TOUCHING BEHAVIORS OF MOTHERS WHEN FIRST REUNITED WITH THEIR CHILD WHO HAS EXPERIENCED SURGERY

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We hereby recommend that the Thesis prepared under our supervision by Cheryl Jeanne Boyd Hundley entitled Touching Behaviors of Mothers When First Reunited with Their Child Who Has Experienced Surgery

be accepted as fulfilling this part of the requirements for the Degree of Master of Science.

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CHAPTER I

INTRODUCTION

Touching is an everyday act in which most persons engage in some form. The person performing touch may do so for many purposes, without being aware of the meaning of the act. Touch may be used to merely gain access to an object or person, to perform an everyday task, or used as nonverbal medium to communicate affection, tenderness, or caring. Touch may also indicate displeasure or anger as evidenced by a slap or a hit. While one may not cognitively be aware of it, touching someone or something provides belief in the reality of the touched object or gives tangible evidence to something or someone outside oneself. Touching is a medium substantiating what is without the body while at the same time experiencing the touched object within.

Because of the many purposes and meanings of the act of touching, the phenomenon must be viewed clinically within a theoretical framework so that the purpose of the touching act will be congruent with the expected outcome in the care of clients. Knowledge about and use of touching is relevant to all helping professions, but it is particularly important to nurses who work with family

systems. In maternal-child health nursing, touching between the mother and infant is clinically important in establishing the attachment process in the postpartal period. The postpartal period is certainly a culmination of a maturational crisis for the mother and a critical time for the infant physiologically and psychosocially. There are, however, other crises which beset mother and child in the ensuing months and years which are not predictable as are maturational crises. Situational crises may arise as with hospitalization of a child for surgery. Maternal touch behavior is used as an index of how mother and infant are relating in the critical period postpartally. Identification and description of touching behaviors when the mother is reunited with her child, returning from surgery, may provide clinical data for use in facilitating the mother-infant relationship in this situation.

Therefore, this study was intended to investigate the touching behavior of the mother when first reunited with her child who had surgery. It was anticipated that this descriptive study would reveal a pattern of maternal touching in the mother's first contact with the post-operative child and that this data could be extrapolated for use in the postoperative pediatric setting in the care

of mothers and children and for identification of related research areas.

Statement of Problem

The problem of this study was to explore touching characteristics of mothers with their child of less than thirty-six months of age during their first encounter in the postoperative period.

Purposes

The purposes of this study were to identify:

1. The touching characteristics the mother displays when first reunited with her child of less than thirty-six months of age who has experienced surgery

2. If there is a discernible sequential pattern of maternal touch characteristics when the mother is first reunited with her child who has experienced surgery

3. If there is a touching pattern in which the mother progresses from fingertip to whole-hand touch, to the use of her arms to enfold the child during the first encounter with her postoperative child

4. If the age of the child affects the touching characteristics of the mother in the first postoperative encounter with her child

Identification and description of maternal touch has hopefully provided data for the facilitation and use of touch between mothers and children within this situational crisis.

Conceptual Framework

Touch is a direct empirical referent which can be observed. Inferences as to the use of touch by mothers has clinical significance only if viewed from several concepts related to reciprocal interactions of the mother-child subsystem within the crisis setting. Touch is viewed as a behavior activated via reciprocal processes which function circuitously between the mother and child. Maternal touch occurring in the reunion of the mother with her postoperative child is seen as a predictable behavioral outcome when applied to Bowlby's (1969) concept of attachment and Benedek's (1970) concept of empathy in the setting of a situational crisis as defined by Caplan (1964).

Background and Significance

This significance of touch within the mother-child dyad has received much attention through the works of Bowley (1969), Harlow (1974), Rubin (1963), and Kuals and Kennell (1976). Professional nursing has added to the expanding body of knowledge of maternal touch as evidenced

by Rubin's (1963) original description of the maternal touching sequence in the early postpartal period. "The whole area of contact and touch is getting more attention from other disciplines and needs to be more carefully studied by the nursing profession, particularly" (Rubin 1961: 684). Since nurses provide care for mothers and children, it is necessary to look at maternal touch conceptually as a basis for classifying and analyzing characteristics common to the phenomenon. This can be done by viewing empirically how the mother and child interact tactually in various settings.

Rubin (1963) described the development of the maternal touching sequence in the early postpartal period and postulated that a mother must first explore the child tactually before being able to enfold and progress to developing maternal love for the child. She stated that

> for those of us particularly interested in promoting and fostering this relationship, the nature and kind of maternal touch or contact permitted may serve as an index to the kinds of help our patients can use (Rubin 1963: 829).

Klaus et al. (1970) postulated that touch is an important behavioral system which serves to bind the mother and infant in the early postpartal period. This study confirmed Rubin's earlier description of the touching sequence as accurate, with Klaus et al's. study timing the

complete sequence as occurring in nine minutes. Rubin (1963) described the sequence as occurring over several days.

Rubin goes on to say that she has observed mothers whose children of under one year of age are hospitalized and have been

> . . . forcibly struck by recapitulation of these (progressive) stages in maternal contact in the same ordering, particularly post-operatively. Maternal relationships are re-established first in fingertip identification, then in involvement of hands, and then, very rarely, by the arms (1963: 831).

Rubin (1961) also identified the postoperative touching phenomenon in an article on "Basic Maternal Behavior" in which the maternal touch progression is considered as "universal." The author stated that the rate of the touch progression is used as an index of how the mother feels about herself and about her relationship with her baby. The author also used this as a criteria for assessing the mother's readiness and capacity for maternal behavior. "We find this index valuable in guiding our own nursing care in the puerperal period and also in pediatrics, particularly postoperatively" (Rubin 1961: 683).

Considering Rubin's observations and generalizations that the maternal touching sequence is recapitulated

in the postoperative pediatric setting, there was a need that this maternal behavior be empirically identified and described in the postoperative setting.

According to the U.S. Census Bureau figures of 1970, there are 287,870 children under eighteen years of age in the city where the study is to take place. In the population being studied there are approximately five thousand children who undergo surgery yearly (Bell 1978). Therefore, pediatric surgery is not an uncommon experience of children and their families. Caplan (1964) classified surgery for the individual and his family as a situational crisis. Caplan defined a situational crisis as an unpredictable, serious, and unavoidable event which poses a threat in some way to an individual and his family system. In a situational crisis, the individual and his family experience psychological disequilibrium and display a heightened desire for help as regular problem-solving mechanisms are inefficient to reduce the tension which is the expected sequelae of disequilibrium (Caplan 1964).

The dynamics of the family may be viewed, according to Benedek (1970), as a psychologic field in which reciprocal processes occur between parents and between themselves and their children. The mother and child are considered as a subsystem of the primary unit. Initially

this subsystem is linked in a physiologic symbiosis followed by reciprocal processes of emotional symbiosis through which the mother and infant progress in establishing a clear identity of each other in reality (development of object relations). Empathy, another reciprocal process, is an unconscious process used by the mother. It is defined as an energy charge which stimulates the mother to respond intuitively and instinctively to the subtle needs of the child. Empathy is viewed by Benedek (1970) as a process which allows man to continue on a purely psychic level, the procreative processes originating in biology, to the raising of children to adult maturity. Thus, maternal touch may be motivated to meet the needs of the child at an intuitive or an instinctual level through the empathic response of the mother.

Since surgery for the child constitutes a crisis, the mother may perceive the situation as creating a threatened loss of her child. Bowlby's (1969) theory of attachment assumes that behavioral systems tying a child to his mother have survival value and are instances of instinctive behavior. According to Bowlby (1969), retrieval is a mothering behavior the predictable outcome of which is reduction of distance between the mother and child, with the mother retaining the infant in close

physical contact. This attachment behavior is one of the maternal behavioral systems maintaining proximity to the child, facilitating the ongoing process of attachment. Therefore, the mother should seek contact with her post-operative child and maintain physical contact as a function of maternal retrieval behavior as she perceives the child to be threatened or in danger (Bowlby 1969).

When a child has surgery, this phenomenon constitutes a crisis for the child and his parents. For nurses, this crisis situation is significant as the mother-child dyad and the family system are amenable to intervention. The child and his family are at risk for negative resolution of the crisis which could manifest itself adversely within the mother-child relationship. The subsequent duration of such influence is not predictable but may be enduring (Caplan 1964). In this stressful, yet unavoidable situation, nurses may intervene and help to promote a positive crisis resolution with the facilitation of the mother-child relationship through knowledge about touch.

Hypothesis

The hypothesis for this study was: that the mother will touch her child in a sequential pattern during their first postoperative encounter after the child has experienced surgery.

Definition of Terms

The following terms were defined operationally for this study:

1. Mother--a female person who is nurturing the child and is the child's primary caregiver (Gove 1976)

2. Child--a young person of either sex (Gove 1976) under thirty-six months of age

3. Touch--to bring a bodily part into contact so as to feel or to perceive through the skin (Gove 1976)

4. Surgery--an invasive or non-invasive operative technique experienced by the child of less than thirty-six months

5. Situational crisis--an unavoidable and serious event which in some way poses a threat to the mother and the child (Caplan 1964)

6. Stages of maternal touch characteristics--Stage zero--the child is resting on the ventral surface of the mother's body with the mother using only the lower arms and hands to hold the child. The mother's upper arms are not actively flexed or used to hold the child (Rubin 1963, Kaufman and Rosenblum 1969, Luddington-Hoe 1977). Stage one--the mother uses only her fingertips to stroke or to stationarily touch the child's extremities and face (Cannon 1977). Stage two--fingertip touching progresses

to the trunk of the child (Cannon 1977). Stage three--the mother progresses to the use of her hand (including palm) to massage the child's trunk or to encompass the trunk or the head of the child's body (Cannon 1977). Stage four--complete enfolding with the mother's whole arm(s) occurs with the child held closely against the mother's body (Cannon 1977)

7. First postoperative encounter--a twenty-minute period in which the mother and child, in the child's hospital unit, are first reunited after the child has experienced surgery

8. Stationary touch--immobile placement of a portion of the mother's hand on the child's body

9. Stroke--directional movement of a portion of the mother's hand on the child's body

10. Massage--linear or circular movements of the mother's palmar surface on the child's body

11. Encompass--enclosure of the trunk or head of the child by the mother's entire hand (Klaus et al. 1970)

12. Enface--mother's face is rotated so that her eyes and child's eyes meet in the same vertical plane (Klaus et al. 1970)

13. Enfold--mother actively uses all parts of her arms to cradle the body of the child against the ventral surface of her body (Cannon 1977)

14. Passive holding--the child is resting on the ventral surface of the mother's body with the mother using only the lower arms and hands to hold the child. The mother's upper arms are not actively flexed or used to hold the child (Rubin 1963, Kaufman and Rosenblum 1969, Luddington-Hoe 1977,

15. Functional touching--necessary maternal touch used in caretaking activities

16. No touch--the mother does not touch her child

17. Preoperative period--the twenty-four hours before the child's surgery

Limitations

For the purpose of this study, the following limitations were identified:

1. The presence of the investigator may have given the subject (the mother) an awareness of being observed which may have changed natural behaviors

2. The sample was not large enough for generalizations to be made about the universal population

3. Postoperative care given by the nursing staff may have affected the mother's interaction with the child in the reunion period

4. The quality of the attachment between the mother and child may have been affected by events

antecedent to the study over which the investigator had no control

5. The sample was limited to available subjects (children) who fit the sample criteria

6. Demographic variables not controlled were the race, age, education, cultural background, and religious preference of the mother

Delimitations

The following measures of control were employed in this study:

1. All subjects of this study were mothers who are the primary caregiver of the child

2. All children were under thirty-six months of age and had experienced some form of surgery

3. All children who experienced surgery were brought directly to their room from the recovery area where they were initially reunited with their mothers

4. All mothers were observed for a display of touch characteristics in a twenty-minute time period beginning when the mother and child were reunited in the first postoperative encounter

5. All observations were made by the investigator

6. All mothers received a standardized verbal and written explanation of the study by the investigator

7. The observations were made in the usual (natural) setting for a postoperative encounter

Assumptions

The following assumptions made in this study were that:

1. The mother and child are a subsystem of the family system

2. The mother and child interact reciprocally

3. Touching of the child by the mother is a desirable phenomenon

4. Occurrence of maternal touch is beneficial for the child and the mother when they are first reunited after the child's surgery

5. Surgery is a situational crisis for the child and his family members

6. Surgery poses a threat of loss of the child to the mother

7. Attachment is a reciprocal process necessary for normal development and growth of the child

8. The mother and child are engaged in the attachment process

9. Empathy is a reciprocal process

10. Empathy is a desirable psychic phenomenon working within the mother-child subsystem

11. Communication occurs through touch

Summary

This study was done to observe the characteristics of touch the mother displays when reunited with her child of less than thirty-six months, who has experienced surgery, in their first postoperative encounter. The investigator anticipated that the data would reveal a characteristic pattern of maternal touch when the mother was first reunited with her child postoperatively.

The contents of forthcoming chapters are as follows: Chapter II reviews the literature for information relevant to the conceptual framework; Chapter III reviews the methodology utilized in the pilot study and in the later implemented revision of methodology used to collect data; statistical analysis and discussion of the touch data are presented in Chapter IV; and the summary, conclusions, implications, and recommendations of the study are outlined in Chapter V.

CHAPTER II

REVIEW OF LITERATURE

If there is an assumption made as to the theoretical reality that a mother will re-establish her relationship with her child who has experienced surgery (Rubin 1963), then implied in that statement are many phenomena which deserve a review: surgery as a situational crisis for the family; the dilemma a child experiences when hospitalized; the effect of brief separation of the child from his mother; and touch as evidence of maternal behavior and as a function of the attachment process.

Situational Crisis

The concept of crisis is embodied within Caplan's (1964) model of primary prevention of mental illness. Within the idea of primary prevention it is assumed that a person needs physical, psychosocial, and sociocultural supplies commensurate with his current stage of growth and development and if there are qualitative or quantitative shortages in these supplies, then psychological disorder occurs. Caplan (1964) described physical supplies as food, shelter, sensory stimulation, and all factors necessary for physical health. Psychosocial supplies

include stimulation of a person's cognitive and affective domains mediated through interaction with family, peers, and community. Caplan (1964) also assumed that innate needs of the biological organism are continuously modified by interaction with the human and non-human environment. A critical factor underlying psychological disturbance is recognized as an interruption of any supplies to a person as a result of illness, death, departure, or disillusionment (Caplan 1964).

Aguilera, Messick, and Farrell (1970) proposed a generic approach to crisis and crisis intervention which assumes that there are certain recognizable patterns of behavior in most crises. Aguilera, Messick, and Farrell emphasized that studies have demonstrated characteristic response patterns in persons experiencing the premature birth of an infant, impending surgery, and in persons diagnosed with chronic illness. Thus, there are situations which precipitate the crisis phenomenon.

Situational crisis is defined as a period of psychological and behavioral upset which involves "sudden loss of basic supplies, the threat of loss or challenge associated with opportunity for increased supplies by heightened demands on the individual" (Caplan 1964: 35). The threat of harm to bodily integrity as with illness or

surgical operation is a type of situational crisis (Caplan 1964). Therefore, when the child is hospitalized for surgery, it is an unavoidable situation capable of inducing psychological disequilibrium for the child and his family and more particularly, his mother. During disequilibrium, an individual and his family can, with assistance from support persons, positively resolve emotional upset with mobilization of existing and newly developed adaptive mechanisms. Certainly, pediatric nurses through knowledge of crisis and crisis intervention are a support system capable of assisting the child and the mother to resolve the crisis when the child is hospitalized for surgery. Caplan (1974) recognized that professional nurses should assume roles as intervenors in times of client crisis, for preservation of positive mental health. Pursuant to caregiving professionals as support system, Caplan stated,

> . . . they must learn enough about various crises to know what specific tasks are involved in each, and what is the range of healthy and unhealthy patterns of accomplishing them, in order that they may be able to identify those individuals who are proceeding on a maladaptive course (1974: 208).

Therefore, children hospitalized for surgery and their mothers are a significant population group which need to be assessed for risks which could impair growth and development of the child and for risks possibly affecting

the attachment process. Aguilera, Messick, and Farrell (1970) maintained that crisis intervention should provide facilitation of adaptive behavior, allow for provision of support systems, environmental manipulation, and anticipatory guidance. The situation of when a child is hospitalized for surgery also needs to be viewed as having potential to augment and discover the coping mechanisms of the child and his mother. Positive and negative potentials are, therefore, present for the individual or family system experiencing crisis. In discussing the crisis of the child hospitalized for surgery, Oremland and Oremland (1973) pointed out that in the Chinese language that the two symbols are used to write the word crisis, one symbol represents the concept of danger and the second symbol represents the concept of opportunity.

Literature gives information regarding the patterns of behavior occurring within the child and his family system when he is hospitalized for surgery. Foley (1967) stated that parents report an overwhelming anxiety about their child's impending surgery and that they have difficulty in coping with their fears. The author suggested that helping parents to cope with this difficult situation is a worthwhile goal of nursing care in the pediatric setting. Inability of the parent to cope with the

heightened tension related to a child's hospitalization may cause parents to behave in a manner which may not be beneficial to the child (Foley 1967). Such undesirous parental behaviors have been reported in forms of over solicitous, over protective, or rejecting attitudes toward the child (Levy 1966, Solnit, and Green 1977).

Janis (1958), in his classic psychoanalytic study of surgical patients, concluded that a surgical operation constitutes a stress situation resembling other crises of life. Persons working with surgical patients and their families should give support and preparation to facilitate the "work of worrying" (Janis 1958: 376).

Skipper, Leonard, and Rhymes (1968) studied mothers' feelings about stress and adaptation to their child's hospitalization for surgery. Their data supported the hypothesis that maternal anxiety levels can be reduced through planned social interaction with an authoritative person (in this study the nurse) who provided emotional support and information. Data indicated maternal stress appears greater before and during surgery and may be less postoperatively, but in general, the stress is still intense. The data also revealed that if a mother thought or anticipated a future operation for the child that her stress heightened once again.

Rubin, in discussing object constancy in maternal relationships, believed that "change on the part of either mother or child requires a reencounter, a reorientation, a readjustment, and a readaptation on the part of the other" (1972: 103). It is evident that the child who is to experience, or who has experienced surgery, is in a changed condition from the mother's point of view. Crisis intervention, then, by nurses should lend itself to facilitating maternal behaviors which can allow readaptation, reencounter, and a reorientation to the child (Rubin 1972). The literature established that maternal tension and stress exist in this pediatric situational crisis and that intervention can promote more healthful outcomes for the parent and the child. Touching is a behavior which conveys messages more powerful than the spoken word. Perhaps creating or allowing the mother to touch the child can be viewed as facilitating adaptive behavior for this situational crisis. The act of the mother touching the child in this setting may provide physical and psychosocial supplies in a reciprocal manner, thus strengthening the response of both to the situation (Caplan 1964).

Auerbach and Kilmann (1977) reviewed research related to crisis and crisis intervention with surgical

patients. Only two of thirteen studies were about children hospitalized for surgery. The authors reemphasized that the stressor of surgery for the person and his family is predictable and allows opportunities for intervention in pre-impact and post-impact stages through programmed intervention.

The Hospitalized Child

The emotional trauma which results from hospitalization of a child is well established (Prugh et al. 1953, Robertson 1958, Levy 1966, Bowlby 1969, Robertson 1977). Robertson (1958) described the phenomenon of "hospitalism" which is comprised of the stages of protest, despair, and denial. The major stress is seen by Robertson (1977) to be an interruption of the mother-child entity and the hospital is the "intruder" in this relationship. Therefore, this author suggested that the child in the hospital must be studied in the context of his family. The child needs his mother while in the hospital, as his immature cognitive and psychic processes cannot always mediate the threats imposed by painful investigations, operations, and separation (Robertson 1958). Robertson postulated that a mother separated from her child may assume an unrealistic view of her child. A mother who is with her hospitalized

child maintains a realistic view of the child and maintains confidence in her own ability to care for the child and can facilitate a better transition back into the home (Robertson 1958).

Prugh et al. (1953) provided a classic study of one hundred children which investigated immediate reactions and modes of adaptation of children and parents to the impact of hospitalization and the character of any long-range emotional reactions. Data revealed that children under three years of age are most susceptible to the effects of hospitalization, especially to separation from the parents. Based on the data, these authors suggested that parental reactions to a child's illness or surgery need assessment so that with professional intervention parents can optimally provide care for their children. Visintainer and Wolfer (1975) studied the effects of various types of psychological preparation for surgical pediatric patients and their parents. They classified the following cluster of needs for a child who is hospitalized for surgery: the threat of bodily harm, pain, mutilation or death; separation from parents; the strange environment and possibility of surprise; uncertainty about "acceptable" behavior; and the loss of autonomy. The stress a hospitalized child experiences depends on

how these threatening events are manipulated. Parents who were treated with a combination of systematic preparation and rehearsal and with supportive guidance from a nurse, at each stress point prior to and after surgery, indicated greater satisfaction with the child's care. These parents also demonstrated more effective management of their child's behavior preoperatively and postoperatively. The children of these parents also had less behavioral upset upon returning home. Visintainer and Wolfer's (1975) data also suggested that younger children showed more upset associated with hospitalization for surgery.

Douglas (1975) studied two generations of children hospitalized briefly during their first five years, until preadolescence, to determine if hospitalization in the early years correlated with later disturbances in learning. Each child had a median hospital stay of 8.5 days and 20 percent of the children studied were readmitted. Data provided strong evidence that a hospital stay of even less than one week before age five and in particular, children from six months through four years of age, were associated with increased risk of behavior disturbance and poor reading abilities as preadolescents. Data suggested that children most vulnerable are those who are very

dependent on mothers or who were under stress at home. Data also highlighted that admissions during early childhood, while shorter in length, are more frequent than twenty-five years ago (Douglas 1975).

The idea that hospitalization of the child can have long-term effects is poignantly illustrated in Solnit and Green 's (1977) study in which fifty children with histories of accident, illness, or surgery in early years of life were expected to die. The data supported their hypothesis that children who are expected by their parents to die prematurely, often react with a disturbance in psychosocial development. Four basic disturbances were identified: difficulty of the child separating from the mother; parents unable to discipline reasonably, were over indulgent, oversolicitous, and in return the child demonstrated disobedience and an argumentative attitude; the child and parent were overly concerned with bodily functions even when physical competency was confirmed by examination; and the child usually experienced school underachievement. These authors identified the above disturbances as the "vulnerable child syndrome."

Congenital abnormalities, serious illness, recent death of a sibling, hereditary disorder, and prematurity at birth are the most common historical factors associated

with the vulnerable child. These children and their parents may many times experience frequent and traumatic hospitalizations (Green and Solnit 1977). Psychosocial disturbance occurs as the hospitalization incident remains alive psychologically for the parents, and the parent attaches doom to the child's normal growth and developmental phenomena. The child is aware and accepts the parent's distorted vision of himself (Solnit and Green 1977).

Cary (1977), in a review of the literature of the vulnerable child concept, suggested that professionals should approach the situation by assessing the maternal reaction to the child's illness. Intervention is then planned to facilitate the mother's adaptation by giving sufficient information about the child and his illness to alter her distorted view of the child. Therefore, intervention allowing for maternal adaptation to a realistic perception of the child can assist in decreasing deviant psychological sequelae resultant from illness, surgery, and accidents occurring early in the child's life (Cary 1977).

An historical article about English literature gave Victorian views of health and sick children. Author George Sampson, a poet and literary critic, looking back on his childhood wrote,

> . . . "As soon as we took up our new quarters I became severely ill and nearly died. I mention this fact because it had an important effect on my development. I learned afterward from my mother's talk to visitors, that my recovery was regarded as a miracle . . . . I was always the little boy that almost died . . . and so grew up with that taint on me' (Nursing Times 1977: 1188).

Mechanic (1964), in a study of how mothers influence their children's health behaviors, demonstrated that mothers basically mold a child's pattern of illness behavior and that mothers under stress reported more illness symptoms for themselves and for their children.

Several studies have also given impetus to the benefits of parents being with the child during anesthesia induction and in the recovery room. Schulman et al. (1967) reported that children were less upset when mothers were with them during anesthesia induction, and the mothers reported that this procedure should be a standard practice. In a study of parents in the recovery room, Dew, Bushong, and Crumrine stated that . . . "little has been done clinically to reunite the family in the often strange and stressful postoperative environment" (1977: 277).

An impetus for care should be creating a hospital environment so the surgical experience for the child and parents can "meet the adaptive capabilities of both the child and parents" (Dew et al. 1977: 267). These authors'

hypothesis that permitting parents in the recovery room would reduce stress for the child and parent was confirmed. Ninety-eight percent of the parents thought it was helpful for the child and for themselves. Many parents commented that they were able to comfort and sometimes hold their child, giving two-way reassurance. These twenty-one children, aged from two weeks to three years, were accompanied mostly by their mothers. Dew et al. (1977) postulated that fostering parental adjustment in the immediate postoperative period allows the parent to give emotional support to the child and to accept the realities of his condition. Korsch (1975), in an article on the child and the operating room, stated that mothers should be allowed maximum active involvement with their child during the entire hospitalization as the best preventive measure against hazards of hospitalization. The author postulated that when children under three years of age are prepared for anesthesia that the word "sleep" should be avoided because it has connotations of death (as a pet is "put to sleep") and this can increase the stress of the pediatric surgical situation (Korsch 1975).

From a review of literature about the psychological responses of children to hospitalization, Vernon et al. (1965) suggested that there be adequate preparation

of the parent and child prior to admission; that the staff become knowledgeable about the child's developmental needs and the parents' coping abilities; and that the hospital staff should continue to support parents during hospitalization. These authors emphasized that parents who had traumatic hospitalizations as children react with more stress to their own child's hospitalization (Vernon et al. 1967).

An article by a professional nurse described her reaction to her own child's hospitalization. The mother was frightened for her child. When the nurse removed the child from her arms the mother "longed to grab her back" (Baxter 1976: 159) and felt that her child was "a piece of me . . . causing me pain" (1976: 159). When the child was in bed on her back and restrained due to the intravenous drip, the mother ". . . tenderly placed one arm under and brushed aside the moist curls . . . with my other hand . . . softly I stroked her forehead" (Baxter 1976: 160) This article illustrated the importance of touch to the mother of a hospitalized child as a means of providing comfort and security for both parents. Litchfield (1974) listed the advantages of a mother caring for her hospitalized child. A mother who cares for her child is able to show her strong maternal impulse to love

and protect her child and she is reinforced by the response of the child to her cuddling, smiling, and play.

In a study by Vernon, Foley, and Schulman (1967), a child's response to the stress of admission to the hospital and to anesthesia induction were studied. Two variables, the child's separation from his mother and the child's ordinal position in the family, were measured. Data suggested that the effect of separation from the mother made the first and last moments during anesthesia induction more disturbing for the child. Birth order did not alter a child's separation reaction. Mothers did not differ in the reactions to first-born or second-born children after separation.

The importance of how a mother perceives her child and the effects of these perceptions upon the child is clearly demonstrated by Broussard's (1976) longitudinal study of primiparas and healthy full-term infants. The Neonatal Perception Inventory was given to the mother at one or two days postpartum and at one month postpartum. Mothers with positive perceptions of their infants were classed as positive and mothers with negative perceptions of their infant were classes as high risk. At four-and-a-half years and at ten years of age the children whose mothers had a negative perception of them had some form

of mental disorder. In this study, negative perception may have been related to mothers' stress and lack of confidence in her mothering ability (Broussard 1976).

Therefore, maternal perceptions of the child may have profound influence upon the growth and development of the child and upon family dynamics. It is, therefore, necessary to focus on what kinds of behavior will create the most healthy adaptation of the mother to a child who is hospitalized and/or who has had surgery. Allowing physical contact and creating an environment where behaviors can occur naturally may be a preventive intervention facilitating adaptive behavior in this crisis situation.

Brief Separation

When the child is hospitalized usually there are brief separations from the mother. The effect of maternal separation on the hospitalized child is well documented and identified as a major hazard to the child's psychological equilibrium (Robertson 1958, Bowlby 1969, Robertson 1977). Separations of the child from the mother in the early weeks and months also have potential for hazards. Helfer (1974) statistically determined that children separated from mothers in the early neonatal period have a higher rate of child abuse than the general

population. This is especially true for premature infants and infants delivered by Caesarean section. Events associated with disorders of maternal attachment include separation of the baby from the mother due to complications of parturition and prematurity (Barbero 1974).

In animal studies with Rhesus monkeys (Hinde 1977), infants separated from their mothers for six days exhibited an increased frequency of distress calls, had a decrease in locomotor activity, and sat in a hunched posture. After reunion with the mother, there was increased clinging and an increase in temper tantrums with mother yielding to the infant's demands. The severity of the symptoms was dependent upon the length of the separation. Infants who remained in familiar environments when their mother was removed had the most severe reaction to separation. These data also revealed that depressed infants were less effective in eliciting maternal care. These infant monkeys, when separated, were less able to cope with slightly alarming situations. Hinde's (1977) data basically correlated with human data as to the effects of maternal separation from the infant. The author suggested that since Rhesus monkeys are simpler organisms than man, they may be used to obtain data to

"harden up concepts," and to generate principles about humans (Hinde 1977: 49).

Leiderman (1974) in a two-year follow-up study compared mothers who were separated from their infants in the immediate postpartal period and mothers who were not separated from their infants during this time. At the end of two years both groups of mothers had similar maternal attitudes and maternal behaviors. The striking difference between the groups was that mothers who had not been separated from their infants in the immediate postpartal period touched their infants more regardless of the infant's birth order or sex.

Leifer et al. (1972) studied three groups of mother-infant dyads. The longitudinal study was designed to examine close body contact, distal contact, and nonroutine interactions. Two groups of mother-infant dyads consisted of a group of mothers and their premature infants and the third group consisted of mothers and their full-term infants. One group of mothers of premature infants were recipients of routine nursery care and had only visual contact with their premature infants. The second group of mothers of premature infants were allowed all modes of contact. The mothers of full-term infants were allowed full sensory contacts in the immediate postpartal period. Several months later the mothers of

full-term infants were observed by the authors to hold their infants closer than the group of mothers of premature infants who had full sensory contact with their infants in the postpartal period. At this time the authors found in the group of mothers of premature infants who had only visual contact with their infants, that two mothers gave their child up for adoption, and five mothers got a divorce. None of these events occurred in the contact group (Leifer et al. 1972).

Hinde and Spencer-Booth (1971) also reported from a study of infant Rhesus monkeys that those separated for a few days from their mothers were still displaying distress symptoms one month after reunion. Testing at six months and two years of age infant monkeys were more affectively labile when compared with infants never separated from the monkey mother.

Studies on humans examining the effects of neonatal separation upon the human mother and infant dyad, suggest that mothering disorders are the result of early neonatal separation. The following are identified as mothering disorders: overconcern of the mother about her child's body, a mother whose child fails to thrive, and a mother who abuses her child (Klaus et al. 1971, Klaus et al. 1974). A recent study of mothers and their

defective infants indicated that when mothers have their infants home for two weeks or more, the mothers demonstrated almost perfect visiting records after the infants were readmitted to the nursery. Mothers whose infants were home less than two weeks demonstrated sporadic visiting patterns (Lampe, Trause, and Kennell 1977). According to Klaus and Kennell (1976), a mother who visits her infant in the nursery fewer than three times in two weeks will probably develop a mothering disorder.

In many hospitals the several hours following birth of a baby are utilized to admit the baby to the nursery. The mother is separated from her infant during this critical period since Klaus and Kennell (1976) postulated that during the hour following birth the mother and infant should be able to interact maximally for the establishment of the mother-infant bond. The touching interactions which should occur during these early hours postpartally should be further augmented by the infant rooming-in with the mother (Klaus and Kennell 1976).

The concept of rooming-in is a clinical intervention which allows the infant to be with the mother in her room where the mother can care for the infant. Rooming-in was first subscribed to by Gessel and Ilg in 1943 (Greenberg, Rosenburg, and Lind 1973). In a Swedish

study compared rooming-in mothers to non-rooming-in mothers. Data revealed that rooming-in mothers judged themselves more confident and competent to meet their infant's needs. They also believed that they could cope more effectively at home than non-rooming-in mothers. Data showed rooming-in mothers to be more sensitive to the infant's cues, especially in interpreting the infant's cry. Rooming-in mothers in this study also had a higher incidence of breastfeeding (Greenburg et al. 1973). Schroeder (1977), in a comparison of rooming-in with non-rooming-in mothers had similar data. Sugarman (1977) reported that women who are briefly separated from their infants because of a Casearean delivery may have an uncertainty about whether they have actually had an infant. This author postulated that these factors can interrupt and delay the maternal-infant attachment process. Sugarman (1977) also presented evidence that infants with a single caretaker during the first ten days of life will more quickly establish stable feeding-waking-sleeping cycles. Therefore, rooming-in allows for further advantages for the mother and infant.

A mother who can touch her infant can learn to identify the infant's needs and can become thoroughly acquainted with him. The mother utilizing rooming-in

can become thoroughly satisfied in her own competence to meet the infant's needs (Klaus and Kennell 1976).

Touch

Before examining touch within the context of the maternal-child relationship, touch as a phenomena will be reviewed. Touch by dictionary definition means "to bring a bodily part into contact so as to feel or to perceive through the skin" (Gove 1976: 2301). Other definitions in the literature describe touch as a behavior that communicates love, comfort, security, and warmth (Johnson 1965). Categorically, touch can be described as expressive or instrumental. Instrumental touch is contact initiated so as to perform another act and expressive touching is spontaneous and affective and is not required to perform a necessary act (Watson 1975). Montagu defined touching as the "action, or act of feeling something with the hand" (1971: 125). Active touch is thought to be "an exploratory rather than a merely receptive sense . . . active touch can be termed tactile scanning . . . ." (Gibson 1962: 477). Gibson (1962) defined passive touch as being touched. In a series of simple experiments on active touch by Gibson (1962), a seated subject put both hands under a cloth curtain. An observer placed an object in the subject's hand and the

following behaviors were noted. The other hand of the subject was brought to the object and the fingers curved around it. With the fingertips the subject traced, rubbed, and pressed the object and then named the object. The subject's hand appeared to be searching for stimulus information. The subject reported unitary perception of the object when all five fingers were applied to the object. Gibson (1962) concluded that active touch is a channel of spatial information for the perception of the arrangement of surfaces. His research data indicated that vision and touch register the same information but that touch is superior because the front and back of an object can be experienced with touch but not with vision.

Physiologically, there are two forms of touch sensibility. Simple touch allows the person to perceive light touch and pressure and a simple sense of tactile localization. Tactile discrimination utilizes a deeper sense of pressure and allows spatial localization and the perception of the size and shape of objects (Clark 1978).

The skin, according to Montagu (1970), is our largest sense organ and one of the most important. The skin is derived from ectoderm which gives rise to all the sense organs and the nervous system. The several sense modalities that can be felt through the skin are heat, cold, touch, and pain (Wyburn 1968).

> Among the earliest of the sense organs (in the skin) evolved were the mechanoreceptors informing the organism about the movement of parts, vibrations and skin contacts (Wyburn 1968: 15).

According to Montagu (1971), there is a general embryological law that assumes that the earlier a function develops the more essential it is to the survival of the organism. In man, the areas of the skin which are most sensitive tactily are the fingertips, the lips and tongue, and the palms of the hands. Man's normal tactile organ is the tips of the fingers (Wyburn 1968). In a classic monograph, Frank (1957) stated that tactual sensitivity in fetal life is probably the first sensory process to become functional as the fetus is in a highly tactual environment in utero. Frank (1957) postulated that an infant's needs for contacts and his ready response to them may be due to his uterine experiences. Touch, therefore, is an act which can give perceptual information, which communicates feelings and which can perform a necessary act.

Maternal Touch

A mother is thought to reestablish her relationship with her child who has experienced surgery by recapitulating the maternal postpartal touching sequence (Rubin 1963). The maternal touching sequence described by

Cannon (1977) is divided into descriptive stages and is based on the original descriptions of Rubin (1961, 1963; Klaus et al. 1970; Klaus and Kennell 1976). Initially, the mother uses only her fingertips to explore the infant's extremities and face; secondly the mother's fingertip touching progresses to the trunk of the infant; thirdly her hand and palmar touching develops; and finally, complete enfolding by the whole arm occurs with the infant being cradled against the mother's ventral surface. In this study those mothers who received dressed infants took longer to reach touching sequence stages three and four, while mothers whose infants were undressed reached these stages more rapidly. Nineteen of the twenty-four filmed mother-infant pairs completed the touching sequence in twelve minutes (Cannon 1977). The time for completion of this same sequence pattern was nine minutes in Klaus et al's. (1970) study. Rubin (1963) originally described the sequence as occurring over several days. Klaus et al. (1970) postulated that the differences in the time for completion of the touching sequence might be attributed to the fact that infants in their study were nude, which may have stimulated a more rapid progression. In Klaus et al's. (1970) study, when touching behavior in the first and third three-minute

periods were compared, there was a decrease in fingertip contact from 52 percent to 26 percent, an increase in palm contact from 28 percent to 62 percent, a decrease in amount of touching of the infant's extremities from 38 percent to 22 percent and an increase in touching the infant's trunk from 24 percent to 49 percent. Encompassing increased from 12 percent to 30 percent. All values were statistically significant.

Rubin (1963) emphasized that relaxed arms of the mother, holding the child closer, and increasing the amount of body surface involved in contact with her child is indicative of the mother being actively involved in the relationship. The author is in agreement with Gibson (1962) when she stated that "We use our fingertips to explore, to obtain information. . . . In relationships between two people fingertip contact is exploratory in nature . . ." (Rubin 1963: 830).

The maternal touching sequence, in the early post-partal period, is believed to be a behavior giving fragmentary evidence that mothers engage in species--specific behavior. This type of behavior is viewed as one which is unlearned (Klaus and Kennell 1976). In discussing types of maternal touch, Luddington-Hoe (1977) identified "reaching" as an important maternal behavior.

At first, holding the baby is a "passive procedure, a receiving of contact" (1977: 1171). The mother will wait for the infant to be placed in her arms. This behavior is regarded as normal as the author postulated it takes five days until "active holding" occurs whereby the mother reaches out with her arms with a simultaneous forward motion of the trunk.

Ainsworth's (1972) study regarding the development of attachment behaviors indicated that in the first year of life the quality of attachment between mother and infant is evidenced by the mother's careful and tender handling and holding. Ainsworth (1972) further defined touching as physical contact without picking up the infant. A related maternal behavior was described as interaction or "approaching a baby closely and bending over him, smiling, talking or initiating play not involving touching, or picking up" (Ainsworth 1972: 126). Over the year there was reduction in the amount of time the mother held her infant, from twenty-one minutes per hour in the first three months, to approximately six minutes per hour in the ninth through the twenty-first month. The data also suggested that the experience of the mother and baby with physical contact in the first three months has a continuing effect on the baby (Ainsworth 1972).

Ribble (1965) stated that frequent close contacts with the mother are necessary for the infant's sensory growth and awareness. Ribble wrote that the baby's mouth is an important touch organ as it is a continuation of the skin embryologically. "The face and head are also extremely sensitive and the gentle stroking of the head soothes a restless infant in a remarkable way" (Ribble 1965: 54). Maternal contact and rocking gives the infant a sense of equilibrium and a sense of belonging (Ribble 1965).

Lewis (1972) reported that there are differences in maternal touch as a response to the sex of the infant. Mothers exhibited more proximal behavior toward boys which included more touching and holding. They had more distal behavior toward girls which indicated more visual contact and vocalization. Maternal touch, visual contact, and maternal smiling were found to initiate infant behavior (Lewis 1972).

Psychoanalytical literature regards maternal touch as crucial to the psychic unfolding of the infant. Based on longitudinal study of normal infants and mothers, Mahler (1975) formulated a theory as to the psychological birth of the infant. Psychological birth is the separation-individuation process whereby the infant

establishes a sense of his own body as he emerges from an emotional symbiosis with his mother. Motor phenomena are assumed to be correlated with the child's intra-psychic events and communication occurs predominantly in the non-verbal sphere. Maternal contact brings the infant into sensory awareness. Symbiosis is the result of holding experiences. Soon the infant, through contact with the mother's skin, becomes aware of the difference in shape, smell, and skin resilience and the process of differentiation begins (Mahler 1975). After six months the infant may no longer "mold" to his mother's embraces as he is realizing his body is separate from his mother's (Mahler 1975, Kaplan 1978). Maternal contact, psychoanalytically, is an essential prerequisite of body ego formation. By thirty-six months of age the child's individuation process psychically provides a stable internal image of his mother and he can tolerate her absence temporarily if he has been positively and tenderly mothered (Mahler 1975).

Greenacre (1958) stated that the core of the ego, and later the self-image, are mediated through the infant's contacts with the mother's skin, and through his vision and sucking-sensitive mouth. Benedek (1970) stated that without her baby a mother does not feel

complete or whole and a mother who is separated from her baby feels empty. At this time the mother has increased tension of receptive needs and wishes to regain physical contact with the child. Mahler (1975) believed maternal contact is necessary for the child as "fuel" and mother is the "home base." Mahler pointed out how the infant will "perk up" after maternal contact (1975: 69). In the process of individuation, Mahler (1975) also noted that toddler boys physically disengage earlier from their mothers; but that girls demand more physical contact from their mothers.

> Mothers often commented that the bodies of their girl babies felt different from those of boys and that girls were softer and more cuddly (Mahler 1975: 183).

Certain animal studies lend importance to maternal touch. The Harlow (1967) studies substantiate that contact comfort is the most important mechanism which binds the infant Rhesus monkey to his mother. Studies with the cloth surrogate mothers established that infants maintained contact with the surrogate mother because it needed contact and touch, thus refuting the theory that infants bond to mothers because mothers supply food (Harlow 1974).

Kaufman and Rosenblum (1969) described maternal contact behaviors of Macaque monkeys. The term cradle was

used to describe pressing the infant to the mother's ventral surface through the active use of her hands. Enclosure was a maternal behavior in which the mother clasped the infant with flexed forearms. Passive support was described as the infant sitting or supporting himself at her ventral surface without being cradled or enclosed by the mother. The monkey mothers, in conditions of distress or danger, even at the end of the infant's first year, would cradle and carry the infant for an extended period. Data reflected a wane in the amount of ventral-ventral contact and by the latter part of the first year, the monkey mother offers only passive support on her ventrum (Kaufman and Rosenblum 1969). Hinde (1974), in a study of Rhesus monkeys, demonstrated that as the infant grows older the amount of time in ventro-ventral contact is decreased.

Attachment and Retrieval

Much of the interchange between mother and infant occurs through silent language. The mother learns what the infant's needs are by observing, handling, and holding the child. Throughout life, much important communication in this close relationship occurs in a nonverbal fashion (Schwartz and Schwartz 1972). Mother-infant interaction is viewed as a reciprocal process by many (Bowlby 1969,

Brazelton 1974, Bromwich 1976, Klaus and Kennell 1976).

The development of the mother-child relationship is considered by Bowlby (1969) to follow a pattern of behavior and is an expression of a common plan since a healthy mother-child relationship has obvious survival value. Behaviors through which mothers and infants attach are viewed by Bowlby as instances of instinctive behavior. Instinctive behaviors of the infant are basically crying and smiling. These behaviors have the effect of keeping the infant in close proximity to the mother. The two basic features of attachment behaviors are that they maintain proximity of the mother to the infant and they restore proximity when it has been impaired (Bowlby 1969).

The reciprocal behavior of parents is termed caretaking behavior. In infancy, the signal behaviors of crying, smiling, or a cry of pain bring the mother to the child. Attachment behavior such as following, seeking, and clinging bring the child to the mother. Conditions such as the mother's departure, a child's illness, fatigue, and pain can activate the attachment behaviors (Bowlby 1969). Ainsworth (1964) defined attachment as an active two-way process, which is behavioral, and, therefore, observable. Attachment is also defined as a "unique

relationship between two people that is specific and endures through time" (Klaus and Kennell 1976: 2). Ainsworth's (1964) study demonstrated that the infant is able to form attachments to the father and other figures after he has done so with the mother. Bell's (1970) study suggested that infants are more advanced in the concept of persons than the concept of inanimate objects as being permanent. The quality of attachment determines the rate at which the infant develops a sense of person permanence and this was shown to affect the development of object permanence which is a foundation for cognitive development (Bell 1970).

Coates, Anderson, and Hartup (1972) observed behaviors of children ten, fourteen, and eighteen months old. They concluded that touching was the most stable attachment behavior, especially when the mother and child were reunited after a brief separation. In another study, Coates, Anderson, and Hartup (1972a) observed children ten, fourteen, and eighteen months old at four-month intervals through two-way mirrors. Attachment behaviors of the child in the mother's presence indicated that the mother's visual regard for the child was correlated with the child touching her and staying close. In a low-stress free-play situation, Ban's (1974) study indicated that

children are more proximally attached to mothers than fathers. Boys highly attached to their mothers were also highly attached to their fathers. This correlation was not true for girls.

The early neonatal period is a crucial time for the establishment of a healthy mother-infant relationship. Klaus and Kennell (1976) postulated that there is a sensitive period in the first hours after birth during which time certain behavioral systems serve to optimally bond the mother and infant. During this time touch, eye-to-eye contact in the en face position function to aid in the beginning attachment. This is a period in which the mother, the neonate, and the father should be together as a family unit. Extra contact in the early postpartal period has been shown in longitudinal studies to positively influence the mother-child relationship (Ringler et al. 1975, Kennell et al. 1974, DeChateau and Wiberg 1977a, DeChateau and Wiberg 1977b). Grossman (1975) reported that visual fixation between the mother and infant are a chief mode of communication and that the infant may cry when his mother approaches him from a position other than the en face position.

Mothers of preterm infants also have strong interest in eye-to-eye contact with their infants (Kennell and Klaus 1971). Mothers of preterm infants who

are in incubators spend less time in the en face position and move through the touching sequence much more slowly than mothers of full-term infants (Klaus and Kennell 1976). Studies have demonstrated that preterm and low birth weight infants respond positively to extra tactile stimulation with increased weight gain and formula intake and with higher developmental status at twelve months (Scarr-Salapatek and Williams 1973, White and Labarbra 1976). Christensen (1977) reported that parents of preterm infants are afraid to touch the infant. In this study, nursing intervention over a two-day period was necessary before one set of parents was able to touch their preterm infant. The preterm infant may not always readily respond to parental touch. The preterm infant's lack of response to touch may inhibit the bonding process. The nurse in the neonatal intensive care unit may facilitate the bonding process between parent and preterm infant by fostering confidence in parents' ability to touch their extremely small infant. Summer and Fritsch's (1977) study of the mothers and infants during the first six weeks postpartum suggested that mother-infant attachment is established in a negative or positive direction before four weeks of the infant's life.

Many factors can alter the quality of the mother-child relationship. Klaus and Kennell (1976) stated that

the mother's own care by her mother, relations with family and husband, and the planning course during the pregnancy can adversely affect the relationship. Fraiberg, Adelson, and Shapiro (1975) cited case studies in which many mothers have "ghosts" in their baby's nursery. The "ghost" is the repressed affective portion of the mother's childhood experiences. Many times parents of abused or failure-to-thrive children, inflict their own conflicts upon their children by recreating the affective portion of their own negative childhood experiences. Intervention is then aimed at disengaging the affectively repressed experience from the relationship with their own child (Fraiberg, Adelson, and Shapiro 1975).

Retrieval

Bowlby (1969) stated that biological systems have a predictable outcome which in some way leads to the survival of the species. Thus, behavioral systems must be viewed within the context of the environment of evolutionary adaptedness for interpretation of the value of the behavior. Bowlby, after reviewing maternal retrieval behavior in animals, identified human retrieval behavior as much the same. Retrieval behavior is an attachment behavior which occurs when certain of maternal behavioral systems are activated when the child is thought

to be in danger. Retrieval behavior is concerned with the mother reducing the distance between herself and her child. The child is usually kept in close physical contact with her after retrieval. Bowlby (1969) described primate retrieval behavior as the mother gathering the infant into her arms and holding him there in response to a threatening event. Eibl-Eibesfeldt (1970), an ethologist, believed there are signals between individuals of a species which facilitate and maintain physical contact between them allowing for protection and communication about the external environment.

Harlow (1967) documented that Rhesus monkey mothers, at the slightest real or implied threat, rushed to retrieve their infant. In Kaufman and Rosenblum's (1969) study of Macaque monkeys, they described physical-danger retrieval and social-danger retrieval as maternal behaviors. Both types of retrieval elicited the grasping and rapid cradling of the infant. Their data reflected that in the mother-child macaque bond, that protective maternal behavior is the most enduring. Baxter's (1976) self-described frustration during her child's hospitalization, described her impulse to "grab the child back" after the nurse removed her child from her arms (1976: 159).

Bowlby (1969) postulated that the mother's alarm or the infant's distress will elicit retrieval behavior from the mother. Early in life, since the child is immobile and cannot effectively cling, the maintenance of proximity is the responsibility of the mother. During a child's first three years of life, the mother is primarily responsible for maintaining proximity. Bowlby (1969) stated that the child's pain-type cry is the most powerful stimuli for bringing the mother to the child. Any type of intense activation of retrieval behavior cannot be terminated until the mother brings the child into physical contact with herself. The condition of the child, the whereabouts of the mother and occurrence of alarming events can alter the intensity of all attachment behaviors (Bowlby 1969).

Empathy

Benedek (1970) defined psychoanalysis as the biologic approach to psychology which can mediate a framework within which biology, psychology, and sociology can be explained. From this framework, Benedek (1970) viewed the family as a psychologic field with the marital couple and the children forming systems and subsystems. Reciprocal communication within the systems and subsystems allow for adaptation. Benedek (1959) and Mahler (1975)

both addressed emotional symbiosis as an important reciprocal process occurring between the mother and infant. During this time there is psychic oneness between the mother and infant and the infant introjects "good-self" as the mother becomes confident in her abilities to gratify the infant's needs. Benedek viewed empathy as a

> specific human quality, a result of evolution that has created a psychic apparatus which enables man to sublimate and so to continue on a purely psychic level process which originates in biology (1970: 119).

Empathy allows a parent to raise a child to full maturity. Empathy is defined by Schwartz and Schwartz (1972) as the capacity to become aware of feelings or the emotions of another. Kaplan (1978) described empathy as a mysterious but sacred quality of the human mind and that the depth of a mother's empathy may appear incredible. Benedek (1970) described empathy as an energy charge which directs and guides the ego's attention and facilitates perception within the psyche. Empathy enlarges the psychic field and activates a person toward another. "The empathic response appears usually as an intuitive or spontaneous reaction which often mobilizes behavior" (Benedek 1970: 120). Kaplan stated that "Because there is a connection between how a mother's body reacts and what in fact her baby might need, such phenomena fall into the

range of empathetic responsiveness" (1978: 98). Benedek believed that the mother's empathy for her infant allows the variety of responses necessary for successful mothering and the empathetic response "is a direct instinctual or intuitive reaction to a child's need" (1970: 120).

Ribble (1965), addressing the rights of infants postulated that there is a powerful mothering instinct which includes all the small acts by which she reacts to and meets the child's needs. "The essence of motherhood is creativeness which is an instinctual gift" (Ribble 1975: 9). Mahler's (1975) study indicated that each child's constellation is the result of an optimal or less than optimal empathic personality of the mother. The empathic process between the mother and child may be influenced by accidental crisis events, illness, surgery, or separation (Mahler 1975).

Summary

A review of the literature did not reveal other studies concerning the postoperative touching behaviors of mothers who are reunited with their child who has just experienced surgery. Related concepts of touch, situational crisis, and the reciprocal processes of empathy and attachment provide basic information as to

how touch is a function of the mother-child relationship. Certainly, when the child is hospitalized for surgery this is a threatening event for him and his mother (Caplan 1964). On-going between the mother and child is the attachment process which may be influenced by many neonatal and environmental factors early in life (Bowlby 1969). A mother who perceives her child in danger from a surgical procedure will demonstrate retrieval behavior particularly if the child cries out in pain (Bowlby 1969). Rubin (1972) stated that when the child is perceived to be in a changed state that the mother must relocate and reidentify with the child. The author proposed that the recapitulation of the touching sequence as described from personal postpartal observation (Rubin 1963) and empirically validated by Klaus et al. (1970) and Cannon (1977), occur in the postoperative pediatric setting as the mother reestablishes her relationship with the child.

Since the touching behavior in bonding is thought to be species-specific for humans, and, therefore, an unlearned response, there is a possibility that instinctual phenomena such as empathy as described by Benedek (1970) and Kaplan (1978) may provide the energy and the drive for the mother's subtle effective responses to the child's needs. Data which supports that a child

needs maternal touch for optimal growth and development is well established by Harlow (1974), Barbero (1974), Montague (1971), and Klaus and Kennell 1976).

Considering all the above statements, if a mother does reestablish a relationship with her postoperative child by recapitulating the postpartal touching sequence, then it can be viewed as an attachment behavior possibly associated with the crisis of surgery (a threatening event) in which maternal retrieval behavior is activated with maternal touching of the child occurring as a predictable outcome. It is a situation in which maternal touching behavior may be energized by the unconscious psychic process of empathy whereby the mother meets the subtle needs of the child.

CHAPTER III

METHODOLOGY

This descriptive field study was designed to observe and record the characteristics of how a mother touches her child who has experienced surgery. An observational tool (appendix B), standardized in a pilot study, was used to record maternal touch behaviors in timed intervals for the purpose of identifying maternal touch behaviors in the surgical pediatric setting. This descriptive study has facilitated information about the touching behaviors of twenty-four mothers when they were first reunited with their child who had experienced surgery.

Setting for the Study

The setting for this study was in a non-profit private children's hospital in a metropolitan area of over one million persons. The hospital has a 117-bed inpatient area and a large outpatient clinic which serves local and regional clients. The third floor medical-surgical unit admits children from birth to thirty-six months of age. The fourth floor, a medical-surgical unit, accommodates patients of thirty-six months of age up to eighteen years

of age. Occasionally patients under thirty-six months of age are located on the fourth floor. It is in these areas that data were collected within the children's respectively assigned units. Each individual hospital unit is a well-lighted area containing a bed, a built-in bedside table at the head of the bed, an overbed table, and an adult-size chair which converts into a bed. During the data collection phase of this study, the investigator was located within the child's unit in order to have a complete view of the mother and child. Also, the location of the investigator in the room did not interfere with access to the child by the mother or the staff.

Each mother was introduced to the purposes and the procedure for the study by the investigator during the preoperative period. The investigator explained to the mother that there would be two observation sessions, each lasting twenty minutes. The first session was to occur before the child's scheduled surgery and the second session was to occur when the mother and her child were first reunited upon the child's return from the surgery area. The investigator's role was to observe the mother and child and record data of the interaction-encounter sessions; both sessions would be viewed by the investigator from approximately the same location.

The investigator was dressed in the professional attire standardized for the institution where the study was conducted. A name pin identifying the investigator was worn.

Population and Sample Selection

The sample chosen for this study consisted of twenty-four pairs of mothers and children. The sample was divided into three groups (A, B, and C) according to the ages of the children. This grouping was done for the purpose of determining if there was the influence of the child's age upon the touching behaviors displayed by the mothers. Group A was composed of children whose ages ranged from one week to the age of twelve months. The second group (B) was composed of children whose ages ranged from twelve months to twenty-four months. Ages of the children selected for the third group (C) ranged from twenty-four to thirty-six months of age.

The sample was selected so that each group would contain an equal or near equal number of children of each sex. The sampling technique consisted of selecting children under thirty-six months of age who were hospitalized for surgery during the data collection phase of this study. The sample was chosen in advance by the investigator from the surgery roster. Children having any

type of surgery and recovered in the surgery area were selected. Those children chosen for the sample were sent to the hospital room from the surgery-recovery area after they were determined to be physiologically stable. Children with physical defects, children born prematurely, and children who had experienced prior surgery were not excluded from the study. The sample was not controlled for various demographic variables.

Each subject's participation in this study was voluntary after the explanation of the study (appendix C) and the parental consent forms (appendix D) were signed by the mother or the father and witnessed by another person of legal age. The written explanation of the study (appendix C) communicated to the parents that the study being conducted by the investigator was concerned with the recording of kinds of behaviors that occur when a child is hospitalized for surgery. The explanation focused on the kinds of behavior that children exhibit during hospitalization to prevent alteration of the mother's natural behavior during the observation sessions. The explanation contained a written statement telling parents that you and your child's participation in this study will hopefully make nurses more aware of the needs of children who are hospitalized for surgery. The parental consent form

(appendix D) stated that the investigator was allowed to observe and record activities of the child for two twenty-minute periods, that the child's hospital and/or clinic records could be used, and that no names would be released in the research report. The form stated that the child's participation and parental participation was voluntary with the parties being free to withdraw at any time. The parental consent form also stated that refusal or consent to participate in the study would not affect the care of their child. The purposes and the procedure of the study were reviewed with the mother and with the father when he was present. This was done by the investigator prior to the first observation session in the preoperative period.

Description of the Instrument

An observational tool (appendix B) was developed by the investigator and adapted from other tools used by Cannon (1977) and Boriskie (1978). The tool was further refined according to recommendations made by a statistician. A demographic sheet (appendix B) was utilized with the observation tool. The demographic sheet consisted of descriptive items regarding the child, information relating to the child's surgery, and information related to post-partal events experienced by the mother with this child.

Demographic information was obtained by the investigator by interview with the mother and from the hospital record after both observations were recorded.

The tool format, used for recording the maternal touching behaviors, was designed according to descriptions of maternal touch by Rubin (1963), Klaus et al. (1970), Cannon (1977), and Luddington-Hoe (1977). The tool format was adapted from observation tools used by Cannon (1977) and Boriskie (1978).

The tool identifies twenty minutes of maternal touching behaviors. The twenty-minute period was delineated as related literature indicates that the touching behaviors may occur within this time period. Klaus et al. (1970) and Cannon (1977) identified that the postpartal touching pattern occurred within a nine- to twelve-minute period while Rubin's (1963) earlier description maintained that it took several days for the mother to move through the pattern of touch.

The observation tool was utilized to identify the touching characteristics of the mother in the first encounter with her child who had just experienced surgery. The categories used are similar to those used by Klaus and associates (1970), Cannon (1977), and Rubin (1963). The categories outlined on the tool are:

1. Areas of the child's body where the mother touches

2. Parts of the mother's body which she uses to touch the child

3. Types of touch exhibited by the mother when touching the child

4. Other activities such as eye contact, verbalizing, and related behaviors exhibited

The reliability and the validity of this tool had not been established. Therefore, a pilot study was conducted in the same setting as the main study using three mother-child pairs. The preoperative and postoperative observations were made individually by the investigator and an assistant knowledgeable about touch behaviors. Maternal touch behaviors were recorded on the tool by each observer and results were compared. Questionable areas on the observation tool were discussed as to clarity and practicality. Collaborative critique and discussion of the observational tool determined the tool to be efficient, practical, and designed to record behaviors necessary for hypothesis testing. Results of the pilot study indicated that the behaviors of no touching, functional touching, and passive holding needed to be operationally defined and added to the types of touch in the key of the observation

tool. A column was added which indicated the location of the child during the touch encounter. The column identified the bed, the mother's or father's lap as potential places wehre the child might be during the observation.

During the pilot study the investigator and the second observer individually recorded a particular maternal holding behavior that was passive in nature and did not involve active use of the upper arms. From these observations and definitions in the literature, this behavior was designated as passive holding and was assigned as Stage 0 in the touching sequence based on Luddington-Hoe's (1977) description and documentation of such maternal holding behavior in the early postpartal period. The content validity of an item being tested is basically judgmental with each item studied for presumed relevance to the property being measured (Kerlinger 1973). According to Kerlinger (1973) a reliable instrument is one which will achieve the same results with repeated usage. Therefore, after comparisons of results obtained from the tool in the pilot study and appropriate changes made, the observational tool was presumed to have validity and reliability. When greater interpretive burden is put upon the observer, reliability and validity may suffer. However, according to

Kerlinger (1973) validity of behavioral observation measures are much stronger if they are embedded in a theoretical framework from which certain relations should exist. Kerlinger (1973) also went on to say that behaviors recorded in small easily observed units attain a higher degree of reliability.

Procedure for Data Collection

The data for the proposed study were collected during a period from October 18 to November 22, 1978, in the fall semester after obtaining written approvals from the faculty committee, Human Rights Committee (appendix A), and from the agency (appendix A) where the study was conducted. Before commencing the study the nursing service director of the hospital agency was consulted and explanations of the study were made. This same procedure was followed in introducing the nursing and medical staff to the study during the times the investigator was on the hospital units. After receiving written consent that the mother understood the explanation of the study (appendix C), permission forms to participate in the study were also signed by the mother (appendix D).

The investigator observed each mother and child for two twenty-minute periods. The first observation period occurred prior to the child's scheduled surgery.

Before commencing with the first observation of each mother and child, the two observation tools and the demographic data sheet were identified by the appropriate case number. The first observation tool (appendix B) utilized for the preoperative observation was marked observation number one and the duplicate tool used to record postoperative data was designated as observation number two. These data collection papers were kept in a brown portfolio. Data were always recorded on the papers as they rested on the opened inside surface of the portfolio. Once the data collecting tools were treated in the above manner, the investigator then explained to the mother that she would be in the room for the next twenty minutes.

The first data collection session was initiated with the following standard statement from the investigator (appendix E): "Now that your child and you are together in the room, I need to make notations for my record. Please feel free to be with your child now." The investigator was then seated in a chair placed 3 to 5 feet from the foot of the bed. The chair was positioned so the investigator was diagonally across from the mother and child. After being seated the investigator began timing and recording maternal touching behaviors. The behaviors were recorded in two-minute segments. The two-minute

segments were timed using a wrist watch with a second hand whose dial had easily visible one-minute demarcations. Several mothers sporadically engaged the investigator in conversation; brief responses were given but no further conversation was initiated by the investigator. The investigator did not initiate conversation with the mother during the observation periods. During the twenty-minute time period maternal touching behaviors were recorded. After the first observation, the investigator asked the mother (and the father if present) if there were any questions the investigator could answer concerning the study. Usually questions would request information which was contained in the written explanation of the study (appendix C) and the written parental consent form (appendix D). The investigator then told the mother she would return to the room for the second observation when the child returned to his room postoperatively.

In order to be present when the mother and child were reunited following the child's surgery, the investigator informed the recovery room nurses which children were in the study. The recovery room nurses instructed the investigator as to the approximate time the child would be returned to his room. This allowed the investigator to be on the unit and accompany the child as he

was returned to his room from the surgery-recovery area.

The second observation began after nurses had completed necessary postoperative care of the child. Usually the child was placed by the recovery room nurse in the mother's arms or on the bed. When the nurses left the room the investigator initiated the second observation period with the same standard statement used in the preoperative session. The maternal touching behaviors were then recorded in two-minute segments for the next twenty minutes. When the second observation session ended, the investigator obtained necessary demographic data from the mother. The investigator then asked if there were other questions. Usually there were no questions after the second session. Mothers were less likely to initiate conversation during the second session as they were usually more preoccupied with their child. Many of the children were fretful from the effects of surgery. After completing the second observation and recording demographic information which only the mother could supply, the investigator thanked the mother or both parents if the father was present, and left the room. At that time the investigator obtained the remaining demographic data from the child's hospital record.

Method of Data Analysis

The data are grouped and scrutinized according to the variables of age and sex of the child, touch characteristics exhibited by the mother, and the time in which characteristics of touch progress from stage to stage as defined in the operational definition of stages of touch characteristics.

Data about maternal touch obtained in the post-operative period were scrutinized and grouped for similarities and differences. Touch data were correlated with various demographic information to ascertain if mothers' touch behaviors were affected by such factors as neonatal separation, or prematurity of the child at birth. Frequency distributions and measurements of central tendency are other statistical methods which were applied. The statistical analysis is presented in Chapter IV of this study.

CHAPTER IV

ANALYSIS OF DATA

This study was concerned with identifying the touching characteristics the mother displays when first reunited with her child of less than thirty-six months of age who has experienced surgery. The data were collected in a manner to discern if the touching characteristics of the mother progressed in a sequential pattern similar to the maternal touching pattern identified in the early post-partal period. Twenty-four mother-child pairs were observed in this investigation. The mothers, when first reunited with their child who had experienced surgery, were observed for touches progressing from use of the fingertips, to the use of their palms and hands and finally to the use of their arms to enfold the child. The results of this descriptive study are presented in this chapter.

Description of the Sample

The sample consisted of twenty-four mother-child pairs. There were three groups of eight mother-child pairs which were delineated by the age of the child. Group A consisted of eight mothers with infants to twelve

months of age. Group B consisted of eight mothers whose children were twelve months to twenty-four months of age. Group C was composed of eight mothers whose children were twenty-four months to thirty-six months of age.

Collection of the data was carried out between October 18, 1978, and November 22, 1978. All subjects who were approached by the investigator agreed to participate in the study.

Scrutiny of the data by age groups A, B, and C was not definitive for the stated purposes of the study. Therefore, the sample is described and the data are analyzed by the group of mothers who sequentially progressed through the touch stages (SQ Group) and the group of mothers who touched their children non-sequentially (NSQ Group). Nine mothers (38 percent) touched sequentially and fifteen mothers (62 percent) did not touch sequentially when reunited with their child who had experienced surgery. In the following tables the sequence touch group of mothers will be designated as the SQ Group and the non-sequence touch mothers will be designated as the NSQ Group.

Table 1 gives the sex and race of the child sample. The child sample was selected so there would be a near equal number of males and females, but there were no restrictions on race. The number of males comprised a

slightly larger percentage in the sequence and non-sequence groups. Most of the two groups were comprised of Caucasian children. Twenty percent of the children in the non-sequence group were Black as compared with 11 percent of Black children in the sequence group.

TABLE 1

DISTRIBUTION OF CHILD SAMPLE BY SEX AND RACE BY THE TWO GROUPS

	Sex			
	Male		Female	
	Number	Percent	Number	Percent
SQ Group	5	56	4	44
NSQ Group	8	53	7	47
Total (N=24)	13	54	11	46

	Race			
	Black		White	
	Number	Percent	Number	Percent
SQ Group	1	11	8	89
NSQ Group	3	20	12	80
Total (N=24)	4	17	20	83

The mean age and the range of the child sample by the two groups were similar (table 2). Children in the sequence touch group were 2.6 months older than those in

the non-sequence group. Both groups contained infants and older children. These data support Rubin's (1963) observation that recapitulation of the maternal touch sequence postoperatively occurs with children under twelve months of age, but contradicts the idea that the post-operative touch sequence is a phenomena experienced by mothers and infants only. Five of the nine mothers who touched sequentially had children whose ages ranged between twenty-four and thirty-six months of age.

TABLE 2

MEAN AGE AND RANGE OF CHILD SAMPLE BY SEQUENCE AND NON-SEQUENCE TOUCH GROUPS

Group	Mean Age in Months	Range in Months
SQ (N=9)	18.9	0.5 - 35
NSQ (N=15)	16.3	1.5 - 35.25
Total (N=24)	16.3	0.5 - 35.25

Table 3 shows the distribution of the number of siblings of the children in the sequence touch groups and the non-sequence touch group. None of the children in the sample had more than two siblings. Six of the nine children whose mothers touched in sequence had siblings at home. Five out of the fifteen children whose mothers did not

touch in sequence had siblings at home. Two-thirds of the non-sequence touch group were first-time mothers, while one-third of the sequence mothers were first-time mothers.

TABLE 3

NUMBER OF SIBLINGS OF CHILD SAMPLE BY SEQUENCE AND NON-SEQUENCE TOUCH GROUPS

Group	0 Sibling		1 Sibling		2 Siblings	
	Number	Percent	Number	Percent	Number	Percent
SQ	3	33	4	45	2	22
NSQ	10	67	4	26	1	7
Total	13	54	8	33	3	13

N = 24.

Distribution of the child sample by maturity at birth revealed that 100 percent of the children of mothers who touched in sequence were full-term infants while only 60 percent of the children in the non-sequence group were full-term (table 4). Forty percent of the children of mothers who touched non-sequentially were premature. Prematurity of a child at birth is considered a stressful neonatal factor which can disturb the formation of maternal affectional ties because of maternal-infant separation (Kennell and Klaus 1971).

TABLE 4

DISTRIBUTION OF CHILD SAMPLE BY MATURITY AT BIRTH

Group	Full-term		Premature	
	Number	Percent	Number	Percent
SQ	9	100	0	0
NSQ	9	60	6	40
Total	18	75	6	25

N = 24.

Klaus and Kennell (1976) suggested that the hour following delivery is a critical period for the mother and child to form a beginning attachment. Mothers of premature infants may be immediately separated from their infants because of admission to special care units. The non-sequence group children were on the average five weeks premature and were in the hospital six days longer than the sequence group (table 5).

Demographic data listing the presence of a physical defect, whether or not the defect was grossly visible and the category of surgical procedure the child experienced are listed in table 19 (appendix F). Children who had defects and who had experienced prior surgeries were not excluded from the sample. Both groups of children had a similar mean number of prior surgeries; however, the range

TABLE 5

MEAN WEEKS PREMATURE AND MEAN NEONATAL DISCHARGE AGE (DAYS) OF CHILD SAMPLE

Group	Mean and Range of Prematurity in Weeks	Discharge Age And Range in Days
SQ	0	10 (2-30)
NSQ	5 (4-11)	15.7 (4-90)
Total	1.46 (0-11)	13.75 (2-90)

N = 24.

of the number of surgeries experienced by children in the non-sequence group was up to seven surgeries as compared with top range of two surgeries in the sequence group table 6). The mean time away from the hospital unit for surgery and recovery was 1.05 hours longer for the children of the non-sequence touch group (table 6).

Skipper, Leonard, and Rhymes (1968) concluded from this study that maternal anxiety levels are greater during surgery and maternal stress is further heightened if the mother believes her child will have to have more surgical procedures in the future. Prolonged time that the child was in surgery may have heightened the maternal stress experienced by the mothers who did not sequentially touch their children postoperatively. Bowlby (1969)

stated that alarming events can alter the intensity of all attachment behaviors.

TABLE 6

MEAN NUMBER OF PRIOR SURGICAL PROCEDURES AND MEAN TIME CHILD WAS IN SURGERY (HOURS)

Group	Mean Number of Prior Surgical Procedures	Mean Time Child Was in Surgery
SQ	1.1 (0-2)	2.67 hours (1.75-4)
NSQ	1.3 (0-7)	3.72 hours (1.75-5.75)
Total	1.2 (0.7)	3.4 hours (1.75-5.75)

N = 24.

Much of the demographic data was concerned with the mother. The mother's age, whether or not she was awake during the delivery of the child, whether or not she held the child in the delivery room, and whether or not she was separated from the infant during the first hours after delivery were recorded. The length and the reason for the first neonatal separation, and whether or not the mother experienced rooming-in and breast-feeding post-partally were also documented.

Mothers who touched their children sequentially were slightly older by 1.41 years than mothers in the non-sequence touch groups (table 7). No conclusions

can be drawn as to the effect of the mother's age upon maternal touch in this situation.

TABLE 7

MOTHERS' MEAN AGE AND AGE RANGE IN YEARS BY THE TWO GROUPS

Group	Mothers' Mean Age in Years	Range of Age in Years
SQ	25.78	19 - 32
NSQ	24.27	16 - 31
Total	24.83	16 - 32

N = 24.

Table 8 compares the delivery room events experienced by mothers of sequence and non-sequence touch groups. Eight of the nine mothers in the sequence touch group (89 percent) were awake during delivery as compared with only 53 percent of the mothers who did not touch their children sequentially. Forty-four percent of the sequence touch mothers held their child on the delivery table as compared with 33 percent of the non-sequence group of mothers. All of the mothers were separated from their child immediately after delivery. The hour following delivery is considered by Klaus and Kennell (1976) as the critical period during which maternal touch and eye-to-eye

TABLE 8

DELIVERY ROOM EVENTS EXPERIENCED BY MOTHERS OF SEQUENCE AND NON-SEQUENCE TOUCH GROUPS

	Awake or Asleep During Delivery				Held Child in Delivery Room				Immediately Separated From Child After Birth			
	Yes		No		Yes		No		Yes		No	
Group	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
SQ	8	89	1	11	4	44	5	56	9	100	0	0
NSQ	8	53	7	87	5	33	10	67	15	100	0	0
Total	16	67	8	33	9	37	15	63	24	100	0	0

contact between mother and child are maximally operational for the initiation of maternal-infant bonding.

Comparison of the mean number of hours mothers were separated from their newborns is presented in table 9. Mothers who touched their child sequentially when first reunited in the postoperative period, were separated postpartally only an average of 7.4 hours. Mothers who touched non-sequentially were separated postpartally from their infant for a mean time of 23.2 hours, three times as long as the sequence touch mothers. Klaus and Kennell (1976) suggested that the time span for optimum bonding between the mother and child is usually twelve to fifteen hours after delivery. Mothers who did not recapitulate the touching sequence in the postoperative reunion with their child, were separated from them also during a critical time postpartally.

Table 10 shows neonatal separation of the mother and child was produced by admission of infants to hospital nurseries. Sixty-seven percent of the children of mothers who touched in sequence were admitted to well-baby nuries, as compared with 47 percent of the children of non-sequence mothers. More children of non-sequence touch mothers were admitted to neonatal intensive care units. These data correlate with this group's higher rate of

prematurity and prolonged neonatal separation time after delivery.

TABLE 9

COMPARISON OF MEAN TIMES IN HOURS MOTHERS WERE SEPARATED FROM INFANTS AFTER DELIVERY

Group	Mean Time in Hours	Range in Hours
SQ	7.4	1 - 72
NSQ	23.2	2 - 96
Total	22.5	1 - 96

N = 24.

TABLE 10

IMMEDIATE NEONATAL SEPARATION OF MOTHER AND INFANT BY TYPE OF NURSERY ADMISSION

Group	Well Nursery		Neonatal ICU	
	Number	Percent	Number	Percent
SQ	6	67	3	53
NSQ	7	47	8	53
Total	13	54	11	46

N = 24.

Seventeen percent of the mothers in the total sample experienced rooming-in postpartally (table 11).

Twenty-two percent of the sequence touch mothers experienced rooming-in and the same percent experienced breast-feeding. Thirteen percent of mothers in the non-sequence touch group experienced rooming-in and 40 percent breast-fed their infants (table 11). Greenberg's (1977) data revealed that rooming-in mothers had higher incidence of breast-feeding. Kennell and Klaus (1971) reported that compulsory rooming-in in postpartum areas increased the incidence of mothers breast-feeding by 24 percent. These authors suggested that breast-feeding promotes more continuous tactile contact between mother and infant and facilitates development of a stronger maternal-child attachment.

None of the children whose mothers touched them sequentially during the postoperative reunion had grossly visible defects. Fifty-three percent of the children in the maternal non-sequence touch group had grossly visible defects. Mothers whose children are born defective or whose children experience minor problems, such as hyperbilirubinemia, are at risk for disturbed mother-child relationships. The mother of such a child can develop a mothering disorder ranging from over concern about the child's physical needs, neglect, and child abuse (Kennell and Klaus 1976).

TABLE 11

NUMBER OF MOTHERS WHO EXPERIENCED ROOMING-IN AND BREAST-FEEDING BY THE TWO GROUPS

	Rooming-in			
	Yes		No	
Group	Number	Percent	Number	Percent
SQ	2	22	7	78
NSQ	2	13	13	87
Total	4	17	20	83

	Feeding Method			
	Breast		Bottle	
	Number	Percent	Number	Percent
SQ	2	22	7	78
NSQ	6	40	9	60
Total	8	33	16	67

N = 24.

Presentation and Analysis of Data

The analysis of data was divided into two categories. The order mothers progressed through the touch stages was based on the mean minute they were first observed in each operationally defined stage of touch. Secondly, the mean number of minutes the mothers spent in each touch stage was tabulated. Also, the mean number of

minutes mothers spent touching functionally and not touching were recorded.

The mean minute, the moment that mothers were first observed in each touch stage provided the data to establish which mothers progressed through the touch stages sequentially. Stage zero touch was defined as the mother passively holding the infant against her ventrum without active use of the upper arms. Some mothers were not recorded in this stage since some children were placed in the bed upon return from surgery instead of being placed in the mother's arms. Stage one touch was defined as the mother using only her fingertips to stroke or to stationarily touch the child's extremities or face. Stage two touch required that the mother progress to fingertip touching of the child's trunk. When the mother used the palmar surface of her hand to massage the child's trunk or to encompass his head the mother was defined as being in stage three of the touch sequence. Stage four touch was recorded when a mother enfolded the child actively using her whole arm to hold the child against her ventral surface.

The mean minute, the moment that the mothers were first observed in each touch stage, represents only those subjects who demonstrated specific stage behaviors.

Therefore, N varies from stage to stage and from group to group. Twenty mothers (83 percent) spent all or part of the postoperative observation in touching the child during their immediate postoperative reunion. These mothers did not always participate in all the defined stages. Four (17 percent) of the mothers never touched their child during the observation period. The stages of touch in which each mother participated and the sequence of stages is presented for each case in table 19 (appendix F).

Table 12 summarizes the mean minute that mothers were first observed in each touch stage. The group of mothers who touched sequentially entered stage zero at 1.79 minutes, stage one at 4.07 minutes, stage two at 7.58 minutes, and stage three at 12.25 minutes. The sequence touch mothers never entered stage four. Stages of touch progressed in an orderly chronological sequence, while the stages of touch for the non-sequence group did not (table 11). The results of the data analysis for the sequence group supports Rubin's (1963) observations that maternal relationships are re-established postoperatively in fingertip identification and touch with the hands, but the arms are not actively involved initially. Six of the mothers in the non-sequence touch group enfolded their

children in the postoperative reunion after the child's surgery. Their children were in surgery approximately one hour longer.

TABLE 12

MEAN MINUTE MOTHERS WERE FIRST OBSERVED IN EACH STAGE BY THE TWO GROUPS*

Stage	SQ Group	NSQ Group	Total
0	1.79 (N=7)**	2.1 (N=5)	1.92 (N=12)
1	4.07 (N=9)	7.5 (N=10)	5.75 (N=18)
2	7.58 (N=7)	6.67 (N=6)	6.58 (N=13)
3	12.25 (N=5)	4.75 (N=8)	6.69 (N=13)
4	0 (N=0)	6.63 (N=6)	6.25 (N=6)

*Mean minute computation based on only those subjects who demonstrated specific stage behaviors, N thus varies from stage to stage.

**Two children were in bed, not in mother's lap.

Table 13 illustrates that mothers in the non-sequence group entered stages three and four after passively holding the child. The stage four behavior of enfolding is much like the maternal retrieval response described by Bowlby (1969). The mother retrieves the child into close bodily contact particularly if the child is crying out in pain or when the mother becomes alarmed (Bowlby 1969). Children's cries were not recorded and

cannot be correlated with the enfolding behavior of the non-sequence mothers. Table 13 also illustrates that mothers who touched in sequence progressed through all the stages except stage four. None of these mothers enfolded their child.

TABLE 13

ORDER OF MOTHERS' TOUCH STAGES BASED ON MEAN MINUTE MOTHERS WERE FIRST OBSERVED IN EACH STAGE

Group	Order of Touch Stages
SQ	0123
NSQ	03421
Total	01423

N = 24.

The mean number of minutes the two groups participated in each touch stage in functional touching and in not touching were recorded in table 14. The mean number of minutes for all twenty-four months gradually decreased for each subsequent (higher) stage of touch (table 14). This further supports Rubin's (1963) observation that mothers, when reunited with their postoperative child, recapitulate the touching sequence primarily using the fingertip and hand touch. The non-sequence group of mothers spent approximately 15 percent of the twenty

TABLE 14

MEAN LENGTH OF TIME IN MINUTES MOTHERS WERE OBSERVED IN EACH TOUCH STAGE, IN FUNCTIONAL TOUCHING AND IN NOT TOUCHING

	SQ Group		NSQ Group		Total Group	
	Mean Minutes		Mean Minutes		Mean Minutes	
Stage	$\bar{X}$ Minute	Percent	$\bar{X}$ Minute	Percent	$\bar{X}$ Minute	Percent
0	6.43	32	2.17	11	3.76	19
1	4.96	25	2.5	13	3.42	17
2	4.65	24	1.3	7	2.56	13
3	0.85	4	2.87	14	2.13	10
4	0	0	3.07	15	1.91	10
FT	0.22	1	0.4	2	0.33	2
NT	2.89	14	7.67	38	5.88	29

N = 24.

minutes enfolding although the sequence touch mothers never reached stage four. Boriskie (1977) had similar results in a study comparing touch behaviors of mothers of normal and failure-to-thrive infants. Mothers of thriving infants more frequently used palms and fingers than mothers of failure-to-thrive infants. Also, mothers of failure-to-thrive infants embraced the infant more than did mothers of thriving infants (Boriskie 1977). Mothers in the group that touched sequentially had children who were all full-term, and from whom they were separated

after delivery for about seven hours. Therefore, this group was less risk for developing mothering disorder than were the mothers of the non-sequence touch group (Klaus and Kennell 1976). Sequence touch mothers spent a total of seventeen minutes in fingertip and hand touch. These maternal touch behaviors support the hypothesis that a maternal re-identification process occurs in the pediatric postsurgical setting. The non-sequence touch group spent 38 percent (7.67 minutes) of the observation period not touching their child, while the sequence group spent only 2.89 minutes (14 percent) of twenty minutes not touching.

Leiderman (1974) studied delayed consequences of neonatal separation of mothers and infants. In follow-up studies these mothers and their full-term and premature infants demonstrated that mothers not separated from their infants postpartally touched their children more fifteen months later. Leiderman's (1974) data would tend to support the data that mothers in the sequence touch group spent more time touching their children in the post-operative reunion period since they were only separated from them an average time of seven hours neonatally. The average time of separation for the non-sequence touch group was twenty-three hours. Klaus et al. (1970)

empirically identified Rubin's (1963) reports of the maternal postpartal touching sequence. However, Klaus et al's. (1970) study and Cannon's (1977) study indicated the sequence is complete within nine to twelve minutes.

Data from this present study would suggest that the recapitulation of the maternal touching sequence in the pediatric postoperative setting takes more than twenty minutes before mothers touching in sequence will reach stage four and enfold their children. The presence of dressings, intravenous equipment, and clothing may slow down the touch sequence. The children in this study were many times drowsy and unresponsive when first reunited with their mothers.

Demographic data which suggested great variability between the sequence touch group and the non-sequence touch group were further analyzed by application of the Fisher Exact Probability Test.

Table 15 indicates that in this sample the difference between the groups in the frequency of gross visible defects was statistically significant at the .009 significance level. Therefore, mothers whose children have gross visible defects are not likely to touch them sequentially in a postoperative reunion setting and may be

a population needing nursing intervention for facilitation of healthy maternal touch behaviors.

TABLE 15

RESULTS OF THE COMPARISON BY THE FREQUENCY OF CHILDREN WITH GROSS VISIBLE DEFECTS BY THE TWO GROUPS

Grossly Visible Defect	SQ Group		NSQ Group		P
	Number	Percent	Number	Percent	
Yes	0	0	8	53	--
No	9	100	7	47	.009* or less than .01

N = 24.

*Strong statistical significance by application of the Fisher Exact Probability Test.

Table 16 displays another statistically significant difference between mothers who touched sequentially and mothers who did not. The children of sequence touch mothers were all full-term as compared with 60 percent of the non-sequence group. Mothers of children born full-term and without grossly visible defects have less potential for mothering disorders affecting the quality of mother-child attachment (Barbero 1974).

Table 17 indicates that mothers who touched their children in the postoperative reunion were more likely to

TABLE 16

RESULTS OF COMPARISON BETWEEN THE TWO GROUPS BY THE CHILD'S MATURITY AT BIRTH

Maturity	SQ Group		NSQ Group		P
	Number	Percent	Number	Percent	
Full-term	9	100	9	60	.037 or less than .04*
Premature	0	0	6	40	--

N = 24.

*Statistically significant by application of the Fisher Exact Probability Test.

be conscious during delivery as compared with mothers in the non-sequence touch group. This difference was a borderline level of significance. Kennell and Klaus (1971) postulated that the effects of general anesthesia will alter the mother's abilities to interact effectively with her newborn. Sugarman (1977) reported that women who are given a general anesthesia for a Caesarean section never believe that they have delivered a child. This factor is thought to delay the development of the early mother-infant attachment process.

There was also a comparison of the two groups for the mean time the mothers spent not touching (table 18). The Mann-Whitney U test was applied. Results of compared differences between amount of time the two groups spent

TABLE 17

RESULTS OF COMPARISONS OF MOTHER'S LEVEL OF CONSCIOUSNESS AT DELIVERY BY THE TWO GROUPS

Mother Conscious at Delivery	SQ Group		NSQ Group		P
	Number	Percent	Number	Percent	
Yes	8	89	8	53	0.79*
No	1	11	7	47	--

N = 24.

*Borderline statistical significance by application of the Fisher Exact Probability Test.

not touching, produced a value only in the direction of statistical significance. This would give some support to Leiderman's (1974) data in which mothers and children not separated for a long period neonatally, touch their children more in later months.

TABLE 18

COMPARISON OF MEAN TIMES MOTHERS SPENT NOT TOUCHING BY THE TWO GROUPS

Time in Minutes	SQ Group	NSQ Group	U Statistic	P
Not touching	2.89	7.67	51.5	.17*

N = 24.

*Not significant but in the direction of significance by application of the Mann-Whitney U Test (t = -1.54, p - .137).

Summary

The data analyzed were obtained from observing the touching characteristics of mothers who were reunited with their child of less than thirty-six months who had experienced surgery. The results produced some evidence to suggest that mothers may recapitulate the postpartal touching sequence when reunited with their child who has just experienced surgery. The demographic data revealed that the group of mothers who touched their children sequentially contained more full-term children, none of whom had grossly visible defects. These differences were found to be statistically significant by use of the Fisher Exact Probability Test. The nine mothers who touched sequentially were more likely to be conscious during the delivery of their child than were the mothers who did not. The fifteen mothers who did not touch sequentially, as a group, had children with higher incidence of prematurity and prolonged neonatal separation.

Nine of the twenty-four mothers progressed sequentially through all the touch stages up to stage four. Six of the fifteen non-sequence touch mothers enfolded their children after passively holding the child during the postoperative reunion. The mean number of minutes the entire group spent in each stage decreased with each

higher stage. These data suggest that mothers use fingertip and hand touch to reidentify with their child who has had surgery. The data support Rubin's (1963) description that the mother's arms are rarely used actively at this time.

Correlating postpartal and delivery-room data of the mother with types of touches seen by sequence and non-sequence touch groups, indicate that mothers at risk postpartally for a mothering disorder may still be at risk when the mother has to cope with a child's surgery event. Although the mothers in the non-sequence group spent more time not touching their children than did the sequence mothers, the difference was not significant. The value, however, was in the direction of significance.

Another finding of this study was the mothers who touched their child in sequence were found in all three age groups. Therefore, the data of this study suggest that the touching sequence is not necessarily confined to mothers with infants.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This study was performed to identify if mothers, when first reunited with their child who has just experienced surgery, touch their child in a sequential pattern similar to the maternal touching sequence in the early postpartal period. Three groups, each consisting of eight mother-child pairs, were delineated by the age of the child. Each of the mother-child pairs was observed preoperatively and postoperatively by the investigator for twenty-minute periods. The data obtained from the twenty-minute postoperative observation, when the child and mother were first reunited, are the data reported in this study. Touching behaviors were delineated and recorded according to the defined stages of maternal touch. The data were analyzed and compared to the various demographic data in an effort to correlate maternal touching behaviors with the crisis of her child's surgery. Ex post facto postpartal data were correlated to present maternal touching behaviors.

The observational tool used in this study was adapted from tools designed to record maternal touching behaviors developed by Cannon (1977) and Boriskie (1978). The adapted tool was tested in a pilot study by the investigator and an assistant knowledgeable about touch behaviors. From the pilot study a maternal behavior of passive holding was recognized and operationally defined for data collection. This behavior was designated as Stage Zero in the maternal touching sequence. The observational tool identified the type of touch and the location of the mother's fingers, hands, arms on the child in ten sequential, two-minute segments.

Each mother who participated in the study received a written explanation of the general purpose of the study and a written parental consent form. After explanation form (appendix C) and parental consent form (appendix D) were signed and witnessed, the preoperative observational session was initiated by a standard statement from the investigator (appendix E). The postoperative session was also initiated with the standard statement (appendix E).

The sample of twenty-four mother-child pairs was obtained from a private children's hospital in a large metropolitan area. Children who were admitted to the hospital for surgery and who were under thirty-six months of age were chosen. Day surgery patients were not used.

The purposes of this study were to identify the touch characteristics displayed by a mother when reunited with her child of less than thirty-six months of age who had experienced surgery. Other stated purposes included discerning if a sequential pattern of maternal touch occurred in which the mother progressed from fingertip to whole-hand touch, to use of the arms to enfold the postoperative child. Although data were collected by three groups delineated by age, the data were presented and analyzed according to groups of mothers who touched their children sequentially and mothers who did not touch their children sequentially. When the data were analyzed by age groups, the stated purposes of the study were not answered.

Nine mothers, as a group, touched children sequentially passing from stage zero through stage three. Fifteen mothers touching out of sequence, as a group, passed from stage zero to stages three and four. Mothers who touched their children in an orderly sequence of fingertip to whole-hand touch had a statistically significant number of full-term children without grossly visible defects. A borderline significant difference between the two groups was that mothers who touched sequentially were more often conscious during the delivery

of their child. As a group the mothers who did not touch their children sequentially had a higher incidence of children who were premature with grossly visible defects. The mean minute of neonatal separation was three times longer for the non-sequence group. According to Klaus and Kennell (1976) and Barbero (1974), these mothers are at risk for developing mothering disorders.

The length of time the entire sample spent in each stage of touch decreased as the stage of touch increased. This would support Rubin's (1963) premise that the mother uses generally fingertip and whole-hand touch to reidentify with a child who has experienced surgery. The progression of fingertip to whole-hand touch in a chronological sequence was documented in all three age groups. This suggests that the maternal touching sequence is not just a phenomenon of the mother and the infant as documented by Klaus et al. (1970) and Rubin (1961, 1963).

Mothers in the non-sequence touch group touched their children less. Statistical significance was not given to the value. Difference between the two groups, however, was in the direction of significance when the Mann-Whitney U test was applied.

The presented data suggest some evidence to support that the maternal touching sequence of the

postpartum period is recapitulated when a mother is reunited with her child who has experienced surgery. Data revealed that mothers who do not touch sequentially had a history containing data known to be risk factors for developing mothering disorders. There is no explanation for why six non-sequence touch mothers enfolded their child. Enfolding is a maternal behavior associated with healthy relaxed mother-child relationships (Rubin 1963, Klaus and Kennell 1976). Closer scrutiny of that behavior in this situational crisis might suggest a retrieval behavior described by Bowlby (1969). Many of the children were in pain and children in the non-sequence touch group were in surgery almost one hour longer than children in the sequence touch group.

The motivation for maternal touching behavior cannot explicitly be identified. Psychoanalysts have recognized a mother's subtle ability to respond to the child's needs as an empathic response (Benedek 1970, Mahler 1975). Mahler (1975) stated that the health of a mother-child pair depends a great deal on the mother's ability to empathically respond to her child.

Conclusions

The purpose of this study was to identify the characteristics of touch that mothers displayed when

reunited with their child of less than thirty-six months who had experienced surgery. It was hypothesized that mothers would touch their child in a characteristic pattern in their first encounter after the child experienced surgery. Nine of the twenty-four mothers were observed to progress sequentially through the first three touch stages. Fifteen of the mothers did not touch their children sequentially. The demographic and touch data were analyzed comparing the non-sequence touch group and the sequence touch group. Conclusions were:

1. Mothers who touched their child sequentially used primarily fingertip and hand touches to the child's head, extremities, and trunk. None of these mothers reached stage four, which was enfolding their children. Mothers not touching in sequence many times entered stages three and four after stage zero

2. Mothers in the sequence touch group had children who were all full-term at birth and displayed no grossly visible physical defects. These differences between the sequence group and the non-sequence touch group were statistically significant

3. The entire group produced decreasing mean times for each subsequent (higher stage) of touch. Therefore, data suggested that mothers primarily touched their

children with fingertips and their hands but rarely used their arms to enfold the child in the first postoperative encounter. Such data imply the existence of a maternal re-identification process with the child in the immediate postoperative period

4. The maternal touch sequence in this study was observed in all three age groups, suggesting that the phenomena is not restricted to mothers and infants

5. Sequence touch mothers had a higher incidence of being conscious during the delivery of their child than did the non-sequence mothers at a borderline level of significance. In the neonatal period, non-sequence mothers were separated from their infants three times longer than the sequence mothers neonatally

6. Mothers who touched in sequence spent more time touching their children than did non-sequence mothers but not at a significant level, although values were in the direction of significance

The differences in the touch behaviors of the sequence and non-sequence touch groups correlated with various demographic data, indicated that mothers who did not touch in sequence had histories characteristic of mothers at risk for mothering disorders. A suggestion may be made that the re-identification of the mother with the

child utilizing touch is a healthy, desirable behavior in the postsurgical pediatric setting. Nursing assessment of touch referents and correlation of such behaviors with careful maternal-child histories may provide needed inroads to promoting healthier social bonds.

Implications

Identifying how a mother touches her child following surgery may provide information which can be correlated as to how the mother qualitatively relates to her child within this crisis setting. Such data possibly can be used for the assessment of the ongoing attachment process between the mother and child. Data could provide a base for predicting whether or not a mother might need nursing intervention for the facilitation of a more positive relationship with her child. Maternal touch data can be added to an expanding body of knowledge about touch as a means of communication. Recapitulation of the touching sequence by the mother in the pediatric postsurgical setting is suggestive that the touching sequence is a form of human behavior used for more than one purpose. Generally, such data about how a mother touches her child can provide an index as to how the mother and child are relating during events which may stress this relationship.

Data from this study imply the empirical existence of the maternal touch sequence, as seen in bonding, in the pediatric postoperative setting. If an assumption is made that maternal reidentification with the child is a healthy and desirable mothering behavior, then nurses are in an optimum position to identify and to facilitate this adaptive behavior. Assessment of maternal touch behaviors can provide data upon which nursing judgments can be made as to the ongoing health of the attachment process operating between mother and child.

Recommendations

The following recommendations are offered for subsequent research studies in the area of touch communications between the mother and child.

1. A study involving a much larger sample of mother-child pairs to further document the characteristic pattern of maternal touch in the pediatric postoperative setting

2. A study comparing touch behaviors of mothers whose children are without congenital defects with touch behaviors of mothers whose children were congenitally defective

3. A study observing touch characteristics of mothers who are reunited with their child in the pediatric recovery room

4. Correlation of maternal touching behaviors of mothers reunited with their infants who have experienced surgery, with scores from neonatal perception inventory given preoperatively to the mothers

5. A study comparing a child's developmental score with the touch behaviors displayed by his mother in the postoperative reunion

6. A study in which the touch behaviors of the child and the mother are recorded and then correlated for cue-response data

7. A study to more closely scrutinize, and analyze touching behaviors between mothers and children using videotape equipment to record maternal touch data in the postoperative reunion

APPENDIX A

LETTERS AND PERMISSIONS

8/28/78

Cheryl Hundley
5122 Alcott
Dallas, Texas 75206

Dear Cheryl,

Enclosed are several pages xeroxed from my study that I hope you will find helpful in completing your proposal. Let me apologize for the delay and the added bother of a telephone call, although I enjoyed our visit by phone today. You certainly have my permission to use the tool from my study in any way that it will help in your research.

Your study sounds very interesting, and it would be of great interest to me to hear of the results of mothers' touching behaviors in a post-op situation with their infants.

Good luck to you as you strive for that December due date!

Sincerely,

Rose Cannon

En: RBC/rbc

September 13, 1978
Dallas, Texas

Ms. Cheryl Hundley
5122 Alcott
Dallas, Texas 75206

Dear Cheryl,

I hereby give you permission to use all or parts of the touch observation tool designed by myself used in my own research study on touch behaviors of mothers with their failure-to-thrive infants.

Respectfully,

Linda Boriskie

Linda Boriskie

TEXAS WOMAN'S UNIVERSITY

Human Research Committee

Name of Investigator: Cheryl Hundley Center: Dallas

Address: 5122 Alcott
Dallas,
Texas 75206

Dear Ms. Hundley:

Your study entitled Touching Behaviors of Mothers When First Reunited with Their Child Who Has Experienced Surgery has been reviewed by a committee of the Human Research Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education and Welfare regulations require that written consents must be obtained from all human subjects in your studies. These forms must be kept on file by you.

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

Sincerely,

Chairman, Human Research
Review Committee
at Dallas.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS

DALLAS CENTER
1810 Inwood Road
Dallas, Texas 75235

HOUSTON CENTER
1130 M.D. Anderson Blvd.
Houston, Texas 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Children's Medical Center

GRANTS TO CHERYL BOYD HUNDLEY

a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

"Touching Behaviors of Mothers When First Reunited with Their Child Who Has Experienced Surgery." The investigator will observe and record the characteristics of how a mother touches her child who has just experienced surgery after they are reunited in the child's hospital unit.

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of ~~consultative~~ or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date 10/13/78

Signature of Agency Personnel

Cheryl Boyd Hundley
Signature of student

Tommie L. Wallace
Signature of Faculty Advisor

*Fill out and sign three copies to be distributed as follows: Original — Student; first copy -- agency; second copy -- T.W.U. College of Nursing.

University of Pittsburgh

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September 5, 1978

Ms. Cheryl J. Hundley, R.N.
5122 Alcott
Dallas, Texas 75206

Dear Miss Hundley,

Thank you for your letter. I enjoy your interest and it gives me pleasure to learn that it has been sparked by my own. Good luck on your research proposal. The adventure of one's own discoveries is a very gratifying and exciting one.

The touching sequence has been discussed many times in nursing literature (Judy Dunbar, Ann Clark, many others) but not in peds. Observations by others in peds corroborate the sequence, but I know off hand nc reported studies. So yours would be the first.

There is no reason to exclude I.V.'s or dressings. In fact, it is important to include them because of their newness and strangeness in a child (6-12 mos.) who is already "known". Touching is a means of identifying the other, the situation of the other, and one's relationship now to the other and to the situation of the other.

No difference in type of surgery: cleft lip, cardiac, colostomy, hernia, etc. T & A's are not on the body surface, so no touching.

Why don't you group your children-mothers by age, by surgical condition, etc. and factor out differences, if any, rather than limit your population by age or condition. If you find more (or less) touching, or a change or arrest in the sequence of touching, say in a congenital 1-3 mos. surgery correction than in a later age or different condition than the probable expected proportion of responses (straight probability) for the number in the group as a whole, then you have something to look at. You could use, the null hypothesis, not in collecting data but in analyzing the data by groups.

PITTSBURGH, PA. 15260

To have too many criteria (why?) for selection of your subjects in a clinical study is most unprofitable: you spend too much time getting the subjects that fit your criteria. Right now you are excluding the rich available material for no good reason. You want to study maternal touch post-operatively, not 6-12 month children. The sample for post-op maternal touch is much larger, more accessible, at many age groups. If you have 6-12 children, you could have 3 at ages 1-3, another 3 at ages 4-6 months, etc.

Good luck. Sorry your letter came after I left on vacation, but I hope this gets to you in time and that it is helpful.

Sincerely,

Reva Rubin/lam

Reva Rubin
Professor,
Graduate Programs in Maternity Nursing

RR/lam

APPENDIX B

DEMOGRAPHIC SHEET AND TOUCH OBSERVATION TOOL

DEMOGRAPHIC SHEET

Date_____

Case Number_____I.D. Number_____

B.D._____Age_____Months_____Weeks_____

Sex_____Race_____Number Siblings_____

Physical Defects_____

Full term yes/no Premature yes/no

Weeks premature_____Discharge age_____

Infant feeding method_____breast/bottle

Type of surgery_____

Prior surgery procedures_____

Time to surgery_____Return time_____

Total time_____

Case Number_____Age_____

When baby was born were you awake or asleep?_____

Did you hold your child in the delivery room?_____

Were you separated from your child after birth?_____

If so, for how long?_____Why?_____

_____

Did you have "rooming-in"? _____yes/no

Study explained yes/no Permission granted yes/no

Starting time_____Completion time_____

Case Number_____

Observation 1 or 2

I. Start Time_____ Time_____

Location of the Child M.lap			Bed	F. lap	Location of the Child M.lap			Bed	F. lap
Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other	Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other
Head					Head				
Extremities					Extremities				
Hands					Hands				
Arms					Arms				
Legs					Legs				
Feet					Feet				
Trunk					Trunk				
Anterior					Anterior				
Posterior					Posterior				
Entire body					Entire body				

Time_____ Time_____

Location of the Child M.lap			Bed	F. lap	Location of the Child M.lap			Bed	F. lap
Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other	Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other
Head					Head				
Extremities					Extremities				
Hands					Hands				
Arms					Arms				
Legs					Legs				
Feet					Feet				
Trunk					Trunk				
Anterior					Anterior				
Posterior					Posterior				
Entire body					Entire body				

Time_____ Time_____

Location of the Child M.lap			Bed	F. lap	Location of the Child M.lap			Bed	F. lap
Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other	Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other
Head					Head				
Extremities					Extremities				
Hands					Hands				
Arms					Arms				
Legs					Legs				
Feet					Feet				
Trunk					Trunk				
Anterior					Anterior				
Posterior					Posterior				
Entire body					Entire body				

Case Number________

Observation 1 or 2

Time________

Location of the Child M.lap			Bed	F. lap
Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other
Head				
Extremities				
Hands				
Arms				
Legs				
Feet				
Trunk				
Anterior				
Posterior				
Entire body				

Time________

Location of the Child M.lap			Bed	F. lap
Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other
Head				
Extremities				
Hands				
Arms				
Legs				
Feet				
Trunk				
Anterior				
Posterior				
Entire body				

Time________

Location of the Child M.lap			Bed	F. lap
Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other
Head				
Extremities				
Hands				
Arms				
Legs				
Feet				
Trunk				
Anterior				
Posterior				
Entire body				

Time________

Location of the Child M.lap			Bed	F. lap
Mother's / Child's	Finger Tips	Palms/ Hands	Arms R/L	Other
Head				
Extremities				
Hands				
Arms				
Legs				
Feet				
Trunk				
Anterior				
Posterior				
Entire body				

Key

End Time________

ST = Stationary touch
S = Stroke
EFo = Enfold
PH = Passive holding

M = Massage
EC = Encompass
REFo = Rocking while enfolding

"Other"
EO = Eyes open
EC = Eyes closed

EF = en Face
FT = Functional touching
NT = No maternal touch

APPENDIX C

EXPLANATION OF STUDY

EXPLANATION OF STUDY

This study is concerned with the recording of kinds of behaviors that occur when a child is hospitalized for surgery. The investigator is initiating this study in partial fulfillment of the requirements for the degree of Master of Science from Texas Woman's University, College of Nursing.

A group of children are being studied during hospitalization for surgery. On two occasions the investigator will be observing the kinds of behaviors and communication that children exhibit during hospitalization for surgery. There will be two periods of observation. Each period of observation will last twenty minutes.

Hopefully your participation in this study will help make nurses more aware of the needs of children who are hospitalized for surgery.

I acknowledge I have had an explanation of this study and have had an opportunity to have my questions answered. I understand the purpose and my role in participating in this study.

_____ _____

Signature Date

_____ _____

Witness Date

APPENDIX D

STATEMENT OF PARENTAL CONSENT

STATEMENT OF PARENTAL CONSENT

I agree to participate in a research project which is designed to obtain information regarding behaviors and communication of children during hospitalization for surgery.

I agree to allow the investigator to observe and record activities of my child during two twenty-minute time periods.

I agree to permit the use of my child's hospital and/or clinic record for this research project.

I understand that the purpose of this study is to gather information on the behaviors of children during hospitalization for surgery.

I understand that neither my child's name nor my name will be used in any release of the research results.

I understand my child and I are free to withdraw at any time.

I also understand that my participation and that of my child's is on a voluntary basis.

I understand that my consent or refusal to participate in this study will not affect the care of my child.

Witness	Name
Date	Relationship to Child
Date Time	Child's Name
Hospital Number	

APPENDIX E

FORMAT FOR OBSERVATION OF MATERNAL TOUCHING BEHAVIOR IN THE PREOPERATIVE AND POSTOPERATIVE PEDIATRIC SETTING

FORMAT FOR OBSERVATION OF MATERNAL TOUCHING BEHAVIOR IN THE PREOPERATIVE AND POSTOPERATIVE PEDIATRIC SETTING

The explanation of the study and parental consent forms were signed in the preoperative period before the first observational session.

The investigator was placed in the child's hospital unit in such a manner that it did not interfere with access to the child by the mother and the staff.

The investigator said to the mother, "Now that your child and you are together in the room, I need to make notations for my record. Please feel free to be with your child right now." This statement was used by the investigator to initiate both twenty-minute observational settings. During each of the twenty-minute periods the observer recorded behaviors in two-minute intervals. After that time the investigator thanked the mother for her assistance and asked if she had any questions about the study. The session was then concluded.

APPENDIX F

LIST OF THE ORDER OF TOUCH SEQUENCE, THE CHILD'S PHYSICAL DEFECT, AND THE TYPE OF SURGERY BY EACH CASE

TABLE 19

LIST OF THE ORDER OF TOUCH SEQUENCE,
THE CHILD'S PHYSICAL DEFECT, AND
THE TYPE OF SURGERY

Group	Case Number	Order of Touch Sequence	Type of Physical Defect	Type of Surgery
A	10	0123*	Newly diagnosed hydrocephalus**	Neurosurgery
	2	01*	Early chondroplasia punctata**	Gastrointestinal surgery
	12	02*	None**	Gastrointestinal surgery
	15	01	Newly diagnosed hydrocephalus**	Neurosurgery
	5	1324	Ventricular septal defect**	Gastrointestinal surgery
	7	No touch	Bilateral cleft lip and palate	Plastic surgery
	17	31	Progressive hydrocephalus	Neurosurgery
	11	No touch	Bilateral glaucoma**	Eye surgery
B	1	0213	Urethral valve defect**	Urologic surgery
	18	03124	Downs Syndrome/ventricular septal defect	Cardiac catheterization
	8	No touch	Patent ductus arteriosus**	Cardiac catheterization
	24	4301	Chromosome defect/cleft palate	Plastic surgery
	4	0241	Head and neck hemangiomata	Nose and throat surgery
	3	431	Ventricular septal defect**	Cardiac catheterization
	6	0123*	Stenosis of auditory meatus**	Plastic surgery
	21	0312	Trisomy 8/ventricular septal defect	Cardiac catheterization
C	13	0123*	Hirshsprung's Anomaly**	Gastrointestinal surgery
	16	21	Atrial septal defect**	Gastrointestinal surgery
	14	0123*	Colon polyps**	Gastrointestinal surgery
	20	No touch	Left cleft lip and palate	Plastic surgery
	***23	12*	Bilateral eye prostheses**	Eye surgery
	22	0123*	Bilateral glaucoma**	Eye surgery
	***19	12*	None (post anesthetic apnea*)*	Nose and throat surgery
	9	43	Bronchial arch of neck	Plastic surgery

*Touch progression in sequence.
**No grossly visible defect during data collection phase.
***Case 19 and 23 were located in bed not the mother's lap; Stage 0 not possible.

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