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**The effect of therapeutic touch on anxiety and well-being in
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The University of Arizona, 1987

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THE EFFECT OF THERAPEUTIC TOUCH ON ANXIETY
AND WELL-BEING IN THIRD TRIMESTER PREGNANT WOMEN

by

Janet Lynn Nodine

A Thesis Submitted to the Faculty of the

COLLEGE OF NURSING

In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF SCIENCE

In the Graduate College

THE UNIVERSITY OF ARIZONA

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ABSTRACT

This study was conducted to determine whether or not a significant difference exists in pregnant women among those receiving therapeutic touch, mock therapeutic touch, or no touch on measurements of anxiety and well-being. Thirty third trimester primigravida subjects were tested pre- and postintervention using the State-Anxiety Inventory and a Well-Being Visual Analog; heart and respiratory rates were monitored before, during, and after the treatment. No significant differences were found using analysis of covariance with the pre-test scores as the covariate. These findings indicate that therapeutic touch may not be useful in reducing state anxiety or enhancing subjective well-being in pregnancy. Study limitations include a small sample size, use of an instrument without established reliability and validity, and a study environment that may have increased anxiety.

CHAPTER I

INTRODUCTION

The Problem

Therapeutic touch is increasingly used by nurses in their plan of care (Krieger, 1981). Empirical research on this mode of treatment is beginning to accumulate, but much is still unknown. Traditional medical and nursing theory does not adequately explain the effects observed with the use of therapeutic touch. Research is needed that further contributes to nursing's knowledge base on therapeutic touch, a potentially useful mode of intervention. This study focuses on therapeutic touch as an intervention to reduce anxiety and promote well-being during pregnancy.

Anxiety is a common experience in pregnancy; research indicates that it is present regardless of the woman's physical, emotional, or economic status (Cassidy, 1974), or number or previous pregnancies (Erickson, 1976; Glazer, 1980; Gorsuch & Key, 1974). The anxiety of pregnancy results from two sources: the somatopsychic and the psychogenic. Somatopsychically induced anxieties are produced as a result of hormonal and general metabolic variations. Psychogenically induced anxieties are linked to the developmental tasks of rearranging one's sense of

self and others so as to accommodate a new person in one's life (Ballou, 1978; Caplan, 1959).

Although some degree of anxiety is expected and normal, increased anxiety may be related to an increased incidence of obstetrical complications. In a comprehensive review of the literature pertaining to the role of emotional factors in obstetric complications, McDonald (1968) concluded that "the data supported the notion of a positive relationship between psychological and physiological functioning during pregnancy" and that "patients with obstetric complications had higher anxiety levels than women with normal gestations and deliveries" (p. 275). Crandon (1979) found that the incidence of pre-eclampsia, prolonged and precipitous labor, forceps delivery, manual removal of the placenta, post-partum hemorrhage, clinical fetal distress, and lower five-minute Apgar scores were significantly higher among highly anxious pregnant women. Erickson (1976) found the complications of prolonged first and second stages of labor, uterine inertia, head rotation, low forceps delivery, and low infant Apgar scores to be associated with the anxieties of fears for self, fears for baby, and dependency.

A postulated mechanism for the relationship of anxiety to complications of pregnancy is the elevated blood catecholamine levels caused by stress, fear, and anxiety.

Epinephrine has been associated with lower uterine contractility and norepinephrine with increased uterine contractility (Lederman, Lederman, Work & McCann, 1978), which could explain prolonged and precipitous labor, as well as uterine inertia. Both are associated with changes in vasoconstriction and blood pressure, which influences the oxygen and nutrition available to the uterus, placenta, and fetus (Levinson & Shnider, 1979). Decreased oxygen availability to the fetus could explain fetal distress and lower Apgar scores. The relationship between anxiety and complications has implications for nursing care that is directed toward reducing anxiety experienced during pregnancy.

Therapeutic touch is defined by Krieger (1979) as "a method (derived from the laying-on of hands) of using the hands to direct human energies to help or heal someone who is ill" (p. 1). The hands are used to first assess irregularities in the client's energy field, then to repattern the energy field until it feels homogeneous and pulses rhythmically.

The intention of therapeutic touch is to facilitate the harmonious integration and patterning of the client's energy field. When the energy flows in a harmonious, rhythmic pattern, the person will feel happy, light, and at peace - feelings of well being (Boguslawski, 1979).

Therapeutic touch has been examined in research as an approach to increase hemoglobin levels (Krieger, 1975), decrease pain (Boguslawski, 1980, Keller & Bzdek, 1986), decrease anxiety (Heidt, 1980; Quinn, 1984), and as a prenatal teaching tool (Wolfson, 1984). Therefore, therapeutic touch may be useful in reducing the anxiety experienced by pregnant women.

Since feelings of anxiety may influence well-being, therapeutic touch may also contribute to feelings of well being. "An individual will be high in psychological well-being in the degree to which she has an excess of positive over negative affect and low in well-being in the degree to which negative affect predominates over positive" (Bradburn, 1969, p. 9). High levels of anxiety are one example of this negative affect that may be reduced by therapeutic touch, contributing to enhanced well-being.

Purpose

Pregnancy is an experience that can alter one's sense of well-being and increase anxiety. Anxiety may contribute to maternal antepartum, intrapartum, and postpartum complications, as well as compromised fetal outcome. Therapeutic touch may be useful in reducing anxiety. Therefore, this study examined the effects therapeutic touch may have on anxiety and well-being during pregnancy.

Theoretical Framework

Human Beings as Energy Fields

This research is based upon Rogers' (1970, 1980, 1986) conceptual model for nursing which emphasizes energy fields and their interaction. These energy fields are electrical in nature, continually changing, and vary in intensity, density, and size. Rogers theorizes that there are two energy fields: the human field and the environmental field. The human field is identified by a particular patterning of energy unique to that individual; the environmental field is all the energy outside any given human field, which also has patterning.

Rogers (1980) conceptualizes three principles of homeodynamics that describe the nature and interaction of energy fields. The first principle, helicy, states that there is continuous interaction between human and environmental fields which is characterized by increasing diversity of the human field pattern, and manifests "nonrepeating rhythmicities". The second principle is resonancy explained in terms of "the human field and the environmental field as identified by wave pattern and organization and manifesting continuous change from lower-frequency, longer wave patterns to higher-frequency, shorter wave patterns". The third principle, integrality, emphasizes continuous, mutual, simultaneous interactions

between human and environmental fields (Rogers, 1980, p. 333).

According to Rogers (1970), the human field extends beyond the visible mass identified as human, and varies from person to person and from time to time in the same individual. The boundary of the human field is contiguous with the environment and fluctuates according to the energy exchanges taking place. The result of these energy exchanges is a change in the patterning of the energy field. Further, Rogers (1980, 1986) states that human and environmental matter are simply the manifestation of their dynamic energy wave patterns. Thus, a change in the patterning of the human energy field will bring about a change in the matter, or substance of the person.

Pregnancy and Disorganization of Field Patterning

Pregnancy is a very dynamic state due to the many physiologic and psychologic changes. Dynamic states have great potential for changes in patterning and for enhancement of health. Anxiety is associated with changes of pregnancy, and represents a disorganization in patterning. The term "anxiety" is commonly used to denote a transitory emotional state or condition characterized by feelings of tension and apprehension, and heightened autonomic nervous system activity (Spielberger, 1972). Spielberger (1972) proposes that anxiety involves fear and

two or more of the fundamental emotions of distress, shame (including shyness and guilt), anger, and the positive emotion of interest-excitement. These basic emotions are frequently amplified during pregnancy, and may lead to pregnancy anxiety. For example, there is fear of harm to self, husband, and fetus, plus shyness resulting from pelvic exams, possible anger at the fetus for hard kicking felt in late pregnancy, and intense interest-excitement in anticipation of labor and delivery and the responsibility of parenting.

Anxiety is related to two different causes of emotional change in pregnancy: the somatopsychic and the psychogenic. The somatopsychically induced changes are related to hormonal and metabolic changes (Caplan, 1959). Hormone levels may influence moods and anxieties in pregnancy (Colman & Colman, 1971; Williams, 1977). Elevated levels of estrogen and progesterone as occurs in pregnancy have been shown to be related to decreased levels of norepinephrine; decreased levels of norepinephrine may be related to increased depression and other emotional changes (Williams, 1977). Corticosteroid levels, which are also altered in pregnancy, have been implicated in feelings of paranoia (Colman & Colman, 1971). But, as Colman and Colman state, hormones probably effect the intensity of

pregnancy feelings, rather than alter feelings in a direct way.

It is well known that when the body is subjected to threat, the autonomic nervous system is activated. Some of the physiological expressions of anxiety-fear are the acceleration of heartbeat in order to pump more blood to the muscles, and the increase in respiratory rate to breathe more oxygen, which will be needed for "fight or flight" (May, 1977). Heart and respiratory rates are not specific indicators of anxiety, but do represent a generalized body reaction of excitement in response to threat (May, 1977). During a "relaxation response", physiological indicators of the fight-or-flight response decrease (Benson, 1975), as Krieger predicts happens during a therapeutic touch treatment. Thus, increased heart and respiratory rates are expected to occur during states of increased anxiety.

The psychogenically induced emotional changes relate to the developmental tasks of becoming a parent (Caplan, 1959). A number of authors have delineated the developmental tasks of pregnancy. According to Duvall (1962), the developmental tasks of the expectant family include the following: reorganizing house arrangements to provide for the expectant baby; developing new patterns for getting and spending income; re-evaluating procedures for

determining who does what and where authority rests;
adapting patterns of sexual relationships; reorienting
relationships with relatives, friends, associates;
acquiring knowledge about and planning for, the specifics
of pregnancy, childbirth, and parenthood; and testing and
maintaining a workable philosophy of life.

It is important to view pregnancy as a series of developmental tasks. Anxiety is the natural result of the psychological work involved in resolving the developmental tasks. Successful resolution of each of the psychogenic tasks prepares her to cope with future tasks. When the tasks are resolved, the woman completes her pregnancy with growth, self-esteem and autonomy (Clark, 1979). If not, abnormally high levels of anxiety result. The four tasks of pregnancy according to Clark (1979) are: (a) Pregnancy Validation--To ascertain if the pregnancy is a reality and to accept the reality of pregnancy and its implications; (b) Fetal Embodiment--To incorporate the fetus into the body image and to shift in dependency and identity relationships with the husband and with mother; (c) Fetal Distinction--To view the fetus as an individual being and to formulate a personally relevant, unique mothering identity (d) Role Transition--To prepare to give up the fetus, to experience labor and birth, and to mother the infant (p. 269).

Rubin (1976) identifies four broad, interdependent tasks which are a part of the content and substance of pregnancy work. The pregnant woman concerns herself with all four tasks concurrently and with equal importance. Again, an impasse in any one area seems to create severe stress and anxiety. The four maternal tasks of pregnancy may be described as: (a) Seeking safe passage for herself and her child through pregnancy, labor, and delivery; (b) Ensuring the acceptance of the child she bears by significant persons in her family; (c) Binding-in to her unknown child; (d) Learning to give of herself.

Colman and Colman (1971) focus on the key developmental tasks of each trimester of pregnancy and identify the anxieties that are an inevitable consequence of the rapid changes taking place. They state that all pregnant women experience to some extent an altered emotional state of lability, anxiety, insomnia, and crying spells.

The key task of pregnancy during the first trimester is the formation of a new personal mothering identity, separate from that of her own mother. Because she has not yet felt the baby move, she is mostly concerned with what is happening to her. She wonders: "will she be a good mother? Can they afford a child?" She may be frightened or anxious because of a bad experience with a

previous pregnancy or delivery, or because of the bad experiences she may have heard about from friends or relatives (Colman, & Colman, (1971).

During the first trimester the pregnant woman may experience panic about new or additional responsibilities involved in adding a new family member. She is reminded of the role-differences between men and women which cannot be totally removed by society. She frequently experiences concerns for personal and sexual adequacy. The inevitable feelings of ambivalence about pregnancy during the first trimester may produce undue anxiety, especially in someone who really wanted to become pregnant or who feared infertility. Unexplained anxieties may relate to feelings concerning her particular circumstances of the pregnancy (Colman, & Colman, 1971).

The major task of the second trimester is the working out of the shift from the dependency of being a daughter to the dependency of being a wife. The second trimester is often called the quiet months when the threat of abortion is mainly over, the morning sickness, if experienced, is over, and the discomfort of the end of pregnancy is not yet felt. Feeling the baby move is the overwhelming experience of the second trimester. There may be anxiety over the lack of control over body changes, which are being caused by a strange being living inside

her. There is concern for "who will take care of me?", and sometimes over-concern for the husband's safety. There is concern for possible feelings of inadequacy in the husband because he cannot bear children, and his possible feelings of jealousy of the attention she will be giving the baby (Colman, & Colman, 1971).

The third trimester is a time of pride and fulfillment together with anxious anticipation of the imminent unknown and physically uncomfortable. The reality of the pregnancy and unavoidable labor and delivery is inescapable. There is fear of being helpless since the pregnant woman's capacity to move quickly and agilely is greatly diminished. There may be stressful adjustments to decreased income among those women who stop working in the third trimester. Lack of sleep may intensify her emotions and anxieties. She may feel ugly and sloppy as she realizes the great disparity between magazine pictures of non-pregnant women and her full body (Colman, & Colman, 1971).

The third trimester woman may feel anger and resentment at the baby who kicks at her ribs and may keep her awake at night. She worries, given that it is so uncomfortable at eight months, that she still has a month to go. There may be sexual tensions due to a large belly and awareness of a third person present. She may also be

anxious that each Braxton-Hicks contraction is the beginning of labor and that the baby will deliver wherever she is at the moment, including the grocery store (Colman, & Colman, 1971).

The main anxieties of pregnant women in the third trimester are related to the fear of losing control in labor and delivery, possible loss of the baby, and possible death. Some women dread becoming empty after delivery (Colman, & Colman, 1971). Kitzinger (1977) says of third trimester anxiety: "A baby which, somehow, someday, has to get born. Whether by the birth canal or a caesarean, whether it lives or dies, it is in and must come out" (p. 89).

Glazer (1980) identified specific concerns and anxiety levels among pregnant women. The concerns expressed by pregnant women differed according to trimester. Concerns identified by at least 50% of the first trimester women pertained to self, childbirth, and medical care. In the second trimester, concerns focused on medical care, childbirth, and subsequent pregnancies. The greatest number of concerns are expressed during the third trimester and relate to self, childbirth, effects on baby, finances, family, and subsequent pregnancies. In all three trimesters, women were most concerned about the baby and childbirth. These findings are similar to the concerns

postulated by Colman and Colman (1971). Similarities include reference in the first trimester to concern for self, and to heightened concern in the third trimester for childbirth and baby.

Research by Lightfoot, Keeling, and Wilton (1982) compares 20 high-anxious women with 20 medium-anxious and 20 low-anxious women to determine whether there were particular distinguishing characteristics between the groups. No significant differences were found between medium- and low-anxious women but high-anxious women were significantly different from the other two groups on three variables: Level of financial security, tertiary education, and family living in locality. Medium- and low-anxious women were financially more secure, were better educated and were less likely to have immediate family living in the locality than highly anxious women. Similarly, earlier research by Glazer (1979) also indicated that women with higher levels of anxiety tend to be younger, less educated, married or involved in a relationship for a shorter period of time, and less wealthy than are women with lower anxiety levels.

In summary, then, it appears that women with fewer coping resources such as finances and education, are prone to experience more anxiety. Anxiety seems to center around concerns for self in the first trimester, concerns for

baby and the husband in the second trimester, and peak in the third trimester with anxieties related to impending labor and delivery, and parenting responsibilities. These anxieties are summed up and represented in a description of the dreams and thoughts of a pregnant woman:

One patient was able to define three distinct phases in her pregnancy. At first she was obsessed with dreams of harm coming to herself. In the middle of pregnancy, these dreams were supplanted by disturbing thoughts about her husband being hurt or killed, generally in an automobile accident. At the end of pregnancy, she was increasingly concerned with injury to the baby and was no longer haunted by the threats to herself or her husband (Colman, & Colman, 1971, p. 106).

It is evident that anxiety is always present in some form in pregnancy, and is caused by hormonal and psychological changes inherent in childbearing (Caplan, 1959; Colman, & Colman, 1971). Hormonal changes are related to the effects of progesterone on the feelings of motherliness which contribute to anxiety. Psychological changes are related to the developmental tasks of pregnancy resulting from the integration of the pregnancy and impending parenthood into the woman's personality. An impasse in any one of the developmental tasks creates high anxiety (Clark, & Affonso, 1979; Rubin, 1976). It is also evident from the research regarding anxiety in pregnancy, that high anxiety is experienced more often by women who have decreased coping resources such as finances and

education (Glazer, 1971; Lightfoot, Keeling, & Wilton, 1982).

In unstable states, there is great potential for changes in patterning and for enhancement of health and well-being. Pregnancy anxiety represents a disorganization in patterning, which may be reduced with a therapeutic touch treatment. Therefore, it is postulated that the repatterning of the pregnant woman's energy field and the channeling of organized environmental energy to her will reduce feelings of anxiety.

Pregnancy and Well-Being

Enhanced feelings of well-being may also be an outcome of more organized patterning. Optimal patterning of energy allows persons to feel wholly integrated and pleased to be themselves. Well-being is the sense of happiness, lightness, and of being at peace that derives from the harmonious integration and patterning of energy (Boguslawski, 1979). People high in well-being will feel "on top of the world" and people low in well-being will feel "lonely and remote from other people" (Bradburn, 1969, p. 56). No published research was found which examined the effect of therapeutic touch on well-being.

Leifer (1980), in a descriptive study of primipara's response to pregnancy, found a heightened sense of well-being in the first and second trimesters of

pregnancy. The second trimester was the period with the most feelings of happiness and pride, described by many women as a special "state of grace" (p. 56). Feelings of well-being were not as high in the third trimester due to increased physical discomfort. Thus, the third trimester may be a particularly critical time for addressing methods of enhancing well-being as well as decreasing anxiety.

Therapeutic Touch and Repatterning

Therapeutic touch is a possible intervention for repatterning and strengthening of the human energy field. Therapeutic touch "(TT)" is defined as "a method (derived from the laying-on of hands) of using the hands to direct human energies to help or heal someone who is ill"

(Krieger, 1971, p. 1). Although derived from the laying-on of hands, it differs from it in that TT is not performed within a religious context. The person in the role of healer does the act of TT while in a meditative state and is motivated by an interest in the needs of the patient (Krieger, 1975).

Purposeful interactions are needed for healthy repatterning of the human energy field. Nursing's goal according to Rogers (1970, p. 122) is "to promote symphonic interaction between person and environment, to strengthen the coherence and integrity of the human field, and to direct and redirect patterning of the human and

environmental fields for realization of maximum health potential". In therapeutic touch, the sensitivity of the hands is used to assess the regularity of the human energy field pattern, and then to redirect energy until the field is organized and homogeneous. Then the hands are used to direct energy into the human field in order to strengthen it for maximum health potential.

Therapeutic touch is an intervention that can be utilized by nurses to repattern and bolster the client's energy field (Boguslawski, 1979; Krieger, 1971; Quinn, 1979; Rogers, 1970). Therapeutic touch has been shown to be useful in reducing anxiety in cardiovascular patients (Heidt, 1980; Quinn, 1983), as well as in increasing hemoglobin values (Krieger, 1975), reducing pain (Boguslawski, 1980), and increasing bonding within the pregnant family (Wolfson, 1984). The anxiety of cardiovascular patients is similar to the anxiety experienced by pregnant women in that both face the fear of the unknown, fear of pain and death, lack of control over body changes, dependency issues, and concern for personal, financial, and sexual adequacies. Further research is needed to determine if therapeutic touch reduces anxiety in the pregnant woman. The benefits of therapeutic touch are postulated to result from the energy interaction between the practitioner and the client (Quinn, 1983). Further

research needs to be done to validate these findings, but an obvious trend is observed.

All of the benefits of therapeutic touch are congruent with the overall construct of well-being. Decreased anxiety, decreased pain, increased family bonding, and increased hemoglobin values representing increased prana (vitality) all appear to be aspects of the general feeling of well-being. Since well-being derives from the harmonious integration and patterning of energy (Boguslawski, 1978), it is postulated that therapeutic touch may enhance feelings of well-being, while reducing anxiety. However, there is a dearth of research in this area.

The intention of therapeutic touch is to repattern the client's energy field to the optimal, organized pattern of well-being as well as to reduce anxiety. This is displayed in a model of the theoretical framework (figure 1). Thus, the effects of therapeutic touch on the levels of both anxiety and well-being are examined in this study.

Hypotheses

Four hypotheses were derived from the theoretical framework.

1. There will be a difference among pregnant subjects treated with therapeutic touch, pregnant subjects treated with mock therapeutic touch, and pregnant subjects

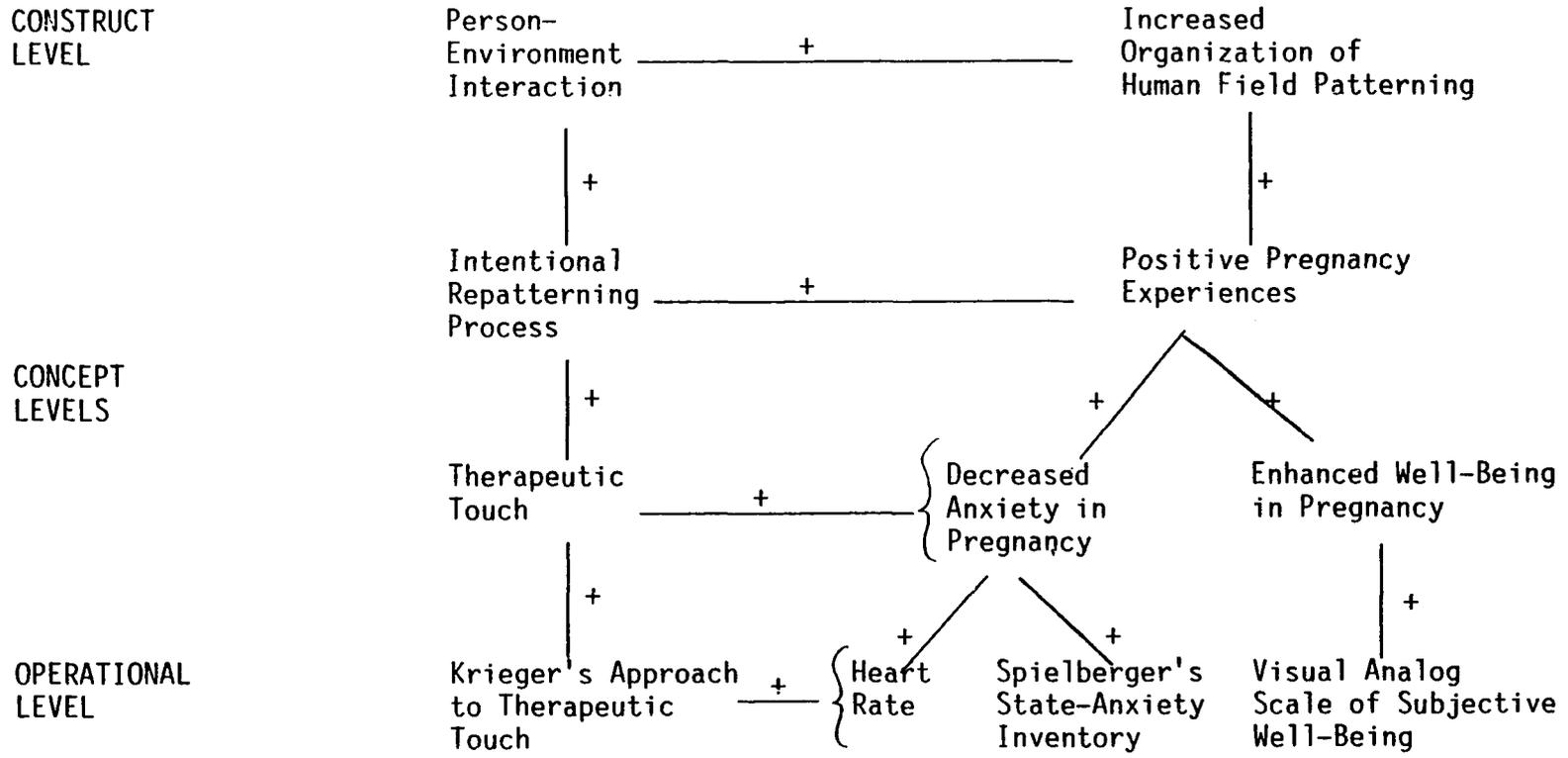


Figure 1. Theoretical Framework. The effect of therapeutic touch on state-anxiety and sense of well-being in pregnancy.

treated with no touch, on posttest state-anxiety scores when pretest scores are controlled, such that the pregnant subjects treated with therapeutic touch will have the lowest posttest state anxiety scores.

2. There will be a difference among pregnant subjects treated with therapeutic touch, pregnant subjects treated with mock therapeutic touch, and pregnant subjects treated with no touch, on posttreatment heart rates when pretreatment rates are controlled, such that the pregnant subjects treated with therapeutic touch will have the lowest posttreatment heart rates.

3. There will be a difference among pregnant subjects treated with therapeutic touch, pregnant subjects treated with mock therapeutic touch, and pregnant subjects treated with no touch, on posttreatment respiratory rates when the pretreatment rates are controlled, such that the pregnant subjects treated with therapeutic touch will have the lowest posttreatment respiratory rates.

4. There will be a difference among pregnant subjects treated with therapeutic touch, pregnant subjects treated with mock therapeutic touch, and pregnant subjects treated with no touch, on posttest well-being scores when the pretest scores are controlled, such that the pregnant subjects treated with therapeutic touch will have the highest posttest well-being scores.

Operational Definitions

Therapeutic Touch

A treatment in which the sensitivities in the hands are used to assess, repattern, and direct energy to a human energy field. Before therapeutic touch is begun, the practitioner centers herself by entering a relaxed state of concentration involving the intention to help or heal.

Mock Therapeutic Touch

A mock treatment mimicing the hand movements of therapeutic touch, but with no attempt to assess, repattern, or direct energy. There is no attempt to center by the practitioner, and no intention to help or heal. The practitioner mentally counts backwards by sevens from 100 during the treatment.

No Touch

A non-treatment situation in which the nurse is present in the room with the subject, sitting nearby reading a book.

State Anxiety

A transitory emotional state characterized by feelings of tension and apprehension, and heightened autonomic nervous system activity which can be influenced by environmental stimuli.

Well-being

A positive subjective sense of happiness,
lightness, and of being at peace.

CHAPTER II

LITERATURE REVIEW

In this chapter, theoretical and empirical literature pertaining to the effects of therapeutic touch is reviewed. No studies were found in which the effects of therapeutic touch during pregnancy were examined. Research studies and clinical reports regarding therapeutic touch and its relationship to anxiety, hemoglobin values, pain relief, and family bonding are presented.

Therapeutic Touch and Anxiety

The earliest research reported on therapeutic touch was by Krieger (1971). She found that ninety percent of clients treated with therapeutic touch will respond with particular, observable signs of relaxation (Krieger, 1971). The signs which occur are: (a) The voice level of the client will decrease; (b) The clients's respirations will deepen and slow down; (c) There will be some audible sign of relaxation in the client, such as a sigh or deep breath; (d) There will be an observable pinking of the skin, usually noted first in the face, as a result of dilation of the peripheral vascular system (Krieger, 1971).

These physiological signs of relaxation indicate that the person receiving therapeutic touch is not experiencing high levels of anxiety. Anxiety is usually accompanied by physiological signs that are opposite to those observed by Krieger. For example, the voice pitch usually goes up with anxiety, respirations become more shallow and increase in number, and peripheral circulation constricts as evidenced by the cold hands usually experienced with anxiety (Krieger, 1971).

Heidt (1980) examined the effect of therapeutic touch on the anxiety of 90 volunteer male and female subjects who were hospitalized in a cardiovascular unit. State (or transitory) anxiety was measured by the Self-Evaluation Questionnaire X-1, developed by Spielberger, Gorsuch and Lushene. Subjects were administered this tool pre- and post-intervention to measure the dependent variable, state anxiety. A post-test interview was also done to collect the thoughts and feelings of the subjects about the intervention they received. Three matched groups were formed; each subject received an individual five-minute period of intervention by therapeutic touch (TT), casual touch (CT), or no touch (NT). Heidt (1980) defined casual touch as that in which the nurse takes the subject's apical and radial pulse, and the pedal pulse in both feet. "No touch" treatment involves a nurse who sits be the

bedside and talks with the subject without touching. It was hypothesized that in subjects receiving TT there would be a reduction in post-test A-state anxiety scores, that there would be a greater reduction in A-state anxiety scores in those subjects receiving TT than in subjects receiving CT, and that there would be a greater reduction in A-state anxiety scores in subjects receiving TT than in subjects receiving NT.

Pre- and post-test means of A-State anxiety were compared across treatment groups and analyzed by correlated t-tests and analysis of covariance. Subjects who received TT treatment experienced a highly significant reduction in state anxiety ($\underline{t}(29) = -4.88, p < .001$). Moreover, after controlling for pretreatment differences, the TT group had significantly lower state anxiety scores than the CT group ($\underline{F}(1, 57) = 9.65, p < .01$) and the NT group ($\underline{F}(1, 57) = 7.21, p < .01$).

In the post-test interview, subjects related the experience of therapeutic touch to feelings of relaxation and decreased anxiety. For example, subjects stated "I feel calmer," "She gave me peace of mind," "I felt as if my problems went away for awhile" and "I felt more cheerful; my problems are still there, but I don't feel worried."

Some researchers have questioned the validity of a self-report questionnaire as the sole measure of anxiety in

Heidt's (1981) study (Clark & Clark, 1984). It may have been preferable to measure a concurrent physiologic variable such as pulse rate, respiratory rate, galvanic skin response, or electromyographic change; concurrent criterion related validity could than have been examined, adding strength to the results (Clark & Clark, 1984).

Heidt's (1981) design has also been criticized for not controlling for the placebo effect inherent in the practice of therapeutic touch. Clark and Clark (1984) point out that the casual touch intervention did not simulate the movements involved in therapeutic touch, so there was not an adequate control group. It was suggested that a more appropriate control group would be one who received a mock therapeutic touch session, including the movement of the hands over the surface of the body, but with no intentional transfer of energy by the practitioner (Clark & Clark, 1984).

Heidt's 1981 study does indicate the possibility that the practice of therapeutic touch effects a reduction in state anxiety. The results indicate that anxiety is reduced after the application of therapeutic touch, and that anxiety is reduced more by therapeutic touch than by the casual touch of nursing care, or no touch at all. Statements that the recipients of therapeutic touch felt

calmer, more cheerful, and less worried supported the significant findings.

Quinn (1983) also measured A-State anxiety pre- and post-therapeutic touch intervention. She utilized the mock therapeutic touch session in the control group as learned from Heidt's (1981) study. Since the effects of therapeutic touch are results of the unique interaction between the energy fields of the practitioner and the client, Quinn hypothesized that there would be a greater decrease in post-test state anxiety scores in subjects treated with noncontact therapeutic touch than in those treated with noncontact. Her definition of noncontact therapeutic touch (NCTT) was identical to Heidt's definition of therapeutic touch except in the placement of the hands. Quinn's (1983) treatment protocol required the nurse to place the hands 4 to 6 inches from the subject's body in the solar plexus area, whereas in Heidt's study (1980) the hands were placed on the subjects's body in the solar plexus area. Non-contact (NC) was defined as an intervention that mimics the movements of the nurse during TT but during which there is no attempt to center, no intention to help the subject, no assessment of the energy field of the subject, and no direction of energy.

The sample consisted of 37 men and 23 women cardiovascular patients. Subjects were randomly assigned

into one of two groups: experimental (NCTT) or control (NC). There were no significant differences in the mean ages or other demographic variables between groups. Subjects completed the Spielberger State Anxiety Inventory questionnaire pre- and post-treatment.

The results supported the hypothesis that there would be a greater decrease in anxiety in subjects treated with NCTT than those treated with NC. After adjusting for pretest score differences, Quinn (1984) reported finding a significant difference between the groups ($t(57) = -4.341$; $p < .0005$) indicating that the experimental group anxiety scores decreased more than the control group scores. It was concluded that it is not the physical contact that is important in explaining the effectiveness of therapeutic touch, but the energy exchange that occurs during the activity (Quinn, 1983).

Quinn's study effectively controlled for the placebo effect by incorporating the mock therapeutic touch intervention into the control group. It would have, however, increased the validity of the study further to add a third group which received no intervention except the pre- and posttest to separate the effects of testing (Hawthorne effect). It would have also given baseline data to compare the results of therapeutic touch and mock-therapeutic touch to no intervention.

Heidt (1981) and Quinn (1983) demonstrated a trend of empirical support for therapeutic touch as effective in reducing anxiety in the cardiovascular patient. Their studies also indicate that the effects of therapeutic touch originate from the patterning and transfer of energy. Thus, therapeutic touch may be effective as an intervention to reduce anxiety.

One study failed to show therapeutic touch to be effective in reducing anxiety. Randolph (1984) exposed 60 female college students to a stressful stimulus, and treated them with either therapeutic or physical touch. The stressful stimulus in Randolph's (1984) study was a movie depicting a tribal ceremony, including a sequence of operations performed with a sharp stone on the genitals of adolescent boys. During the movie, those in the therapeutic touch experimental group received a treatment by a practitioner who placed her hands on their abdomens and backs. The practitioner entered a meditative state and concentrated her attention on assisting the person. The physical touch group received the same physical touch with no attempt to direct energy. The groups were compared on levels of physiological response through electromyographic, skin conductance, and peripheral skin temperature measures. The hypothesis that the therapeutic touch group

would remain more relaxed than the physical touch group was not supported.

A major drawback to this study was the lack of consistency with the complete therapeutic touch intervention. Therapeutic touch typically requires assessment and repatterning of the client energy field before transfer of energy. These steps of the intervention were left out, which may have rendered the intervention ineffective. Since Randolph (1984) did not employ therapeutic touch as is it designed to be used, her results may not be valid.

Therapeutic Touch and Hemoglobin Values

Research has shown therapeutic touch to be useful in ways other than reducing anxiety. Dolores Krieger, a professor of nursing at New York University, designed several research studies based on hemoglobin. She had been searching for the physiological mechanism involved in the healing she observed with the laying-on of hands. She postulated from her reading of Eastern literature that oxygen is the equivalent to the Eastern concept of prana. Prana is translated as vitality or vigor, and is often connected with the breath. She reasoned that the test object could be hemoglobin, since it is the oxygen-carrying pigment of the blood cells which transfers oxygen to the tissues.

In 1971, Krieger conducted the first pilot study with 36 subjects, using a renowned healer. She hypothesized that the mean hemoglobin values of the experimental group after treatment by the laying-on of hands would significantly exceed their before-treatment hemoglobin values, and that the mean hemoglobin values of the control group at comparable times would show no significant difference. The two hypotheses were confirmed, for the first time, at the .01 level of confidence (no t-values were reported). In 1972, Krieger conducted a full-scale study with 76 subjects, and supported the earlier (1971) finding (Krieger, 1975).

In 1973, Krieger replicated this research with 75 more subjects, and included controls for a number of possible intervening variables which might affect hemoglobin levels such as the practice of meditation or breathing exercises. The significance of therapeutic touch was again supported.

Krieger conducted the classic therapeutic touch study in 1975 using registered nurses as the healers. Thirty-two nurses were consistently taught the process of therapeutic touch. These nurses possessed the qualities thought to be necessary in implementing therapeutic touch, i.e. they were inner directed, independent, possessed a high sense of self worth, and had a positive capacity for

intimate contact. The experimental group consisted of nurses who included treatment by therapeutic touch while caring for their 32 patients; the control group included nurses who gave nursing care to their 32 patients without using therapeutic touch.

It was hypothesized that following treatment by therapeutic touch the mean hemoglobin values of the patients in the experimental group would change significantly from their pre-test value and that there would be no significant difference between the pre- and post-test hemoglobin values of the patients in the control group. These hypotheses were supported by statistical analysis using Fisher's t -Test (values not reported) at the .001 level of significance. For the control group, the difference between the pre- and post-test means was not statistically significant.

While Krieger's research has for the most part been applauded, there has been some criticism about her method of analysis. A more suitable method of analysis may have been analysis of covariance, which would have adjusted post-test means to account for differences in pre-test means (Clark & Clark, 1984).

Therapeutic Touch and Pain

Therapeutic touch has also been reported to be used for the relief of pain. Boguslawski (1980) reports on her

clinical application of therapeutic touch with acute and chronic pain, no statistics were reported. She states that relief from acute pain can come within minutes and usually lasts several hours, depending upon the severity of the condition. The patient will feel more relaxed and may rest quietly after the treatment. With chronic pain clients the benefits of therapeutic touch frequently last as long as five or six days. Weekly treatment sessions are suggested to assist clients in staying within a reasonable range of comfort.

The possible release of endorphins and enkephalins during therapeutic touch was suggested by Boguslawski (1980) as a possible explanation for the positive effects. These morphine-like substances may be the mechanism for pain relief from acupuncture. Acupuncture and therapeutic touch both work with the energy system. No research was presented to support her observations and suggestions.

A study was designed to investigate tension headache and the link between the relief of pain and the reduction of anxiety (Keller & Bzdek, 1986). It was hypothesized that the pain of tension headache would be reduced after therapeutic touch and relief would be maintained for four hours; that therapeutic touch (TT) subjects would have greater pain reduction than the control group receiving a placebo simulation of therapeutic touch;

and that the greater relief of pain in TT touch subjects would last four hours post-intervention. Tension headache pain was measured on three scales from the McGill-Melzak Pain Questionnaire pre- and post-intervention. Results of the data analysis ($N=60$) revealed that 90% of the TT group a reduction in headache pain; that in the TT subjects the post-test pain score decreased an average of 70%, while the control group dropped 37%; and that the differences in delayed post-testing of pain reduction were significantly different between the TT and control groups. No t-test values were reported.

Therapeutic Touch and Pregnancy

Wolfson (1984) was the first author to suggest the use of therapeutic touch in pregnancy. She claimed it can be effective in optimizing family bonding, and in reducing anxieties and discomforts related to pregnancy. Wolfson (1984) reported on her use of therapeutic touch as a Nurse-Midwife: first as a therapy for the treatment of anxieties, discomforts, and complications related to childbearing; and second, as a teaching tool to increase awareness within the family. Prenatally, Wolfson (1984) taught fathers to use therapeutic touch on their partners. She based her teaching on the idea that, at some point, the fathers usually can distinguish the energy field of the baby as different from that of the mother. She stated that this

new way of perceiving strengthens the prenatal bonding of father to infant, and can also be used during labor to diminish labor pains. These ideas, however, have not been substantiated with empirical findings.

Summary

In summary, reports in the literature indicate that therapeutic touch may be effective in reducing anxiety, as well as increasing hemoglobin levels, reducing pain, and strengthening family bonds. In addition, therapeutic touch has been used to reduce anxiety during pregnancy, although this has not been empirically supported. In spite of the research done linking therapeutic touch to diminished anxiety, there has been no published research on the potential relationship between therapeutic touch and well-being. It is consistent to speculate, however, that therapeutic touch may effect well-being as it diminishes anxiety. Thus, much more research is needed in the area of pregnancy to further validate previous findings and clinical experiences of nurses practicing therapeutic touch, and to identify additional benefits of therapeutic touch on human beings.

CHAPTER III

THE METHOD

Design

An experimental study was designed to investigate the effect of therapeutic touch on anxiety and well-being in pregnancy. The study was conducted in the College of Nursing's Biological Studies Laboratory at the University of Arizona, and involved the voluntary participation of pregnant women.

Human Subjects

Approval to conduct the study was obtained through the Human Subjects Review Committee at the university in which the research took place (Appendix A). Protection of the rights of the subjects was ensured throughout the study. A copy of the oral explanation given all subjects is in Appendix B, and the subject disclaimer read by all of the participants before participation is in Appendix C.

Recruitment

Subjects were recruited from prenatal education classes throughout Tucson. The investigator went to the classes, explained the study (Appendix B), and asked for volunteers and their phone numbers. Subjects were then

contacted by phone to arrange for a convenient time to come to the Biological Studies Laboratory. All subjects were given directions to take the elevator to the second floor lab to avoid the heart rate increase involved in climbing stairs.

Sample

The sample consisted of 30 pregnant women who volunteered their time. The criteria for inclusion in the study were: (a) Primigravida; (b) Third trimester pregnancy (28-42 weeks); (c) No serious medical condition that could compromise a pregnancy; (d) No regular or habitual use of medication; and (e) Able to read and speak English.

Women experiencing their first pregnancy were chosen since gravidity may affect the sources of anxiety during pregnancy (Erickson, 1976; Glazer, 1980), and to provide more homogeneity of the sample. The rationale for selecting third trimester women was that the greatest number of concerns are expressed during this time with anxieties related to impending labor and delivery, and parenting responsibilities (Glazer, 1980).

Instruments

State-Trait Anxiety Inventory

The State-Anxiety (S-Anxiety) portion of the State-Trait Anxiety Inventory (STAI) has been used in previous

therapeutic touch and anxiety studies. In this research, the S-Anxiety Self-Evaluation Questionnaire, form Y-1 (Spielberger, 1983), was used to measure the amount of state anxiety pre- and posttreatment. The S-Anxiety scale contains 20 statements that ask subjects to rate themselves on a four-point scale of increasing intensity about how they feel at that moment in time. Items such as "I am tense", "I feel nervous", "I feel calm", and "I am relaxed" are typical. To reduce acquiescence bias, 10 items are scored directly and 10 are reversed (see Appendix D).

The Y form of the STAI is highly correlated with the previous form X (Spielberger, 1983). Normative data for form Y are based on samples of working adults, college students, high school students, and military recruits. The working adult norms are based on 1,838 employees of the Federal Aviation Administration. The sample was reported as heterogeneous in reference to education and age. On the S-Anxiety scale, the working adult mean for 1,387 males was 35.72 ($SD = 10.40$), and the alpha coefficient was .93; and for 451 females the mean was 35.20 ($SD = 10.61$), and the alpha coefficient was .93 (Spielberger, 1983).

The normative sample of college students contained 855 students attending University of South Florida introductory psychology courses; they were inventoried during regular classes or in special sessions. The

S-Anxiety mean for 324 males was 36.47 (SD = 10.02), the alpha coefficient was .91; and for 531 females the mean was 38.76 (SD = 11.95), and the alpha coefficient was .93. The normative sample of high school students contained 424 tenth-grade students inventoried during regular classes. For 202 males the mean was 39.45 (SD 9.74), and the alpha coefficient was .86; and for 222 females the mean was 40.54 (SD= 12.86), and the alpha coefficient was .94 (Spielberger, 1983).

The military recruit norms are based on two different samples: 1,701 Air Force recruits tested on their second or third day of basic training at Lackland Air Force Base, Texas, and 263 Navy recruits tested on the fifth day of basic training at the Navy Recruit Training Command, Orlando, Florida. Reported S-Anxiety means for males (N = 1,893) were 44.05, SD = 12.18, alpha = .95, and for females 47.01, SD = 14.42, alpha = .95. The S-Anxiety scores for the military recruits were higher as would be expected in a highly stressful training program (Spielberger, 1983).

S-Anxiety scale test-retest correlations for college students were .16, and for high school students .62, with a median reliability coefficient of only .33. These low correlations are expected since a valid measure of state anxiety should reflect situational factors at the

time of testing. Since S-Anxiety states have a transitory nature, the alpha coefficient is a more meaningful measurement of internal consistency for reliability of the S-Anxiety scale (Spielberger, 1983).

The S-Anxiety scale is given on each occasion when a measure of change of anxiety is needed. Studies in which the S-Anxiety subscale was repeated within a short time indicated that repeated usage may lead to greater differentiation among subjects. No significant influence on test scores of frequent administrations of the questionnaire have been indicated in other studies that used this procedure (Spielberger, 1983).

State-anxiety has been used as a measurement of anxiety in pregnancy (Gorsuch & Key, 1974). In studies of 20 to 111 women, the data indicated mean scores which ranged from 35 to 50 on the S-Anxiety scale, depending on weeks of gestation. No standard deviation values or alpha coefficients were reported (Gorsuch & Key, 1974).

Heart and Respiratory Rate

Heart and respiratory rates were used as physiological co-measurements of anxiety. A Grass Model 78B polygraph data recording system was used. The heart rate amplifier sensitivity was set at 30, and the respiratory rate amplifier sensitivity was set at .05; the system was calibrated before use. Heart and respiratory rates were

monitored for five minutes before, five minutes during, and five minutes after interventions. One minute heart and respiratory rates were later counted for each of the 15 one minute blocks.

Well-Being Visual Analog Scale

The visual analog scale for the measurement of well-being consisted of four 10 cm lines. The horizontal lines were accompanied by directions to "Please mark on each line the degree of feelings of happiness, lightness, and peacefulness you are feeling right now". The lines were labeled at the left "Least", and at the right "Most" (see Appendix D). The scale was scored by measuring to the mark on each line and adding the sum. The maximum score possible was 40.

The instrument was piloted with five subjects to see if respondents related to horizontal or vertical lines more easily. Three respondents preferred the horizontal lines and two chose the vertical lines; the horizontal format was then used for the instrument design. No studies were found using a visual analog for the measurement of well-being.

The use of a visual analog scale for the assessment of mood in depressed patients has been shown to be practical, reliable and valid (Zealley & Aitken, 1969). Depressed patients admitted to the Royal Edinburgh Hospital

($N = 13$) were asked to mark on a horizontal 100 mm line the degree of depression as opposed to normal mood at 12-hour intervals throughout their stay in the hospital. Morning and evening line marks were plotted against time; they were then subjected to separate morning and evening regression analyses. Correlations between the analog scale and the psychiatrists' overall rating were 0.78.

Procedure

In order to minimize investigator bias, very specific protocols were designed and carried out in a consistent manner with each subject. The investigator randomly assigned subjects to one of three treatment groups, administered the treatment conditions, and served as data collector. The three treatment groups were therapeutic touch (TT), mock therapeutic touch (MTT), and no touch (NT). Each of the three treatment protocols was piloted with one subject; slight revisions were made at that time. Since intention to help or heal is inherent in the therapeutic touch treatment, the administrator must be aware of which group the subject is in. Therefore, a double-blind study is impossible with therapeutic touch.

The setting for the study was a room which contained a desk and chair with desk lamp, a recliner chair with nightstand, a window admitting natural light, and a private bathroom. The polygraph system was just outside

the room with connections that went through a small hole in the wall to the nightstand.

Subjects were randomly assigned to either the experimental, therapeutic touch (TT) group; placebo, mock therapeutic touch (MTT) group; or control, no touch (NT) group. Questionnaire packets were prepared such that the order of the two instruments was also randomly determined.

When subjects arrived at the Behavioral Science Laboratory, they were all greeted with a smile and the statement, "Hi, thank you for coming, please come with me." They were then led to a seat at a desk in a private room. "I really appreciate your coming, please have a seat." "Please take a minute to read this over". Subjects were given time to read the disclaimer. Questions were answered candidly and pleasantly without undue explanation or emphasis, and they were told that they could ask questions at any time during the procedure. Then the State-Anxiety Inventory and Well-Being Visual Analog were placed on the desk in front of the subject and she was told, "Instructions are given on each page, please answer all the questions about the way you are feeling right now." Then the investigator left the room for approximately five minutes.

The investigator then returned to the room and with a smile asked if the subject had completed the

questionnaires. If the answer was "no", the subject was asked if there were any questions and given the time necessary to complete the questionnaire. If the answer was "yes", the investigator thanked her, took the questionnaires from the subject and said "Please be seated in the recliner chair". Then the respiratory bellows were adjusted to subject comfort and the electrode patches applied just under the collar bone with the leads attached. She then adjusted the chair to her comfort in a semi-reclining position.

Verbal directions. Directions were given to the TT and MTT groups as follows: "What we're going to be doing is this. I'll be leaving the room for five minutes, then I'll be back for five minutes and I'll be passing my hands over your body several times like this (therapeutic touch hand movements were demonstrated) for a few minutes and then holding them over your tummy like this (hands placed over the waist area) for about a minute. Then I'll leave the room again for five minutes, and then be back to take off all the equipment". Directions were given to the NT group as follows: "What we're going to be doing is this. I'll be leaving the room for five minutes, then I'll be back for five minutes and I'll be sitting in the chair at the desk for about five minutes. Then I'll leave the room again for five minutes, and then be back to take off all the

equipment". The investigator then asked all three groups of subjects to "just relax, breathe comfortably, and keep your eyes closed as much as you can. If you need to peek to see what I'm doing, that's ok, but please keep them closed as much as you can."

The investigator then left the room, turned on the polygraph and monitored the heart and respiratory rates for five minutes. Then the investigator returned to the room and administered the protocol for TT, MTT, or NT exactly (see below), each lasting five minutes. The heart and respiratory rates continued to be monitored by the polygraph. The investigator left the room, then turned off the polygraph after five minutes, returned to the room and removed the electrode patches and the respiratory bellows.

Following the treatment, the subject was again asked to be seated at the desk and asked to "Please repeat these questionnaires about the way you are feeling right now". The subject was handed the State Anxiety Inventory and the Well-Being Visual Analog, and the investigator left the room for approximately five minutes. After completion of the questionnaires a paper asking for subject data (age, parity, weeks of gestation, practices to reduce anxiety, special worries this pregnancy, marital status, employment, education, ethnic group, financial status) was handed to the subject and she was asked to "Please fill

this out about your general background, all answers are strictly confidential". After approximately two minutes, the subject was asked if she was finished and if she had any questions. She was then thanked for her time and cooperation.

The three treatments of therapeutic touch, placebo therapeutic touch, and no touch are operationally defined below.

Therapeutic Touch (TT). TT treatment involves the following steps similar to Krieger (1971), Heidt (1981) and Quinn (1984):

1. The investigator centers herself by closing her eyes, taking three deep breaths and letting them out slowly, while becoming aware of the energy field in and around herself that could be used to help the subject. She consciously enters a relaxed state of concentration.

2. The subject's energy field is assessed by placing the hands four to six inches away from the subject's body and passed from head to toe three times over the body becoming aware of sensory cues in the hands which indicate areas of congestion or areas of decreased energy.

3. The subject's field is "unruffled" by using the hands in sweeping and smoothing motions to mobilize any congested areas out of the field or moved to areas felt to

be devoid of energy. This is done until the field feels homogeneous and smooth.

4. The investigator directs energy to the subject by consciously gathering energy from the environment and channeling it to the subject through her arms and hands. To do this the hands are placed over the solar plexus area (at the waist) for approximately 90 seconds.

5. The investigator knows it is time to stop when the energy field of the subject feels symmetrical, homogeneous and pulses rhythmically, and she has the sense that enough energy has been channeled. This entire procedure takes approximately five minutes.

Mock Therapeutic Touch (MTT). MTT mimics the movements of therapeutic touch but there is no attempt to center, no intention to assist the subject, no assessment of the energy field, and no direction of energy, similar to Quinn (1984).

1. The investigator takes three breaths and mentally begins counting backwards from 100 by 7's.

2. The investigator's hands are passed slowly from head to toe three times over the subject's body four to six inches away while continuing to count backward by 7's.

3. Sweeping and smoothing motions are made four to six inches from the subject's body mimicing the ones used to redistribute energy in TT.

4. The hands are placed over the waist area for 90 seconds while continuing to count backwards by 7s.

5. The MTT treatment is stopped after five minutes.

No Touch (NT). The purpose of NT is to measure what effect the environment alone has on the subject. The nurse is present but will not interact with the subject, except to answer questions consistent with all groups; she sits at the desk in the room and reads a book for five minutes.

Limitations

The use of a small sample size was the major limitation for this study. A larger sample size would be more representative of the population and provide for more accurate data and power in the statistical tests (Polit & Hungler, 1983).

Limitations in the study design also included the use of an instrument, the Visual Analog Scale of Subjective Well-Being, which has no established reliability and validity. In addition, Zealley and Aitken (1969) showed that the use of a visual analog scale was reliable and valid for the assessment of mood. The instrument was piloted with five subjects to determine that subjects could relate to the horizontal analog scales for the concept of well-being.

Another limitation in the experimental study was the effect of social desirability response set. This refers to the subjects responding in a favorable manner, regardless of their true attitude toward the question being asked. This may be a particular problem with affective measures, such as state-anxiety and well-being (Polit & Hungler, 1983). Subjects were encouraged to give their honest feelings to minimize this limitation.

The study environment may have contributed to increased anxiety. The Biological Studies Laboratory contains several large and imposing instruments which were unfamiliar to the subjects. They were led past these instruments to an undecorated private room. These elements of the environment may have contributed to discomfort, and therefore, to reports of increased anxiety and diminished well-being.

CHAPTER IV

RESULTS

This study was designed to explore the effect of therapeutic touch on anxiety and well-being in pregnancy. This chapter presents the characteristics of the sample; statistical tests of the hypothesized anxiety scores, heart and respiratory rates, and well-being scores; and additional analyses on the relationships among the study and demographic variables.

Sample Characteristics

The sample consisted of 30 primiparous, third-trimester women. The total sample mean age was 28.9. The majority were married (90%), employed (70%), and white (90%). Fifty percent described their finances as average, 43.3% as secure, and 6.7% as poor. Subjects were fairly well educated with a mean years of education of 15.8. The average length of pregnancy was 34.7 weeks.

Of the total sample, 70% reported having special worries during the pregnancy. The worries included eight reports of concern for baby's normal health, six reports of concern for finances, two reports of concern for change in body and weight gain, two reports of concern for

miscarriage, and two reports of concern for normal labor and delivery. Other concerns expressed were about decorating the house, first year teaching, coping with a change, medication in labor, thesis, breech position, possible cesarean section, twin absorbed at seven weeks, no insurance, step daughter's acceptance, enthusiasm of husband, moving, job change, building a house, husband in school, low alpha fetal protein and amniocentesis, Down's syndrome, and thyroid tumor.

Thirty percent of the sample practiced something special to reduce anxiety. Two subjects reported using meditation, two reported practicing positive thinking and affirmations, three reported exercise such as walking and working out. Other practices included breathing, prayer, conscious relaxation, attempting time management, talking with confidants, writing, resting with eyes closed, and use of a relaxation tape.

The sample characteristics of the therapeutic touch (TT), mock therapeutic touch (MTT), and no touch (NT) groups are presented in Table 1. The mean age, years of education, and length of pregnancy were similar across all three groups.

Group Means on Dependent Variables

The means on the dependent variables, anxiety and well-being for each treatment group, are presented in

Table 1. Mean Age, Years of Education, and Weeks of Gestation for the TT, MTT, and NT Groups

Group	<u>Age</u>		<u>Education</u>		<u>Gestation</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
TT	27.60	5.16	16.10	2.18	35.20	2.04
MTT	30.00	5.87	16.00	4.00	34.50	2.46
NT	29.20	3.33	15.30	1.70	34.50	2.37

Table 2. There was an increase noted in two of the three measures of posttreatment anxiety across all groups. It was also noted that posttreatment well-being scores increased across all groups.

Statistical Analysis of the Hypotheses

Given the small sample size, analysis of homogeneity of variance was carried out prior to analysis of covariance. Homogeneity of variance was supported across treatment groups.

Hypothesis 1

Hypothesis 1 stated that there will be a difference among pregnant subjects treated with TT, MTT, or NT, when pretest scores are controlled, on posttest state-anxiety scores such that the subjects treated with therapeutic touch will have the lowest posttest state anxiety scores. Figure 2 displays the pre- and posttest scores for each group on state-anxiety. All groups reported a slight rise in anxiety after the intervention, with the therapeutic touch group reporting the largest increase.

A one-way analysis of covariance (ANCOVA) was used, with pretest state-anxiety scores as the covariate. No significant difference was found ($F = .76$) (Table 3).

Table 2. Group Means and Standard Deviations on Anxiety and Well-being Scores for Each Group

Variable	TT		MTT		NT	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Anxiety						
Pretreatment Heart Rate Mean	93.00	12.46	93.20	5.89	84.26	9.00
Posttreatment Heart Rate Mean	90.74	13.32	93.20	5.89	82.02	7.30
Pretreatment Resp. Rate Mean	14.32	4.29	13.30	3.69	14.58	2.59
Posttreatment Resp. Rate Mean	15.10	3.13	14.20	3.02	15.99	3.07
Pretest State Anxiety Score	34.30	8.49	39.90	8.86	40.80	9.17
Posttest State Anxiety Score	47.80	3.79	46.10	5.38	45.60	4.09
Well-Being						
Pretest Well-Being Score	20.95	5.73	17.20	6.70	16.54	6.64
Posttest Well-Being Score	36.13	4.56	30.59	6.81	29.58	8.11

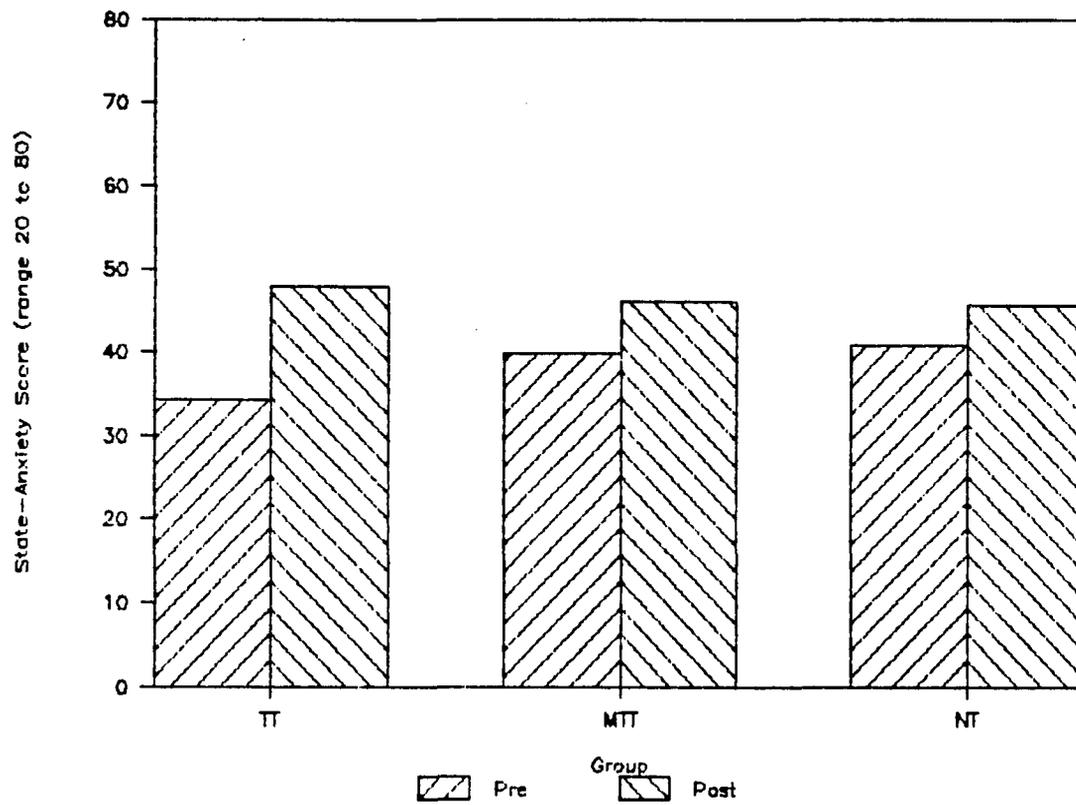


Figure 2. Pre- and Posttest State-Anxiety Means for Each Group

Table 3. Analysis of Covariance: Comparison of TT, MTT, and NT Groups on State-Anxiety

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Covariate	.15	1	.16	.01
Main Effect	31.17	2	15.59	.76
Explained	31.32	3	10.44	.51
Residual	536.18	26	20.62	
Total	567.50	29	19.57	

Hypothesis 2

Hypothesis 2 stated that there will be a difference among pregnant subjects treated with TT, MTT, or NT, when pretreatment rates are controlled, on posttreatment heart rates such that the pregnant subjects treated with therapeutic touch will have the lowest posttreatment heart rates. It was noted (Table 4) that the groups differed significantly on the covariate, pretest heart rate ($F = 158.85, p < .001$); the lower mean in the NT group is evident in Figure 3. The patterns of heart rate change were similar however. All groups experienced a drop in heart rate at 6 minutes, during the first minute when the investigator entered the room. Heart rates continued generally lower until the investigator left the room at eleven minutes, then rose slightly, except for the NT group which remained low (Figure 3).

A one-way ANCOVA was done using pretreatment heart rates as the covariate. No significant main effects were found when the pretest scores were controlled ($F = .50$) (Table 4).

Hypothesis 3

Hypothesis 3 stated that there will be a difference among pregnant subjects treated with TT, MTT, or NT, when pretreatment rates are controlled, on posttreatment respiratory rates such that the pregnant subjects treated

Table 4. Analysis of Covariance: Comparison of TT, MTT, and NT Groups on Heart Rate

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Covariate	2356.50	1	2356.50	158.85*
Main Effect	14.79	2	7.40	.50
Explained	2371.29	3	790.43	53.28*
Residual	385.72	26	14.84	
Total	2757.01	29	95.07	

*p<.001

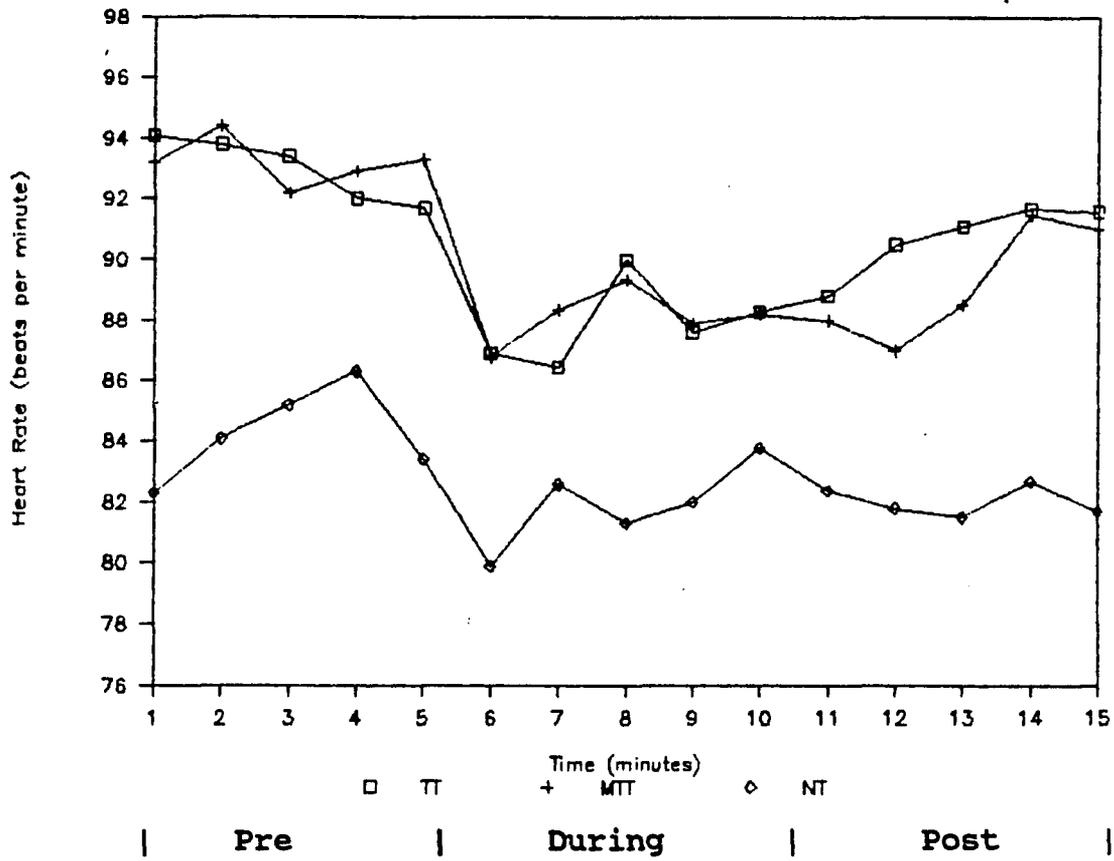


Figure 3. Mean Heart Rate Before, During, and After Treatment for Each Group

with therapeutic touch will have the lowest posttreatment respiratory rates. It was noted (Table 5) that the groups differed significantly on the covariate pretreatment respiratory rates ($F = 9.49, p < .005$), as is evident in Figure 4. Figure 4 displays the rates for each group on respiratory rates before, during, and following the treatment conditions. All groups generally experienced a decrease in respiratory rate during the treatment. The pattern of change is similar in all groups except that the respiratory rate begins to climb during the treatment in the NT group somewhat earlier than the other two groups.

A one-way ANCOVA was used, with pretreatment respiratory rates as the covariate. No significant main effects were found ($F = 1.93$) (Table 5).

Hypothesis 4

Hypothesis 4 stated that there will be a difference among pregnant subjects treated with TT, MTT, or NT, when pretest scores were controlled, on post-test well-being scores such that the pregnant subjects treated with therapeutic touch will have the highest posttest well-being scores. It was noted (Table 6) that the groups differed significantly on the covariate pretest well-being scores ($F = 55.57, p < .001$). The higher mean in the TT group is evident in Figure 5. All groups reported an increase in

Table 5. Analysis of Covariance: Comparison of TT, MTT, and NT Groups on Respiratory Rates

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Covariate	206.17	1	206.17	87.63*
Main Effect	3.84	2	1.92	.82
Explained	210.01	3	70.00	29.75*
Residual	61.17	26	2.35	
Total	271.18	29	9.35	

*p<.001

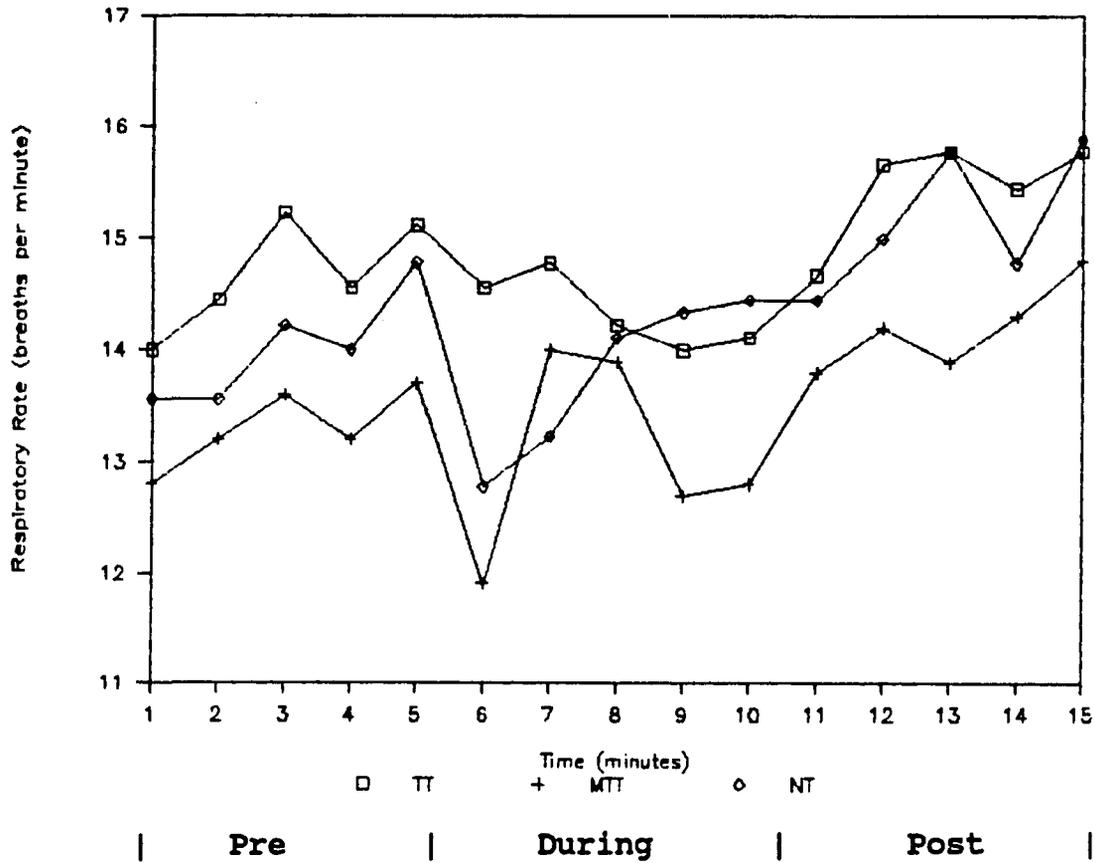


Figure 4. Mean Respiratory Rate Before, During, and After Treatment for Each Group

Table 6. Analysis of Covariance: Comparison of TT, MTT, and NT Groups on Well-Being

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Covariate	955.65	1	955.65	55.57*
Main Effect	43.98	2	21.99	1.28
Explained	999.64	3	333.21	19.38*
Residual	447.12	26	17.20	
Total	1446.76	29	49.89	

*p<.001

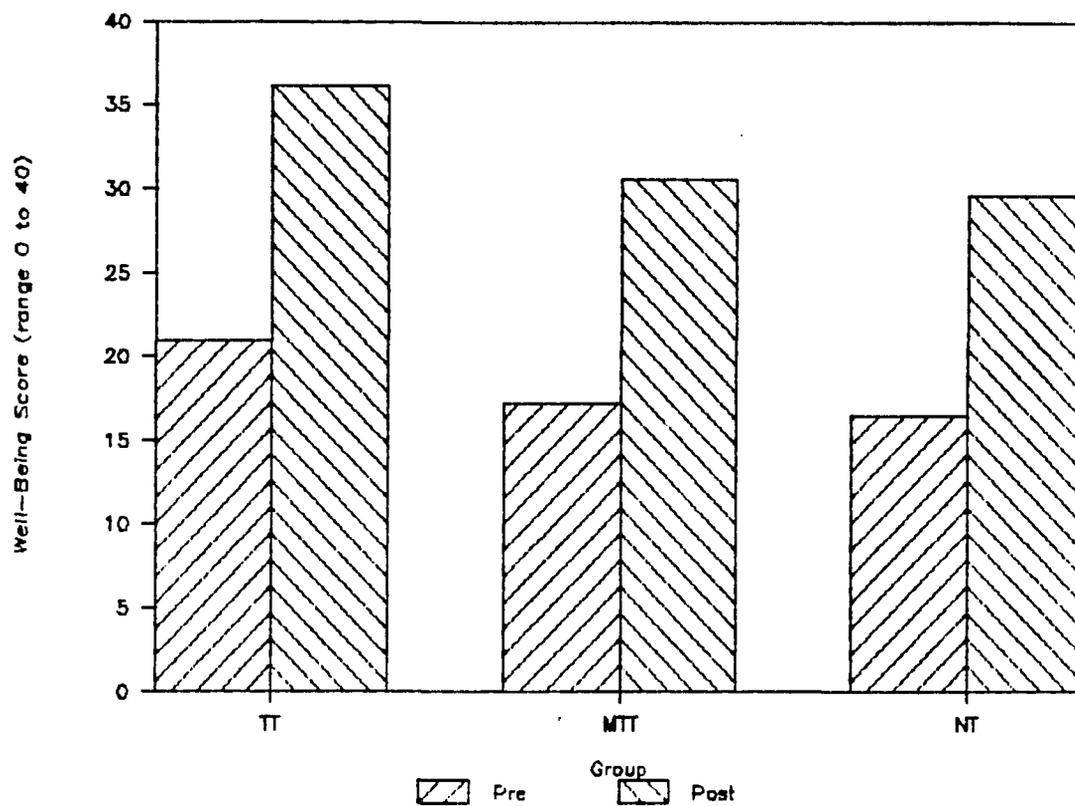


Figure 5. Pre- and Posttest Well-Being Means for Each Group

well-being, with the largest increase reported by those subjects in the TT group (Figure 5).

A one-way ANCOVA was used, with pretest well-being scores as the covariate. No significant main effects were found ($F = 1.28$) (Table 6).

Correlations Among the Study Variables

Additional analysis of the data was done to describe the relationships among the demographic and dependent variables for each group. The significant Pearson correlations are presented in Tables 7, 8, and 9.

In the TT group, significant Pearson correlations occurred between pretreatment respiratory rate means and pretreatment state-anxiety scores ($r = -.61$), pretest state-anxiety scores and pretest well-being scores ($r = -.55$), and posttest state-anxiety scores and posttest well-being scores ($r = .79$). Age was correlated to the presence of special worries during pregnancy ($r = -.64$), and to special practices to reduce anxiety ($r = -.68$) (Table 7).

In the MTT group, significant Pearson correlations were found among pretreatment respiratory rates and posttest well-being scores ($r = .66$), posttreatment respiratory rates and the use of practices to reduce anxiety ($r = -.63$), and pretreatment heart rates to the presence of special worries in pregnancy ($r = .58$).

Table 7. Therapeutic Touch Group Correlations

	Pre Heart	Post Heart	Pre Resp	Post Resp	Pre Anx	Post Anx	Pre Well	Post Well	Age	Anx Pracs	Worry
Pre Heart	1.0	.95*	-.19	-.28	.16	-.34	.01	.01	-.31	.07	.49
Post Heart		1.0	-.02	-.13	-.09	-.44	.09	-.05	-.40	.26	.54
Pre Resp			1.0*	.97*	-.61*	-.24	.02	-.16	.52	.50	.26
Post Resp				1.0	-.50	-.12	-.03	-.13	-.50	.51	.12
Pre Anx					1.0	.28	-.55*	.11	.09	-.36	-.11
Post Anx						1.0	.33	.79*	.01	.02	-.01
Pre Well							1.0	.65*	.00	.13	.12
Post Well								1.0	.26	.05	.25
Age									1.0	-.68*	-.64*
Anx Pracs										1.0	.53
Worry											1.0

*p<.05

Table 8. Mock Therapeutic Touch Group Correlations

	Pre Heart	Post Heart	Pre Resp	Post Resp	Pre Anx	Post Anx	Pre Well	Post Well	Age	Anx Pracs	Worry
Pre Heart	1.0	.80*	-.08	.03	-.13	.15	-.01	-.10	-.05	.37	.58*
Post Heart		1.0	.07	-.06	-.29	.10	.12	-.10	.23	.19	.38
Pre Resp			1.0	.83*	-.36	.03	.40	.66*	-.25	.67	.37
Post Resp				1.0	-.10	-.21	.00	.32	-.06	-.63*	.27
Pre Anx					1.0	-.08	-.72*	-.47	.02	.06	-.38
Post Anx						1.0	.37	.39	-.33	.22	.41
Pre Well							1.0	.84*	-.50	.25	.52
Post Well								1.0	-.71*	.58	.49
Age									1.0	-.65*	-.59
Anx Pracs										1.0	.65*
Worry											1.0

*p<.05

Table 9. No Treatment Group Correlations

	Pre Heart	Post Heart	Pre Resp	Post Resp	Pre Anx	Post Anx	Pre Well	Post Well	Age	Anx Pracs	Worry
Pre Heart	1.0	.90*	-.47	-.50	-.34	-.21	.22	.29	-.43	.18	.53
Post Heart		1.0	-.72*	-.70*	-.48	-.50	.15	.18	-.57*	.06	.49
Pre Resp			1.0	.83*	.70*	.43	-.26	-.09	.68*	.13	-.42
Post Resp				1.0	.63*	.60*	-.25	-.24	.64*	-.16	-.37
Pre Anx					1.0	.16	-.51	-.32	.19	.34	-.28
Post Anx						1.0	.15	-.00	.31	-.21	-.14
Pre Well							1.0	.84*	-.40	-.24	-.33
Post Well								1.0	-.32	-.11	-.45
Age									1.0	-.19	.05
Anx Pracs										1.0	.17
Worry											1.0

*p<.05

Pretest state-anxiety scores were correlated to pretest well-being scores ($\underline{r} = -.72$), posttest well-being to age ($\underline{r} = -.71$), and age to the presence of worries ($\underline{r} = -.59$). Correlations were found among the use of practices to reduce anxiety and both pretreatment respiratory rates ($\underline{r} = .67$) and posttreatment respiratory rates ($\underline{r} = .63$), the use of practices to reduce anxiety and posttest well-being ($\underline{r} = .58$), the use of practices to reduce anxiety and age ($\underline{r} = -.59$), and the use of practices to reduce anxiety and the presence of special worries this pregnancy ($\underline{r} = .65$) (Table 8).

In the NT group significant Pearson correlations were found between posttreatment heart rates and both pretreatment respiratory rate ($\underline{r} = -.72$) and posttreatment respiratory rates ($\underline{r} = -.70$), and among pretreatment respiratory rates and pretest anxiety ($\underline{r} = .70$). Age was correlated with the variables posttreatment heart rate ($\underline{r} = -.57$), pretreatment respiratory rates ($\underline{r} = .68$), and posttreatment respiratory rates ($\underline{r} = .64$). Correlations were found between posttreatment respiratory rates with both pretest state-anxiety scores ($\underline{r} = .63$) and posttest state-anxiety scores ($\underline{r} = .60$) (Table 9).

It was noted that the TT, MTT, and NT groups differed on the study variable correlations. In the TT group, pretest anxiety and pretest well-being are

negatively correlated, then posttest anxiety and posttest well-being are positively correlated. In the MTT group pretest anxiety and pretest well-being are also negatively correlated. However, in the NT group there are no correlations between anxiety and well-being. In the TT group, age is negatively correlated with the presence of special worries in pregnancy, and the use of practices to reduce anxiety. In the MTT group age is also negatively correlated to worries and practices to reduce anxiety, as well as negatively correlated with posttest well-being scores. In contrast, in the NT group age is not correlated with worries, practices, or well-being. In the MTT group the use of practices to reduce anxiety is correlated positively with posttest well-being, as well as the presence of special worries; practices to reduce anxiety are not significantly correlated with well-being or worries in the TT or NT groups.

Summary

Thirty pregnant women received either a therapeutic touch treatment, mock therapeutic touch treatment, or no touch treatment. Self-reports of anxiety and well-being were measured before and after each treatment; heart and respiratory rates were measured before, during, and after the intervention.

Analysis of covariance was used to test the four hypotheses in this study. The results indicated that there are no significant differences among the treatment groups receiving therapeutic touch, mock therapeutic touch, and no touch. Subjects treated with therapeutic touch did not have significantly lower posttreatment anxiety scores, heart or respiratory rates, nor significantly higher post-treatment well-being scores.

CHAPTER V

DISCUSSION

The findings of this study are discussed in relation to the conceptual framework and to nursing practice. Recommendations for further study are made.

Findings Related to the Conceptual Framework

Pregnancy is an experience that can alter one's sense of well-being and increase anxiety. Therapeutic touch has been shown to be useful in reducing state-anxiety in previous studies (Heidt, 1980; Quinn, 1983). A laboratory study was therefore undertaken in order to measure the effect of therapeutic touch (independent variable) on anxiety in pregnancy (dependent variable), and the probable effect of decreased anxiety, enhanced well-being in pregnancy (dependent variable).

Results indicated that therapeutic touch may not affect state-anxiety or well-being. These findings do not support the claims of Heidt and Quinn who found reduced levels of state-anxiety in cardiovascular patients following therapeutic touch. The findings do support the results of Randolph (1984), who found no significant change

in state-anxiety in college students receiving therapeutic touch during a stressful movie. The results of this study, while limited in external validity, serve as some evidence that therapeutic touch may be of little use in pregnancy.

Lack of significant findings may be due to the limitations of the study. The total sample size of 30 subjects (10 subjects per group) may not have been large enough to collect accurate data. Though it is generally acceptable to use a sample size of 10 for each subdivision of data, it is preferable to have 20 to 30 for each subdivision (Polit & Hungler, 1983). Thus, a preferable sample size for this study would be 60-90 subjects. With a larger sample size, results on the measures of anxiety and well-being may be significant.

The therapeutic touch treatment was administered for a total of five minutes; this may not have been long enough for significant change to occur in anxiety and well-being. A longer therapeutic touch treatment may have produced significant results. In addition, the measurements of anxiety and well-being may not have been collected long enough before, nor long enough after, the treatment. Significant results may have been obtained with longer periods of measurement.

The Well-Being Visual Analog may not reflect accurate data since it has not demonstrated established

reliability and validity. Lack of significant findings on well-being may be due to measurement error of the instrument.

The effect of response set may have influenced participant's responses. Subjects may have tended to present themselves in a socially acceptable response set, as in reporting moderate anxiety and high well-being. Their self-reports then may not have demonstrated an accurate change in the pre- and posttest scores.

In addition, lack of significant findings may be due to the effect of the study environment. The Biological Studies Laboratory contained large, imposing instruments which the participant had to pass by on the way to the room where the study took place. The sight of these instruments may have increased anxiety and diminished well-being in the subjects. During the study subjects were monitored by a polygraph, which required that they have electrocardiograph patches placed on their upper chest with wires attached, and a respiratory bellows placed around the upper chest. The presence of these foreign objects may have also created anxiety and decreased well-being. Three subjects reported that they had experienced polygraph tests at their places of work and that the experiment reminded them of these past negative experiences. The unfamiliar and possibly imposing study environment may have contributed to the finding of

increased anxiety in all subjects on the posttest state-anxiety score, and a diminished increase in well-being on the posttest well-being score.

Measurements of Repatterning

This research is based on the concept of energy fields and their interactions (Rogers, 1970, 1980, 1986). While an energy field may be felt with sensitive hands, there is no laboratory equipment available to identify or measure the energy. According to Joy (1979), a medical doctor, this energy "is not of a kind currently known to science" (p. 161). Anxiety, heart and respiratory rates, and well-being were chosen to represent an energy change, but they are not actual measures of energy. Therefore, they may not be sensitive or subtle enough to measure the repatterning of a human energy field.

All groups in the study experienced a mean drop in heart rate of 3-6 beats (Figure 3) when the nurse entered the room. A possible reason for this is that the presence of a helping person's energy field interacts with the subject's energy field, causing a relaxation effect. The mean decrease lasted until the nurse left the room or longer in the case of the no touch group. While it may be possible to intensify the repatterning response with therapeutic touch, an effect may be confounded by the mingling of energy fields.

Peper and Ancoli (Krieger, 1979) looked at psychophysiological changes in the practitioner and the client during therapeutic touch. During the treatment the 3 clients showed no significant changes in heart rate, muscle tension, temperature, or galvanic skin response, but did show an abundance of large amplitude alpha brain wave activity with eyes open and closed indicating a relaxed state. Electroencephalograph changes may be a better indicator of subtle changes produced by therapeutic touch and the repatterning of the human energy field.

Pregnancy and Anxiety

Lightfoot, Keeling, and Wilton (1982) found correlations between high anxiety and finances, education, and family. Glazer (1979) found correlations between high anxiety and age, education, marital status, and finances. In this study, higher anxiety was only correlated with lower well-being, and the report of special worries during the pregnancy was correlated with increased heart rate, decreased age, and more practice of methods to reduce anxiety. Similar to Colman and Colman (1971), this study found heightened concern for childbirth and the baby in the third trimester.

Gorsuch and Key (1974) found that state-anxiety in the first trimester was related to complications affecting pregnancy and the neonate; anxiety in the second and third

trimester was not. This suggests that third trimester state-anxiety may not be significantly increased, and therefore may not be responsive to measures used to decrease anxiety. Instead, life stress in the second and third trimesters was shown to be associated with abnormalities (Gorsuch & Key, 1974).

State-anxiety, as measured in this study, may not be the appropriate measurement of anxiety in pregnancy. State-anxiety includes heightened autonomic nervous system activity by definition, which may not be present throughout normal pregnancy. Heart and respiratory rate changes are instead due to the normal hormonal and metabolic changes of pregnancy. This is different from the "fight or flight" phenomenon seen with other anxiety producing situations such as test-taking. Another measure of anxiety may be more appropriate to measure the anxiety present during pregnancy.

Heart rate, as measured in this study, may not be an appropriate physiological concurrent measure of anxiety. Increases in heart rate may not necessarily accompany increases in anxiety (Hardy & Whitehead, 1984), neither may changes in subjective anxiety precede changes in heart rate (Emmelkamp & Felton, 1985).

Pregnancy viewed as a normal process (only subjects with normal pregnancies were accepted for the study)

involves physiologic and psychologic adaptations. If these adaptations are successful, anxiety may not be significantly increased, and well-being may already be significantly experienced. This is suggested by the total population mean score of 46.5 on the State-Anxiety Inventory out of a possible score of 80, a moderate score, and 32.10 out of a possible score of 40, a high score, on the Well-Being Visual Analog Scale. Previous research with therapeutic touch and anxiety on cardiovascular patients (Heidt, 1980; Quinn, 1984) was with disease-state patients. Thus, a significant decrease in anxiety may be found in a more anxious population.

Pregnancy and Well-Being

Though no significant changes in well-being were found in this study, the posttreatment group well-being scores differed. Out of a total possible score of 40, the post-treatment mean score for the therapeutic touch group was 36.13, for the mock therapeutic touch group 30.59, and the no touch group 29.58. The higher scores in the subjects who received therapeutic touch may represent a trend.

Findings Related to Nursing Practice

This study's findings do not support the previous reported benefits of therapeutic touch. Considering the

limitations of the study, along with the results of previous studies, the use of therapeutic touch continues to warrant consideration by nurses.

Human beings are considered to be in a constant state of interaction with their environment (Rogers, 1970). The nurse is a part of the client's environmental field significantly affecting the client's energy field. The nurse needs to be aware of how she can affect the repatterning of the client's energy field. Her intention to help during therapeutic touch may repattern the energy field in the direction of health (Krieger, 1979).

Therapeutic touch is derived from the "laying on of hands", an ancient international phenomena. The energy that has not been identified by Western science has been called "prana" by Arurvedic (Indian) Medicine, and "chi" by Chinese Medicine (Krieger, 1979). These systems of medicine have been useful for thousands of years; the concept of energy and its repatterning through therapeutic touch could be useful to nursing.

Seventy percent of the sample reported having special anxieties during their pregnancies. It is important that nurses question their pregnant clients regarding anxieties, and allow time for expression and discussion of these anxieties.

The practices used by the pregnant subjects in this study to reduce anxiety could be recommended to pregnant clients who are experiencing increased anxiety. Practices such as meditation, positive thinking and affirmations, and exercise may be suggested as possible methods to reduce anxiety.

Recommendations for Further Study

Further research is indicated for the use of therapeutic touch in pregnancy, as well as for a variety of nursing situations in which there is interaction between the client and the nurse. The following suggestions for further study are made.

1. Replicate this study to determine if significant findings emerge with a larger sample.
2. Utilize a more comfortable and home-like environment for data collection.
3. Consider the use of electroencephalographic readings to study changes in energy.
4. Consider the use of hemoglobin as an indicator of energy change.
5. Explore other measures of pregnancy anxiety.
6. Consider the use of a high risk pregnant population with higher anxiety levels.

7. Consider the use of first trimester pregnant women.

8. Consider the concept of life stress and its relationship to complications of pregnancy.

Summary

Therapeutic touch has been shown to be effective in reducing state-anxiety in cardiovascular patients (Heidt, 1980; Quinn, 1983). The results of this study with a third trimester pregnant population did not replicate the previous research findings. Results indicate that therapeutic touch may not affect state-anxiety or well-being, and thus may be of little use in pregnancy.

Lack of significant findings may be due to design limitations such as small sample size, use of a therapeutic touch protocol that was not long enough to affect changes in anxiety and well-being, measurement error, or response set. The study findings may have been influenced by an anxiety-producing research environment, measurements that were not sensitive enough to measure subtle energy changes, and lack of a scientific way to measure energy change.

Therapeutic touch continues to warrant consideration by maternity and other nurses, considering the limitations of this study, previous research results, and the ancient, international roots of therapeutic touch, the "laying-on of hands."

Nurses should recognize the frequent occurrence of anxiety in pregnancy, and utilize recommendations to reduce anxiety such as meditation, positive thinking and affirmation, and exercise.

Recommendations for further research include replication with a larger sample size, utilization of a more comfortable research environment, and reconsideration of measurement and design aspects.

APPENDIX A

HUMAN SUBJECTS APPROVAL

**THE UNIVERSITY OF ARIZONA**

TUCSON, ARIZONA 85721

COLLEGE OF NURSING

MEMORANDUM

TO: Janet Nodine
Graduate Student

FROM: Linda R. Phillips, PhD, RN, FAAN *LRP*
Acting Director of Research

DATE: March 25, 1987

RE: Human Subjects Review: The Effect of Therapeutic Touch
on Anxiety and Well-Being in Pregnancy

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Subcommittee of the Research Committee and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research if you need access to it.

We wish you a valuable and stimulating experience with your research.

LRP/fp

APPENDIX B

ORAL EXPLANATION

Oral Explanation of Nurse-Client Interactions in Pregnancy Study

I am Janet Nodine, a Certified Nurse-Midwife and graduate student at the University of Arizona. I am conducting a nursing study on the non-verbal interaction between the pregnant client and the nurse. I am particularly interested in women pregnant for the first time, in the third trimester (28-42 weeks), not having any serious medical condition, not taking any regular or habitual medication, and able to read and speak English. I would like those of you meeting this criteria to please participate.

Your participation is on a voluntary basis and you can withdraw at any time without having to explain why. There are no known risks. Any information you give for the study is confidential and your identity will not be revealed.

If you agree to participate, I will ask you to:

1. Come to the Biological Studies Laboratory at the College of Nursing of the University of Arizona.
2. Fill out two questionnaires on feelings.
3. Be seated in a recliner chair, fully clothed, and relax for about 15 minutes. I will be the only one present with you. Your heart rate will be monitored during this time by placing two stick-on patches near your heart with wires that lead to a heart-rate monitor.
4. Repeat the two questionnaires on feelings, and answer some questions about your general background and health.

The process should last no more than one-half hour. Nothing invasive or intrusive will be done. I will be glad to answer any questions you have about the study at any time. The questionnaires are designed only to get your feelings; there are no right or wrong answers.

I am expecting that the information I receive from everyone in the study will help nurses to better understand how their interactions with pregnant women effect the pregnant woman's feelings, and to help nurses provide better nursing care for pregnant women.

If you are willing to participate, please give me your first name and phone number that I may call you to set up an appointment. I'll pass around a list for you to sign up on. I will give you directions on how to get to the College of Nursing when I call.

Do you have any questions at this time?

I thank you very much.

APPENDIX C

SUBJECT DISCLAIMER

SUBJECT DISCLAIMER

1. You are being asked to voluntarily participate in the study, "Nurse-Client Interactions in Pregnancy". The purpose of the study is to determine whether non-verbal, non-touch interactions between the nurse and the pregnant client effect feelings during pregnancy. This project will be used to fulfill one of the requirements for a Master's degree in Maternal-Newborn Nursing for the primary investigator. A possible use for the data collected includes publication in a scientific journal.

2. You are eligible to volunteer if you are pregnant for the first time, in your third trimester (28-42 weeks), have no serious medical condition, do not regularly or habitually use medication, and are able to read and speak English.

3. The project will be conducted while you are seated in a private room with only the investigator present, in the Behavioral Studies Laboratory of the College of Nursing, at the University of Arizona.

4. The project involves filling out two questionnaires about how you are feeling at the time. By responding to the questionnaires, you will be giving your consent to participate in the study. You will be asked to sit in a recliner chair, and to relax and breathe comfortably with eyes closed for fifteen minutes. Your heart rate will be monitored by placing two stick-on electrodes on your upper chest, with wires leading to a heart rate monitor. Then you will be asked to complete the questionnaires again. It is important that you give your honest feelings at the time you fill out the questionnaires. You will also be asked to answer some questions about your general background and health. The total time required of you is about one-half hour.

5. There is no cost or payment to you for participating. There are no known risks to you from participating in this study. There are also no direct benefits to you from your participation. The knowledge obtained about feelings during pregnancy may help nurses to better understand their non-verbal interactions with clients, and to provide better nursing care to pregnant clients.

6. The investigator, who will be with you throughout the project, is a registered nurse with advanced clinical knowledge and experience in maternal-newborn nursing.

7. Your name will not be identified with the information you provide on the questionnaires. You may complete all or part of this project and are free to withdraw from the study at any time. Whatever you decide, the investigator-subject relationship will not be affected in any way. Your participation or non-participation will also have no effect on the care you receive in the clinic or hospital. You may ask questions and receive answers about the study at any time.

8. Investigator:

Janet Nodine, BSN, CNM, RN
Graduate Student, Maternal-Newborn Nursing
The University of Arizona

9. Thesis Committee:

Dr. Pamela Reed, PhD, RN, Chairperson
Dr. Margarita Kay, PhD, RN
Dr. Joyce Verran, PhD, RN

APPENDIX D

INSTRUMENTS

SELF-EVALUATION QUESTIONNAIRE

Developed by Charles D. Spielberger
 in collaboration with
 R. L. Gorsuch, R. Lushene, P. R. Vagg, and G. A. Jacobs

STAI Form Y-1

Name _____ Date _____ S _____
 Age _____ Sex: M _____ F _____ T _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

VERY MUCH SO
 MODERATELY SO
 SOMEWHAT
 NOT AT ALL

- | | | | | |
|--|---|---|---|---|
| 1. I feel calm | 1 | 2 | 3 | 4 |
| 2. I feel secure | 1 | 2 | 3 | 4 |
| 3. I am tense | 1 | 2 | 3 | 4 |
| 4. I feel strained | 1 | 2 | 3 | 4 |
| 5. I feel at ease | 1 | 2 | 3 | 4 |
| 6. I feel upset | 1 | 2 | 3 | 4 |
| 7. I am presently worrying over possible misfortunes | 1 | 2 | 3 | 4 |
| 8. I feel satisfied | 1 | 2 | 3 | 4 |
| 9. I feel frightened | 1 | 2 | 3 | 4 |
| 10. I feel comfortable | 1 | 2 | 3 | 4 |
| 11. I feel self-confident | 1 | 2 | 3 | 4 |
| 12. I feel nervous | 1 | 2 | 3 | 4 |
| 13. I am jittery | 1 | 2 | 3 | 4 |
| 14. I feel indecisive | 1 | 2 | 3 | 4 |
| 15. I am relaxed | 1 | 2 | 3 | 4 |
| 16. I feel content | 1 | 2 | 3 | 4 |
| 17. I am worried | 1 | 2 | 3 | 4 |
| 18. I feel confused | 1 | 2 | 3 | 4 |
| 19. I feel steady | 1 | 2 | 3 | 4 |
| 20. I feel pleasant | 1 | 2 | 3 | 4 |



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VISUAL ANALOG SCALE OF
SUBJECTIVE WELL-BEING

Directions: Please mark on each line the degree of feelings of happiness, lightness, peacefulness, and well-being you are feeling right now.

Happiness

Least |-----| Most

Lightness

Least |-----| Most

Peacefulness

Least |-----| Most

Well-being

Least |-----| Most

SUBJECT INFORMATION QUESTIONNAIRE

Directions: Please CHECK or FILL IN the correct response.

Subject Number: _____

1. What is your age? _____
2. Is this your first pregnancy? _____
3. How many weeks pregnant are you? _____
4. Do you practice anything special to reduce anxiety? _____ If yes, what? _____
5. Have you had any special worries this pregnancy? _____ If yes, what? _____
6. What is your marital status? _____
7. Are you currently employed? _____
8. How many years of school have you completed?

9. What is your ethnic background? _____
10. Would you describe your financial status as:
____Secure ____Average ____Poor

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