

THE EFFECT OF ONE TOUCH MODALITY ON STATE ANXIETY  
DURING A HOSPITAL ADMISSION PROCEDURE

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We hereby recommend that the dissertation prepared under  
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## DEDICATION

I dedicate this dissertation to my Lord and Savior Jesus Christ, for without Him I can do nothing, but with Him, I can do all things.

## ACKNOWLEDGEMENTS

In Mark Chapter 5 verse 37 in the King James Version of the Bible, it says the following:

37 And there arose a great storm of wind, and the waves beat into the ship, so that it was now full.

38 And He [Jesus Christ] was in the hinder part of the ship, asleep on a pillow: and they awoke Him, saying unto Him, Master carest Thou not that we perish?

39 And He arose, and rebuked the wind and said unto the sea, Peace be still. And the wind ceased, and there was a great calm.

40 And He said unto them, Why are ye so fearful? How is it that ye have no faith."

I thank God for the gift of faith when I needed faith and for peace that passes all understanding that only He can give in the midst of a great storm.

God brings people to see you through a storm or to be a blessing in your life. Special recognition is extended to those who have blessed my life and whose participation made this dissertation possible.

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## TABLE OF CONTENTS

DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS.....	vi
LIST OF TABLES.....	viii
LIST OF FIGURES.....	ix
Chapter	
1. INTRODUCTION.....	1
Problem of Study.....	1
Justification of Problem.....	1
Theoretical Framework.....	5
Assumptions.....	12
Hypothesis.....	12
Definition of Terms.....	13
Limitations.....	14
Summary.....	15
2. REVIEW OF LITERATURE.....	17
Touch in Growth and Development.....	17
Effects of the Use of Touch in Interpersonal Relationships.....	20
Skin.....	25
Modalities of Touch.....	27
Anxiety.....	30
Touch and State Anxiety.....	34
Therapeutic Touch.....	41
Summary.....	45
3. PROCEDURE FOR COLLECTION AND TREATMENT OF DATA.....	48
Setting.....	51
Population and Sample.....	51
Protection of Human Subjects.....	52
Instruments.....	53
STAI Form X-1 (A-State Inventory).....	54
Systolic Blood Pressure and Pulse.....	55

## TABLE OF CONTENTS (Continued)

### Chapter

Data Collection.....	56
Treatment of Data.....	62
4. ANALYSIS OF DATA.....	64
Description of Sample.....	65
Findings.....	69
Hypothesis 1.....	69
Hypothesis 2.....	69
Hypothesis 3.....	71
Additional Findings.....	72
Summary of Findings.....	79
5. SUMMARY OF THE STUDY.....	81
Summary.....	81
Discussion of Findings.....	84
Conclusions and Implication.....	91
Recommendations for Further Study.....	93
APPENDIX A.....	95
APPENDIX B.....	97
APPENDIX C.....	99
APPENDIX D.....	101
APPENDIX E.....	104
APPENDIX F.....	106
APPENDIX G.....	108
APPENDIX H.....	110
REFERENCE LIST.....	113

## LIST OF TABLES

Table	Page
1. Examples of Actions of the Autonomic Nervous System.....	31
2. Number and Percent Distribution of Sex of Touch and No-Touch Groups.....	66
3. Number and Percent Distribution of Race of Touch and No-Touch Groups.....	66
4. Number and Percent Distribution of Age of Touch and No-Touch Groups.....	67
5. Number and Percent of Type of Admission of Touch and No-Touch Groups.....	68
6. Analysis of Covariance for STAI Scores Between Touch and No-Touch Groups.....	70
7. Analysis of Covariance for Systolic Blood Pressure Between Touch and No-Touch Groups..	71
8. Analysis of Covariance for Pulse Between Touch and No-Touch Groups.....	72
9. Pre- and Posttest Systolic Blood Pressure for Touch Group.....	74
10. Pre- and Posttest Systolic Blood Pressure for No-Touch Group.....	75
11. Pre- and Posttest Pulse Rate for Touch Group..	76
12. Pre- and Posttest Pulse Rate for No-Touch Group.....	77
13. STAI Form X-1 Scores for Touch and No-Touch Groups.....	78
14. Number of Subjects Whose Anxiety Score Increased or Decreased on STAI Form X-1.....	79



## LIST OF FIGURES

Figure	Page
1. Model.....	11
2. Diagram of the Pre-Posttest Control Group Design.....	49
3. Diagram of the Independent and Dependent Variables for the Pre-Posttest Control Group Design Utilized in the Study.....	50

## CHAPTER 1

### INTRODUCTION

Stroking, patting, holding, squeezing, and rubbing are common touch modalities occurring in interpersonal relationships. Different touch modalities are often employed intuitively in nursing without awareness of how they might best be used to meet the needs of the patient. By replacing arbitrary, intuition-based use of touch in patient care with a more intelligent application based on research knowledge, nursing care will be better able to enhance therapeutic response in patients. A study of one touch modality and its effect on patients' state anxiety of hospital admission was considered in this study.

#### Problem of Study

The problem of this study was: What is the effect of one touch modality, stationary touch, on state anxiety in adult patients undergoing a routine hospital admission procedure?

#### Justification of the Problem

"Anxiety is not only our official emotion, it is the primary focus of a concerted effort aimed at the improvement, and perhaps the perpetuation of human life" (Levitt,

1980, p. 2). Overt or covert anxiety is almost universal in hospitalized patients. Hospitalization heightens anxiety. Most people dread leaving the comfort of home and family to go into an unfamiliar environment (Decker, 1979). Dellipiani et al. (1976) and Kristic (1979) showed that immediately following admission, patients are highly anxious. Johnston (1980) showed that prior to admission for surgery, patients experience high levels of anxiety. Pancheri et al. (1978) reported that "patients with high anxiety levels suffer more complications during recovery . . . than patients with lower anxiety levels" (Viney & Westbrook, 1982, p. 87).

Anxiety is seen as a problem in surgical patients and, therefore, hospital staff advocate anxiety reduction (Johnston, 1980). One technique for anxiety minimization might be the modality of a stationary touch. Harlow (1959) found that infant monkeys could cope with new and frightening experiences if they could first cling to and obtain contact comfort from the mother or mother object. Harlow (1959) demonstrated that this contact provided strength, security, and comfort. Similarly, Montague (1971) noted that people experiencing states of alarm would derive comfort by holding onto themselves, such as

by clasping their hands. "If this is true, then extensive physical contact may indeed be the natural or primordial sedative or tranquilizer, one without dangerous side effects of pharmaceutical compounds" (Jourard, 1968, p. 148).

Physical contact may be the natural sedative, however, the number of published investigations concerning the effect of a modality of physical touch on state anxiety during a hospital admission procedure is nonexistent. A few studies have been conducted on therapeutic touch and state anxiety. In these studies, problems such as the following were noted by Clark and Clark (1984): (a) lack of random assignment, (b) lack of control of extraneous variables, (c) inappropriate treatment of data, and (d) the placebo effect.

Randolph (1984) conducted an experiment in which therapeutic touch and physical touch were compared for their effect on state anxiety. The hypothesis predicted that therapeutic touch would have a greater relaxing effect than physical touch. However, the results revealed no significant difference. In the study, the effect of the type of touch was considered following exposure to a stressful stimulus (in this instance a film showing tribal

operations on genitals with a sharp stone). The study did not consider the length of time of the touch (8 minutes) and the body area selected to receive the experimental touch (the abdomen and lower back). Bramble (1973) conducted a survey of psychiatric outpatients and determined that the loci of acceptable touch are the upper back and the hands.

Heidt (1981) examined the effects of therapeutic touch on state anxiety employing a casual touch, a therapeutic touch, and no touch. Notably lacking were assessments of state anxiety using physiological measures, (e.g., pulse, blood pressure, respiratory rate) or direct observational measures. The sole instrument employed in the study was a subjective self-report inventory. "It is difficult to establish the validity of an emotional response. A corroborating physiological variable such as pulse rate, respiratory rate, or galvanic skin resistance, would have provided a more explicit measure of anxiety" (Clark & Clark, 1984, p. 40). According to Fisher, Rytting, and Heslin (1976), "previous research on the effects of touch has been hampered by a lack of appropriate methodology" (p. 420).

This research attempted to correct some of those problems by using improved methodology, appropriate loci of touch, and incorporating physiological indices as well as a subjective measure of state anxiety in endeavoring to answer the research question.

#### Theoretical Framework

This study was based on the general systems theory originally proposed by von Bertalanffy (1966). The general systems theory was discussed and followed by the application of its principles to the study. A system is a set of units with relationships among them in which "the state of each unit is constrained by, conditioned by, or dependent on the state of other units" (Miller, 1965, p. 200). Thus, systems are made up of units (components, parts) which are in dynamic interaction; these units are surrounded by boundaries which separate them. Each unit of a system may itself be a system which consists of units (components) in dynamic interaction surrounded by a boundary. All but the largest systems have a suprasystem, which is the next higher system (Miller, 1965). The totality to be studied in a given situation is a system and its environment. The "division into the system and environment depends on the intention of the person

studying the phenomena" (Hazzard, 1971, p. 386). The environment is defined as everything external to the systems boundary (McKay, 1969). It is all the factors (variables) that are affected by a system or affect a particular system (Hall & Fagen, 1968). There are usually two environments of a particular system. The first is the immediate environment which is the suprasystem minus the system itself. The suprasystem and all other systems above it make up the entire environment. The system affects the environment, and in order to survive, it must adjust to it (Miller, 1965).

Systems may be classified as open or closed. Open systems exchange information or energy with their environment and maintain steady states (McKay, 1969). "After any disturbance, a system tends to re-establish its steady state. When a component is added, the organism reacts in a way so as to re-establish a steady state" (McKay, 1969, p. 396). A steady state is characterized by organization as opposed to disorganization or negative entropy (Pierce, 1972). The input, transformation (internal processing), and output are activities by which a system improves or maintains its state. Input affects output, and output can affect input.

The general systems theory was briefly discussed, and the application of its concepts and principles occur below. Before discussing the application, it should be stated that "the realities of human existence are more complex than only the conceptual system which attempts to describe it" (McKay, 1969, p. 396). The nurse-patient interaction is a system made up of systems which are in dynamic interaction. The nurse and patient can be considered as systems, and the patient's skin can be considered to be the boundary for the patient system. The environment is everything external to the system's boundary and all the factors (variables) that affect a particular system. There are two environments which affect the patient system. The first is the immediate environment, which is the suprasystem (nurse's touch). The other is the entire environment, which is every system above the suprasystem and includes the hospital. The hospital affects the patient system in that it heightens anxiety (Decker, 1979). The patient affects the hospital, and in order to survive, he/she must adjust to it.

A system has recognizable inputs and outputs. The input consists of the patient and nurse. The components (patient and nurse) are the input surrounded by a boundary



(inpatient unit) and are in dynamic interaction. The patients are characterized by disorganization as opposed to organization. In order to survive, the patient must move toward organization (negative entropy), and this means the nurse's intervention in the process of disorganization. The nurse aims at helping the patient's systems change and meeting his/her needs. When systems changes are considered a sequence of events or process occurs in an orderly way. "By choosing somewhat arbitrary beginning-and endpoints and discussing them in relation to a particular system, a process may be labeled for convenient use" (Miller, 1973, p. 137). In order to choose an arbitrary beginning, a fundamental concept descriptive of a system needs to be defined. It is state and is defined as the condition of a system at a particular point in time (Miller, 1973). The state of the patient immediately upon hospital admission is anxious (Dellipiani et al., 1976; Kristic, 1979; Johnston, 1980). Spielberger, Wadsworth, Auerbach, Dunn, and Taulbee (1973) conducted a study related with the evaluation of anxiety changes in patients experiencing major surgery. The mean A-state scores were higher 24 hours prior to surgery than postsurgery. Spielberger, Gorusch, and Lushene (1970) conceptualized

state anxiety as a transitory emotional state characterized by intensified activity of the autonomic nervous system and feelings of apprehension and tension.

The arbitrary beginning point is state anxiety, and the end point, therefore, is the desired patient state (dynamic equilibrium or state anxiety reduction). Anxiety is seen as a problem in surgical patients, and, therefore, hospital staff advocate anxiety reduction.

A change is desired in the patient system. Touch is seen as a tension-reducing behavior (Levitt, 1980). In one experiment, a laboratory attendant petted and gentled an experimental colony of albino rats. The control group, who were not petted, were tense, anxious, and exhibited neuromuscular tension. The handled and stroked rats were relaxed and lacked neuromuscular tension (Montague, 1971). Infants who were held during immunization injections had a lesser duration of crying (Hallstrom, 1968). Triplett and Arneson (1979) conducted an exploratory study to observe distressed children's responses to tactile/touch measures and verbal measures. Distressed children responded better to touch than to verbal measures. Sommer (1979) investigated the difference between two groups of obstetrical patients, those receiving reassuring touches and those not

receiving such contact, with respect to the patient's anxiety. Sommer reported significant differences in all of the indexes (blood pressure, verbal expressions, and the self-report questionnaire). Figure 1 shows a model of the touch process developed by the researcher.

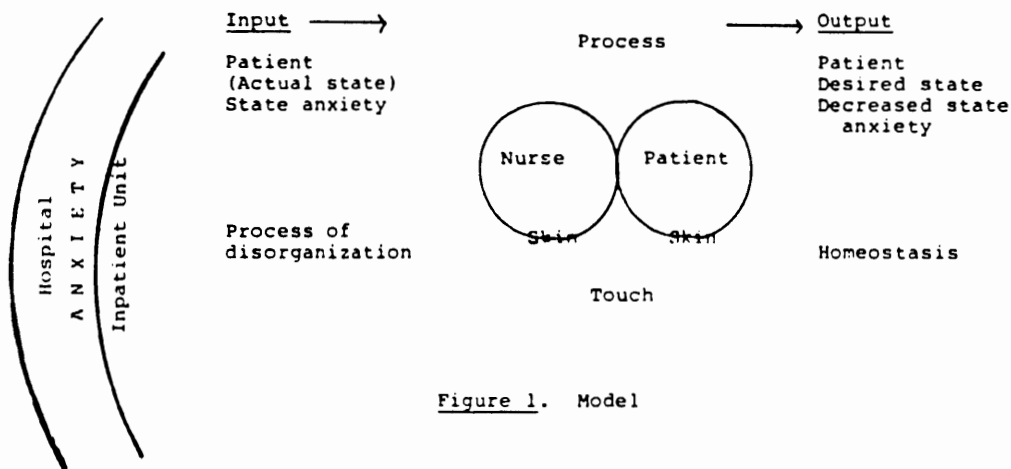


Figure 1. Model

Research studies by Dellipiani et al. (1976), Johnston (1980), and Kristic (1979) showed that immediately following admission and prior to admission, patients are highly anxious. The condition of the patient system at this point in time is anxious, and, therefore, the patient is experiencing state anxiety. Therapy is the process of reduction of the discrepancy between the actual patient state (disequilibrium or state anxiety) and the desired patient state (homeostasis or decreased state anxiety). Nurses intervene in the patient's process of

disorganization. Research and the review of literature have suggested that touch may be a tension-reducing behavior (Hallstrom, 1968; Levitt, 1980; Montague, 1971; Sommer, 1979; Triplett & Arneson, 1979).

The patient's skin is his boundary for the patient system. Everything external to the boundary is the environment and affects the system. The hospital affects the patient system resulting in state anxiety, and the nurse's touch affects the patient system resulting in tension-reduction. If the state of the patient immediately upon admission is anxious and if touch is a tension-reducer, then touch will affect state anxiety during a hospital admission procedure.

Input	Output
ACTUAL STATE	DESIRED STATE
(State anxiety) as	(Decreased state anxiety)
as measured by:	as measured by:
1. STAI Form X-1 (A-State anxiety)	1. Decrease in STAI Form X-1 scores.
2. Systolic blood pressure	2. Decrease in systolic blood pressure
3. Pulse rate	3. Decrease in pulse rate

### Assumptions

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

1. Man can be conceived as an open system.
2. Hospitalized patients experience state anxiety.
3. The state anxiety experienced can be measured subjectively and physiologically.
4. The input into a patient system can affect its output.

### Hypotheses

For purposes of this study, the following hypotheses were tested:

1. There is no significant difference in state anxiety as measured by the total score on the STAI Form X-1 (which measures state anxiety only) in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure.
2. There is no significant difference in state anxiety as measured by a decrease in systolic blood pressure in a group of adult patients receiving the experimental stationary touch as compared to a control

group receiving no experimental touch during a hospital admission procedure.

3. There is no significant difference in state anxiety as measured by a decrease in the pulse rate in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure.

#### Definition of Terms

The following terms are described for use in this study.

1. Stationary touch--gentle physical contact in which the fingers and/or palm of one hand of the toucher comes into contact with the subject's skin and rests immobile for a duration of 6 seconds or less.

2. Touch group--the group of subjects in which the experimental stationary touch is used.

3. No-touch group--the control group of subjects in which the experimental stationary touch is not used.

4. State anxiety: (a) theoretical definition--a temporary emotional state "characterized by subjective, consciously perceived feelings of tension, apprehension, and nervousness accompanied by or associated with

activation of the autonomic nervous system" (Spielberger, 1975, p. 137). (b) operational definition--the subjective emotional state of anxiety is the total score on the STAI Form X-1. The autonomic nervous system activation is alteration in the systolic blood pressure or pulse rate.

5. Hospital admission procedure--the routine entrance into the hospital through the admitting office (excluding emergency room entrance) from the time the patient enters his/her room and includes taking vital signs and asking questions, by the nurse, which are pertinent in the medical and nursing care of the patient. The questions and admission format are standardized for the hospital.

#### Limitations

The limitations of the study were:

1. The study was limited to one general hospital in the southwestern part of the United States; therefore, generalization is limited. "If an experiment is replicated in different time and place settings . . . generalizations concerning the findings can be made with greater confidence" (Van Dalen, 1966, p. 256).

2. Volunteers may have responded differently than non-volunteers, limiting generalization of the results (Cooper & Bowles, 1973).

3. Generalization was limited by the type of touch (stationary touch) employed in this study and the fact that the sample was not random.

4. Attribute variables and previous touch experience were not considered in this study.

#### Summary

Anxiety is almost universal in hospitalized patients. Studies (Dellipiani et al., 1976; Kristic, 1979) have shown that immediately following admission, patients are highly anxious. Johnston (1980) showed that prior to admission for surgery, patients experience high levels of anxiety. Hospital staff advocate anxiety reduction as anxiety is seen as a problem in surgical patients. Pancheri et al. (1978) reported that more complications are experienced by patients with high anxiety levels than lower anxiety levels. Touch is seen as a tension-reducing behavior (Levitt, 1980).

A study of one touch modality and its effect on patients' state anxiety of hospital admission was considered in this study. The problem of the study



stated: What is the effect of one touch modality, stationary touch, on state anxiety in adult patients undergoing a routine hospital admission procedure? The justification of the problem was given along with the theoretical framework for the study, which is based on von Bertalanffy's (1966) general systems theory. Assumptions, hypotheses, definition of terms and limitations of the study were also given.

## CHAPTER 2

### REVIEW OF LITERATURE

This review of literature concerns touch in relation to growth and development and effects of the use of touch in interpersonal relationships. Also discussed are skin, modalities of touch, anxiety, touch and state anxiety, and therapeutic touch.

#### Touch in Growth and Development

Touch in the form of embracing, fondling, stroking, and caressing is necessary for bringing about normal growth and development. Without touch, physiological needs are not met and normal growth and development are retarded (Montague, 1971). Numerous observations and experimentations have been done on subhuman species to understand if tactile experiences are necessary for the healthy development, both behaviorally and physically, of a particular species. In one such experiment, two groups of rats were utilized. One group was caressed and cuddled while the control group received no tactile contact. The petted rats showed problem-solving ability, curiosity, and more advanced skeletal growth than did the ungentled rats. Newborn lambs who lack licking fail to stand and eventually die. Cutaneous stimulation is significantly

important during labor, delivery, pregnancy, nursing, and all developmental stages in mammals. "The living organism depends to a very large extent upon the stimulation of the external world for its growth and development" (Montague, 1971, p. 211).

Considerable research indicates that tactile experiences are one of the primary needs of human organisms. Researchers, such as Spitz (1956) and Temerlin (1967), reinforced the concept of the need for touch. Temerlin (1967), in a study of 32 nonverbal retarded males found that those who received a maximum amount of skin contact had higher weight gains than did the control group. Spitz (1956) found in his studies that infants deprived of physical contact over a period of time suffered physical deterioration even to the point of death.

Not only are touch experiences necessary for physiological needs but interpersonal needs as well. An infant's need for contact constitutes the beginning of these interpersonal needs (Sullivan, 1953). Rubin (1963) stated that for the infant, touch is the dominant mode of adjustment and of learning about the world and himself. The lack of touch during childhood results in failure to secure relations with others (Montague 1971). James and

Jongeward (1971) are of the opinion that infants that were ignored and denied tactile experiences during their childhood shrink from touch in their interpersonal relations in later life. The lack of touch in infancy results in the marks of a schizophrenic personality which are indifference, detachment, uninvolvedness, emotional shallowness, and estrangement (Montague, 1971). In addition to schizoid or schizophrenic traits, investigations show that psychosomatic illness may develop in connection with the lack of touch. Fromm-Reichman (1959) stated that emotional disturbances seem to be a by-product of physical contact insufficiency.

The need for physical contact such as touch, is consistent and innate from birth and continues to be a need in later life (Fromm-Reichman, 1959). Hollender (1970), in his study on the need for body contact, found that some women had sexual relations with men not for sex but only to be held or cuddled. Bramble (1973) found that 56% of the patients in a psychiatric outpatient facility were not touched by the health team. Over one-third of the subjects who were not touched wanted more physical contact, and two-thirds of the males not touched wanted increased tactile contact from the health team. Approximately 81.8%

of the touched subjects wanted more physical contact. Three-fourths of the touched males and all the touched females desired to be touched more.

According to Sullivan (1953), touch is associated with reward, and the refusal of contact results in anxiety and pain as forms of punishment. Sullivan felt that the need for touch is so strong that it surpasses the fears of intense anxiety. The frustration of the wish to be held results in feelings of tension (Hollender, 1970).

#### Effects of the Use of Touch in Interpersonal Relationships

In a paper presented at the International Communication Association, Bardeen (1971) discussed a study in which the subjects thought that in three different situations they were interacting with three different people. However, it was the same person in each situation. The different situations were as follows: (a) subjects were blindfolded, not touched but talked to only, (b) visual only as subjects were not blindfolded, neither talked to nor touched, and (c) subjects were blindfolded, not talked to but touched only. Following each encounter, the subjects picked adjectives describing their encounter. The visual encounter was described as cold, childish, and

artificial. The verbal encounter was labeled as noncommunicative, distant, insensitive, and artificial. In contrast, the touch encounter was described as being warm, trustful, sensitive, serious, natural, and mature. Subjects were asked to choose which of the three persons they would select for future interactions. Forty-seven percent of the subjects chose the person who used touch (Knapp, 1972).

Boderman, Freed, and Kinnacan (1972) conducted an experiment to test the assumption that touch increases interpersonal attraction. The touch condition involved mutual touching for 110 seconds. Boderman et al. found that subjects in the touch condition perceived the accomplice as more attractive than those in the control group where the accomplice was not touched. Hubble, Noble, and Robinson (1981) found that counselors were perceived as more expert when using touch as opposed to a no-touch condition.

Pattison (1973) investigated the effects of touch on self-exploration and the therapeutic relationship. Following the initial interview in which the touch or no-touch procedure was utilized, the attitudes that the client thought the counselor was expressing and the

client's perception of psychological conditions offered by the counselor were analyzed. Touch did not make any significant difference in the client's perceptions of relationship conditions, although clients touched did engage in more self-exploration.

A study by Cooper and Bowles (1973) agreed with Pattison's (1973) results in that touch increased the subject's willingness to self-disclose. Pattison stated that client comments about having been touched implied that there was a significant impact on rapport building.

Aguilera (1967) initiated a study to find out if the use of touch with psychiatric patients would increase their verbal interaction. With the use of touch, increased verbal interaction occurred. In addition, those patients touched had greater positive attitude changes toward the nurses.

Daly and Carr (1967) conducted a study to develop a tool to measure tactile contact and compare a child's progress with his increased tactile contacts with the therapist. The subject was a 5-year-old girl who had severe problems in communicating with people. She was withdrawn, confused, and extremely anxious. At first, the therapist initiated most of the tactile communications,

and the child resisted approximately one-third of the tactile contacts. Of the tactile contacts initiated by the child, approximately one-half were body contacts. Around the ninth observation period, a change was seen in the child's tactile experiences. The tactile contacts of the therapist with the child were consistent; whereas, the child's resistance to those touches was absent. In addition, the child's initiated tactile communications with the therapist doubled. In the beginning of therapy, the child did little verbal communication; whereas during the last observation, the child was talking more freely, relevantly, and directly. At the termination of therapy, the child had formed a close relationship with her, and the child's symptoms had improved. She was able to relate to others and was more spontaneous.

The effects of touch on seriously-ill medical and surgical patients was investigated by McCorkle (1974). She attempted to determine if touch would produce an increase in the number of positive acceptance responses. A greater number of patients in the touched group responded positively with facial expressions. There were no differences in positive body movement responses. In the experimental or touch group, more neutral movements



were noted as well as fewer negative movements. Responses indicated that "although a patient may be consciously aware of the nurse's touch, he may be more aware of her interest, concern, and caring for him when touch is used" (McCorkle, 1974, p. 130). McCorkle's study suggested that touch can be used to establish rapport with patients in a short time period.

Fisher et al. (1976) conducted a study in which library clerks either placed a hand over an individual's palm for about half a second or did not touch the individual for whom they checked out books. The study revealed that subjects who were touched had more positive responses than subjects in no-touch conditions. The response to touch was positive for females but more ambivalent for males. "In effect, for females, the touch employed in this study acts as a 'Midas' touch which affects the recipient positively both in terms of personal feelings and in terms of evaluation of the environment" (Fisher, 1976, p. 419). Touch had a positive effect on responses even if the touch was not perceived by the recipient. According to Fisher et al., "the potency of the act of touching another person becomes very striking: a touch of

less than one second has the power to make people feel better" (p. 420).

The previously mentioned studies suggested that touch can facilitate rapport development (Aguilera, 1967; Daly & Carr, 1967; Pattison, 1973), verbal interaction (Aguilera, 1967; Daly & Carr, 1967), self-exploration (Cooper & Bowles, 1973; Pattison, 1973), and positive patient responses (Fisher et al., 1976; McCorkle, 1974). Being touched by someone stimulates and brings one back into our body and expedites unreserve and openness (Jourard, 1968).

In Daly and Carr's (1967) study, prior to the use of touch, the subject was extremely anxious, but at the termination of therapy, the subject's symptoms had improved. The effects of the use of touch have been found to be rapport development, increased verbal interaction, self-exploration, positive patient responses, and now anxiety reduction.

#### Skin

The sense of touch which is associated with the skin is the earliest to develop (Montague, 1971). The embryological law "states that the earlier a function develops, the more fundamental it is likely to be" (p. 3). The

8-week-old embryo is devoid of eyes and ears, and yet it responds to stroking. The largest organ of the body is the skin, a complex and fascinating organ. The skin comprises about  $2,500 \text{ cm}^2$  in the newborn baby and in the average male about  $18,000 \text{ cm}^2$ . This is about 16-18% of the average male's total body weight. The skin has sensory receptors receiving touch stimuli. The skin is the most alert of the five senses during sleep, and it recovers on awakening quicker than any other sense. Most of what is known about the skin's function has been acquired since the 1940s. The skin is used in tension reduction. When a person is under tension, it has been observed that he/she often rubs the thumb and the index finger together. Sometimes this is extended to all fingers rubbing concurrently against the palm (Montague, 1971).

The skin can be used as a tension reliever in many different ways (Montague, 1971). One of the most familiar is the scratching of the head by men. Women seldom react in this manner. There are marked differences between male and female uses of the skin in tension reduction. When men are perplexed, they will rub their cheeks, the back of their head, or their earlobes. Men also rub their nose,

flex their finger over their mouth, rub the side of their neck, close their eyes and rub them, pick their nose, and also rub the infraorbital portion of the face. In addition, men also rub the back of the hand, purse their lips or rub their thighs. Women in a perplexed state have different gestures. Women will put a finger under their chin or upon the lower front teeth.

The previously mentioned tactile stimulations are self-comforting and are designed to reduce tension. Even in states of alarm, individuals will wring their hands, grasp their own hands, or clasp onto one's own self (Montague, 1971).

#### Modalities of Touch

"The skin possesses the ability to respond to a large variety of modalities" (Montague, 1971, p. 175). A modality denotes a method, way, or manner of doing something (Landau & Bogus, 1975). Touch may vary from massive stimulation to simple body contact with the fingers or whole hand (Montague, 1971) using various modalities, such as a pat, stroke, rub, or stationary or holding touch.

A rubbing or a stationary touch, such as posing a finger under the chin or clasping or grasping one's hand is comforting and is said to reduce tension (Montague,

1971). The modality of rubbing of one's own skin is observed in tension reduction, and it is said to induce erotic sensations. The therapeutic touch modality affects tachycardia and evokes a generalized relaxation response (Krieger, 1979). In Montague's (1971) discussion of self-comfort or tension reduction, the pat modality was not mentioned. In the Western world, cheek patting, chin chucking, and head patting are all tactile forms of indicating affection.

In a study by Nguyen, Heslin, and Nguyen (1975), the authors found that the modalities of touch (a pat, a squeeze, a brush, a stroke) differed from one another on rating scales. The pat was the most friendly and playful, and the stroke was rated the most pleasant, loving, and sexual. Sexual disagreement occurred on whether the modes meant playfulness, warmth/love, and friendship/fellowship, but not on whether these modes conveyed pleasantness and sexual desire. The participants in Nguyen et al's study depended more on location to determine whether the touch communicated friendship/fellowship and sexual desire. The authors relied more on modality than loci of touch to determine how warm/loving, playful, and pleasant a touch was. From the reactions of men and women to being touched

by their best friends, it can be concluded that:

1. Touch is highly pleasant.
2. Sexual desire is the least likely interpretation of touch.
3. Playfulness/warmth of a touch depends on mode of touch.
4. An interpretation of sexuality and friendliness by the subject depends on where he/she is touched.
5. The stroke communicates warmth/love and sexual desire.
6. The pat communicates playfulness and friendship/-fellowship.
7. The accidental brush is the most ambiguous modality of touch.
8. All modalities of touch by the hands are assigned high ratings of friendship/fellowship, warmth/love, and pleasantness.

The interpretation of touches from a friend of the opposite sex is:

1. Women discriminate between body parts more than men.
2. Men are more attuned to modalities with greater attention given to squeezing, patting, and stroking.

### Anxiety

Anxiety is a complex phenomenon and is difficult to define (Rees, 1972). "In everyday usage, the term anxiety means a transient mood reflecting an awareness of an impending unpleasant occurrence (p. 2). Different meanings of anxiety are rampant, depending upon the particular theoretical orientation. According to Spielberger (1973), anxiety can be conceptualized as a stable personality trait, a transitory state, or as an intricate cognitive-emotional-motivation process. According to Schalling, Cronholm, and Asberg (1973), anxiety is a temporary emotional state or anxiety-proneness (trait anxiety).

There has been confusion by not distinguishing between state and trait anxiety (Schalling et al., 1975). State anxiety refers to anxiety that a person feels at a specific point in time. An example of this would be, "I feel anxious now." Trait anxiety on the other hand concerns a habitual tendency, such as "I often feel anxious" (Lidberg, 1980). According to Levitt (1980), anxiety at the moment "refers to an immediate and probably ephemeral state, whereas the latter [trait anxiety] is a constant state without a time limitation" (p. 11).

State anxiety is a fluctuating emotional state with intensity variation. It is subjectively manifested through consciously perceived feelings of nervousness, tension, and apprehension accompanied by intensified activity of the autonomic nervous system (Spielberger & Sarason, 1975). There are physiological accompaniments associated with activation of the autonomic nervous system (Levitt, 1980) (Table 1).

Table 1

Examples of Actions of the Autonomic Nervous System

Organ or Function	Sympathetic Effect	Parasympathetic Effect
Heart-beat rate	Increased	Slowed
Blood vessels	Constricted	Dilated
Body temperature	Raised	Lowered
Blood sugar	Increased	Decreased
Gastrointestinal	Action inhibited	Action enhanced
Sweat glands	Increased secretion	None

Note: From The Psychology of Anxiety, by E. Levitt, 1980, p. 73.

The concomitants of emotion are mostly sympathetic with only a few being parasympathetic. Studies of



anxiety, as a rule have supported the prevalence of sympathetic, and there have been reports of parasympathetic. However, there is a large variation from one individual to another, and in some individual's parasympathetic reactions predominate (Levitt, 1980). During anxiety, there can be subjective body discomforts, such as (a) feeling of chest constriction, (b) leg weakness, (c) tightness of the throat, (d) difficulty breathing (Lewis, 1980), (e) dry mouth, (f) jumping at any unexpected noise (Rees, 1972), (g) tremors of the body (Rees, 1972), and (h) heart palpitations (Rees, 1972).

There are manifest bodily concomitants in the autonomic nervous system, muscular and sudomotor system. The bodily disturbances of muscular ache, pain, and tremor are due to increased stress of the voluntary musculature (Rees, 1972). The sudomotor system's bodily concomitants are sweating from the forehead, palms, and axillae. The manifestation of anxiety in the respiratory system is rapid shallow breathing occasionally exhibited by frequent sighing.

Tachycardia is one feature of anxiety in the cardiovascular system (Rees, 1972). In anxiety states the systolic blood pressure is increased. Peripheral

vasoconstriction of the feet and hands results in cold, pallor extremities. Concomitantly dilated are the arterioles in the neck and upper chest. There may be increased frequency and urgency of micturation in the genitourinary system. A decrease of salivary secretion in the gastrointestinal system accounts for nausea, diarrhea, dyspepsia, and dryness of mouth.

Levitt (1980) stated that state anxiety is multimodal as it may express itself in four various modes:

1. A spoken or written verbal report.
2. Surface physical reactions, such as trembling, sweating, or pallor.
3. Internal physiological reactions, such as elevated breathing, pulse rate, blood pressure, and changes in gastrointestinal action.
4. Voluntary motor behavior or no behavior, such as freezing.

These modes have defined state anxiety in experiments and theoretically the four different modes would be interrelated. According to Levitt, an individual reporting intense state anxiety verbally would exhibit intense physiological and motoric reactions. Instead, state

anxiety is complex, as inconsistently across the four modes occurs.

According to Spielberger (1966, 1972), the level of state anxiety would be elevated in threatening circumstances. Consistent with this theory, studies by Dellipiani et al. (1976), Johnston (1980), and Kristic (1979) pointed out that anxiety is elevated prior to and immediately following hospital admission. Pancheri et al. (1978) reported that "patients with high anxiety suffer more complications during recovery. . . than patients with lower anxiety levels" Viney & Westbrook, 1982, p. 87). Anxiety is seen as a problem in surgical patients, and, therefore, hospital staff advocate anxiety reduction (Johnston, 1980).

#### Touch and State Anxiety

Waddell (1979) believed that touch is not an emotion but has the capacity of evoking emotion or feeling. According to Bruhn (1978), "the sensory elements of touch include neural, glandular, muscular, and mental changes, which in combination are called emotion. Touch is experienced affectively as emotion" (p. 1469). For example, in one instance, a nurse put her hand on a very ill patient's shoulder or held his hand upon entering his room. After a while, a change was noted, and the patient became more

relaxed and smiled more (Goody, 1979). Goody believed that the nurse's touch can help lower anxiety in a crisis situation.

Mercer (1966) stated that psychiatric nurses occasionally touch the mentally ill to comfort the patient. Labored breathing often occurs under conditions of stress which is not unlike the breathing of an infant at birth. By stroking or caressing a person's skin under these conditions, the sufferer will be returned to equilibrium. During an asthma attack, instant relief has occurred by placing an understanding arm around the sufferer (Montague, 1971). Goody (1979) saw touch as promoting psychological or physical well-being.

In one experiment by Hammett (1921), a laboratory attendant petted and gentled an experimental colony of albino rats. However, the control group's only human contact was that occurring due to cage cleaning or routine feeding by an attendant. The control group, who were not petted, were tense, irritable, apprehensive, anxious, exhibited fear and neuromuscular tension. The constantly handled and petted rats were relaxed, lacked neuromuscular tension and responded with fearlessness. Hammett (1921) removed the thyroid and parathyroid from both groups.

During the first 48 hours after the complete thyroidec-tomy, 79% of the rats that were considered irritable died. However, only 13% of the rats that had been gentled expired during the same time frame. This constitutes a difference of 66% (Montague, 1971) for the rats that were petted. When only the parathyroid was removed, 76% of the rats that were considered irritable died during the first 48 hours. The gentled rat's rate of mortality remained at 13%, which makes a difference of 63%. The more stroking and handling that rats receive in subsequent experience, the better the rats will do in the laboratory circumstances (Montague, 1971).

Bell, Reisner, and Linn (1961) conducted an experiment with Wister albino rats. Eighty rats were or were not handled daily. At the age of 46 days, one-half of each group was subjected to electroconvulsive shock treatment. The shock was increased, resulting in a produced convulsion. The next day, a blood sample was removed from both the shocked and nonshocked groups. Those subjects not handled had high blood sugars, for the rats that received shock when compared to those nonshocked. The handled rats showed a complete recovery from stress.

Hallstrom (1968) investigated the differences in intensity and duration of infant crying when held as opposed to lying on the examination table during immunization injections. The infants held in their mother's arms "showed less stress as evidenced by intensity and duration of crying, than did similar infants who were unsupported while lying on the examination table during the injection" (p. 133).

Triplett and Arneson (1979) conducted an exploratory study to observe distressed children's responses to tactile/touch measures and verbal measures. Only 7 of 40 verbal measures alleviated crying in contrast to 53 tactile-verbal interventions out of 60. Within 5 minutes when 33 verbal interactions failed, tactile/intervention was added and 29 tactile interventions were affective. In McCorkle's (1974) study, she noted that twice the number of control subjects exhibited tension as compared to the experimental or touch group. In addition, a greater number of subjects in the touch group had no body movements supporting the plausibility that touch has a calming effect upon subjects. According to Rubin (1963), touch has a "sudden comforting and quieting effect on ourselves and the situation in which we find ourselves . . . for in

situations in which one feels isolated and vulnerable, there seems to be no other modality comparable to touch" (p. 828).

Heidt (1981) studied the effect of therapeutic touch on state anxiety of patients in a cardiovascular unit. Subjects were assigned to group A (therapeutic touch), group B (casual touch), or group C (no touch) on the basis of matching scores of the A-State Self-Evaluation Questionnaire. Casual touch consisted of taking the apical pulse, radial pulse, and right and left ankle pedal pulses, each for 1 minute. The group receiving the no touch and casual touch were not significantly different. The group receiving therapeutic touch had significantly lower state anxiety than the group receiving casual touch.

The results were questioned due to problems in the research design and the use of one, subjective measure of state anxiety (Clark & Clark, 1984). Clark and Clark stated that a corroborating physiological variable, such as respiratory rate or pulse rate in addition to the questionnaire would provide a more definite measure of anxiety. Heidt (1981) did not include physiological measures, and this is surprising due to her discussion of

the manifestation of the relaxation response in blood pressure, respiratory rate, and pulse rate changes (Clark & Clark, 1984).

Heidt's (1981) study appeared to have problems in research design as it "compared two distinct treatments" (Clark & Clark, 1984, p. 40). According to Clark and Clark, it would have seemed more suitable to have a control group that received a sham therapeutic touch. The sham would have no energy transfer while the hands were being passed over the body. This would be possible since by definition, therapeutic touch is a purposeful act (Heidt, 1981). A control group like this gives the possibility of a double-blind procedure. Thus, the placebo effect would be more effectively controlled. If the sham and the actual therapeutic touch procedures should show comparable results, one could come to the conclusion that the placebo effect was in operation in some form. However, if significant effects were seen only in the therapeutic touch group, the likelihood of a placebo effect would be ruled out (Clark & Clark, 1984).

In Heidt's (1981) study, the sole measure of state anxiety was a subjective measure. Randolph's (1984) study, on the other hand, used only physiological measures



(muscle tension, peripheral skin temperatures, and skin conductance) to study reactions to stressful stimuli in comparing therapeutic and physical touch. The therapeutic touch and physical touch groups were touched on the subject's abdomen and back during the stressful stimuli (viewing of the film that included operations on genitals of boys using a sharp stone). The hypothesis predicted that therapeutic touch would have a greater relaxing effect than physical touch. The resultant experimental data, however, revealed no significant difference in variables. Randolph (1984) suggested factors that could have produced no significant difference, such as the use of healthy subjects as compared to ill persons. However, Randolph failed to look at what appears to be the most obvious factors, such as the length of time of the touch (8 minutes) and the body area selected to receive the touch (the abdomen and lower back). Bramble (1973) surveyed psychiatric outpatients to determine the loci of acceptable touch to be the upper back, including the shoulders and hands, not the stomach.

Sommer (1979) investigated the difference between two groups of obstetrical patients, those receiving reassuring touches and those not receiving such contact,

with respect to the patient's anxiety. Both subjective and physiological indexes were used. The author reported significant differences in all of the indexes (blood pressure, verbal expressions, and the self-report questionnaire). However, the results and interpretation of these are questionable for numerous reasons: (a) lack of control of extraneous variables, (b) data collection procedure in which the data used were collected anywhere from 1 to 4 hours postdelivery, and (c) the knowledge of the experiment by the entire nursing staff (the control group received routine nursing care).

The number of published investigations concerned with the effect of a modality of physical touch on state anxiety on adults was very limited. A few studies have been conducted on therapeutic touch and state anxiety and were included in the review of literature. For this reason, the therapeutic touch modality is discussed separately.

#### Therapeutic Touch

The laying on of hands is an old practice and persists today. It was recorded in cuneiform writings, pictures, and hieroglyphics (Krieger, 1979). Touch was ascribed great importance in various cultures and time

periods (Mintz, 1969). Historically, there was a belief that the touch of a renowned person had healing power (Bruhn, 1978). There was a medieval belief that scrofula would be cured by the touch of a king, and there was the "laying on of hands in the apostolic succession of the Catholic Church" (Mintz, 1969, p. 366).

Primitive cultures saw touch as capable of causing mental and physical cures (Huss, 1977). In primitive times, touch was a component of the prescribed ritual when treating emotional illness (Mintz, 1969). Aboriginal Australian witch doctors used no verbalizations but touch alone as curative.

In the early history of Western medicine, Galen used applications of genital massage to deal with hysteria in women (Mintz, 1969). The great healers of the past healed by the laying on of hands. In the early history of European medicine, Galen, Greatrakes, the Stroaker, for example, wrote concerning "the healing powers of touch." (Huss, 1977).

The Bible describes how Christ touched and healed. Throughout the New Testament (New International Version Bible, 1978), examples of these healings are mentioned. For example, in Matthew 8:14-15, "Jesus came into Peter's

house, he saw Peter's mother-in-law lying in bed with a fever. He touched her hand and the fever left her and she got up and began to wait on him" (p. 1095). Ears opened, the lame walked, and the blind had sight through Jesus Christ. The Bible states that believers in the Lord Jesus Christ will lay hands on the sick and they shall recover. Kittelson (1978) saw Christian nurses as instruments of healing power and gave examples of many that had occurred. In one example, a woman had suffered from a leg ulcer (3 inches in circumference) for 3 years. On Saturday, the 11th of June, 1977, five persons laid hands on her and prayed for healing. The next morning, the ulcer had completely disappeared. Kittelson saw all Christians as having the healing power, the source of which is Jesus Christ. She saw the nurse as the instrument through which Jesus can work. Kittelson referred to Mark 16:17-18, which says, "these signs will accompany those who believe: In My name [the name of Jesus] they will drive out demons . . . , they will place their hands on sick people, and they will get well" (New International Version Bible, 1978, p. 1152).

A derivative of the laying-on of hands has been studied by Krieger (1975, 1979) and has been called

therapeutic touch. Kunz's observations and pioneering efforts led to its initial conceptualization (Borelli & Heidt, 1981). It differs from the laying-on of hands in that it does not depend upon the healer's faith and is not enacted within a religious context. Therapeutic touch is recognized as a valid procedure by the American Nurse's Association and is taught at New York University (Kittelton, 1977). Therapeutic touch is taught in continuing education courses, inservice programs, and workshops in some areas of the United States (Krieger, 1979).

Krieger (1979) stated in therapeutic touch, excess energy is directed from the healer to the healee for the purpose of healing or helping the healee. The process of therapeutic touch consists of the healer listening with his/her hands while scanning the healee's body. The healer attunes to the healee's condition. "The healer places her hands over the areas of accumulated tension in the patient's body and redirects these energies" (Krieger, 1979, p. 660). The healee experiences a sense of heat in the diseased areas, feelings of well-being, relaxation, and changed hemoglobin values (Krieger, 1975).

Krieger (1975) conducted an experiment in which pretest blood samples were drawn and following the laying-on of hands, posttest blood samples were drawn for both an experimental and control group of subjects. Posttest mean hemoglobin values exceeded before treatment values in the experimental group. The control group showed no significant posttest mean change.

Therapeutic touch accelerates the healing process, eradicates or alleviates pain and evokes a generalized relaxation response (Krieger, 1979). It affects tachycardia, an autonomic nervous system symptom, and works effectively with stress-related illnesses.

#### Summary

Most of the comprehensive investigations concerned with touch have been done on the subhuman species. Observations and experiments have been done to understand if touch experiences are necessary for the healthy development, both behaviorally and physically, of a particular species. Investigators have found that touch is beneficial and even essential to their physical and behavioral development.

Touch has been found to be necessary for the healthy development, both behaviorally and physically, of an individual. Touch plays an important role in human development and interpersonal relations. Studies have suggested that touch can facilitate rapport development (Aguilera, 1967; Daly & Carr, 1967; McCoy, 1977; McCorkle, 1974), verbal interactions (Aguilera, 1967; Daly & Carr, 1967); positive patient responses (Fisher et al., 1976; McCorkle, 1974) and state anxiety reduction (Heidt, 1981; Sommer, 1979).

State anxiety is characterized by subjective feelings of nervousness, apprehension, and tension (Spielberger, 1975). Persons will touch their own skin during tension or alarm (Montague, 1971). A study (Montague, 1971) of handled rats demonstrated that the petted rats were relaxed and lacked neuromuscular tension. Infants who were held during immunization injections had a lesser duration of crying (Hallstrom, 1968). Distressed children responded better to touch than to verbal measures (Triplett & Arneson, 1979). This suggests that touch can affect state anxiety. However, few studies have been conducted on physical touch and state anxiety. Most of the studies that have been done were on therapeutic touch

and state anxiety. However, in these studies, problems were noted, such as the use of a subjective measure as the sole index of state anxiety. One study included both subjective and physiological variables, while another used only physiological indexes. However, the results were questionable.

The purpose of this study was to determine if a stationary touch, as opposed to no-touch, affects state anxiety during a hospital admission procedure. The skin responds to a variety of modalities, such as a stroke, pat, squeeze, or accidental brush. There exists sparse research on the effects of these different modalities. One study (Nguyen et al., 1975) suggested that there are differences between the modalities. However, the stationary or immobile touch modality was not one of its considerations. Knowledge is needed to determine the effects of touch and specific touch modalities on therapeutic response in patients. The effect of a stationary touch on state anxiety during a hospital admission procedure is the first of its kind.



### CHAPTER 3

#### PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The purpose of this study was to determine the effect of a stationary touch on state anxiety of adult patients during a hospital admission procedure. The design of the study was a pre-posttest control design (Huck, Cormier, & Bounds, 1974; Huitema, 1980). This design involves accessible selection and random assignment instead of random selection and random assignment (Huitema, 1980). Huitema stated that random selection and random assignment are impractical; accessible selection and random assignment are the rule in most experiments. However, in the latter, generalization is limited to the characteristics of the sample.

The diagram for the pre-posttest control group design (Huck et al., 1974) is demonstrated in Figure 2. The present study met the criteria for the pre-posttest control group design as follows:

1. Two groups (stationary touch group and no-touch group) were involved in the design (two rows of symbols).
2. The subjects were randomly assigned to the stationary touch and no-touch groups (R in each row).

R	0	X	0
R	0		0

Figure 2. Diagram of the pre-posttest control group design.

3. Both the touch and no-touch groups were measured at the same time before treatment was applied to the touch group (the first column of 0s).

4. One group received the stationary touch; whereas, the second group did not (X in the one row).

5. Both the touch and no-touch groups were measured at the same time after the touch was applied (the second column of 0s).

Both the touch and no-touch groups were measured twice meeting the criteria for the pre-posttest control group design and compared on the dependent variables (Huck et al., 1974). The initial measurements served as the pretests, and the second measurements served as the posttests. The measurements for this study were the STAI Form X-1 (A-State anxiety), systolic blood pressure, and pulse. The independent variable was stationary touch. A diagram for this study is presented in Figure 3.

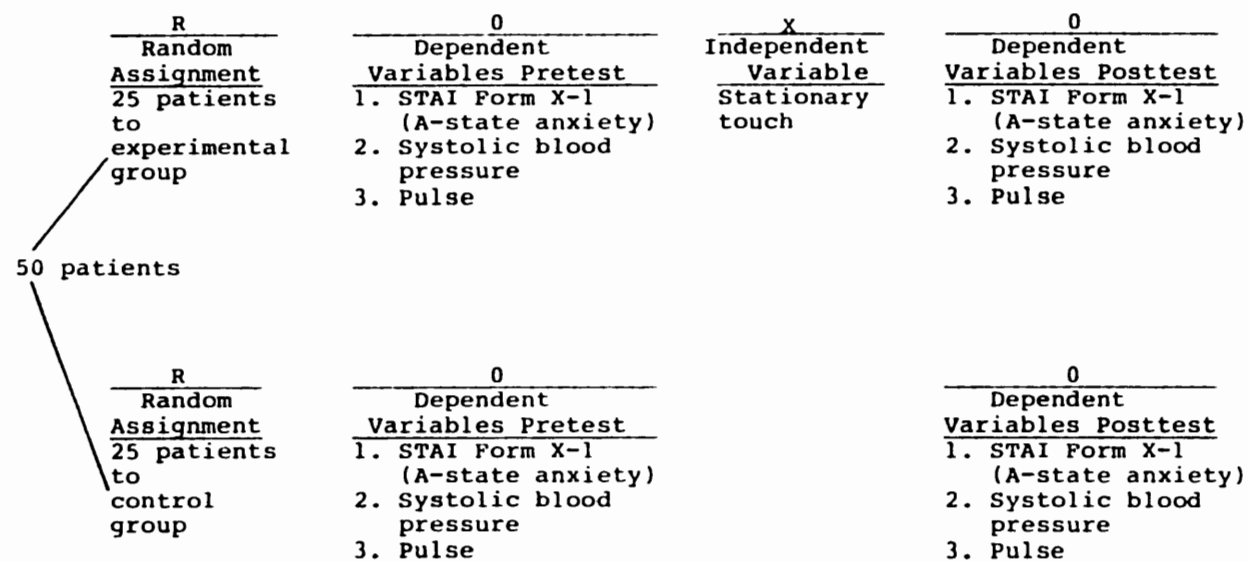


Figure 3. Diagram of the independent and dependent variables for the pre-posttest control group design utilized in the study.

### Setting

This study was conducted in a 505-bed general hospital located in a highly populated metropolitan city in the southwestern part of the United States. The subjects were located in the north and south floors of the hospital. The north floor usually had the following types of admissions: (a) gynecology, (b) radium implants, (c) ophthalmology, (d) oral surgery, and (e) pediatrics. The south floor generally had the following types of admissions: (a) general surgery, (b) urology-kidney, (c) overflow obstetrical, and (d) overflow gynecology.

### Population and Sample

The population consisted of 146 adult patients who were being admitted to two floors at a general hospital over a 9-day period, beginning on a Monday and continuing for 9 consecutive days with the exception of Saturday. The method of sample selection was accessible selection and random assignment. The subjects who volunteered were randomly assigned to either the control (no-touch) group or the experimental (touch) group by the use of drawing different colored papers from a box. An equal number of both black and white pieces of paper were placed in a box and mixed. The drawing of a black piece of paper

indicated that the particular subject would be in the no-touch group, and a white piece of paper designated the touch group. Fifty volunteers comprised the sample. The criteria for participating subjects were as follows:

1. Consent was given to participate in the study.
2. The subjects were 18 years of age or older.
3. The subjects had not taken any tranquilizers prior to admission.
4. The subjects were admitted through the admissions office.

#### Protection of Human Subjects

The protection of human subjects occurred in the following ways:

1. The Human Research Review Committee at Texas Woman's University critiqued the study to consider subject protection, and approval was given to conduct the study (Appendix A).
2. Permission was given to conduct the study by the hospital (Appendix B).
3. The Professional Activities Committee of the hospital, comprised of section chiefs of all departments, considered the human rights of the patients and approved the study (Appendix C).

4. The researcher identified herself to the subjects and gave them an oral description of the study including its purpose and significance. The subjects were informed of when and where the results of the study would be available. They were told that participation was voluntary, and that whether they decided to participate or not would not affect the care which they received. Anonymity was assured by using numbers instead of names in recording the data (Appendix D).

5. Consent forms were signed by the subjects who participated in the study, and each subject received a copy of the signed form (Appendix E).

#### Instruments

The State-Trait Anxiety Inventory (STAI) Form X-1 (Appendix F) developed by Spielberger, Gorusch, and Lushene (1970) and the Tycos 7052-08 Digital Blood Pressure Monitor were used in the study to determine the effect of stationary touch on state anxiety of adult patients undergoing a hospital admission procedure. The demographic data of age, sex, type of admission or diagnosis, and floor assignment were obtained by reviewing the schedule of admissions. The blood pressure and pulse, used later in data interpretation, were recorded on an

Information Tool (Appendix G). The Information Tool also gave the race of the subject since this information was not on the schedule of admissions.

STAI Form X-1 (A-State Anxiety)

The STAI Form X-1, developed by Spielberger et al. (1970) was used to measure anxiety. Permission to use the instrument was obtained from the publisher (Appendix H). The STAI Form X-1 measures A-State anxiety. According to Spielberger (1975) A-State is "a transitory emotional condition or feeling state that is characterized by subjective, consciously perceived feelings of tension and apprehension. . . . A-States may vary in intensity and fluctuate over time" (p. 719). The A-State scale (Form X-1) consists of 20 statements which asks subjects to disclose how they feel at a definite moment in time. The subjects respond to questions, such as "I feel nervous," by rating himself on a 4-point scale, ranging from not at all to very much so. This results in a total score ranging from 20 to 80 (Spielberger et al., 1970).

The test-retest correlations for the A-State scale are low (.16 to .54). Since anxiety states are of a transitory nature, it is much more meaningful to use the alpha coefficient as an index of A-State scale reliability

rather than test-retest correlations. The alpha reliability for the A-State scale range from .83 to .92. The alpha reliability coefficients are higher for the A-State scale when the instrument is administered under stressful situations (Spielberger et al., 1970). After administration of an intelligence test to college males, the alpha reliability was .92, and it was .94 after a distressing film. Following relaxation training for the same subjects, it was .89. Scores on the STAI Form-X-1 increase with response to stress and decrease with relaxation training which furnishes proof of the construct validity of the A-State scale (Spielberger, 1975).

#### Systolic Blood Pressure and Pulse

The blood pressure and pulse were measured by an electronic blood pressure monitor (Tycos 7052-08 Digital Blood Pressure Monitor). The monitor consists of an electronic unit, valve, inflation bulb, and an inflatable bag in a cuff (Tycos, n.d.). Inside the cuff, there is a microphone which listens to and processes blood flow sounds determining the systolic blood pressure, diastolic blood pressure, and pulse. A stethoscope was not needed (Tycos, n.d.). An electronic blood pressure monitor reading of blood pressure and pulse was taken and compared to



a blood pressure and pulse reading using the stethoscope, sphygmometer, and watch, respectively, and were not significantly different.

#### Data Collection

Data collection began after approval was obtained from the Human Subjects' Review Committee of Texas Woman's University (Appendix A) and permission had been obtained from the hospital (Appendix B). There was a training period prior to conducting the research in which the research assistant and researcher role-played and practiced (a) tone of voice (soft), (b) eye contact (during questioning), and (c) spatial distance (within touching distance of the patient) (Johnson, 1972). Practice was also done on positioning the bedside table in front of the patient.

Routine hospital admissions generally occurred from 1:00 p.m. to 5:00 p.m., with the largest number of patients being admitted at that time. The researcher arrived in the morning and stayed until 8:00 p.m. beginning on Monday and continuing for 9 consecutive days, excluding Saturday.

Upon arrival at the hospital, the researcher checked the list of scheduled admissions in the admissions office

which designated patients scheduled for that day. These records also contained the age, type of admission or diagnosis, and floor designation for each admission. Those subjects 18 years of age or older, who were not coming from the emergency room, and who were assigned to floors 6 North or 6 South were asked to participate in the study. Each subject received an oral description of the study (Appendix D) and was asked to sign a consent form (Appendix E). The subjects were assured of their anonymity. Numbers instead of names were used to collect and record the data. The subjects were also assured that their participation or nonparticipation would not affect their care in the hospital.

The method of sample selection was accessible selection and random assignment. The subjects who volunteered and signed the consent form (Appendix E) were randomly assigned to either the touch or no-touch groups by drawing either a white or black piece of paper from a box.

The researcher kept all of the conditions the same for both the touch and no-touch groups, except for exposing the independent variable (touch) to the touch group. Both groups were measured twice. The first measurements of the STAI Form X-1, systolic blood

pressure, and pulse served as the pretests, and the second measurements served as the posttests. Each group was measured at the same time, before and after the touch was applied to the touch group.

The research assistant collected the data for both the touch and no-touch groups but had no knowledge of which subjects were or were not touched. This technique minimized experimenter bias (Walizer & Wiener, 1978). The research assistant entered the room of either the touch or no-touch subject and asked the subject to sit on the same side of the bed as the bedside console. The overbed table was placed in front of the subject, and the subject was given directions for taking the STAI Form X-1 pretest. Each subject was assigned a code number, and it was written on the test sheet.

Following the completion of the STAI Form X-1, the vital signs (blood pressure, temperature, pulse, and respiration) were taken by the research assistant. Walizer and Wiener (1978) recommended the use of automated devices to minimize experimenter bias. Therefore, the pretest systolic blood pressure and pretest pulse rate were taken twice using the Tycos 7052-08 Digital Blood Pressure Monitor. The average of both the two blood

pressure readings and the two pulse readings were utilized in the data analysis as the pretest.

The procedure to obtain the systolic blood pressure and pulse was as follows:

1. If necessary, the subject was asked to roll his/her own sleeve up.
2. The cuff was placed over the subject's arm just above the elbows, and the microphone was positioned over the brachial artery pulse point. The brachial artery pulse point is "located on the inside surface of the arm, just above the elbow and under the biceps muscle" (Tylos, p. 4).
3. The free end of the cuff was folded snugly and the velcro attached to itself.
4. The research assistant again checked the microphone assuring its positioning over the brachial artery.
5. The subject's arm remained resting on the overbed table in front of him/her close to the level of his/her heart.
6. The pressure switch was set for the upper range from 180 to 240.
7. The monitor was turned to the on position, and the research assistant waited for the beep and zero display.

8. The switch was turned to the constant inflation position, and the inflation bulb was squeezed until a beep was heard.

9. The subject was asked not to move and remain quiet.

10. The cuff deflated automatically.

11. A long beep sounded and the deflation symbol flashed when the measurement was completed.

12. The systolic, diastolic, and pulse rates were displayed, respectively, on the digital readout for 90 seconds (Tycos, 1983).

The blood pressure and pulse rates that were displayed on the digital readout were copied onto the Information Tool (Appendix G). The blood pressure cuff was not removed following the readings but was left on the subject's arm. The subject was asked to leave his/her arm in a prone position, resting on the table top still in front of him/her. The research assistant left the room at this time.

The researcher entered the subject's room as the research assistant departed. The researcher oriented the subject to the use of the phone, call light, and the operation of the bed. Using the routine admission

information sheet used by that particular hospital, the researcher asked specific questions. An example of a question was: Are you allergic to any medication? In this way, the researcher was more able to control extraneous variables.

Following the above, the researcher told the subject (both those in the touch and no-touch groups), "If you have need of anything after I leave, please feel free to call the nurses' station." In the touch group, the researcher placed her hand on the subject when the word "if" in the statement was spoken and kept her hand on the subject until the word "station" was spoken. The researcher's right hand was placed on the middle of the patient's forearm. The touch consisted of the fingers and the palm of the hand of the researcher resting on the left forearm of the subject for a duration of 6 seconds (approximate time required to make the above statement to the subject). The no-touch group received the same verbal encouragement but were not touched. The researcher then left the subject's room.

The research assistant re-entered the subject's room at this time. The posttest (STAI Form X-1) was then given to the subject. Following completion of the second

STAI Form X-1, the posttest blood pressure and pulse were retaken twice, using the Tycos 7052-08 Digital Blood Pressure Monitor. The subject was then asked the postexperimental question: "If you were anxious or tense and the nurse was to touch your lower arm, which type of touch would you prefer that would decrease your tenseness or nervousness? (a) patting touch, (b) rubbing touch, (c) stroking touch, or (d) stationary touch." The touches were demonstrated by the research assistant.

#### Treatment of Data

The design of the study was a pre-posttest control design involving accessible selection and random assignment (Huitema, 1980). The statistical analysis employed with this design was the analysis of covariance (ANCOVA) (Huck et al., 1974). According to Huck et al., researchers consider the analysis of covariance to be better than a t-test to compare two groups. In ANCOVA, the posttest means are adjusted for differences in pretest group means and compared. ANCOVA was used to statistically analyze the data from each hypotheses. The "ANCOVA procedure includes an adjustment of the treatment effect that reduces bias that may be caused by pretreatment

differences between groups" (Huitema, 1980, p. 13). The level of significance chosen was .05.

The demographic data and the postexperimental question were analyzed using descriptive statistics. Frequencies and percentages were calculated on age, race, sex, and type of admission. With accessible selection and random assignment, generalization is limited to the characteristics of the sample (Huitema, 1980). For this reason, the characteristics of the sample were described in detail.



## CHAPTER 4

### ANALYSIS OF DATA

The problem of this study was to investigate the effect of one modality of touch, stationary touch, on the state anxiety of adult patients undergoing a hospital admission procedure. The design of the study was a pre-posttest control design involving accessible selection and random assignment (Huitema, 1980). The statistical analysis employed with the pre-posttest control design was the analysis of covariance (Huck et al., 1974). An analysis of covariance was employed to statistically analyze the data from each hypothesis. The findings were organized according to the hypotheses and accompanied by appropriate tables.

The demographic data were analyzed using descriptive statistics. Frequencies and percentages were calculated on age, race, sex, and type of admission. With accessible selection and random assignment, generalization is limited to the characteristics of the sample (Huitema, 1980). For this reason, the characteristics of the sample were described in detail.

### Description of Sample

Sixty subjects were asked to participate in the study. Eight persons declined to participate including one experiencing abdominal pain and another who was unable to read English. Additionally, one subject was excluded from the study for leaving too many unanswered questions on the instrument and another was excluded due to instrument failure. The resultant sample size of 50 was obtained.

Demographic data collected included age, sex, race, and type of admission. The sample consisted of 8 (14%) males and 42 (86%) females who were divided into the touch (experimental) and no-touch (control) groups. The no-touch group was composed of 5 (20%) males and 20 (80%) females; the touch group was composed of 3 (12%) males and 22 (88%) females (Table 2). The frequency distribution of race in the touch and no-touch groups was 1 (4%) black and 24 (96%) white for the no-touch group and 3 (12%) black and 22 (88%) white for the touch group (Table 3).

In considering age, nearly one-half (48%) of the sample were between the ages of 31 and 40 years. The age range of the no-touch group was 25-78 years with a mean of 43.6 and a standard deviation of 14.73 years. In the

Table 2

Number and Percent Distribution of Sex of Touch and  
No-Touch Groups

Sex	<u>Touch Group</u>		<u>No-Touch Group</u>	
	Number	Percent	Number	Percent
Males	3	12	5	20
Females	<u>22</u>	<u>88</u>	<u>20</u>	<u>80</u>
Total	25	100	25	100

Table 3

Number and Percent Distribution of Race of Touch and  
No-Touch Groups

Race	<u>Touch Group</u>		<u>No-Touch Group</u>	
	Number	Percent	Number	Percent
Black	3	12	1	4
White	<u>22</u>	<u>88</u>	<u>24</u>	<u>96</u>
Total	25	100	25	100

touch group, the age range was 20-78 years with a mean of 39.2 and standard deviation of 15.14 years (Table 4).

The total sample of 50 consisted of the following types of admission: 24 (48%) gynecology, 6 (12%)

Table 4

Number and Percent Distribution of Age of Touch and  
No-Touch Groups

Age	Touch Group		No-Touch Group	
	Number	Percent	Number	Percent
20-25	0	0	3	12
26-30	4	16	2	8
31-35	6	24	7	28
36-40	3	12	8	32
41-45	4	16	2	8
46-50	1	4	0	0
51-55	1	4	1	4
56-60	3	12	0	0
61-65	0	0	1	4
66-70	0	0	0	0
71-75	2	8	0	0
76-80	<u>1</u>	<u>4</u>	<u>1</u>	<u>4</u>
Total	25	100	25	100
Mean	43.6		39.2	
Standard deviation	14.73		15.14	

ophthalmology, 1 (2%) obstetrical, 2 (4%) urology-kidney, and 15 (30%) general surgery. Of the 50 subjects, 47 (94%) were surgical admissions with 48% of these being gynecological. Table 5 shows the types of admissions for the no-touch and touch groups. Both groups had close to half of their admissions being for gynecology: the no-touch group had 11 (44%) and the touch group had 13 (52%). The second most frequent admission category was general surgery with 7 (28%) in the no-touch group and 8 (32%) in the touch group.

Table 5

Number and Percent of Type of Admission of Touch and No-Touch Groups

Type of Admission	<u>Touch Group</u>		<u>No-Touch Group</u>	
	Number	Percent	Number	Percent
Surgical-Gynecology	13	52	11	44
Surgical-Urology	1	4	1	4
Surgical-Opthalmogy	3	12	3	12
Surgical-General	8	32	7	28
Obstetrical	0	0	1	4
Medical	<u>0</u>	<u>0</u>	<u>2</u>	<u>8</u>
Total	25	100	25	100

### Findings

The findings of the statistical analysis of data were organized according to the hypotheses. The hypothesis is stated accompanied by appropriate tables.

#### Hypothesis 1

Hypothesis 1 stated: There is no significant difference in state anxiety as measured by the total score on the STAI Form X-1 (which measures state anxiety only) in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure. Table 6 shows the analysis of covariance for the STAI scores between the touch and no-touch groups. There was no significant difference ( $F = 1.58814$ ,  $df = 1$ ) in state anxiety as measured by the STAI Form X-1 score in a group of adult patients receiving the stationary touch as compared to a control group not receiving the experimental touch during a hospital admission procedure. Therefore, hypothesis 1 was accepted based on the .05 level of significance.

#### Hypothesis 2

Hypothesis 2 stated: There is no significant difference in state anxiety as measured by a decrease in

Table 6

Analysis of Covariance for STAI Scores between Touch and  
No-Touch Groups

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	<u>F</u>	Signifi- cance of <u>F</u>
Treatment	35.16949	1	35.16949	1.58814	.214*
Error	1040.82072	47	22.14512		
Total	1075.99021	48			

N = 50.

\* $p < .05$ .

systolic blood pressure in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure. Table 7 shows the analysis of covariance for systolic blood pressure between the touch and no-touch groups. There was no significant difference ( $F = .04655$ ,  $df = 1$ ) in state anxiety as measured by the systolic blood pressure in a group of adult patients receiving the stationary touch as compared to a control group not receiving the experimental touch during a hospital admission procedure. Therefore, hypothesis 2 was accepted based on the .05 level of significance.

Table 7

Analysis of Covariance for Systolic Blood Pressure between  
the Touch No-Touch Groups

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	<u>F</u>	Signifi- cance of <u>F</u>
Treatment	2.79264	1	2.79264	.04655	.830*
Error	2819.63647	47	59.99227		
Total	2822.42911	48			

N = 50.

\* $p < .05$ .

Hypothesis 3

Hypothesis 3 stated: There is no significant difference in state anxiety as measured by a decrease in the pulse rate in a group of adult hospitalized patients receiving the experimental stationary touch as compared to a control group of patients receiving no experimental touch during a hospital admission procedure. Table 8 shows the analysis of covariance for pulse between the touch and no-touch groups. There was no significant difference ( $F = .46774$ ,  $df = 1$ ) in state anxiety as measured by a decrease in the pulse rate in a group of adult patients receiving the stationary touch as compared



to a control group not receiving the experimental touch during a hospital admission procedure. Therefore, hypothesis 3 was accepted based on the .05 level of significance.

Table 8

Analysis of Covariance for Pulse between Touch and No-Touch Groups

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	<u>F</u>	Significance of <u>F</u>
Treatment	18.84580	1	18.84580	.46884	.497*
Error	1889.26001	47	40.19702		
Total	1908.10581	48			

N = 50.

\* $p^2$ .05.

Additional Analysis

Normative data for male general medical-surgical patients on the A-State scale was 42.38, SD = 13.24 (Spielberger et al., 1970). The mean score for pre-A-State anxiety reported in the present study was 41.40, SD = 11.398 lower than the general medical-surgical population. It did not differ significantly from the mean obtained by Heidt (1981) of 41.1 on hospitalized cardiovascular patients. The averages for the systolic blood

pressure for both the touch and no-touch groups are shown in Tables 9 and 10. Tables 11 and 12 give the pulse rates for the touch and no-touch groups. There were no significant differences in state anxiety in Hypothesis 1, 2, and 3. Therefore, additional analysis of the STAI Form X-1 scores were compared to determine the number of subjects whose pretest anxiety scores decreased or increased on the posttest. Comparison of the two groups on the STAI Form X-1 pre-posttest scores and their differences can be noted in Table 13 along with the averages of the pre- and posttest scores. The comparison of the touch and no-touch groups in Table 14 showed that the state anxiety score for the touch group decreased in 68% of the subjects who were touched as opposed to only 52% in the no-touch group. Also, the anxiety score of the touch group increased in only 20% of the subjects as opposed to 36% in the no-touch group.

The postexperimental question data concerned with the type of touch modality preferred for decreasing anxiety was analyzed using descriptive statistics, such as frequency and percentages. Twenty-four (48%) of the 50 subjects preferred the stationary touch modality.

Table 9

Pre- and Posttest Systolic Blood Pressure for Touch Group

Patient Number	Pretest			Posttest			Increase or Decrease <sup>c</sup>
	SBP	SBP	Average <sup>a</sup>	SBP	SBP	Average <sup>b</sup>	
1	94	80	87.0	76	80	78.0	- 9.0
4	115	120	117.5	117	112	114.5	- 3.0
5	106	110	108.0	92	101	96.5	-11.5
7	110	130	120.0	108	117	112.5	- 7.5
9	104	103	103.5	119	109	114.0	+10.5
10	110	119	114.5	108	105	106.5	- 8.0
11	102	109	105.5	106	107	106.5	+ 1.0
13	136	130	133.0	127	122	124.5	- 8.5
16	116	130	123.0	119	132	125.5	+ 2.5
18	94	92	93.0	90	89	89.5	- 3.5
25	128	117	122.5	137	128	132.5	+10.0
27	128	115	121.5	118	126	122.0	+ 0.5
29	86	82	84.0	81	85	83.0	- 1.0
31	156	154	155.0	161	155	158.0	+ 3.0
32	112	108	110.0	119	114	116.5	+ 6.5
33	112	118	115.0	103	122	112.5	- 2.5
37	126	117	121.5	107	106	106.5	-15.0
40	119	102	110.5	113	101	107.0	- 3.5
44	124	116	120.0	117	122	119.5	- 0.5
45	139	123	131.0	128	122	125.0	- 6.0
46	115	114	114.5	108	121	114.5	0.0
48	111	118	114.5	111	111	111.0	- 3.5
49	102	104	103.0	103	100	101.5	- 1.5
50	123	127	125.0	130	125	127.5	+ 2.5
51	123	120	121.5	124	113	118.5	- 3.0

<sup>a</sup>Average of pretest = 114.98.<sup>b</sup>Average of posttest = 112.94.<sup>c</sup>Number of increases = 8; number of decreases = 16; number stayed the same = 1.

Table 10

Pre- and Posttest Systolic Blood Pressure for No-Touch Group

Patient Number	Pretest			Posttest			Increase or Decrease <sup>c</sup>
	SBP	SBP	Average <sup>a</sup>	SBP	SBP	Average <sup>b</sup>	
2	161	162	161.5	160	151	155.5	- 6.0
3	121	119	120.0	107	105	106.0	-14.0
6	108	106	107.0	96	108	102.0	- 5.0
8	121	116	118.5	115	122	118.5	0.0
12	109	109	109.0	99	121	110.0	+ 1.0
14	134	135	134.5	133	137	135.0	+ 0.5
15	107	105	106.0	100	100	100.0	- 6.0
17	140	136	138.0	164	153	158.5	+20.5
19	140	136	138.0	147	139	143.0	+ 5.0
20	125	123	124.0	123	118	120.5	- 3.5
21	133	125	129.0	108	110	109.0	-20.0
23	116	125	120.5	127	120	123.5	+ 3.0
24	110	108	109.0	113	118	115.5	+ 6.5
26	115	118	116.5	120	113	116.5	0.0
28	95	106	100.5	115	125	120.0	+19.5
30	143	138	140.5	139	134	139.0	- 1.5
34	147	143	145.0	139	148	143.5	- 1.5
35	132	123	127.5	119	122	120.5	- 7.0
36	118	110	114.0	111	112	111.5	- 2.5
38	142	144	143.0	147	143	145.0	+ 2.0
39	109	104	106.5	103	101	102.0	- 4.5
41	142	141	141.5	154	145	149.5	+ 8.0
42	138	141	139.5	136	137	136.5	- 3.0
43	107	112	109.5	94	102	98.0	-11.5
47	107	107	107.0	95	93	94.0	-13.0

<sup>a</sup>Average of pretest = 124.24.<sup>b</sup>Average of posttest = 122.92.<sup>c</sup>Number of increases = 9; number of decreases = 14; number stayed the same = 2.

Table 11

Pre- and Posttest Pulse Rate for Touch Group

Patient Number	Pretest			Posttest			Increase or Decrease <sup>c</sup>
	Pulse 1	Pulse 2	Average <sup>a</sup>	Pulse 1	Pulse 2	Average <sup>b</sup>	
1	55	55	55.0	56	34	30.0	-25.0
4	91	95	93.0	96	94	95.0	+ 2.0
5	64	52	58.0	68	63	65.5	+ 7.5
7	65	63	64.0	50	78	64.0	0.0
9	64	63	63.5	57	61	59.0	- 4.5
10	82	62	72.0	90	82	86.0	+14.0
11	81	78	79.5	81	84	82.5	+ 3.0
13	83	90	86.5	77	68	72.5	-14.0
16	70	70	70.0	73	86	79.5	+ 9.5
18	73	73	73.0	69	75	72.0	- 1.0
25	65	68	66.5	60	67	63.5	- 3.0
27	79	84	81.4	74	79	76.5	- 5.0
29	60	84	72.0	62	80	71.0	- 1.0
31	94	104	99.0	93	93	93.0	- 6.0
32	68	67	67.5	52	68	60.0	- 7.5
33	73	74	73.5	72	69	70.5	- 2.0
37	108	108	108.0	103	107	105.0	- 3.0
40	77	84	80.5	80	78	79.0	- 1.5
44	53	57	55.0	55	54	54.5	- 0.5
45	74	73	73.5	73	77	75.0	+ 1.5
46	81	80	80.5	64	72	68.0	-12.5
48	63	65	64.0	70	69	69.5	+ 5.5
49	69	69	69.0	69	67	68.5	- 1.0
50	97	89	93.0	85	95	90.0	- 3.0
51	57	69	63.0	67	70	68.5	+ 5.5

<sup>a</sup>Average of pretest = 74.44.<sup>b</sup>Average of posttest = 72.72.<sup>c</sup>Number of increases = 8; number of decreases = 16; number stayed the same = 1.

Table 12

Pre- and Posttest Pulse Rate for No-Touch Group

Patient Number	Pretest			Posttest			Increase or Decrease <sup>c</sup>
	Pulse 1	Pulse 2	Average <sup>a</sup>	Pulse 1	Pulse 2	Average <sup>b</sup>	
2	81	79	80.0	82	84	83.0	+ 3.0
3	77	77	77.0	74	78	76.0	- 1.0
6	64	62	63.0	62	62	62.0	- 1.0
8	107	103	105.0	103	103	103.0	- 2.0
12	70	65	67.5	64	66	65.0	- 2.5
14	81	80	80.5	79	80	79.5	- 1.0
15	76	68	72.0	76	82	79.0	+ 7.0
17	68	67	67.5	50	48	49.0	-18.5
19	99	96	97.5	94	95	94.5	3.0
20	52	55	53.5	44	34	39.0	-14.5
21	71	71	71.0	66	71	68.5	- 2.5
23	86	86	86.0	86	85	85.5	- 0.5
24	83	93	88.0	78	74	76.0	-12.0
26	72	76	74.0	73	76	74.5	+ 0.5
28	104	101	102.5	110	94	97.0	- 5.5
30	66	70	68.0	74	75	74.5	+ 6.5
34	63	70	66.5	62	54	58.0	- 8.5
35	91	89	90.0	90	88	89.0	- 1.0
36	100	93	96.5	96	94	95.0	- 1.5
38	73	77	75.0	64	77	70.5	- 4.5
39	73	68	70.5	74	75	74.5	+ 4.0
41	80	80	80.0	71	73	72.5	- 8.0
42	89	82	85.5	89	87	88.0	+ 2.5
43	78	84	81.0	82	83	82.5	+ 1.5
47	70	71	70.5	64	70	67.0	- 3.5

<sup>a</sup>Average of pretest = 78.74.<sup>b</sup>Average of posttest = 76.10.<sup>c</sup>Number of increases = 7; number of decreases = 18; number stayed the same = 0.

Table 13

STAI Form X-1 Scores for Touch and No-Touch Groups

Patient Number	Touch Group			Patient Number	No-Touch Group		
	Pretest	Posttest	Differ- ence		Pretest	Posttest	Differ- ence
1	21	20	- 1	2	31	27	- 4
4	31	26	- 5	3	41	36	- 5
5	33	26	- 7	6	48	49	+ 1
7	31	24	- 7	8	47	42	- 5
9	29	29	0	12	26	24	- 2
10	71	73	+ 2	14	36	38	+ 2
11	37	36	- 1	15	52	49	- 3
13	26	26	0	17	44	50	+ 6
16	55	54	- 1	19	21	21	0
18	23	22	- 1	20	27	26	- 1
25	45	42	- 3	21	52	39	-13
27	70	73	+ 3	23	50	47	- 3
29	39	44	+ 5	24	43	46	+ 3
31	45	41	- 4	26	46	45	- 1
32	32	29	- 3	28	29	29	0
33	49	48	- 1	30	33	32	- 1
37	35	27	- 8	34	41	49	+ 8
40	52	47	- 5	35	41	51	+10
44	60	57	- 3	36	52	54	+ 2
45	42	44	+ 2	38	46	47	+ 1
46	61	47	-14	39	43	43	0
48	48	48	0	41	37	39	+ 2
49	40	41	+ 1	42	40	31	- 9
50	52	44	- 8	43	37	31	- 6
51	42	35	- 7	47	38	33	- 5

Average of pretest scores of touch group = 42.76, no-touch  
group = 40.04.

Average of posttest scores for touch group = 40.12, no-touch  
group = 39.12

Table 14

Number of Subjects Whose Anxiety Score Increased or  
Decreased on STAI Form X-1

	<u>Touch Group</u>		<u>No-Touch Group</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Decreased	17	68	13	52
Same	3	12	3	12
Increased	<u>5</u>	<u>20</u>	<u>9</u>	<u>36</u>
Total	25	100	25	100

### Summary of Findings

The following represents the findings of this study.

1. There was no significant difference in state anxiety as measured by the STAI Form X-1 score in a group of adult patients receiving the experimental stationary touch as compared to a control group of subjects receiving no experimental touch during a hospital admission procedure.

2. There was no significant difference in state anxiety as measured by the systolic blood pressure in a group of adult patients receiving the experimental stationary touch as compared to a control group of subjects receiving no experimental touch during a hospital admission procedure.



3. There was no significant difference in state anxiety as measured by the pulse rate in a group of adult patients receiving the experimental stationary touch as compared to a control group of patients receiving no experimental touch during a hospital admission procedure.

On the postexperimental question, there was a particular modality of touch preference preferred for decreasing anxiety. Twenty-four out of 50 subjects preferred the stationary touch modality.

The comparison of the touch and no-touch groups showed that the state anxiety score of the touch group decreased in 68% of the subjects who were touched as opposed to only 52% in the no-touch group. Also, the anxiety score for the touch group increased in only 20% of the subjects as opposed to 36% in the no-touch group.

## CHAPTER 5

### SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The problem of this study was to determine the effect of one modality of touch (stationary touch) on the state anxiety of adult patients undergoing a hospital admission procedure. An experimental study was done using a pre-posttest control group design (Huck et al., 1974; Huitema, 1980). This design involved accessible selection and random assignment instead of random selection and random assignment (Huitema, 1980). The control (touch) and experimental (no-touch) groups were compared to determine the effect of the touch. The statistical analysis employed with the pre-posttest control design was the analysis of covariance (Huck et al., 1974). This chapter includes a summary of the study, discussion of findings, conclusions and implications, and recommendations for further study.

#### Summary

The problem of this study was to investigate the effect of one modality of touch (stationary touch) on the state anxiety of adult patients undergoing a hospital

admission procedure. The following null hypotheses were formulated, tested, and accepted.

1. There is no significant difference in state anxiety as measured by total scores on the STAI, Form X-1, in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure.

2. There is no significant difference in state anxiety as measured by a decrease in systolic blood pressure in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure.

3. There is no significant difference in state anxiety as measured by a decrease in the pulse rate in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure.

This study was conducted in a general hospital located in a highly populated metropolitan city in the southwestern part of the United States. The 50 subjects

who participated in the study were admitted through the admissions office to floors 6 north and 6 south and were not emergency admissions. Forty-seven of the 50 subjects were to have surgery. Six different types of admissions were represented: 24 (48%) surgical-gynecology, 2 (4%) surgical-urology, 15 (30%) surgical-general, 6 (12%) surgical-opthalmogy, 1 (2%) obstetrical, and 2 (4%) medical. Forty-two (82%) subjects were female, and eight (16%) were male. Forty-six (92%) were white, and four (8%) were black. The ages of the subjects ranged from 20 to 78 years with 24 (48%) of the sample being between the ages of 31 and 40 years.

The design of the study was a pre-posttest control design (Huck et al., 1974) involving accessible selection and random assignment (Huitema, 1980). Subjects were randomly assigned to the touch and no-touch groups. Both groups were measured before touch was applied to the experimental group. Only the experimental group received the stationary touch; whereas, the control group did not receive the touch. Both the touch and no-touch groups were measured at the same time after touch/no-touch was applied. The two groups were measured twice and compared on the dependent variables. The initial measurements

served as the pretests, and the second measurements served as the posttests. The measurements for this study were the STAI Form X-1 scores, systolic blood pressure, and pulse.

The instruments used in the study were the STAI Form X-1 (A-State Anxiety) and Tycos 7052-08 Digital Blood Pressure Monitor. The Tycos 7052-08 Digital Blood Pressure Monitor measured both the systolic blood pressure and pulse rate.

#### Discussion of Findings

Hypothesis 1 stated: There is no significant difference in state anxiety as measured by the total score on the STAI, Form X-1, in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure. The analysis of covariance on the state anxiety scores failed to show a statistical difference between the experimental (touch) and control (no-touch) groups. The results indicated that the stationary touch and no-touch groups were not significantly different ( $F = 1.58814$ ,  $p < .05$ ) in posttest A-state anxiety after taking into account pretest differences in A-state anxiety. This finding was consistent with the results of Heidt's (1981) study which determined that

casual touch differed from no-touch in posttreatment, A-state anxiety. Heidt found no statistical support to indicate that there were differences in pre- and posttest A-state anxiety scores in subjects receiving casual touch when compared to no touch.

In contrast, Sommer (1979) reported a significant difference in a self-report questionnaire between two groups of obstetrical patients: those receiving reassuring touches and those not receiving such contact during delivery. Based on the findings of the present study, there were no significant differences in state anxiety as measured by the STAI Form X-1. Heidt's (1981) study was consistent with these results; however, Sommer's (1979) results were inconsistent. Therefore, additional analysis of the STAI Form X-1 (state anxiety only) scores were compared to determine the number of subjects whose pretest anxiety scores decreased or increased on the posttest. Comparison of the two groups on the STAI Form X-1 pre-posttest scores and their differences are noted in Table 13. The comparison of the touch and no-touch groups in Table 14 showed that the state anxiety score of the touch group decreased in 68% of the subjects who were touched as

compared to only 52% of the no-touch group. Also the anxiety scores of the touch group increased in only 20% of the subjects as compared to 36% in the no-touch group. This suggests that although there was no significant decrease in state anxiety, as measured by the STAI Form X-1, between the two groups in the present study, the touch group had a larger number of subjects with decreased anxiety scores. In addition, the touch group had a lower number of subjects with increased anxiety scores than the no-touch group.

Hypothesis 2 stated: There is no significant difference in state anxiety as measured by a decrease in systolic blood pressure in a group of adult patients receiving the experimental touch (stationary touch) as compared to a control group receiving no experimental touch during a hospital admission procedure. The analysis of covariance failed to show a statistical difference between the stationary touch and the no-touch groups. The results indicated that the touch and no-touch groups were not significantly different ( $F = .04655$ ,  $p < .05$ ) in the posttest systolic blood pressure after taking into account the pretest differences in the systolic blood pressure.

This finding was inconsistent with those of Sommer (1979). Sommer reported significant differences in systolic blood pressure between two groups of obstetrical patients: those receiving reassuring touches and those not receiving such contact during delivery. The present study was concerned with a routine admission procedure, perhaps if the state anxiety was more acute such as during delivery, an emergency admission, a spinal tap or thoracentesis, a significant decrease between the pre- and posttest systolic blood pressure may have occurred. Future research using more acute anxiety states may produce different results.

In Sommer's (1979) study, the patients received hand contact by the nurse each time anxiety was expressed verbally during 30 minutes of labor. However, in the present study, the effect of touch was determined only on a short-term basis with only one exposure to the stationary touch which could have accounted for the lack of significant differences. Perhaps different results may occur with repeated exposure over a longer period of time.

The blood pressure and pulse were taken using a new instrument (Tycos 7052-08 Digital Blood Pressure Monitor)



unfamiliar to the patients, and this instrument was not removed until the completion of the experiment. Patient comments were, "Are you going to take this off now?" According to Levitt (1980), "being attached to an unfamiliar apparatus may be in itself a stressful experience to the subject, an untoward circumstance that can obtund experimental measurement" (p. 49). This unfamiliar instrument and its repeated use (blood pressure taken twice before touch/no touch and then taken twice following touch/no touch) could have contributed to the subject's anxiety and been a reason for the lack of significant differences between the groups. Perhaps the repetition of the present study using the familiar sphygmomanometer and stethoscope utilized in practice might produce different results.

Hypothesis 3 stated: There is no significant difference in state anxiety as measured by a decrease in pulse in a group of adult patients receiving the experimental stationary touch as compared to a control group receiving no experimental touch during a hospital admission procedure. The analysis of covariance on the state anxiety scores failed to show a statistical significant difference between the experimental (touch) and control

(no-touch) groups. The results indicated that the stationary touch and no-touch groups were not significantly different ( $F = .46884$ ,  $p < .05$ ) in the posttest pulse rate after taking into account the pretest differences in the pulse rate.

This finding was inconsistent with those of Lynch (1978). Lynch discussed a study of a 31-year-old critically injured woman whose pulse decreased 20 beats per minute after pulse taking by the nurse. A similar change was observed in a 30-year-old man who had been severely injured. Different results may be obtained in future studies using different populations, such as patients in a trauma unit in the emergency room, or experiencing an uncomfortable procedure, such as a tracheal suction.

Hypotheses 1, 2, and 3 were accepted. An unexpected exogenous variable might have affected the results of this study. During the time of the experiment, several of the patients informed the researchers that the nursing staff had come in and said, "Have they attacked you yet?" Consequently, the lack of alleviation of anxiety by using a stationary touch might have been due to this fact. Stationary touch as a method of reducing anxiety might not

have been strong enough to combat the fear introduced by some of the nursing staff.

Experimenter effects were a factor to be considered in accounting for the lack of significant differences.

The style and social characteristics of the experimenter are also part of the "setting" when this aspect of the setting partially determines the outcome of an experiment, the consequences are called experimenter effects. For example, a business-like experimenter may restrict emotional reactions in an experiment more than a casual experimenter. . . . Other social characteristics may also influence results. These include age, sex, race, dress, and so on. (Walizer & Wiener, 1978, p. 250)

During the experiment, the toucher's face was covered with a bright red butterfly rash. This could be an experimenter effect and account for the lack of difference between the touch and no-touch groups.

Another experimenter effect may have been the sex of the research assistant. Forty-two out of a sample size of 50 were females. The data were collected by a male research assistant. The presence of a male during data collection could have decreased the possible relaxing effect of the stationary touch. Perhaps the same study may be replicated using only female research assistants or using both males and females for data collection in a single experiment.

The findings of this study reflected no significant differences between the touch and no-touch groups in the systolic blood pressure, pulse, and STAI Form X-1 scores. According to Levitt (1980), state anxiety is expressed in four different modes and is characterized by inconsistency. Levitt believed that perhaps one person may react physiologically, another motorically or verbally. This inconsistency characterizing state anxiety could have accounted for the lack of significant differences between the groups. Future studies may benefit by considering different designs using the four different modes of state anxiety.

#### Conclusions and Implications

As discussed in the theoretical framework, the patient's skin can be conceived as the boundary for the patient system. Everything external to the boundary is the environment and affects the system. The hospital affects the patient system resulting in state anxiety, and the nurse's touch affects the patient system resulting in tension-reduction. If the state of the patient immediately upon admission is anxious and if touch is a tension-reducer, then touch will decrease state anxiety during a hospital admission procedure. This proposition was not

statistically supported. The literature seemed to indicate that touch would decrease tension; however, the results of this study did not support this. Perhaps the reason that the touch did not significantly decrease the patients' state anxiety was due to the nursing staff comments, such as "Have they attacked you yet?" In addition, possibly the reason the proposition was not supported was due to the butterfly rash on the toucher's face and the use of instrumentation unfamiliar to the patients. These factors could have had an impact on anxiety.

The norm for general medical-surgical patients was 42.38 (Spielberger et al., 1970), and the pretest means for the sample were 42.76 and 40.04 for the touch and no-touch groups, respectively. The means fell at the lower end of the anxiety scale meaning that the subjects were not that anxious. Touch is perceived as a tension-reducer; however, if the subjects were not that anxious, then touch would have had little or no effect. This could have been the reason that the study obtained the results that it did.

The findings did not agree with the theoretical framework; however, the touch was given only once.

Perhaps different results would occur through repeated exposure to the touch.

The proposition was not statistically supported; however, the results of the additional analysis added some support to the proposition. In the additional analysis, the touch group had a greater number of subjects with a decrease in his/her anxiety score than the no-touch group and a lower number of subjects with increased anxiety scores. The postexperimental question indicated that stationary touch was the preferred modality for decreasing anxiety.

Touch is intuitively applied in nursing practice. The implication of this study is: rather than continuing to touch intuitively, nurses could use touch in the clinical area and observe and study its effect after application.

#### Recommendations for Further Study

The following recommendations are suggested for further study.

1. This study could be replicated using routine instrumentation which is more familiar to the patient.
2. The study methodology could be designed to specify that the blood pressure cuff be removed following the blood pressure reading.

3. To determine the long-range effects of touch, the posttest could be given at various intervals after the touch intervention (Walizer & Weirner, 1978).

4. Experiments could be conducted in which the subjects have repeated exposure to stationary touch.

5. The subject could serve as his/her own control using subjective, physiological, and motoric measures of state anxiety.

6. The experiment could be replicated using a larger sample size with random selection in order to increase the generalizability of the data.

7. Research could be done to investigate the effects of a stationary touch on other types of acute anxiety producing situations.

8. Research could be done to investigate the effect of different modalities (pat, stroke, squeeze, rub) on state anxiety.

9. The experimental could be replicated using the trait anxiety scale as well as the STAI-Form X-1.

## APPENDIX A



TEXAS WOMAN'S UNIVERSITY  
Box 21934, Two Station  
RESEARCH AND GRANTS ADMINISTRATION  
DENTON, TEXAS 76204

## HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Betty Bramble Center: Denton  
Address: 5830 Ridgcrest # 1017 Date: October 11, 1984  
Dallas, TX 75231

Dear Ms. Bramble,

Your study entitled The Effect of One Touch Modality on State  
Anxiety During a Hospital Admission Procedure

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:

XXX No special provisions apply.

cc: Graduate School  
Project Director  
Director of School or  
Chairman of Department

Sincerely,

*Donald E. Stalch*  
Chairman, Human Subjects  
Review Committee

at Denton

1/10/82

## APPENDIX B

TEXAS WOMAN'S UNIVERSITY  
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY\*

THE \_\_\_\_\_

GRANTS TO \_\_\_\_\_

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

The Effect of One Touch Modality on State Anxiety  
During a Hospital Admission Procedure

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: 10/3/84

\_\_\_\_\_  
Signature of Agency Personnel

Betty B. Bumble  
Signature of student

Helen A. Bunk Ph.D., R.N.  
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 C

October 3, 1984

Dear Betty,

Your study, "The Effect of One Touch Modality on State Anxiety During a Hospital Admission Procedure" has been approved by the Professional Activities Committee of  
The committee is comprised of section chiefs of all departments and considers the human rights of the patients.

Sincerely,

Director of Nursing

VB/pc

## APPENDIX D

## ORAL DESCRIPTION OF STUDY TO SUBJECTS

My name is Betty Bramble. I am a graduate student at Texas Woman's University. As part of the requirements for my graduate degree, I am conducting a study about adult patients undergoing the routine hospitalization procedures at this hospital. The main purpose of the study is to gather information and knowledge about response to hospitalization.

I am here to ask you if you would help me learn more. The information needed will be gathered during the routine admission to the nursing unit. I have questions for you to answer if you would like to help. These questions are not a test. There are no right or wrong answers, only your answers, because each person might feel differently. There will be no names put on the papers so no one will know your name or how you answer the questions, so please be as honest as you can.

Your temperature, blood pressure, and pulse will be taken twice. This is a part of the procedure and does not mean that the first readings are unusual.

People accompanying you will wait outside your room during the admission procedure. This is to ensure more

uniform conditions for each participant and reduce any distractions that may make the results less reliable.

The information obtained will be confidential and anonymous. Your choice to participate (or not) will not affect your care in the hospital in any way. The procedure is neither involved nor risky, but the study is of basic importance. Your consent and cooperation are valued, and please feel free to ask any questions. I hope you do decide to help me out. Thank you for your time and attention.



## APPENDIX E

TEXAS WOMAN'S UNIVERSITY  
HUMAN SUBJECTS REVIEW COMMITTEE

CONSENT FORM B

Title of Project: The Effect of One Touch Modality on State  
Anxiety during a Hospital Admission Procedure

Consent to Act as a Subject for Research and Investigation:

I have received an oral description of this study, including a fair explanation of the procedures and their purpose, any associated discomforts or risks, and a description of the possible benefits. An offer has been made to me to answer all questions about the study. I understand that my name will not be used in any release of the data and that I am free to withdraw at any time. I further understand that no medical service or compensation is provided to subjects by the university as a result of injury from participation in research.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

Certification by Person Explaining the Study:

This is to certify that I have fully informed and explained to the above named person a description of the listed elements of informed consent.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Position

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

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.

## APPENDIX F

The State-Trait Anxiety Inventory Form X-1 is a  
copyrighted instrument and may be obtained by writing to:

Consulting Psychologists Press  
577 College Avenue  
Palo Alto, California 94306

## APPENDIX G

## INFORMATION TOOL

Race \_\_\_\_\_

1st Time

B/P    P    \_\_\_\_\_

R    \_\_\_\_\_

B/P    P    \_\_\_\_\_

Temp    \_\_\_\_\_

2nd Time

B/P    P    \_\_\_\_\_

B/P    P    \_\_\_\_\_

## APPENDIX H

October 2, 1984

Permissions Editor  
Ms. Peggy Ferris  
Consulting Psychologists Press  
577 College Avenue  
Palo Alto, California 94306

Dear Ms. Ferris,

I am a graduate student at Texas Woman's University.  
I will be involved in a research endeavor concerned  
with state anxiety.

Per our conversation over the phone I am sending you  
a letter requesting permission to use STAI Form X-1.  
You said it would be approximately 4¢ per copy so I'm  
enclosing a check for \$4.00 for one hundred copies of  
the original that you will send.

You asked that this letter be endorsed by my mentor.  
Endorsement occurs at the bottom of this letter.  
Thank you very much.

Sincerely,

*Betty Bramble*

Betty Bramble  
5830 Ridgecrest #1017  
Dallas, Texas 75231

*Helen A. Busk, Ph.D., R.N.*  
*Professor*  
*Texas Woman's University*



CONSULTING PSYCHOLOGISTS PRESS, INC.  
577 COLLEGE AVENUE  
PALO ALTO, CALIFORNIA 94306

MS. BETTY BRAMBLE  
5830 RIDGECREST #1017  
DALLAS, TEXAS 75231

In response to your request of OCTOBER 2, 1984 permission is hereby granted you to  
reproduce 100 copies of the STAI form X-1 for use in your research.

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By

*Peggy Ferris*  
Permissions Editor

Date

10/12/84

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