

BACK MASSAGE AND ANXIETY
IN OLDER PATIENTS

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We hereby recommend that the _____ THESIS _____ prepared under
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be accepted as fulfilling this part of the requirements for the Degree of _____ MASTER _____
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CHAPTER 1

INTRODUCTION

Anxiety has been described as a sense of dread or fear over a real or imagined threat to one's mental or physical well-being (Thomas, 1973).

The ordinary stresses and strains of life in the changing world of today are such that few if any escape the need to confront anxiety and to deal with it in some manner. (May, 1967, p. ix)

At least two writers have discussed the anxiety that institutionalized persons experience (Graham & Conley, 1971). Hospitalization for surgical procedures accentuates this anxiety because of the unknown elements of possible discomfort and possible outcomes of the surgery (Graham & Conley, 1971). When the patient is older, he is often less able to effectively cope with stressful situations. The effects of hospitalization and surgery can greatly add to the older person's anxiety level (Burnside, 1977).

Nurses have been concerned with the identification of methods to decrease anxiety in patients for years. Back massage has been one technique utilized to achieve this purpose. Massage has been used over the centuries

by many disciplines for its therapeutic effects. The use of massage as a therapy has been documented as early as 589 A.D. as one part of Chinese medicine (Theil, 1975). Despite the widespread use of massage, there has been a lack of systematic, written information regarding its effectiveness. The problem of this study was to determine whether back massage performed by a nurse would reduce the anxiety level of older orthopedic postsurgical patients.

Problem of Study

Can the specific nursing intervention, back massage, reduce the degree of anxiety in older orthopedic postsurgical patients? The problem may be subdivided to include the following:

1. Is there a significant difference in the level of anxiety, as measured by a decrease in the blood pressure, in subjects who receive back massage and those who do not?
2. Is there a significant difference in the level of anxiety, as measured by a decrease in the pulse rate, in subjects who receive back massage and those who do not?

3. Is there a significant difference in the level of anxiety, as measured by a lower score on the state form of the State-Trait Anxiety Inventory, in subjects who receive back massage and those who do not?

Justification of Problem

The justification for this study stems from three primary needs: (a) lack of knowledge regarding the therapeutic effects of massage, (b) personal interest as a result of experience with older orthopedic post-surgical patients, and (c) a thrust toward moving back to the basics in nursing with the goal of improved patient care.

Massage has been used for years by nurses because of its relaxing and sedative effects. Yet, there have been few studies conducted that scientifically document the effects of massage. According to Beard and Wood (1964), most of the claims made for the use of massage have been testimonials, with few objective reports. In order to promote the growth of nursing as a scientific discipline, there is currently a thrust to expand the knowledge base in nursing. The present study sought to add to the knowledge base in nursing by systematically researching the use of massage by the nurse.

The researcher has worked with hospitalized older patients for over 5 years. The older person who has sustained a fracture is experiencing a great deal of stress. The long period of time required for healing of bones in older patients necessitates prolonged stays in institutions. Graham and Conley (1971), in a study with 70 surgical patients, have shown that hospitalization increases the patient's anxiety level. If the older person experiences the stress of surgery and fear of the unknown in addition to institutionalization, he may become very anxious. According to Burnside (1977), elderly patients demonstrate anxiety when they are exposed to medical examinations and hospitalizations. Burnside (1977) stated that touch can be crucial in decreasing anxiety in the older person. The nursing intervention of back massage involves touch as well as the physiological effects of relaxation of muscles and sedation. If back massage can decrease the level of anxiety in the older patient, it should be performed more frequently.

The nursing profession has shown tremendous advances in recent years. But, along with technological improvements has come an impersonal attitude in nursing. According to Carper (1979):

The charge of dehumanization by health care providers and the resulting depersonalization of the patient/client strikes at our professional commitment to provide both competent and caring help to the maimed, the injured, and the diseased. (p. 11)

Leininger (1977) stated that "caring is the most essential and critical ingredient to any curative process" (p. 2). Beck (1979) asserted that depersonalization in nursing is particularly evident in the care given to the older patient. Beck (1979) described the dehumanization seen in the care of elderly persons. This impersonal attitude in nursing care has been identified by both patients and nurses. To help alleviate this problem, there is now a shift toward getting "back to the basics" in nursing. Back massage is an independent nursing intervention that may help the transition.

Massage is one of the basic techniques that has been neglected by nurses in recent years. According to a survey of nurses conducted by Johnson and Johnson Company at the American Nurses Association convention in San Francisco (Touching, 1975), the act of touch is the very essence of care. Touch gives the patient something to hold on to during times of tremendous stress and anxiety. Most of the nurses surveyed felt that back massage was one of the best times to engage in therapeutic touch.

Many nurses, however, claimed that they had no time for giving back massage. But the 5 minutes required for administration of the back massage is minimal compared to the feelings of relaxation verbalized by the patient.

The cost of the procedure is low, requiring little time and money. The human to human touch involved in massage helps to establish a therapeutic nurse-client relationship as well as to personalize nursing care.

According to Temple (1967),

the time we could save by giving back rubs would be cut down on the time we spend giving analgesics and sedatives because for many patients the back rub will provide sufficient sedation and comfort. (p. 2103)

The question nurses must ask themselves is: Is a short period of time worth the benefit of lowered anxiety?

The purpose of this investigation was to determine whether back massage will decrease anxiety in older orthopedic postsurgical patients. The results of this study have nursing practice implications for the care of the older patient.

Theoretical Framework

The theoretical framework for this study is derived primarily from the physiological principles of massage (Knapp, 1966) and systematic desensitization (Wolpe, 1969).

Knapp (1966) classified the effects of massage as either mechanical or reflex. Mechanically, massage assists in the flow of circulation of blood and lymph and produces intramuscular motion. The reflex effects of massage are discussed in this theoretical framework.

The reflex effects of massage cause relaxation of the patient. These effects are produced in the skin by stimulation of peripheral receptors. The receptors that are stimulated by massage transmit impulses through the spinal cord to the brain producing sensations of pleasure or relaxation. "Peripherally, these impulses cause relaxation of muscles and dilation or constriction of arterioles" (Knapp, 1966, p. 361). Knapp (1966) claimed that massage results in relaxation of muscle as well as reduction of mental tension.

Systematic desensitization, a conditioning therapy developed by Wolpe (1969), helps to explain the effects of massage. The orderly fashion of breaking down anxiety responses is called systematic desensitization. In systematic desensitization, a physiological state of relaxation that inhibits anxiety is induced in the patient. The patient is then exposed to a weak anxiety stimulus

until it no longer evokes anxiety (Wolpe, 1969). The technique of systematic desensitization involves three sets of operations: (a) training in deep muscle relaxation, (b) construction of anxiety hierarchies, and (c) counterposing relaxation and anxiety-evoking stimuli from the hierarchies. Wolpe (1969) declared, "the autonomic effects that accompany deep relaxation are diametrically opposed to those characteristics of anxiety" (p. 98). According to the theories of Knapp (1966) and Wolpe (1969), if the patient's muscles are relaxed by massage, his anxiety level should be decreased.

Assumptions

The following were assumptions of this study:

1. All human beings experience anxiety.
2. Anxiety is present in the hospitalized older orthopedic postsurgical patient.
3. Anxiety can be measured by fluctuations in blood pressure and pulse.
4. High anxiety levels are not desirable.
5. Anxiety can be reduced.

Hypotheses

1. There is a significant difference in the level of anxiety, as measured by a decrease in the blood pressure, in subjects who receive back massage and those who do not.

2. There is a significant difference in the level of anxiety, as measured by a decrease in the pulse rate, in subjects who receive back massage and those who do not.

3. There is a significant difference in the level of anxiety, as measured by a lower score on the state form of the State-Trait Anxiety Inventory, in subjects who receive back massage and those who do not.

Definition of Terms

For the purposes of this investigation, the ensuing terms were operationalized as follows:

1. Blood pressure--the pressure exerted by the blood on the wall of a vessel (Thomas, 1973). The blood pressure was measured by a sphygmomanometer.

2. Pulse--the periodic thrust felt over the arteries in time with the heartbeat (Thomas, 1973). The radial pulse was counted to 60 seconds.

3. State form of the State-Trait Anxiety Inventory (STAI)--a tool consisting of 20 statements that measured how the subject felt at that moment in time.

4. Older orthopedic postsurgical patients--hospitalized patients who: (a) were 60 years of age or older, (b) were able to read and write English, (c) had orthopedic surgery within the past 6 weeks, and (d) did not have a myocardial infarction within the past 6 months and did not experience sepsis, thrombosis, local malignancies, or skin irritations of the back or spinal fractures.

5. Back massage--a protocol developed by the researcher. The massage was given to one-third of the subjects, those randomly assigned to the experimental group (Appendix A).

6. Anxiety--a troubled feeling, experiencing a sense of dread or fear, especially of the future, or distress over a real or imagined threat to one's mental or physical well-being (Thomas, 1973).

Limitations

The following were limitations of this study:

1. Because of the sample size, generalizability of the results of the study was not possible.

2. Individual differences in older persons (i.e., personality, etc.) were not measured and controlled.

3. Available data did not show the use of the STAI with older subjects.

Summary

Older institutionalized patients experience anxiety. Nurses are constantly searching for methods to decrease the anxiety level in patients. The effects of back massage on the anxiety level of older, orthopedic, post-surgical patients were examined in the present study.

The physiological principles of massage (Knapp, 1966) and systematic desensitization (Wolpe, 1969) provided the theoretical framework for this study. Instruments used to collect data regarding the subject's anxiety level were: the sphygmomanometer for the blood pressure, full minute count of the radial pulse, and the state form of the STAI (Spielberger, Gorsuch, & Lushene, 1970). A demographic data sheet was used to describe the sample.

CHAPTER 2

REVIEW OF LITERATURE

Chapter 2 presents a review of the literature. Areas of discussion include the presence and significance of anxiety in the older hospitalized patient, physical manifestations of anxiety, the significance of touch, and the history and value of massage.

Anxiety in the Older Patient

Anxiety is a universal phenomenon which has been experienced by every person at one time or another. It has been described as a sense of dread or fear over a real or imagined threat to one's mental or physical well-being (Thomas, 1973). According to Raskin (1973), "an estimated five percent of the U.S. population is affected by chronic anxiety" (p. 263). When a person is exposed to the stress of illness, his anxiety level may be heightened. Barnett (1972) claimed illness produced painful, unpleasant, and undesirable sensations. Abram (1969) described the patient's response to physical illness as a threat to the person's well-being, body integrity, and ability to function. According to Barnett (1972) and

Abram (1969), the ill person most commonly responds to his illness with anxiety.

When the ill person is hospitalized, his anxiety level may be increased. Barnett (1972) revealed that hospitalization can cause regression, depersonalization, and sensory deprivation. Abram (1969) stated that the ill person's response to hospitalization and surgical procedures is an increased anxiety level. Preuss and Solomon (1968) disclosed that

when a patient enters the hospital, he enters not only with his physical ailment, but also with a great deal of anxiety and fear regarding his illness. (p. 520).

Graham and Conley (1971) conducted a descriptive explorative study with 70 preoperative patients to determine common signs and behaviors of anxiety. The patients were all admitted for major surgery, including cholecystectomy, hysterectomy, laminectomy, mastectomy, surgical fixation of the femur and gastrointestinal, genito-urinary, and gynecological surgery (Graham & Conley, 1971). The researchers found that the changes evidenced in blood pressure and the patient's verbal expressions of anxiety were the most reliable indicators of anxiety. They also found that hospitalization, especially for surgical procedures, produces anxiety.

The anxiety associated with illness and hospitalization may be particularly evident in the older person. Burnside (1977) revealed that elderly patients demonstrated anxiety when they are exposed to medical examinations and hospitalization. According to Burnside (1977) a loss of mental acuity can cause embarrassment and add to the older person's anxiety level. Fear of the unknown and fear of the ability to function independently are two factors that especially heighten the anxiety level of the hospitalized older person.

Physical Manifestations of Anxiety

Anxiety that is present in the hospitalized patient may be manifested in different ways. Freedman and Kaplan (1972) found that

the degree of anxiety has an effect on the physiological functions such as increased heart rate, increased rate and depth of respiration, blood pressure, urinary urgency, dryness of mouth, loss of appetite, dilation of pupils, release of sugar by the liver and diaphoresis. (p. 294)

Burnside (1977) disclosed that the symptoms of anxiety particularly evident in the older person include fidgeting, chain smoking, pacing and increased blood pressure, pulse, and respiration. In Graham and Conley's (1971) study with 70 preoperative patients, it was found that

the changes evidenced in systolic blood pressure and the patient's verbal expressions of apprehension were the most reliable indicators of anxiety.

Rubin (1980), a professor of nursing at St. Louis University, completed an experimental study with 60 university students. Following massage, these effects were noted: (a) no significant decrease in the systolic blood pressure, (b) a significant decrease in the heart rate, (c) slight decrease in respiratory rate, and (d) some type of electrical change on electrocardiogram in 49% of the subjects. In addition to this, five subjects experienced marked bradycardia during the back massage, indicating that these individuals experienced a change in the volume of blood returning to the heart. In this case, the heart responded by decreasing the frequency of contractions per minute. In three subjects, existing sinus arrhythmias became more frequent and pronounced. Rubin (1980) stated that generally this condition has no clinical significance. In persons with cardiovascular disease, though, this may initiate an undesirable and unstable situation in the conduction system of the heart. Thus, massage should be used judiciously in cardiac patients.

Significance of Touch

There have been a number of interventions used to decrease anxiety in patients. These techniques are varied and range from relaxation training to the administration of medications. Touch is one nursing intervention frequently used to decrease the patient's anxiety level. Touching has been defined as "an intentional physical contact between two or more individuals" (Watson, 1975, p. 104). Touch can be divided into two categories, instrumental and expressive. Instrumental touch involves deliberate physical contact necessary for physical care. Expressive touching is spontaneous and is considered above and beyond the physical patient care. The form of touch discussed here is expressive touch.

Touch is such an integral part of man's interaction with his environment that many times he is not aware of using it. This is especially true of the interaction between nurses and patients. A survey by Johnson and Johnson at an American Nurses' Association convention in San Francisco revealed that all of the nurses regarded touch as the one essential form of nurse-patient communication. Nurses also felt that touch transmitted understanding, empathy, and provided the critical human

element to machine oriented care (Touching, 1975).

According to Dominian (1971), "touch becomes a crucial experience associated with relief of pain and discomfort, as well as the relief of anxiety and separations" (p. 897). Touch connotes recognition, comfort, reassurance, affection, and acceptance. Dominian (1971) claimed that adults have an increased need for affective touching during illness because of a greater need for security, rest, and comfort. Further, the anxiety that is associated with illness may be decreased by touch.

Jourard (1964) also supported the value of touch. According to Jourard, the patient's recovery to optimum wellness is affected by the quality of the nurse-patient relationship.

Direct contact with a patient somehow increases his sense of being a worthwhile individual person, and this experience inspirits him . . . it does something to the body which helps it throw off illness. (Jourard, 1964, p. 130)

Durr (1971) conducted an exploratory study with 13 medical-surgical patients to ascertain the recollections of and reactions to touch and closeness in relation to contacts with nurses. The following feelings about touch were obtained through individualized interviews. Touch was viewed as an effective method of giving directions

and encouragement, decreasing fear, demonstrating commitment to patient recovery, and transmitting feelings of interest and concern (Durr, 1971). According to these patients, the nurse's use of touch connotated caring, concern, and warmth.

Fisher, Rytting, and Heslin (1976) conducted an experimental study with 52 male and 49 female university students, investigating the manipulation of tactile contact between a library clerk and students. For alternate half-hour periods, library clerks either touched or did not touch each subject for whom they checked out books. Upon completion of the interaction, the subject was asked to complete an evaluation of the library personnel and facilities. The subjects were given tools to measure the present affective state, evaluate the library clerk, and the library environment. It was found that the subjects in the touch condition experienced more positive reactions than subjects in the no touch condition as evidenced by higher ratings on the tools.

Geis and Viksne (1972) investigated the effects of mutual touching among friendly opposite-sex strangers. In this experimental study with 42 college freshmen, the fingertip sweating index was used to measure degree of

anxiety experienced by the subjects. The subjects were placed into one of three experimental conditions: (a) sitting in a chair for 20 minutes without talking or moving, (b) sitting on the floor, leaning forward and rolling the head for 20 minutes, or (c) giving and receiving a back massage for 5 minutes. Geis and Viksne (1972) found that the subjects in the touch condition demonstrated a decrease in active sweat glands from before to after the touch experience. These authors concluded that mutual physical contact through the back massage actually decreased the stress of the subjects. Harlow (1958), in his description of infant monkeys, proposed that physical contact decreases anxiety or stress.

As mentioned previously, the anxiety that is experienced by the hospitalized patient may be more evident in the elderly person. A descriptive study was conducted by Barnett (1972) to explore use of touch for patients. Barnett (1972) used the observational method to collect data. The interactions between 540 patients and 900 health team members were recorded for a 4-week period. According to Barnett, the age group that received the least frequent touch was the 66 to 100 years old group. This group received only 5 out of 432 touches recorded.

Touch can have both positive and negative effects. Walker (1971) found that communicating by means of touch actually made some subjects feel anxious and generally uncomfortable. Barnett (1972) suggested that touch can actually increase a patient's anxiety level, and thus, needs to be used judiciously.

Touch may also be very beneficial to the patient. Fisher et al. (1976) stated that

In general, it is assumed that touch is an essentially positive stimulus for the recipient to the extent that it does not: a) impose a greater level of intimacy than the recipient desires, or b) communicate a negative message. (p. 417)

Montagu (1953) correlated physiological or general tension with an urge or need to be caressed. This need to be caressed leads to the act of contact which produces homeostasis or a soothing effect. Burton and Heller (1964) and Hooper and McWilliams (1973) contended that the elderly person requires increased physical contact and touch. In many elderly individuals, the senses of sight and hearing are diminished. The ability to touch and be touched remains intact in these people and becomes a more important form of communication than it was earlier in their lives.

DeWever (1977) investigated the elderly patient's perception of touch, utilizing a sample of 99 elderly

white patients in two nursing homes. The researcher used the Comfort When Touched Inventory to measure the elderly person's perception of comfort or discomfort. DeWever (1977) found that a majority of the patients felt comfortable with touch. Based on her experience with older persons, Burnside (1977) has found that touch can decrease anxiety. Touch, when used judiciously, can decrease the anxiety level of older people.

History and Value of Massage

Several authors have discussed the value of touch with anxious persons. According to Hardy (1975), touch through skin massage helps to relieve the special anxieties and concerns of the older patient.

Massage is a nursing intervention that has been used for many years. According to Beard (1952), the use of massage as a form of treatment has been mentioned in medical history from the earliest records and continues down through many 'eras. Beard (1952) continued to say that despite the widespread use of massage, there is a lack of detailed description of the technique. Pemberton (1950) stated:

There is no other measure of equal known value
in the entire armamentarium of medicine which is

even yet so inadequately understood and utilized by the profession as a whole. (p. 133)

The two main effects of massage can be classified as mechanical or reflex. The reflex effects of massage are discussed in this section. These include relaxation of muscles, sedation, and reduction of muscle tension (Knapp, 1966). Pemberton (1950) asserted that "it is generally accepted that massage can relax striated musculature" (p. 134).

The relaxation of muscles following massage is seen because of stimulation of superficial and deep exteroceptors in the skin (Beard & Wood, 1964). The proprioceptors in the muscles and tendons and interoceptors in the deep tissues of the body are also stimulated with massage. These receptors then transmit impulses through the spinal cord to the brain producing sensations of pleasure or relaxation.

According to Gellhorn (1958):

A relaxation of skeletal musculature is accompanied by a diminution of the state of excitability of the sympathetic division of the hypothalamus, and thus a reduction of the hypothalamic-cortical discharges by a similar reduction in the state of excitability of the cerebral cortex. (p. 394)

When the massage is given in a repetitive manner without sharp variations in pressure or sudden changes in the

method of application, sedation is seen. In general, massage results in relaxation of muscles as well as reduction of mental tension.

Massage has both physical and mental effects. Gellhorn (1958) found that the 236 subjects who received back massage experienced muscular and mental relaxation. Nordschow and Bierman's (1962) study with 25 subjects showed similar results. The researchers measured trunk flexion with the touch finger to floor test. After 30 minutes of massage, all the subjects gained an increase of 1.35 inches in trunk flexibility. Nordschow and Bierman (1962) found that manual massage can cause relaxation of voluntary muscles.

The muscular tension of the body has an effect on the person's mental and emotional function. According to Jacobson (1938), muscular relaxation produces mental relaxation. Jacobson (1938) claimed that emotions subside as the patient completely relaxes his striated muscles.

Temple (1967) contended that the back rub has a sedative effect on the patient. The massage helps to relieve tension, thus promoting relaxation and sleep. Temple (1967) contended that the time that nurses spend

in giving back rubs could decrease the time spent in administering analgesics and sedatives.

Touch is an essential part of back massage. McCaffery (1967) stated that "touch may be used for the purpose of controlling anxiety through relaxation" (p. 1227). McCaffery (1967) revealed that a back massage may help to relax the patient's muscles and thus decrease his anxiety. According to McCaffery (1967),

There appears to be a relationship between increased relaxation and decreased pain, and preliminary studies show that a back rub during pain often reduces signs of tension. (p. 1227)

Hardy (1975) contended that skin massage is particularly helpful with older people. At the Lakeview Convalescent Center, nurses found the most effective way to assure that patients experienced the anxiety reducing effects of touch was to administer back rubs.

Summary

The anxiety of older hospitalized persons and the use of back massage to decrease this anxiety have been explored and discussed in this chapter. The studies which were found substantiated the statement that older patients experience anxiety. The physical manifestations that these older persons experience when they are anxious

have been discussed. The value of massage was explored in relation to the patient's anxiety level. Taking the studies together, it can be stated that researchers are more in agreement than disagreement that back massage is an important variable that can decrease the anxiety level of older patients.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This investigation was a quasi-experimental study. According to Polit and Hungler (1978, quasi-experiments involve manipulation of the independent variable and either randomization or a control group component. In this study, the back massage was the manipulation applied to the experimental group. Subjects were randomly assigned to one of three groups. Group I was the experimental group wherein subjects received the back massage. Group II was the control group of subjects who received no back massage while the nurse remained present in the patient's room. In Group III, another control group, the subjects received no back massage and the nurse did not remain in the patient's room.

Random selection of study subjects from the population was not possible because of sporadic availability of patients. The design utilized in this study was the non-equivalent control group pretest-posttest design. According to Campbell and Stanley (1963), this design involves experimental and control groups which are given

pretests and posttests. The control groups and experimental group do not have the pre-experimental sampling equivalence because of the lack of random selection of subjects from the population. A description of the specific use of this design in the study is provided in the following paragraphs.

Pretest and posttest measures were collected on all subjects. First, the blood pressure and pulse were taken, then the state form of the STAI was administered. The blood pressure and pulse were measured again to assist in determining if administration of the STAI increased the subject's anxiety. The subjects were then randomly assigned to the experimental or control groups.

The subjects were assigned a number from 1 to 30 depending upon the order of their admission to the study. Thirty envelopes were collected for the subjects with 10 envelopes allocated for each of 3 groups. A table of random numbers was used to assign subjects by numbers to the groups. To decrease the risk of researcher bias, the 30 envelopes were prepared by a person other than the researcher. Each envelope contained a sheet of paper with instructions for Group I, II, or III enclosed. As the researcher encountered each subject, the envelope

corresponding to the subject's number was selected. The subject was assigned to one of the three groups according to this method.

Immediately after the massage, the subject's blood pressure and pulse were taken. The subjects in the control groups had their vital signs taken approximately 5 minutes after the last measurement because the massage required that amount of time. The state form of the STAI was given to all subjects again followed by an additional determination of the blood pressure and pulse.

Setting

This study was conducted in a 130-bed institution which serves a Southwestern metropolitan area of approximately 2,000,000 people in addition to many surrounding rural areas. The institution is a convalescent center primarily for patients over 60 years of age. It provides skilled nursing care and assists in the rehabilitation of the person to the home setting. The institution is supported by state taxes, Medicare, Medicaid, and private payment. It employs one registered nurse, approximately 12 licensed vocational nurses, and 20 nursing assistants for each shift.

Population and Sample

An accessible population was used in this study. According to Polit and Hungler (1978), "an accessible population is the aggregate of cases which conform to the designated criteria and which is accessible to the researcher" (p. 450). A sample of convenience was selected from this population. Convenience sampling entails the use of the most available patients for use as subjects in a study (Polit & Hungler, 1978). The sample consisted of all older patients in the institution who met the following criteria: (a) were 60 years of age or older, (b) were able to read and write English, (c) had orthopedic surgery within the past 6 weeks, and (d) did not have a myocardial infarction within the past 6 months and did not experience sepsis, thrombosis, local malignancies, or skin irritations of the back or spinal fractures. The demographic data which were collected were used to describe the sample. After convenience sampling, the subjects were randomly assigned to the experimental or control groups.

Protection of Human Subjects

In compliance with the current rules and regulations of the Texas Woman's University Human Subjects Review Committee, the following steps were taken:

1. Prior to initiation of the study, permission was obtained from the Texas Woman's University Human Subjects Review Committee (Appendix B) and from the Graduate School (Appendix C).

2. Prior to the collection of data, permission was obtained from the agency at the proposed location of data collection (Appendix D).

3. Prior to the administration of the pretest measures and the back massage, consent (Appendix E) was obtained from each participating subject and attention was given to the following:

(a) The subject read and received a verbal explanation of the procedure (Appendix F) to be followed.

(b) The subject read and received a verbal description of the associated discomforts or risks.

(c) The subject read and received a verbal description of the benefits to be expected.

(d) The subject was asked to respond to the questions and words on the tool. An alternative procedure was not currently available to offer the subjects. If an alternative procedure did become available, it would have been disclosed to the subjects.

(e) The subject received a verbal offer to answer any questions concerning the procedure.

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(e) The subject received a verbal offer to answer any questions concerning the procedure.

(f) The subject was advised that he was free to withdraw from the investigation at any time without penalty. Care of the patient was not altered by participation or refusal to participate in the study.

4. The subject was requested not to use his name on any form except the consent form in order to assure confidentiality and anonymity. Data were reported as group data so that an individual could not be identified. The subjects were advised of this right.

Instruments

State-Trait Anxiety Inventory

The state form of the State-Trait Anxiety Inventory (STAI) (Appendix G) was used to measure the subject's level of anxiety. The scale consists of 20 statements that ask the respondent to indicate how he feels at this moment in time. The range of possible scores for the scale varies from a minimal score of 20 to a maximum score of 80. The subject was asked to rate his present state of anxiety according to a 4-point scale: 1--not at all, 2--somewhat, 3--moderately so, and 4--very much so.

The reliability of the STAI has been established through the methods of test-retest correlation, measures

of internal consistency using the Cronback modified Kuder-Richardson 20 formula, and item remainder correlations. The test-retest correlations for the state scale ranged from .16 to .54. The measures of internal consistency yielded reliability coefficients ranging from .83 to .92 for the scale. Further evidence of reliability was provided through obtaining median item-remainder correlations for various norm groups ranging from .45 to .55 on the state scale. Spielberger et al. (1970) concluded that:

The test-retest reliability (stability) of the STAI A-Trait scale is relatively high, but stability coefficients for the A-State scale tend to be low, as would be expected for a measure designed to be influenced by situational factors. Both the A-Trait and A-State scales have a high degree of internal consistency. (p. 10)

The concurrent validity of the STAI was established by comparisons with several other anxiety scales. The correlation coefficients between the A-Trait scale and the IPAT were between .75 and .77. Correlation with the Taylor Manifest Anxiety Scale were between .79 and .83, while the coefficient with the Affect Adjective Checklist was between .52 and .58 (Spielberger et al., 1970).

Construct validity was established by administering the A-State Anxiety Scale to 977 undergraduate students using the standard instructions under both normal and

examination conditions. Under normal conditions, the male students scored 40.02 and under the exam condition they scored 54.99, while the female students scored 39.36 under the normal condition and 60.51 under the exam condition. The critical ratio correlation between males under these two conditions was 24.14 and the point-biserial correlation was .60 between the two measures. The critical ratio between female subjects was 42.13 and a point-biserial correlation of .75 was found (Spielberger et al., 1970).

Lazarus and Opton (1977) also administered the STAI to 197 undergraduate students under four different experimental conditions: (a) normal condition, (b) relax condition in which the test was administered following a 10-minute period of relaxation training, (c) exam condition in which the subjects were asked to work on the Terman Concept Mastery Test but were interrupted after 10 minutes to take the STAI, and (d) the movie condition in which the subjects viewed a stressful movie depicting several accidents in a woodworking shop prior to taking the STAI. Critical ratios obtained for the differences between the A-State mean scores in the four conditions include: (a) relax condition vs. normal condition, males = 5.80, females = 9.01; (b) relax condition vs.

exam condition, males = 9.17, females = 12.22; and (c) relax condition vs. movie condition, males = 12.10, females = 22.89. All critical ratios were significant beyond the .001 level of significance (Spielberger et al., 1970).

Blood Pressure

The subjects' blood pressure was measured utilizing a standard sphygmomanometer.

Pulse

The radial pulse was counted for 1 full minute in both the experimental and control groups.

Demographic Data Sheet

A demographic data sheet (Appendix H) was used to collect data for description of the sample and for ease in replication of the study.

Data Collection

The procedure for the collection of data that was utilized in this study is provided below. Patients who met requirements for eligibility for the sample were identified after admission to the institution. A written set of instructions explaining the study was presented to the patient and written permission was obtained.

At approximately 6:00 p.m. the study began. Pre-test and posttest variables were collected on all subjects. First, the blood pressure and pulse was taken. The STAI-state form was administered to all subjects. If the subject experienced difficulty reading the tool, it was read to him.

Immediately upon completion of the STAI, the blood pressure and pulse were taken again. Subjects were then assigned to either the experimental or control groups according to the previously described random basis. Immediately after the massage, the subjects' blood pressure and pulse were taken. The massage lasted approximately 5 minutes, so the blood pressure and pulse of the subjects in the control group were taken 5 minutes after the last time. The state form of the STAI was then administered. Immediately upon completion of the form, the blood pressure and pulse were again taken.

Treatment of Data

After the data were collected, difference scores on all measures were obtained. Then a one-way analysis of variance was calculated along with the Newman-Keuls Multiple Comparison Test. According to Polit and Hungler

(1978) analysis of variance (ANOVA) is utilized to test the significance of difference between means. A one-way ANOVA was used. The hypotheses were tested at the .05 level of significance.

CHAPTER 4

ANALYSIS OF DATA

This quasi-experimental study was conducted to determine the effect that back massage has on anxiety level of older, orthopedic, postsurgical patients. Thirty older, orthopedic, postsurgical patients were randomly assigned to one of three groups. The anxiety level of the subjects was measured by changes in blood pressure and pulse and the score on the state form of the STAI. The results of data analysis are presented and interpreted in this chapter.

Description of Sample

The sample consisted of 30 hospitalized older patients who: (a) were 60 years of age or older, (b) were able to read and write English, (c) had orthopedic surgery within the past 6 weeks, and (d) did not experience a myocardial infarction within the past 6 months and did not experience sepsis, thrombosis, local malignancies, or skin irritations of the back or spinal fractures. The age of the sample ranged from 62 to 94 years with an average age of 79 years. The sample included 4

male and 26 female patients, and consisted of 27 whites and 3 blacks. Two of the subjects were married, 3 were single, and 25 were widowed. A description of the type of orthopedic surgery that the subjects experienced is as follows: 19 had hip surgery; 7 had surgery on the tibia, femur or knee; 3 had amputations; and 1 had surgery of the pelvis.

The subject's blood pressure and pulse were two of the three variables that measured the subject's anxiety level. The state form of the STAI (Spielburger et al., 1970) consisting of 20 statements, scored on a 4-point Likert-type scale, was also administered to obtain information about the subject's anxiety level. The range of possible scores was from 20 to 80, with the lower scores representing the lower anxiety levels.

Findings

The findings which resulted from testing the research hypotheses are stated below:

Hypothesis 1

Hypothesis 1 stated that there is a significant difference in the level of anxiety, as measured by a decrease in the blood pressure, in subjects who receive back massage

and those who do not. Difference scores (pretest minus posttest) were calculated from the second and third measurements of the blood pressure and a one-way analysis of variance was computed. The hypothesis was tested at the .05 level of significance. Since two measures of blood pressure, systolic and diastolic, were taken, two ANOVAs were performed.

The mean and standard deviation of the difference scores of the systolic and diastolic blood pressures are presented in Table 1. The F value (2,27) of the systolic blood pressure was 4.85 with a level of significance of $p = .008$, while values for the diastolic blood pressure were F (2,27) = 5.78, $p = .004$. In order to determine where the differences occurred, the Newman-Keuls Multiple Comparisons Test was applied (Winer, 1971). In both the systolic and diastolic measures, the difference occurred between the group who received the back massage and the group who did not receive the back massage and the nurse did not remain in the patient's room. The hypothesis was accepted inferring for this sample that blood pressure was lowered by performing a back massage.

Hypothesis 2

Hypothesis 2 stated that there is a significant difference in the level of anxiety, as measured by a

Table 1

Mean and Standard Deviation of Difference Scores of the
Systolic Blood Pressure

	Groups		
	I	II	III
Mean	4.0	0.0	-2.8
Standard Deviation	7.1	3.4	3.3
<u>n</u>	10	10	10

Mean and Standard Deviation of Difference Scores of the
Diastolic Blood Pressure

	Groups		
	I	II	III
Mean	5.0	1.4	-4.8
Standard Deviation	9.3	3.5	5.4
<u>n</u>	10	10	10

decrease in the pulse rate, in subjects who receive back massage and those who do not. Difference scores were performed from the second and third measurements of the pulse rate and a one-way ANOVA was calculated. The hypothesis was tested at the .05 level of significance.

The mean and standard deviation of the pulse rate are presented in Table 2. The F value (2,27) was 6.71

Table 2
Mean and Standard Deviation of Difference
Scores of Pulse

	Groups		
	I	II	III
Mean	5.4	1.6	-3.6
Standard Deviation	3.1	5.9	6.9
<u>n</u>	10	10	10

with a level of significance of $p = .002$. The Newman Keuls statistic was again used to specify differences. The pulse rate was significantly different between the group who received the back massage and the group who did not receive the back massage and the nurse did not remain in the patient's room. Hypothesis 2 was accepted. The meaning of this computation is the pulse rate was lowered following back massage.

Hypothesis 3

Hypothesis 3 stated that there is a significant difference in the level of anxiety as measured by a lower score on the state form of the STAI, in subjects who receive back massage and those who do not. Difference scores were calculated followed by a one-way ANOVA. The hypothesis was tested using the .05 level of significance.

The mean and standard deviation of the STAI scores are presented in Table 3. The F value (2,27) was 17.92 with a level of significance of $p = .0005$. Newman-Keuls multiple comparisons were performed. A significant difference was found between the group who received back massage and the group who neither had back massage nor the presence of the nurse in the room. Hypothesis 3 was accepted. The inference based on this computation is that subjects were less anxious, as measured by the STAI, following back massage.

Table 3
Mean and Standard Deviation of Difference
Scores of STAI

	Groups		
	I	II	III
Mean	12	-1.1	-2.9
Standard Deviation	8.9	4.6	3.5
<u>n</u>	10	10	10

Summary of Findings

Based on the data analysis of the study, the following findings were determined:

1. A majority of subjects were white females.

2. There was a significant difference in the level of anxiety, and measured by a decrease in the blood pressure, in the subjects who received the back massage.

3. There was a significant difference in the level of anxiety, as measured by a decrease in the pulse rate, in the subjects who received the back massage.

4. There was a significant difference in the level of anxiety, as measured by a lower score on the state form of the STAI, in the subjects who received the back massage.

CHAPTER 5

SUMMARY OF THE STUDY

A summary of the study, which includes a discussion of the findings, is provided. Conclusions and implications for nursing, as well as recommendations for further study, are also presented.

Summary

This quasi-experimental study was conducted to determine if back massage had an effect on the anxiety level of older, orthopedic, post-surgical patients. The level of anxiety was measured by alterations in blood pressure and pulse and the subject's score on the state form of the STAI. The STAI is a 20-item tool developed by Spielberger et al. (1970) that measures the amount of anxiety that the subject is currently experiencing.

Predictions based on the literature review were made that (a) there is a significant difference in the level of anxiety, as measured by a decrease in blood pressure, in subjects who receive back massage and those who do not; (b) there is a significant difference in the level of anxiety, as measured by a decrease in the pulse

rate, in subjects who receive back massage and those who do not; and (c) there is a significant difference in the level of anxiety, as measured by a lower score on the STAI, in subjects who receive back massage and those who do not.

This study was conducted in a 130-bed skilled nursing and extended care facility in the Southwestern section of the United States. Thirty patients were selected by means of a convenience sample. Criteria for inclusion of subjects for the study included: (a) were 60 years of age or older; (b) were able to read and write English, (c) had orthopedic surgery within the past 6 weeks, and (d) did not have a myocardial infarction within the past 6 months and did not experience sepsis, thrombosis, local malignancies or skin irritations of the back or spinal fractures. After selection, the subjects were randomly assigned to one of three experimental conditions: (a) back massage; (b) no back massage, but the nurse remained in the room for 5 minutes; and (c) no back massage and the nurse left the room for 5 minutes.

The variables measured were blood pressure, pulse, and anxiety level. Anxiety level was measured by the

state form of the STAI (Spielberger et al., 1970). The STAI consisted of 20 items with a possible range of 20 to 80. The lower score indicates a lower level of anxiety.

Difference scores were calculated on the blood pressure, pulse, and STAI score. A one-way analysis of variance along with the Newman-Keuls Multiple Comparison Test was used to test the significance of differences between means.

Study findings were: (a) a majority of the subjects were white females; (b) there was a significant difference in the level of anxiety, as measured by a decrease in the blood pressure, in subjects who received the back massage; (c) there was a significant difference in the level of anxiety, as measured by a decrease in the pulse rate, in subjects who received the back massage; and (d) there was a significant difference in the level of anxiety, as measured by a lower score on the state form of the STAI, in subjects who received the back massage.

Discussion of Findings

The first and second hypothesis proposed that there is a significant difference in the level of anxiety, as measured by a decrease in the blood pressure and pulse

rate in subjects who receive back massage and those who do not. Findings of this study support the hypotheses since the blood pressure and pulse rate of the subjects who received the back massage were significantly lower following the massage.

Freedman and Kaplan (1972) and Graham and Conley (1971) found that anxious persons experienced increased blood pressure and pulse. Burnside (1977) disclosed that the blood pressure and pulse rate of older patients were higher when they were anxious. Jacobson (1938) discovered a decrease in the subject's blood pressure and pulse rate with deep muscle relaxation.

Hypothesis 3 proposed that there is a significant difference in the level of anxiety, as measured by a lower score on the state form of the STAI, in subjects who receive back massage and those who do not. Findings of this study support the hypothesis since the subject's score on the state form of the STAI was significantly lower in the subjects who received the back massage.

Spielberger et al. (1970) found that the subject's score on the STAI was significantly higher when the person was anxious. Lazarus and Opton (1977) also discovered a higher score on the STAI in anxious subjects.

The findings of this study are congruent with the available literature in that the massage decreased the blood pressure, pulse, and anxiety level of subjects in the experimental group.

Conclusions and Implications

The conclusions of the study for this sample with related nursing interventions are provided in this section.

1. An independent nursing intervention can decrease the patient's level of anxiety. Several authors, including Abram (1969), Barnett (1972), Burnside (1977), Graham and Conley (1971), and Preuss and Solomon (1968) have indicated that hospitalized patients experience anxiety. Nurses are concerned with measures to decrease the patient's anxiety level in order to promote comfort and optimum wellness. Based on this study, back massage is an independent nursing intervention that promotes relaxation and decreases anxiety in the older, orthopedic, postsurgical patient.

2. The findings of this study support the theoretical framework. Knapp (1966) discussed the reflex effects of relaxation of muscles and reduction of muscle tension seen with massage. Wolpe (1969) disclosed the relationship between relaxation and anxiety by stating that "the

autonomic effects that accompany deep relaxation are diametrically opposed to those characteristics of anxiety" (Wolpe, 1969, p. 98). Thus, if the patient's muscles are relaxed by massage, his anxiety level should be decreased. The nursing profession is investigating current theories and proposing new theories to help guide nursing interventions. Nurses should acquaint themselves with the theories of Wolpe (1969) and Knapp (1966) in order to understand the effects of back massage. Other theories of anxiety should be explored in relation to back massage.

3. Since the majority of this sample was white females, the findings may be more applicable to white females than other females and all males. These findings may be applicable to males as well as other females, but since there were less other females and males in this study, this conclusion cannot be made. Nurses could employ the intervention of back massage when they care for older orthopedic, postsurgical patients.

Recommendations for Further Study

The following recommendations are offered as a result of this study:

1. A similar study might be conducted using a larger sample.

2. A similar study might be conducted using a different population.

3. Other variables such as respiration and increased skin resistance that measure anxiety may be explored.

APPENDIX A

Protocol Specifications for the
Back Massage

1. Explain the procedure to the patient.
2. Draw the curtains around the bed.
3. Maintain a warm environment. Wash hands thoroughly.
4. Discourage talking by being quiet.
5. Place the patient in a prone or side-lying position with the body parts in proper alignment.
6. Expose the back from the neck to the coccyx. Drape the lower buttocks with a sheet.
7. Place the lotion in the palm of one hand.
8. Hold the hands together for a few seconds to warm the lotion.
9. Place both hands on the coccyx area and move them straight up the back along both sides of the spine.
10. Bring the hands across the shoulders. Then move the hands down the lateral aspects of the back ending at the coccyx area.
11. Beginning at the coccyx area, make long, slow, circular movements upward to the neck. Start the circle near the spinal area and move the hands outward laterally. End each circle at the spinal area.
12. Gently massage the neck muscles.
13. Move the hands down the back along the lateral aspects.
14. Begin the upward circular strokes again.
15. The force used with the massage depends on the tone and bulk of the patient's muscles. The massage will last 5 minutes.

16. Keep both hands in constant contact with the patient's skin during the massage.
17. To end the massage, place the hands on the lower back and move them straight up the back along the spine and down the lateral aspects. Pause with the hands lying gently over the coccyx.
18. Inform the patient that the massage is finished and remove both hands from the back slowly.
19. Remove any excess lotion by blotting the back gently with a towel.
20. Assist the patient to redress and assume a comfortable position.
21. Wash hands thoroughly.

APPENDIX B

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

1810 Inwood Road
Dallas Inwood Campus

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Kathleen Anne Markley Center: Dallas
Address: 1924 Carl Road #216 Date: 11/13/80
Irving, Texas 75061

Dear Ms. Markley:

Your study entitled Back Massage and Anxiety in Older Patients

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:

XX No special provisions apply.

Sincerely, ✓

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To protect individuals we have covered their signatures.

APPENDIX C

TEXAS WOMAN'S UNIVERSITY

DENTON, TEXAS 76204

THE GRADUATE SCHOOL

February 25, 1981

Ms. Kathleen Anne Markley
1924 Carl Rd., #216
Irving, Texas 75061


Dear Ms. Markley:

Thank you very much for sending the appointment of a research committee.

I have placed the form in your file and have noted that final approval has now been given the prospectus.

I look forward to seeing the results of your study.

Sincerely yours,


Robert S. Pawlowski
Provost

RP:d1

cc Dr. Anne Gudmundsen
Dr. Helen Bush
Graduate Office

APPENDIX D

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Dallas Memorial Care Center

GRANTS TO Kathleen A. Markley
a student enrolled in a program of nursing leading to a
Master's Degree at Texas Woman's University, the privilege
of its facilities in order to study the following problem.

To determine the effects that back massage has on the
anxiety level of older, orthopedic, post-surgical
patients.

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 74 names will not be utilized

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

Page 2 of 2

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

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APPENDIX E

APPENDIX E

Consent Form
TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

Consent to Act as a Subject for Research and Investigation:

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

1. I hereby authorize Kathleen Anne Markley to perform the following procedures: (a) measure blood pressure and pulse; (b) administer self-evaluation questionnaire, (c) perform back massage, and (d) review patient records.
2. The procedure or investigation listed in Paragraph 1 has been explained to me by Kathleen Anne Markley.
3. (a) I understand that the procedures or investigations described in Paragraph 1 involve the following possible risks or discomforts: fatigue, personal inconvenience, embarrassment related to expression of feelings and fear of improper release of data.

(b) I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others: the findings of this study may contribute information to the body of knowledge in nursing as well as provide directions for nursing intervention.

(c) I understand that--no medical service or compensation is provided to subjects by the university as a result of injury from participation in research.
4. An offer to answer all of my questions regarding the study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in

Consent to Act as a Subject (continued)

the study at any time without any penalty or alteration in my care.

Subject's Signature

Date

APPENDIX F

Explanation to Subject

Good evening,

My name is Kathy Markley. I am a graduate student at Texas Woman's University and I am conducting a study to determine the effects of back massage. If you agree to participate in this study you will be asked to:

(a) have your blood pressure and pulse measured several times; (b) complete a 20-item self-evaluation questionnaire, (c) receive a back massage, and (d) give permission for the researcher to review your chart.

There are no right or wrong answers to the questionnaire and all data collected will be confidential. If you feel uncomfortable at any time during the study, you may terminate your participation. Thank you for your time.

APPENDIX G

Self-Evaluation Questionnaire

A copy of this instrument may be obtained from the following company:

Consulting Psychologists Press
577 College Avenue
Palo Alto, California 94306

APPENDIX H

Demographic Data Sheet

Number _____

Age _____

Sex _____

Race _____

Marital Status _____

Type and Date of Surgery _____

Chronic Diseases _____

REFERENCE LIST

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