infant as she gazes and cares for it

Kissing: mother touches or presses her lips on infant's face, arms, hands, or body

Bubbling: mother helps infant expel air from stomach by rubbing back in any position

Utilization of tool:

1. An infant feeding on the first and second day following delivery will be observed.

2. A point will be given each time a behavior is observed during the observation period. The points will be tallied and totaled.

This has been adapted from: Smith, Brenda Y. Maternal Behavior Rating Scale. Hyattsville, Maryland, U.S. Department of Health, Education, and Welfare.

APPENDIX B

SCREENING DATA

MOTHER

1. Date of Screening_____

2. Delivery Date_____

3. EDC_____ 4. Primiparous _____yes _____no

5. Breastfeed _____yes _____no 6. Age_____

7. Marital Status_____ 8. Years of school completed_____

9. Comprehends, reads, speaks English _____yes _____no

10. Medical complications of pregnancy? _____no _____yes

11. Medical complications of labor? _____no _____yes

Obstetrical complications of labor? _____no _____yes

12. Type of delivery _____spontaneous vag.
_____elective outlet forceps
_____vacuum extractor
_____other_____

13. Length of labor _____hrs. _____min.

14. Intrapartal medications:
0 Received >20 mg. Nisentil or
>50 mg. Demerol
1 Demerol _____ mg. (≤ 50 mg.)
2 Demerol _____ mg. (≤ 50 mg.) plus
anti-anxiety agent_____
3 Nisentil_____ mg. (≤ 20 mg.)
4 Nisentil_____ mg. (≤ 20 mg.) plus
anti-anxiety agent_____
5 Epidural anesthesia
6 Epidural plus_____
7 No medications received

15. Breastfed in recovery _____yes _____no

16. Postpartum contraindications _____no _____yes_____

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INFANT

1. Gestational age _____weeks 2. Birth weight_____lbs._____oz.

3. Apgar: 1 min._____ 5 min._____

4. Physical Exam: _____WNL _____Other_____

5. Neuro Exam by Physician_____ WNL_____ Other_____

_____Met criteria, subject #_____ _____Did not meet criteria

Assigned to 1____Group A 2_____Group B 3_____Group C

APPENDIX C

ORAL EXPLANATION TO SUBJECT

I am Joreen Buttner, a graduate student in Psychiatric/Mental Health Nursing. I am currently doing a study to learn more about adolescent mothers and their newborn babies and how the mothers and infants react to one another. I would like to have you participate in this study. I feel that this study will help nurses to know how to give more help to first-time adolescent mothers and their infants. In that way your participation may be of benefit to other adolescent mothers and their infants.

Participation involves brief contact with your infant shortly after birth and visits of 30 minutes every four hours for feeding and a 30 minute observation of you and your infant during a feeding time the first and second days following delivery and a 30 minute observation of a feeding during a home visit at three months and six months. You will be told of any changes in the nature of the study or in the procedures just described.

This study will involve no known risk to you or your baby emotionally or physically. If you have any questions regarding this study you may contact the patient representative, _____, of the hospital. Any information you give will be held in strict confidence and your name will not be used in my report or in any articles I may publish as a result of this study.

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You will not be paid any money for participating in this study and there is no cost to you for your participation.

Your agreement to participate in this study is voluntary and may be withdrawn at any time without resulting in any prejudice towards you or loss of benefits to which you are entitled.

If you are willing to participate in this study, please sign this consent form.

The oral explanation to the subject as written is appropriate for Group A. The second paragraph should be changed as follows for Groups B and C.

Group B--Participation in this study will involve spending one hour with your infant immediately after birth and 90 minutes with your infant every four hours for feeding. A 30 minute observation of you and your infant will be made during a feeding the first and second days following delivery and observation of a feeding during a home visit at three and six months.

Group C--Participation in this study will involve spending one hour with your infant immediately after birth and 90 minutes with your infant every four hours for feeding. You will also receive help from a nurse on how to care for your baby. A 30 minute observation of you and

your infant will be made during a feeding the first and second days following delivery and observation of a feeding during a home visit at three and six months. The potential benefit to you and your baby is that you may get some new information about your infant's growth and development.

APPENDIX D

LOMA LINDA UNIVERSITY

Observation of Adolescent Mothers
and Their Infants During Feeding

CONSENT FORM

I have been told that:

This is a study to learn more about first-time adolescent mothers and their newborn babies and how the mothers and infants react to one another. This will provide information regarding possible ways nurses may be of help to them.

Participation in this study will involve brief contact with my infant shortly after birth and visits of 30 minutes every four hours for feeding and a 30 minute observation of me and my infant during a feeding the first and second days following delivery and observation of a feeding during a home visit at three and six months.

I will be informed of any changes in the nature of the study or in the procedures described above.

There is no known risk to the emotional or physical well-being of myself or my baby as a result of participation in this study, but if I have any questions regarding this study I may contact the patient representative, _____, in the hospital.

Participation in this study may be of benefit to other adolescent mothers in that the information obtained may enable nurses to be more effective in helping adolescent mothers.

Refusal to participate in this study will involve no penalties or loss of benefits to which I am entitled.

The information obtained in this study is confidential and that my name and identity will not be disclosed without my consent in any published document.

My participation in this study is voluntary and I may leave the study at any time unconditionally and without prejudice to my continued care.

I will not be paid any money for participating in this study and that there is no cost to me for my participation.

I have ___ have not ___ participated in any research study within the past three months. My participation occurred on _____ and involved _____
_____.

I have read the contents of this consent form and have listened to the verbal explanation of the investigator. My questions concerning this study have been answered to my satisfaction. I may call Joreen Buttner, R.N., graduate student at Loma Linda University, at 689-9906 if I have additional questions or concerns about my participation in this study. I have been given a copy of this consent form. I agree to participate in this study.

_____
Date

_____ _____
Signature of Subject Witness

I have reviewed the contents of this form with the person signing above. I have explained the potential risks and benefits of the study. Any significant changes in the nature of the study, from that described above, will be fully explained to the subject.

_____ _____ _____
Signature of Investigator Phone Number Date

For all in-patient studies, to insure that patients receive coordinated care from the investigator and the primary physician, the primary physician must sign this form as indicating he has knowledge of the research study.

_____ _____
Signature of Primary Physician Date

The consent as written is appropriate for Group A. The second paragraph of the consent should be changed as follows for Groups B and C.

Group B--Participation in this study will involve spending one hour with my infant immediately after birth and 90 minutes with my infant every four hours for feeding. A 30 minute observation of me and my infant will be made during a feeding the first and second days following delivery and observation of a feeding during a home visit at three and six months.

Group C--Participation in this study will involve spending one hour with my infant immediately after birth and 90 minutes with my infant every four hours for feeding. I will also receive help from a nurse on how to care for my baby. A 30 minute observation of me and my infant will be made during a feeding the first and second days following delivery and observation of a feeding during a home visit at three and six months. The potential benefit to me and my infant is that I may get some new information about my infant's growth and development.