

MATERNAL TOUCHING PATTERNS IN HOSPITALIZED
AND NONHOSPITALIZED CHILDREN

A THESIS

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
Chapter	
1. INTRODUCTION	1
Problem of Study	3
Justification of Problem	3
Conceptual Framework	7
Assumptions	10
Hypotheses	10
Definition of Terms	11
Limitations	12
Summary	12
2. REVIEW OF LITERATURE	14
Touch as Communication	14
Maternal Touch	16
Hospitalization as a Situational Crisis	21
The Hospitalized Child	23
Summary	28
3. PROCEDURE FOR COLLECTION AND TREATMENT OF DATA	29
Setting	29
Population and Sample	30
Protection of Human Subjects	31
Instrument	32
Data Collection	33
Treatment of Data	35

	Page
4. ANALYSIS OF DATA.	36
Description of Sample	36
Findings	38
Additional Findings	38
Summary of Findings	39
5. SUMMARY OF THE STUDY	41
Summary	41
Discussion of Findings	43
Conclusions and Implications	43
Recommendations for Further Study	44
APPENDIX A	46
APPENDIX B	49
APPENDIX C	51
APPENDIX D	53
APPENDIX E	58
APPENDIX F	61
APPENDIX G	63
APPENDIX H	65
APPENDIX I	67
REFERENCES	70

LIST OF TABLES

Table	Page
1. Gender and Mean Age in Months for the Children in Both Groups	37

CHAPTER 1

INTRODUCTION

One mode of communication for man is through the sense of touch. Touch has the unique sensual ability of expression and stimulation of emotions. Touch can convey love, understanding, hate, or fear. Touch has the potential for being the most meaningful form of communication. Of all the different forms of nonverbal communication, touch is the most significant.

Touch is the earliest sense to develop in the human embryo and is the first sensation that the newborn baby receives while descending the birth canal. Being touched is a vital part of one's interaction with others, especially when one is young. Touch for young children has implications which can affect them in relation to their physical survival and emotional self-esteem. Developmental stages for the young child derive their certainty from a series of touch experiences which are built into the very fiber of life.

Studies of touching patterns of mothers with their newborn infants during the postpartal period have shown that touching promotes the establishment of attachment.

The development of attachment at this time affects the overall positive relationship that can exist between the mother and child. Touch also affects the infant's ability to adapt successfully to the environment.

When young children are hospitalized they are separated from familiar surroundings, daily routines, and communication patterns they have established with their family. Hospitalization of the child constitutes a situational crisis which affects the established relationship in the mother-child dyad. Interruption of this dyad, due to hospitalization, can have far-reaching effects on the continued growth and development of this relationship. It can also affect the child's future ability to grow in a positive psychological manner.

Young children communicate largely through nonverbal behavior, due to the lack of verbal skills and experience. In providing care for the young child nurses need to be aware of the types of communication that the child uses. Touching is a form of nonverbal communication which when used with care and sensitivity by the nurse, can communicate caring, promote well-being, and perhaps even facilitate the child's recovery.

Touching patterns for the young child begin at birth. The expected mother-child dyad has been

identified. In the opinion of this investigator, additional information is needed regarding touch patterns beyond the postpartal period. Describing touching patterns of mothers with their hospitalized child will add to the growing knowledge about the significance of touch in this dyad.

Problem of Study

The problem of this study was to determine whether or not there was a difference in the sequence of progression and rate of progression through the stages of maternal touching patterns of mothers of hospitalized and nonhospitalized children between the ages of 1 1/2 to 3 years.

Justification of Problem

Over 2,000,000 children under the age of 6 years are hospitalized in the United States annually. For many of these children abrupt separation from their mothers heightens the potentially traumatic aspects of the hospital experience. Physical illness and hospitalization ranks high among stressful experiences and acts of fate which modify and interfere with a child's development (Belmont, 1970).

Hospitalization of a child constitutes a situational crisis, according to Caplan (1964). Caplan defined a situational crisis as an unpredictable, serious, and unavoidable event which poses a threat in some way to an individual and the family system. In a situational crisis the individual and his family experience and display a heightened desire for help because regular problem-solving mechanisms have become ineffective in reducing the tension. Unrelieved tension leads to the expected sequelae--disequilibrium (Caplan, 1964).

Children under the age of 5 years lack the verbal ability, sense of time, and understanding to help them cope with hospitalization, new procedures, and separation from their mothers. Young children rely on the modality of touch as one of their main means of communication with their environments.

Maternal touching patterns in the postpartal period have been observed and recorded by Klaus and Kennell (1970) and Rubin (1963). These researchers showed that the basic communication of touch is established at birth. Mothers, when presented with their nude, full-term infants, were shown to touch their infants in an orderly sequence. The mother first touches the infant's

extremities with her fingertips and then moves on to the trunk. The mother then progresses to touching the infant's trunk with her hands, and finally encompasses the infant with her hands within 8 minutes (Klaus & Kennell, 1970).

Rubin (1963) observed mothers with hospitalized children under 1 year of age, particularly those post-operatively, who exhibited maternal touch progression similar to those identified in the postpartal period. Rubin felt that maternal relationships were reestablished with the postoperative child using the progression touch sequence.

Hundley's (1979) observation of maternal touching sequence in the postoperative period demonstrated that 9 out of 24 mothers progressed sequentially through the touch stages described in the literature. This investigation suggested that these findings provided support for Rubin's (1963) notion that mothers, during post-operative reunion with their children, utilize the same type and order of touch seen in the neonatal acquaintance process described by Klaus and Kennell (1976) in neonatal bonding (Hundley, 1979).

Rubin (1963) stated that for older infants, as well as for neonates, the tactile sense is the dominant mode

of adjustment for learning about self and the world in which one lives. Hospitalization is a time of intense personal stress for the young child. The child is isolated and vulnerable in this unfamiliar environment. The child may rely on the modality of touch to provide an effective means of communication in adapting to this situational crises.

When a child is hospitalized it is an unavoidable situation capable of inducing psychological disequilibrium for the child and family. Hospitalized children are a significant population which need to be assessed for risks which could impair the normal growth and development of the child. The nurse in caring for the hospitalized child needs to be aware of the significance of maternal touching. The nurse must also be able to assess the child's developmental level and patterns of communication in relation to this empirical phenomena.

Touch has been identified in the postpartal period as being significant in the development of both attachment and communication. Touch is one of the infant's and young child's main mode of communication. By exploring this phenomena of touch with the hospitalized child, it was hoped that valuable information could be obtained

to add to the expanding knowledge in this area. Observing and recording maternal touching patterns during this situational crisis may help in promoting crisis resolution in which the child is able to maintain a sense of trust and autonomy.

Conceptual Framework

Touch in humans implies some kind of meeting or encounter between one person and another. Touching, or using the tactile sense, establishes nonverbal communication by stimulating receptors in the skin which transmit messages to the brain that the individual interprets. A large section of the brain is devoted to touch--indeed, it would be hard to live without this sensory input (Montagu, 1971).

Touching is a basic form of communication. Through this medium, individuals learn to transmit messages to and from their parents. The first social interaction a child experiences begins with touch. One of the first lessons in loving and responsibility is learned through the cuddling received while in infancy (Goodykoontz, 1979).

Touch is important in every phase of development for man. Touch supports, reassures, directs, informs, and

alienates. For the child the physiologic sensory perceptions of touch are the foundation on which the communication system of signs and symbols is built (Frank, 1957).

The most vital aspects of a child's communication abilities lie in the type of relationship that exists between the child and mother (Bowlby, 1969). Through this relationship, the child receives the support, nurturance, and confidence that are necessary for a healthy existence. When the infant or child has limited tactile experience with significant others, normal growth and development are impaired. Yarrow and Goodwin (1965) and Cassler (1965) have shown that tactile stimulation is necessary for an infant's normal growth, and that deprivation of this stimulation has a direct relationship to developmental retardation.

Maternal touching patterns in the postpartal period have been observed by Rubin (1963). Rubin found a definite progression and an orderly sequence to the nature and amount of contact a mother makes with her child. The new mother moves from small areas of contact to those more extensive. The mother progresses from fingertips, then hands, and then her whole arm as

an extension of her body when first touching her newborn.

Klaus and Kennell (1970) also observed and recorded maternal touch progression described by Rubin (1963). These researchers showed that when a mother is presented with her nude, full-term infant, she begins to touch the infant's extremities with her fingertips, massaging, encompassing, and palm contact on the infant's trunk within 8 minutes of contact. Rubin (1963) in observing the similar sequence of maternal touching, noted the time to complete the sequence occurred over several days.

Hospitalization is traumatic for all ages. There is no doubt that children are more affected due to separation from family, familiar surroundings, and established daily routines. The child is confronted with the inability to cope with the new procedures, routines, and personnel which heightens the crisis situation.

The child must be viewed and cared for in a holistic manner in order to decrease the crisis response. The child's developmental level, established communication patterns, daily routines, previous coping mechanisms, as well as the child's relationship with the mother and

family need to be considered and assessed when caring for the hospitalized child.

Assumptions

For the purposes of this study, the following assumptions are made:

1. Touch is a form of communication.
2. Touch is an important reciprocal interaction in the mother-child relationship.
3. There are describable maternal touching patterns with the hospitalized child of 1 1/2 to 3 years of age.

Hypotheses

The following hypotheses were formulated for this study:

1. There is no significant difference in the rate of progression in the touching patterns of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age.
2. There is no significant difference in the sequence of the touching patterns of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age.

Definition of Terms

The following terms were operationally defined for this study:

1. Mother--the female parent who exercises care over a child and is the child's primary caregiver (Lexicon-Webster, 1977).

2. Child--a person of either sex from 1 1/2 to 3 years of age.

3. Touch--to come into bodily contact so as to feel or perceive through the skin (Lexicon-Webster, 1977).

4. Stages of maternal touching patterns--(Klaus & Kennell, 1970)

Stage I--mother's fingertips to child's extremities

Stage II--mother's fingertips to child's trunk

Stage III--mother's hands to child's trunk

Stage IV--mother's hands encompasses the child

5. Rate of progression--the progression of the maternal touching patterns observed over a 15-minute period as measured by Bowen's Observational Tool.

6. Sequence of progression--the sequence of the maternal touching patterns observed over a 15-minute period, as measured by Bowen's Observational Tool.

Limitations

For the purposes of this study, the following limitations were stated:

1. The presence of the investigator gave the subject (the mother) the awareness of being observed which could change the natural behaviors.
2. Previous touching patterns that existed between the mother and child could affect present touching patterns.
3. The child's behavior could influence the mother's behavior or response to the child.
4. Demographic variables that were not controlled were the age, religion, culture, socioeconomic background, or educational level of the mother.

Summary

Hospitalization constitutes a situational crisis for both the child and family. The child in a crisis relies on familiar modes of communication, especially touch, to communicate with others. Identifying the maternal touching patterns of mothers with their hospitalized and nonhospitalized child is important to the nurse caring for the child. Expanded knowledge

regarding touch may help the nurse in promoting a positive crisis resolution for the child and family.

CHAPTER 2

REVIEW OF LITERATURE

Maternal touch is a phenomena which encompasses emotions, attachment behaviors, and communication patterns that exist between the mother and child. The child relies on the modality of touch from birth as an important element to assist in the normal growth and development process. Touch as a concept is considered in relation to communication, maternal touch, situational crisis, hospitalization of the child, and child development in the following review of literature.

Touch as Communication

Communication is a sharing between human beings which enables one person to relate to another person by means of signs and symbols. When communication is observed, the message includes the origin of the message, the statement of the message, and the reception of the message. According to Ruesch (1972), not until the receiver has acknowledged the receipt of the communication, the sender has perceived this acknowledgement, and the sender has acknowledged it in return has a message been exchanged.

One special form of communication is the sense of touch. Through the medium of touch, messages are sent, received, and acknowledged. Burton and Heller (1964) suggested that touch is one of the five sensory modes which act together as a mechanism for absorbing, assimilating, and activating communication. The sense of touch has unique qualities which separate it from the other four senses because of the versatility and complexity of the touching sensation. Touch is the only sense that encompasses the emotional sphere, thus adding significance to this method of communication.

Touch is the vehicle and fundament of being in the world which locates a person in space and time. May and Angel (1958) have stated that everything related to touch is in the here and now for as one touches one experiences being touched.

The primary tool for touch is the human hand. The skin is exposed to the world and mediates to the inner organization, and through the hands the world is explored and perceived. The hands provide a physical and mental link through spatial sensibility (Frank, 1957). Hands assure the spatial or tridimensional imprints of the outer world in the cortex of the brain

(Ruesch & Kess, 1964). The purpose of exploratory movements of the hand is to isolate and enhance the components of stimulation which specify the characteristics of the object being touched. The hand is an organ registering information (Gibson, 1962).

Touch is a form of communication which transmits nonverbal messages from one person to another. Touch is also an act which can give perceptual information, communicate feelings, and perform necessary tasks.

Maternal Touch

Montagu (1971) stated that touch is the earliest sense to develop in the human embryo. During pregnancy, the embryo is surrounded by amniotic fluid and is stimulated by the rhythmic impacts of the maternal heartbeat (Frank, 1957). During birth the massive contractions of the uterus upon the body of the fetus represent a series of massive cutaneous stimuli which activate vital systems. After birth the newborn communicates with the outside world by signals which are received through the skin. In the newborn all sensory apparatuses other than the tactile sense are so underdeveloped that they convey very little information (Rubin, 1963).

The mother establishes a relationship with her new infant using the modality of touch. In the beginning maternal relationship there is a definite progression and an orderly sequence in the nature and amount of contact a mother makes with her child. The mother moves from very small areas of contact to those more extensive. At first only her fingertips are involved, then her hands progressing to her whole arm as an extension of her body. The direction of contact areas is from the periphery of her body inward (Rubin, 1963).

The rate of progression from one predominating form of touch or contact to another is dependent upon how the mother feels about herself in this particular function of her role and how she perceives her partner's (the infant) reciprocal response to her. Another aspect of that rate is the character of the relationship at any given time. All three factors operate in determining the extent to which the mother dares permit herself to become progressively and more intimately involved (Rubin, 1963).

Cannon (1977) and Klaus and Kennell (1970) described stages of maternal touch that are based on the original description of Rubin (1963). The nude, full-term infant

was initially touched by the mother using only her fingertips to explore the infant's extremities and face. The mother then progresses to fingertip touching of the infant's trunk, followed by palmar touch of the infant's trunk. Finally, the infant is completely enfolded with the arm cradled against the mother's ventral surface.

Nineteen of 24 filmed mother-infant pairs completed the touching sequence in 12 minutes (Cannon, 1977). The time for completion of this same sequence pattern as noted by Klaus and Kennell (1970) was recorded within a period of 10 minutes. Rubin (1963) originally described the sequence as occurring over several days.

Bowen (1980) observed the touching patterns of 10 multiparous women in the first postpartum contact with their infants. Seven of the observed women experienced normal vaginal deliveries, and three women had planned Cesarean deliveries. Bowen (1980) concluded that multiparous women who delivered vaginally did not progress through the touching stages, as defined by Klaus and Kennell (1970), at a more rapid rate than women who had a planned Cesarean delivery. Bowen (1980) found that similar touching sequences were experienced by both groups. It was also noted that multiparous women

who had normal vaginal deliveries were not more likely to complete all four stages of touch at a more rapid rate than those women who had planned Caesarean deliveries.

The studies of Rubin (1963) and Klaus and Kennell (1970) describing the patterns of maternal touching behaviors in the acquaintance process between the newborn and its mother made no mention of touching behaviors as the infant grew older. Leifer and Leederman (1972) found mothers to demonstrate similar behaviors when infants were older. Maternal behaviors maintained the infant in close proximity and actions were identified as holding; affectionate touching, such as patting, rubbing, and kissing; as well as ventral contact of mother and infant.

The maternal touching sequence, in the early postpartum period, is believed to be a behavior giving fragmentary evidence that mothers engage in species-specific behavior. This type of behavior is unlearned (Klaus & Kennell, 1976).

Bell and Ainsworth (1972) showed that the single most important dimension associated with infant attachment behaviors toward the mother was the degree of

sensitivity in her general handling of the infant. This includes perceiving, integrating, and acting promptly and accurately to the infant's signals. This stimulus or attachment behavior involves essential tactile contact between the infant and mother. The child experiences the mother through the sense of touch before birth; the child is comforted by the mother's closeness more than by her voice or visual image in the early stage of development (Burton & Heller, 1964).

Ribble (1942) stated that frequent close contacts with the mother are necessary for the infant's sensory growth and awareness. The infant's mouth, face, and head are extremely sensitive and the gentle stroking of the head soothes a restless infant. Maternal contact and rocking gives the infant a sense of equilibrium and a sense of belonging.

Certain animal studies also lend a sense of importance to the concept of maternal touch. The study of Harlow and Harlow (1961) substantiated that contact comfort is the most important mechanism which binds the infant Rhesus monkey to its mother. Studies with the cloth surrogate mother established that infants maintained contact with the surrogate mother because

it needed contact and touch, thus refuting the theory that infants bond to the mother because she supplies food (Harlow, 1974).

Maternal touch is not a learned behavior. It has been observed in monkeys by Harlow and Harlow (1961), and in humans by Rubin (1961) and Klaus and Kennel (1970). Touch is important in that it communicates feelings and attachment between the mother and her newborn infant.

Hospitalization as a Situational Crisis

A person in a crisis is at a turning point. The person faces a problem that cannot be readily solved by using familiar past coping mechanisms. As a result tension and anxiety increase and that person is less able to find a solution. A person in this situation feels helpless and caught in a state of great emotional upset at not being able to resolve the problem (Aguilera & Messick, 1978).

Caplan (1964) defined crisis as occurring when the individual faces a problem that he/she cannot solve. There is a rise in inner tension and signs of anxiety and inability to function in extended period of upset.

When customary problem-solving techniques cannot be used to meet the daily problems of living, the balance of equilibrium is upset. The individual must either solve the problem or adapt to a nonsolution. In either case a new state of equilibrium will develop, sometimes better and sometimes worse, insofar as positive mental health is concerned. The outcome of the crisis is governed by the kind of intervention that takes place during that period between the individual and the key figures in the emotional milieu (Caplan, 1961).

A situational crisis is defined by Caplan (1964) as a period of psychological and behavioral upset which involves a sudden loss of basic supplies, the threat of loss or challenge associated with opportunity for increased supplies by heightened demands on the individual. Whenever stressful situations occur in a person's life that threaten the person's sense of biological, psychological, or social integrity, there is some degree of disequilibrium resulting and the concurrent possibility of a crisis. The threat to bodily integrity as with illness, hospitalization, or surgical operation is a type of situational crisis (Caplan, 1964).

When a child is hospitalized it is an unavoidable situation capable of inducing psychological disequilibrium

for the child and family. During this period of disequilibrium the individual and family can, with assistance of support persons, positively resolve emotional upset with mobilization of existing and newly developed adaptive mechanisms. Caplan (1964) recognized that professional nurses should assume the role of intervenor in times of client crisis, for preservation of positive mental health.

Children who are hospitalized are a significant population which needs to be assessed for risks which could impair normal growth and development. The pediatric nurse through knowledge of crisis and crisis intervention should help in assisting the hospitalized child and family to a positive crisis resolution. Aguilera and Messick (1978) have maintained that crisis intervention should provide facilitation of adaptive behavior and allow for provision of support systems, environmental manipulation, and anticipator guidance.

The Hospitalized Child

Hospitalization of the child is a traumatic crisis which affects both the child and family. Hospitalization creates a series of real, imagined, or potential threats for the child. The exact nature of the threats depends on many factors such as age, developmental level

of the child, and previous experience with similar threats. The amount and type of relevant information the child possesses in relation to the threat and the amount and type of support the child receives from parent and others must also be considered.

The threats can be classified into five general categories, each of which assumes a need or cluster of needs. These threats include: physical harm or bodily injury in the form of discomfort, pain, mutilation, or death; separation from parents and the absence of trusted adults, especially for preschool children; the strange, the unknown, and the possibility of surprise; uncertainty about limits and expected acceptable behaviors; and relative loss of control, autonomy, and competence (Visintainer & Wolfer, 1975).

Prugh (1953) studied 100 children and their parents regarding their immediate reactions and modes of adaptation to the impact of hospitalization and the character of any long-range emotional reactions. The investigator revealed that children under 3 years of age were most susceptible to the effects of hospitalization, especially to the separation from the parents.

Bowlby (1953) and Robertson (1958) have described three stages in the child's process of "settling in" to

the hospital routine. The first stage is labeled as protest, which is a period of crying, confusion, fright, and searching for mother. This is generally replaced by despair, characterized by apathy, withdrawal, and monotonous wailing. If the separation lasts long enough, a detachment occurs in the child, a turning away from the child's disturbing feelings toward the mother as the child recovers an interest in the environment.

Responses vary in kind in intensity according to the age and development of the child. Under 5 years of age, the child lacks the verbal ability, sense of time, or understanding of the reasons for the hospitalization and procedures. Therefore, the child is apt to have a more severe prolonged reaction. The child of 1 1/2 to 3 years of age is less able to assess reality or express himself/herself as actively as the older school child.

Erikson (1963) has pointed out that life is not only a sequence of developmental conflicts, but also of accidental crisis. Hospitalization of the toddler is viewed as both an accidental and developmental crisis. It is hard for the child when both types of crisis coincide. The behavioral response of the hospitalized

toddler to the situation may be considered positive if they maintain trust and move the child toward a more healthy autonomy in the child's world. If the child does not move through the experience in a positive manner, the child's sense of shame and doubt about self are increased. Shame and doubt are reflected in the child's lack of exploration and fear of the world.

Hospitalized children who have their mothers with them demonstrate a range of behaviors which reflect a positive adaptation to the experience. This fact suggests that support of the child by the mother makes it possible for the toddler to make adaptive responses when faced with accidental crisis precipitated by admission to the hospital. When the child's needs and care are being met by the mother, the child is better able to conserve energy for healing and regaining psychosocial equilibrium (Calkin, 1968).

Piaget's (1969) theory of cognitive development must also be considered in relation to the hospitalized child. The theory of cognitive development identified that two basic functions, organization and adaptation, operate from the beginning of life and continue throughout intellectual performance. Organization is the

giving pattern and consistency to every act. Adaptation is the dynamic process that allows for the interaction with the environment. There are two basic characteristics of adaptation: accommodation and assimilation.

Piaget (1969) stated that different children pass through the stage of development at different rates, but that the sequence remains the same. Each stage is typified by the most recently emerging capability of the individual, but that behaviors and processes that preceded it continue to occur and may even occur with greater intensity and frequency than new operations. Each stage is also the formation of a total structure that includes the predecessor structures and substructures.

Piaget (1969) identified six stages of infant development. The last of these stages occurs from 18 to 24 months of age and is the age of invention of new means through mental combination. Important change takes place in the infant's intentions and means-ends relationship. The child is now able to intentionally invest new means to an end through reciprocal assimilation of schemata. The child at this stage begins to imitate complex new behaviors and play at this period takes on

characteristics of being mentally worked out before beginning.

Summary

This review of literature has shown that there are identified stages of maternal touch in the postpartal period. Touch between the mother and infant has been shown to be important not only in the postpartal period, but throughout life.

Hospitalization constitutes both a situational and developmental crisis for the child. The hospitalized child's autonomy can be undermined by separation, anxiety, or by fears aroused by hospital procedures. The child may rely on familiar communication patterns, especially touch, to cope successfully with this stressful situation. Identifying what touching patterns exist between the mother and child may help in promoting a positive resolution in this situational crisis.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This descriptive field study was designed to observe and record touching patterns of mothers with their hospitalized and nonhospitalized child of 1 1/2 to 3 years of age. Data were collected on an observational tool developed by Bowen (1980). Maternal touching patterns in timed intervals were recorded. A demographic sheet was used in conjunction with the observational tool.

Setting

Setting A for this study was a 935-bed non-profit private hospital in a metropolitan area of the Southwest United States. The pediatric unit has a 52-bed capacity. The unit was comprised of 14 private rooms, 1 semi-private room, and 9 wards of 4 beds. Each patient unit was a well-lighted area containing a bed, a bedside table, an overbed table, and two or more adult sized chairs.

Setting B for this study was a licensed day care center which was located adjacent to the non-profit

private hospital. The hospital owned and operated this facility to provide care of its employees' children. The children ranged in age from 6 weeks to 6 years. The center cared for children from 6:30 a.m. to 12 midnight.

Population and Sample

The population for this study consisted of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age. The sample drawn from this population consisted of 30 pairs of mothers and their children who volunteered to participate in this study. The hospitalized sample (HS) and nonhospitalized sample (NHS) each consisted of 15 pairs of mothers and their children. The sampling technique used was convenience sampling.

Children in the hospitalized sample (HS) were chosen from the daily census sheet as they were admitted to the pediatric unit. Children with any neurologic insult or condition were not chosen. Children in the nonhospitalized sample (NHS) who met the sample criteria were selected. All mothers consented to be observed with their children. The sample was not controlled for various demographic variables.

Protection of Human Subjects

In order to protect each subject's human rights, the proposal was submitted to the Texas Woman's University Human Subjects Review Committee for approval (Appendix A) and to the graduate school (Appendix B). Approval was obtained from the participating agency in which the research was conducted (Appendix C) prior to any observation.

Each potential subject's mother who participated in this investigation was told verbally and in writing that participation in this investigation was strictly voluntary. Each mother was given an explanation consent form of the study (Appendix D) which was signed by the mother and witnessed by another person of legal age, prior to any observation.

The written consent form was given to the mother of the child to be observed and stated that the study to be conducted by the investigator was concerned with recording the kinds of behaviors and communication patterns that occurred between the mother and her child of 1 1/2 to 3 years of age. Two variations of the consent form were used. One consent form was used with the mother and the hospitalized child and one consent form was used

for the mother and the nonhospitalized child. The written consent forms were individualized and stated that the mother and the child's participation in the study were strictly voluntary and that they could withdraw from the study at any time without consequences. Risks and benefits of the observation period were individualized for each group. The investigator answered all questions regarding the study prior to any signing of the consent form.

The written explanation consent form stated that the investigator would be allowed to observe and record the kinds of behaviors and communications that occur between the mother and child for a one 15-minute period. The consent form also stated that refusal or consent to participate in this study would not affect the care of the child in any way.

Instrument

Bowen's Observational Tool (Appendix E) used with permission (Appendix F) was used to record the sequence and rate of maternal touching as defined by Klaus and Kennell (1970) and Rubin (1963). The instrument was used in a previous research study by Bowen (1980) and

was determined to have content validity. Reliability of the tool has not been established.

The tool listed the stages of maternal touch as defined by Klaus and Kennell (1970) and Rubin (1963). The tool was used to record the stages of touch in 1 minute intervals over a 15-minute period. Each minute interval allowed the observer to record the minute and second that the stage of touching occurred, then the individual time intervals were ranked. Demographic data (Appendix G) in relation to age and gender were obtained prior to the observation period.

Data Collection

The one 15-minute observation period was initiated by the investigator only after the appropriate written consent form was read and signed by the subject's mother. The observation period occurred immediately after all questions were answered and the consent form signed and witnessed by another person of legal age.

The observation tool and demographic sheet were identified according to group and code number, prior to the observation period. Data collection papers were kept in an appropriate folder used only for this investigation. Data were recorded by the investigator on the

observational tool as it rested visible inside the open folder.

When the investigator was ready to record the observed data, she stated a standard oral presentation to the the mother and to the child. This presentation is shown in Appendix H.

Each minute/second observation period was timed using a stop watch. The investigator was seated in a chair approximately 3 to 5 feet from the mother and child. The chair was positioned to allow full visibility of both the mother and child.

Observation of the hospitalized child took place in the child's hospital room. Curtains were drawn or screens were placed around the bed to insure privacy during the observation period. Observation of the non-hospitalized child took place in a separate room located off the main body of the licensed day care center. Privacy was maintained by locating the observation session away from the main areas of the day care center.

During the observation period the observer did not initiate any conversation with the mother, child, or any other person in the room. If the investigator was initiated into conversation by any individual in the

room, only brief responses were given with no further conversation initiated by the investigator. At the end of the observation period questions were answered and the observation period was terminated.

Nurses, hospital personnel, and day care personnel were informed of the research investigation prior to the observation period. Immediately prior to the observation period the personnel were again informed that for the next 15 minutes the investigator would be observing the child and mother in the appropriate room. The investigator did not assist or interfere with any function that would affect the child, or that would take place during the observation period.

Treatment of Data

The data were grouped and analyzed according to the sequence that the touching occurred and at what rate the touching occurred. The Mann-Whitney U test was the statistical method used to analyze the ordinal data obtained to test Hypothesis 1. The Fisher Exact probability test was used to analyze the data obtained to test Hypothesis 2. For the purposes of this study, the level of significance was set at .05.

CHAPTER 4

ANALYSIS OF DATA

This study was conducted to determine whether or not there was a difference in the sequence of progression and rate of progression through the stages of maternal touching patterns of mothers of hospitalized and nonhospitalized children between the ages of 1 1/2 to 3 years. Data for this study were obtained when the investigator observed both the hospitalized sample (HS) and nonhospitalized sample (NHS) for a one 15-minute period. The data obtained from the observational periods are presented and statistically described in this chapter.

Description of Sample

Fifteen hospitalized and 15 nonhospitalized children from 1 1/2 to 3 years of age and their mothers participated in this study. The gender and mean age of each group of children are shown in Table 1. The NHS group was comprised of 8 females and 7 males. The average age of this group was 25.6 months for the females and 29.7 months for the males. The HS group was comprised of 6 females and 9 males. The average age of this group 26.6 months for the females and 25.6 months for the males.

Table 1

Gender and Mean Age in Months for the Children
in Both Groups

Group	Mean Age	Gender	Percentage	Gender--Mean Age (months)
NHS	27.5	females ($\bar{n} = 8$)	53.3%	females--25.6
		males ($\bar{n} = 7$)	46.7%	males --29.7
HS	26.0	females ($\bar{n} = 6$)	40.0%	females--26.6
		males ($\bar{n} = 9$)	60.0%	males --25.6

Findings

Hypothesis 1 stated that there is no significant difference in the rate of progression in the touching patterns of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age. The Mann-Whitney U for large samples was used to test each individual's score at the .05 level of significance. The raw U value was 111 with a critical U value of 72, thus null Hypothesis 1 was accepted. Appendix I summarizes the data for Hypothesis 1.

Hypothesis 2 stated that there is no significant difference in the sequence of the touching patterns of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age. Only 2 mothers (20%) of the nonhospitalized group completed all four stages, while no mothers in the hospitalized group completed the touching sequence. Using the Fisher Exact probability test at the .05 level of significance, $p = .24$, null Hypothesis 2 was accepted.

Additional Findings

It was noted that in the HS group, 7 mothers (46.6%) completed a touching pattern but not in a theorized sequence. In the NHS group, 10 mothers (66.6%) also

completed a touching pattern but out of sequence. Of the hospitalized group, 8 mothers (53.5%) did not complete the touching sequence, while in the non-hospitalized group, 5 mothers (33.3%) did not complete the touching sequence.

Summary of Findings

This study was conducted to determine if there was a significant difference in the rate of progression and sequence of the touching patterns of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age. The findings of this study were:

1. Mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age showed no significant difference in the rate of progression in the touching patterns.

2. Mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age showed no significant difference in the sequence of the touching patterns.

3. No mothers of hospitalized children completed a theorized touching sequence, while over one-half of this particular group did not complete the touching sequence.

4. Over one-half of the mothers of the nonhospitalized group completed a touching pattern out of sequence, and only 2 mothers completed a theorized sequence.

CHAPTER 5

SUMMARY OF THE STUDY

The problem of this study was to determine whether or not there was a difference in the sequences of progression and rate of progression through the stages of maternal touching patterns of mothers of hospitalized and nonhospitalized children between the ages of 1 1/2 and 3 years of age. This chapter includes a summary of how the study was conducted, a discussion of the findings, conclusions and implications, and recommendations for further study.

Summary

The conceptual framework for this study was Rubin's (1963) concept of maternal touch. A major component of this conceptual framework was the stages of touch as identified by Klaus and Kennell (1970). A descriptive field study was designed for this investigation. An observational tool developed by Bowen (1980) was used in this study to show the rate of touching progression, sequence of touch behavior, and number of stages of touch exhibited by each mother.

The participants of this study consisted of 15 hospitalized and 15 nonhospitalized children of 1 1/2 to 3 years of age and their mothers. The hospitalized sample (HS) was obtained from the pediatric unit of a private hospital. The nonhospitalized sample (NHS) was obtained from a licensed day care center owned and operated by the private hospital. Each mother-child pair was observed for a one 15-minute period. The touch behaviors were recorded in minutes and seconds as they occurred.

The following null hypotheses were formulated for this study:

1. There is no significant difference in the rate of progression in the touching patterns of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age.

2. There is no significant difference in the sequence of the touching patterns of mothers of hospitalized and nonhospitalized children of 1 1/2 to 3 years of age.

The data presented in this study did not support the null hypotheses. The data showed that there are no significant differences in the rate and sequence of touching patterns between the two groups.

Discussion of Findings

The findings of this research did not support the previous finding of Klaus and Kennell (1970) and Rubin (1963). Klaus and Kennell (1970) and Rubin (1963) both showed that mothers in the postpartal period did progress in an orderly sequence and rate of progression in touching their infants. Analysis of the data from the samples showed that there was no significant sequence or rate of touch progression of mothers with their children.

It was shown that the mothers in the hospitalized sample did not touch in the theorized sequence, nor did those who touched complete a touching sequence. Since hospitalization is a situational crisis, the normal touching patterns could be disturbed due to the mothers' possible fear for the child or the child's reaction to the touching behavior. Some mothers in the nonhospitalized sample did complete a touching pattern out of sequence within a 15-minute period which supports similar touch findings of Cannon (1977) and Bowen (1980).

Conclusions and Implications

The results of this study showed that there was no difference in the rate of progression and touching sequence between the two observed groups. The results do

not agree with those shown in the studies discussed in the review of literature. There were possibly some intervening variables which could have affected the touching behaviors between the mother and her child.

Recommendations for Further Study

The findings of this study have led to recommendations for nursing research and practice. The following recommendations are made to help increase the nurses' awareness of the mother's and child's needs for communications during hospitalization.

1. A replication of this study be conducted to include such variables as: race, religion, culture, socioeconomic background, or educational level of the mother.
2. A replication of this study be conducted with another observational tool and the investigator would not be present during the observation period. The observation period could be videotaped to decrease the subject's awareness of the presence of the investigator.
3. A study be conducted to describe what behaviors or activities the child and mother are involved in during the observational period.

4. A study be conducted to see at what age of the child the maternal touching patterns and sequence change between the mother and child.

5. A methodological study be conducted to establish the reliability and validity of Bowen's (1980) Observational Tool.

APPENDIX A

TEXAS WOMAN'S UNIVERSITY
 Box 23717, TWU Station
 Denton, Texas 76204

1810 Inwood Road
 Dallas Inwood Campus

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Temme L. Miller Martin Center: Dallas

Address: 1416 South New Haven Date: 3/9/81

Tulsa, Oklahoma 74112

Dear Ms. Martin:

Your study entitled Maternal Touching Pattern in Hospitalized

and Non-Hospitalized Children

has been reviewed by a committee of the Human Subjects 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 typically require that signatures indicating informed consent be obtained from all human subjects in your studies. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

Any special provisions pertaining to your study are noted below:

Add to informed consent form: No medical service or compensation is provided to subjects by the University as a result of injury from participation in research.

Add to informed consent form: I UNDERSTAND THAT THE RETURN OF MY QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH.

The filing of signatures of subjects with the Human Subjects
Review Committee is not required.

 Other:

 X No special provisions apply.

Sincerely,

Estelle D. Kurtz

Chairman, Human Subjects
Review Committee

at Dallas

PK/smu/3/7/80

APPENDIX B

TEXAS WOMAN'S UNIVERSITY
DENTON, TEXAS 76204

THE GRADUATE SCHOOL

April 27, 1981

Mrs. Temme Lou Miller Martin
1416 S. New Haven
Tulsa, OK 74112

Dear Mrs. Martin:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,


Robert S. Pawlowski
Provost

RP:d1

cc Dr. Judith A. Erlen
Dr. Anne Gudmundsen
Graduate Office

APPENDIX C

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE SAINT FRANCIS HOSPITAL

GRANTS TO Temme L. Miller Martin
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.

To compare touching patterns, in relationship to
sequence and rate, of mothers with their hospitalized and
non-hospitalized children of 1 1/2 - 3 years of age. Two
groups of children are to be observed. One group of
children are to be observed during a hospitalization. The
other group of children are to be observed in a licensed
day care center (Ave Maria House). There is to be one 15
minute observation period, after the demographic sheet has
been filled in, and the consent form read and signed.

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 per-
sonnel 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 inter-
library loan.
5. Other Agency wants a final
report when project is
complete

Date: 3-20-81

Temme L. Martin
Signature of Student

Gail Watson
Signature of Faculty Advisor

*Fill out & sign three copies to be distributed as follows:
Original - Student; First copy - Agency; Second copy - TWU
College of Nursing.

APPENDIX D

Consent Form
Texas Woman's University
College of Nursing

(Form A--Written presentation to subject)

Consent to Act as a Subject for Research and Investigation:

The following information is to be read to or read by the subject. One copy of this form, signed and witnessed, must be given to each subject. A second copy must be retained by the investigator for filing with the Chairman of the Human Subjects Review Committee. A third copy may be made for the investigator's files.

1. I hereby authorize Temme L. Miller Martin
(Name of person(s) who will perform
procedure(s) or investigation(s))

to perform the following procedure(s) or investigation:

To observe and record the kinds of behaviors that occur between the mothers and their hospitalized children of 1¹/₂-3 years of age. To observe the hospitalized child and mother in the child's hospital room. Privacy will be maintained through the use of curtains or screens located around the bed. There will be a one 15 minute observation period that will occur only after the informed consent has been read and signed. The investigator will be observing and recording the kinds of behaviors and communications that occur between the mother and child.

2. The procedure or investigation listed in Paragraph 1 has been explained to me by Temme L. Miller Martin.
3. (a) I understand that the procedures or investigations described in Paragraph 1 involve the following possible risks or discomforts:
1. The child may exhibit fear of the presence of the investigator in the child's hospital room
 2. The child may become emotionally upset from being observed
 3. Physical condition of the child may change during the observation period
 4. Possible improper release of data
 5. There is little risk of disclosure of subjects by name since code numbers will be used on the observational tool and demographic sheet.

(Form A--Continuation)

3. (b) I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others:

Your participation in this investigation should help to make nurses more aware of the needs and communication patterns that exist between mothers and their hospitalized children of 1¹/₂-3 years of age.

- (c) I understand that-No medical service or compensation is provided to subjects by the university as a result of injury from participation in research.

Your participation or non-participation in this research investigation will not affect the care of your child in any way.

4. An offer to answer all of my questions regarding the study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in this study at any time.

Subject's Signature

Date

(If the subject is a minor, or otherwise unable to sign, complete the following:)

Subject is a minor (age _____), or is unable to sign because:

Signatures (one required)

Mother

Date

Father

Date

Guardian

Date

Witness (one required)

Date

Consent Form
Texas Woman's University
College of Nursing

(Form A--Written presentation to subject)

Consent to Act as a Subject for Research and Investigation:

The following information is to be read to or read by the subject. One copy of this form, signed and witnessed, must be given to each subject. A second copy must be retained by the investigator for filing with the Chairman of the Human Subjects Review Committee. A third copy may be made for the investigator's files.

1. I hereby authorize Temme L. Miller Martin
(Name of person(s) who will perform
procedure(s) or investigation(s)

to perform the following procedure(s) or investigation(s):

To observe and record the kinds of behaviors that occur between mothers and their non-hospitalized children of 1 1/2-3 years of age. To observe the mother and child in a licensed day care center, the Ave Maria House. The mother and child will be observed, to maintain privacy, in a separate room located off the main area of the Ave Maria House. There will be a one 15 minute observation period that will occur only after the informed consent has been read and signed. The observer will be observing and recording the kinds of behaviors and communication that occur between the mother and child.

2. The procedure or investigation listed in Paragraph 1 has been explained to me by Temme L. Miller Martin.
(Name)
3. (a) I understand that the procedures or investigations described in Paragraph 1 involve the following possible risks or discomforts:
1. The child may exhibit fear of the presence of the investigator, located in a separate room, in the Ave Maria House
 2. The child may become emotionally upset from being observed
 3. Possible improper release of data
 4. There is little risk of disclosure of subjects by name since code numbers will be used on the observational tool and demographic sheet

(Form A--Continuation)

- (b) I understand the procedures and investigations in Paragraph 1 have the following potential benefits to myself and/or others:

Your participation in this investigation should help make nurses more aware of the types of behaviors and communication patterns that exist between mothers and their non-hospitalized children of 1¹/₂-3 years of age.

- (c) I understand that-No medical service or compensation is provided to subjects by the university as a result of injury from participation in this research investigation.

Your participation or non-participation in this research investigation will not affect the care of your child in any way.

4. An offer to answer all of my questions regarding the study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in the study at any time without consequences.

Subject's Signature

Date

(If the subject is a minor, or otherwise unable to sign, complete the following:)

Subject is a minor (age _____), or is unable to sign because:

Signatures (one required)

Mother

Date

Father

Date

Guardian

Date

Witness (one required)

Date

APPENDIX E

Bowen's Observational Tool

Bowen's (1980) observational tool was used to record the defined maternal touching stages as they occurred over a 15-minute period.

The maternal touching stages as defined by Klaus and Kennell (1970) were used and listed in the order I-IV on the right side of the grid.

Stage I--mother's fingertips to child's extremities

Stage II--mother's fingertips to child's trunk

Stage III--mother's hands to child's extremities

Stage IV--mother's hands to child's trunk

Time increments from 0-15 were located across the top of the grid. As the identified stage of touch occurred the time was noted in minute/seconds and written in under the appropriate time heading, correlating with the identified stage of touch.

BOWEN'S OBSERVATIONAL TOOL

Code Number _____
Hospitalized _____
Non-Hospitalized _____

Minutes

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I																
II																
III																
IV																

APPENDIX F

I, Ruth Bowen, do hereby grant Temme L. Martin,
the right to use and/or modify my maternal touching sequence
tool entitled Observational Tool.

I understand this tool is to be used to gather information on
maternal touching of the hospitalized and non-hospitalized
child.

Ruth A. Bowen R.D.
Signature

Sept. 29, 1980
Date

APPENDIX G

Demographic Sheet

Code Number _____

Hospitalized (HS) _____

Nonhospitalized (NHS) _____

Age _____ (months)

Sex: Male _____ Female _____

APPENDIX H

Standard Oral Presentation to
the Mother and Child

This study is concerned with observing two groups of mothers with their children. I will be observing and recording the kinds of behaviors and communications that exist between mothers and their hospitalized children, and mothers of nonhospitalized children between the ages of 1-1/2 and 3 years of age.

Now that you and your child are together I will be observing and recording your interactions for the next 15 minutes. Please take this opportunity to be with your child.

APPENDIX I

Total Number of Minutes and Seconds Taken to
Progress through the Stages of Maternal
Touch and the Order of Sequence for
NHS Group

NHS		
Subject	Order of Sequence	Number of Minutes and Seconds
1	1,4,3	3:25
2	1,4,2,3	4:15
3	1	1:05
4	1,3	5:00
5	1,2	4:00
6	1	0:55
7	1,2	12:20
8	4,3,1	1:05
9	1,3,2,4	12:00
10	4,3,1,2	7:05
11	4,1,2,3	2:00
12	1,4,3	12:20
13	4,1,2,3	11:00
14	1,2,4,3	13:40
15	1,3,2,4	9:10

Total Number of Minutes and Seconds Taken to
Progress through the Stages of Maternal
Touch and the Order of Sequence for
for HS Group

HS		
Subject	Order of Sequence	Number of Minutes and Seconds
16	3,1,4	2:40
17	3,1,3,2	6:40
18	1,2,4,3	10:35
19	1,4	0:50
20	4,1,2	3:10
21	1,3,4	12:31
22	4,1,3,2	8:10
23	1,4,3,2	10:20
24	2,1,3,4	7:00
25	3,4,2,1	1:30
26	1	0:10
27	1,3,4,2	6:55
28	1,2,3,4	9:55
29	1,2,3,4	12:30
30	4,1,3,2	8:20

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