This is to certify that the

thesis entitled

An Exploratory Study of Relaxation Response in Nurses Who Utilize Therapeutic Touch

presented by

Mary Miller Sies

has been accepted towards fulfillment of the requirements for

Master's degree in Nursing

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Date April 1, 1994

AN EXPLORATORY STUDY OF RELAXATION RESPONSE IN NURSES WHO UTILIZE THERAPEUTIC TOUCH

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE IN NURSING

College of Nursing

1994

ABSTRACT

AN EXPLORATORY STUDY OF RELAXATION RESPONSE
IN NURSES WHO UTILIZE THERAPEUTIC TOUCH

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The Therapeutic Touch (TT) is an advanced nursing intervention used to balance a client's energy field and potentiate a healing pattern which elicits a relaxation response. It is the purpose of this study to explore the existence of a relaxation response in the practitioner utilizing TT. Experienced practitioners of TT, as determined by a SETTS score of >97, who had practiced TT for at least a year and were actively practicing nursing (n=8) measured their peripheral skin temperature while performing TT. Fifty percent of the practitioners demonstrated a relaxation response. A Chi-square analysis of relaxation response and time of TT intervention revealed residuals of + or - 2.5, Pearson's Chi-square at 7.3 and a small observed significance level of 0.0007. A one-way analysis of variance of relaxation response to time of TT intervention showed a significant difference between groups (F=9, p=.0240). These findings demonstrated that a TT intervention of greater than 15 minutes has a significant effect on relaxation response in the practitioner. Implications for research and nursing practice are presented.

To my husband Richard,
Whose support and patience
have helped me expand my horizons
and fly.

ACKNOWLEDGMENTS

This research would not have been possible without the patience and assistance of many people. I am especially grateful to Gwen Wyatt, RN, PhD, and Rachel Schiffman, RN, PhD, for their guidance and expertise on the topic and in the research process, respectively, and for serving as co-chairpersons for this thesis. I would also like to thank the thesis committee members, Brigid Warren, RN, MSN, and Joan Predko, RN, PhD, for their expertise and support.

I would like to extend a warm thank you and hug to the life that surrounds me (human, animal, plant, and mineral) that has supported and nurtured me through this catharsis.

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Introduction

As the art, science, and philosophy of nursing evolves, those within the profession are challenged to move forward into new frontiers. This challenge is strikingly present as the health care system in the United States is in the midsts of dramatic change and restructuring. This challenge has the potential of accelerating the evolution of nursing into primary care in which the advanced practice nurse (APN) is the initial, first-line, health provider for the client. By following Nursing's Agenda for Health Care reform (American Nurses' Association, 1992), the APN will be more vulnerable to job stress because of increased primary responsibility for client care and emphasis on fostering change in the client.

The demands of primary care practice may be accompanied by all the stressors long experienced by physicians and particularly female physicians in primary care. APNs will need to develop strategies that decrease stress and allow continued high-level functioning. Nurses in advanced practice have historically used a variety of psychosocial interventions to assist the client, such as relaxation training, humor, counseling, assertiveness training, cognitive reappraisal, music therapy, and therapeutic touch, to mention a few. Most of the psychosocial interventions

are taught to the client by the APN based on her/his knowledge, time, and energy. Therapeutic touch (TT), on the other hand, is performed by the practitioner (APN) on the client. TT has a documented relaxation response in clients (Krieger, Peper, & Ancoli, 1979; Fedoruk, 1984; Kramer, 1990; Samarel, 1992; Heidt, 1990, 1991) and is an intervention the APN may use in her/his practice that may prove to have a relaxing effect on the practitioner as well as the client (Krieger et al., 1979; Heidt, 1990). TT is unique in that it may elicit a relaxation response in the APN who is treating a client and potentially decrease stress in the APN. This may be due, at least in part, to the meditative state intrinsic to performing TT. This differs from other stress reducing modalities that the APN may utilize for her/himself, because TT can be integrated into a busy practice. The APN does not have to take time out to initiate a stress reducing strategy for her/himself separate from the professional work environment.

The literature on physician stress and coping strategies is abundant. Bowman & Allen (1990) identify three major sources of unique stress for women physicians as being minority status/prejudice, lack of role models/mentors/ sponsors, and role strain. Gross (1992) studied the gender differences in physician stress and identified stressors specific to gender. Since the majority of APNs in primary care are presently women, this study is significant for APNs to identify stress reducers specific to gender.

The stressors most frequently reported by the respondents in the Gross (1992) study were the pressure of time demands, doctor-patient relationships, the responsibility inherent in the role, the conflict between career and family obligations, the inability to cure, and the threat of malpractice. Female physicians were more likely to be concerned about the responsibility inherent in the physician's role, whereas male physicians were most distressed by relationships with patients, the inability to cure, and the threat of malpractice. Since APNs in primary care will be practicing in a similar environment, they can expect to experience similar stressors as both male and female physicians. It is therefore important for APNs to develop strategies that minimize stressors in practice. One way is to promote interventions that elicit a relaxation response to decrease physiological effects of stress on the health professional. This thesis explored TT as one advanced nursing intervention that may be utilized by the APN as a strategy to reduce the practitioner's stress by eliciting a relaxation response during a typical day of practice.

Statement of the Problem

The APN role is in its infancy and there is testing, role ambiguity, role intensity, role uncertainty and, therefore, stress in this new position. While there is abundant research that addresses stress and the female

physician (Bowman & Allen, 1990; Manderino & Brown, 1992; Gross, 1992), none looks at the APN in primary care. The role stressors experienced by APNs may lead to role strain depending on intervening conditions, such as amount of role pressure, self-esteem, role mastery, and cultural factors (Ward, 1986). This role strain may then manifest in the APN with attributes of fatigue, exhaustion, depression, cognitive strain, insecurity, tension, and indecision (Ward, 1986). It is important for the APN to intervene early to positively address role stress before it advances to role strain. By avoiding role strain, the APN will be able to continue to interact therapeutically with clients.

Not much is known about the impact that various nursing interventions, such as relaxation training, cognitive reappraisal, humor, counseling, assertiveness training and TT, have on the APN. It is possible that one or more of these interventions may have a positive, stress reducing effect on the APN. This study explored one of these interventions, TT, and specifically, if it elicited a relaxation response and thus assisted in reducing stress in the practitioner.

Purpose and Research Question

APNs need to develop practical nursing interventions that promote wellness and decrease stress for themselves as practitioners. By maintaining a state of wellness, the APN may be less prone to errors, have increased satisfaction,

and be able to maintain more positive client interactions. Therefore, a study focusing on a stress reducing intervention that can be utilized by APNs should provide APNs with a means of coping with stressors of everyday practice.

The purpose of this study was to examine an advanced nursing intervention, TT, as a potential stress reducing modality for the APN. The specific research question was: Does the administration of TT to a client elicit a relaxation response in the practitioner?

Since there has been little research done on what effect the practice of TT has on the practitioner, this study was of an exploratory, descriptive design. At this level, the study design provided an exploration of a single concept--relaxation response--while describing the characteristics of a specific, single population: APNs who are administering TT. Because of the exploratory nature of this research, no inferences can be drawn from the data. It is hoped that the data will lead to suggestions of hypotheses for future studies.

Conceptual Definitions

Relaxation Response

Relaxation response is the antithesis of the stress response as is the parasympathetic response to the sympathetic response. By initiating a relaxation response, one then decreases the stress response. Benson (1975, 1993)

describes the state of relaxation as an innate physiological response that, once initiated, evokes specific physiological changes. These changes include a decrease in oxygen consumption, serum lactate, pulse, respiration, blood pressure, skeletal muscle tone, and a relaxation of smooth muscles in vessel walls (vasodilatation). This vasodilatation is the basis for measuring distal skin temperature to gage relaxation. It is assumed that vasodilatation will lead to increased skin temperature.

Fischer-Williams, Nigil and Sovine (1986) describe the physiological basis of thermal feedback (monitoring of temperature changes on the skin) as being linked to the sympathetic branch of the autonomic nervous system (ANS) and exercising significant control over distal skin temperature through electrochemical changes stimulated by norepinephrine and other neurotransmitters. Sympathetic activation leads to contraction of smooth muscles surrounding the peripheral blood vessels (vasoconstriction) which in turn results in lowered skin temperature as peripheral blood flow decreases. Conversely, parasympathetic activation causes relaxation of the smooth muscles in the vessel wall (vasodilatation) and increased distal skin temperature. Smith, Airey, and Salmond (1990) identify the prime reason for the effectiveness of relaxation in stress reduction is that it alters the ANS activity.

Specific psychological changes were also identified to occur during relaxation. These changes include a

decrease in anxiety and an increase in a sense of well-being (Benson, 1993). Benson (1993) and Pelletier (1993) both postulate that the physiological and psychological aspects of relaxation are not parallel phenomena but are interrelated. Likewise, Gelhorn and Kiely (1972) describe the reticular activating system as the communication mechanism between the cortical and subcortical areas of the brain. Since the cerebral cortex controls psychological activity and the subcortex controls physiological activity, it is logical to conclude that the two aspects of relaxation influence each other. Psychological relaxation can induce the physiological changes of relaxation, and physiological relaxation can promote the psychological changes of relaxation. The mental and physical aspects of relaxation are not two separate spheres but are intimately related (Herman, 1985).

Relaxation response is viewed by Kunz and Peper (1985) as a healing pattern in which the energy field expands and creates a primary mechanism for energy flow to be re-established or replenished. Therefore, for the purpose of this study, the relaxation response is defined as an integrated hypothalamic response which results in decreased sympathetic nervous system activity and some increase in parasympathetic activity (Benson & Rosner, 1974) and a repatterning of existing energy fields that allows for a flow of energy. For this study, relaxation response was

demonstrated by a physiological response (increased distal skin temperature) in the practitioner administering TT.

Therapeutic Touch

Therapeutic Touch is an advanced nursing intervention that was derived from the work of Krieger (1973). TT was later described by Krieger and colleagues (1979) as an act of healing or helping in which "there appears to be a transfer of energy from the healer (nurse) that helps the patient to repattern his/her energy level to a state comparable to that of the healer (nurse)" (p.660). Meehan (1990) viewed TT as facilitating energy field repatterning. This repatterning "occurs in the human-environmental energy field patterning as the nurse assumes a meditative state of awareness, recognizes his/her own unitary nature and integrality with the environmental field, and focuses his/her intent to help the patient" (p.6). More recently, Quinn and Strelkauskas (1993) have postulated that the TT practitioner, "knowingly participating in the mutual human/environment process by shifting consciousness into a state that may be thought of as a healing meditation, facilitates repatterning of the recipient's energy field through a process of resonance, rather than energy exchange or transfer" (p.14).

The framework of TT is based on a Rogerian conceptualization of the universe as an open system composed of a progressive dynamic series of wholes that are in

constant, evolving interaction with each other and lead to an ever-increasing order and complexity (Keller, 1984). In this open system, each whole is a subsystem and a reflection in miniature of the one system. It consists of an abstract conceptualization of subtle states of matter/energy having primacy over gross physical states. At its core is the concept of a life energy which is coextensive with the universe and in constant interaction and exchange with environmental energy fields (Rogers, 1990).

The concept of life energy is indispensable to TT as a healing phenomenon (Weber, 1981). Keller (1984) states that:

> Due to the openness and complete connection between the universe and all its subsystems, life energy can be channeled, sent and received, not only in its multitude of obvious physical forms, but in its pure essence as well. It is the fluid, versatile currency of life (p. 93).

Quinn and Strelkauskas (1993) postulate that life energy is not exchanged between the practitioner and recipient of TT, but that the repatterning of the recipient's energy field occurs through a process of resonance with the practitioner.

For the purpose of this study, TT is defined as a nursing intervention in which the practitioner intentionally repatterns/opens the energy field of the client by means of a healing meditation to allow for a flow and replenishing of energy through a process of resonance (Quinn & Strelkauskas, 1993). According to Kunz and Peper (1985), this elicits a

relaxation response in the client and practitioner. Since TT is conceptualized in a world of open systems in constant interaction, the practitioner should be affected by the TT interaction with a client as well as the client being affected by the practitioner.

Theoretical Framework

The majority of nursing research on TT utilizes Rogers' (1970, 1980, 1990) theory on the science of unitary human beings as a conceptual basis for understanding the phenomenon of TT. The concepts of energy fields, openness, and pattern are at the heart of Rogers' abstract system.

Rogers (1990) perceives a universe made up of open systems of energy fields that are integral with each other and in constant, evolving interaction. Energy fields are "the fundamental units of the living and the non-living" (Rogers, 1990, p.7). Field is a unifying concept between humans and their environments. Energy signifies the dynamics created by the human and environmental fields (Lutjens, 1991). According to Rogers (1990), it is the mutual, simultaneous interaction of these two energy fields through which healing occurs; a change in pattern takes place (See Figure 1). Pattern is an abstraction that cannot be seen; however, manifestation of a pattern can be observed. Patterns represent expressions of unique relationships of individuals and their environment. They display themselves as nonrepeating rhythms in behavior, such

OPEN UNIVERSE

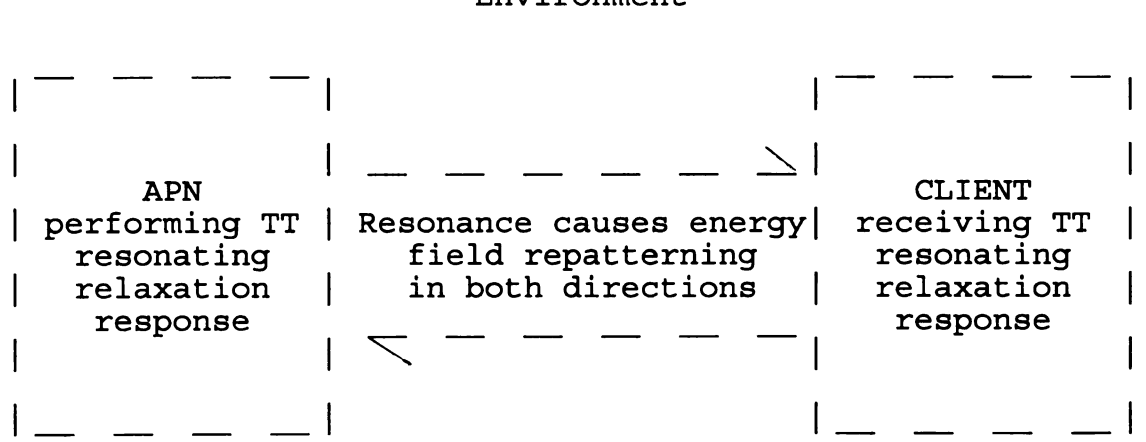

Figure 1. A model for the study.

The relationship of the APN and client as Unitary Human Beings in the Universal Environment and how an intervention such as TT resonates between the two and causes dynamic energy field repatterning.

as sleep and waking and perceptions of time and motion. Patterns are continually changing as energy fields remain in constant interaction in a universe of open systems. TT is viewed as facilitating energy field repatterning.

Simultaneous, mutual interaction of energy fields is a key concept to the action of TT. It is through this interaction that the practitioner of TT attempts to repattern the client's energy so that it is in a more balanced or healthful pattern. The healing pattern, in turn, creates a primary mechanism for energy flow to be re-established or replenished and yields a relaxation response (Kunz & Peper, 1985). Since the practitioner must create a healing pattern and energy flow in TT by assuming a meditative state of awareness and since energy fields are in simultaneous, mutual interaction, then the energy flow should yield a relaxation response in the practitioner as that pattern resonates between client and practitioner (See Figure 1).

Proposed Model for the Study

The building blocks of Rogers (1990) theory of Unitary Human Beings, openness, energy fields and pattern, explain the phenomena of TT and how a relaxation response may occur in the practitioner who is administering TT. The interrelationship of the Unitary Human Being and the environment are depicted in Figure 1. The Unitary Human Being and the environment are integral with one another and

constantly exchanging energy and repatterning in an open universe. The openness of the universe is depicted by broken lines. Any energy field that comes in contact with another will cause a change in pattern in both fields. The type and degree of change depends on the type of contact. The practitioner of TT has a positive intent to help a client by repatterning the client's energy field into a healing pattern which yields a relaxation response (Kunz & Peper, 1985). Since there is a mutual exchange or resonance of energy between practitioner and client, the practitioner should experience a relaxation response when doing TT, irrespective of what occurs with the client's energy field. The practitioner, in sending the healing pattern out, will have some of that same healing pattern reflected back on her/him because of the integral relationship of energy fields and by the process of resonance (Quinn & Strelkauskas, 1993). This multidirectional resonance of energy is depicted by the two-way arrow in Figure 1. Rogers (1990) states the human and environmental fields are a continuous and mutual process in which two fields are open systems integral with one another. The practitioner in interacting with the client becomes part of the client's environmental field, as does the client part of the practitioner's environmental field as illustrated by the broken lines and two-way arrow in Figure 1. Information from this study could provide the groundwork for future experimental research related to the effects of TT on the

practitioner who is administering TT and if TT is an effective strategy for stress reduction in the practitioner in a primary care practice.

Assumptions of the Model

1. The practitioner and client are Unitary Human Beings, irreducible energy fields in open, integral relationship with the universe in a constantly changing pattern.
2. The health care environment and its interventions are irreducible energy fields identified by patterns and are constantly changing in integral relationship with Unitary Human Beings.
3. There is a mutual exchange or resonance of energy between the TT practitioner and the client.
4. Stress is the antithesis of the relaxation response.
5. Relaxation response is created by a healing pattern which allows for a replenishing or repatterning of energy flow.

Review of the Literature

Most of the empirical research on TT has been directed towards effects on the client. Particularly, research has focused on anxiety reduction, pain reduction, and relaxation response in the client. Only three research studies have been done on what effect TT has on the practitioner. Quinn and Strelkauskas (1993) in a pilot study looked at

psychoimmunologic effects of TT on practitioners and recently bereaved recipients. Two TT practitioners and four recently bereaved individuals who received TT treatments were the subjects. Psychological profiles were obtained on both recipients and practitioners using the State-Trait Anxiety Inventory and the Affect Balance Scale and the Effectiveness of Therapeutic Touch Scale. Examination of data for state and trait anxiety scores for practitioners and clients did not reveal any obvious relationships between scores of recipients of TT and scores of practitioners. There was an average decrease in state anxiety following treatment of TT, of 29% in recipients, while practitioner's scores were at or close to no change. The researcher did not establish reliability or validity for the affect and effectiveness scales, so results obtained with these scales need further investigation.

A comparison of actual time elapsed during a TT treatment and practitioner and recipient estimation of time elapsed during TT treatment was performed. This comparison was made to evaluate if the shift in consciousness that is assumed to occur during TT is reflected in an individual's perception of time. The comparison raised questions about the degree of consciousness shift and the perceived effectiveness of the TT treatment by the client and what level of consciousness shift (time perception) is needed by the practitioner in order to enter a healing state of consciousness. Time perception was found to be parallel in

the client and the practitioner. Both perceived time shifting in the same direction--either shorter or longer than actual intervention time.

A profile of immune functions was developed for each practitioner and recipient and was drawn before and after the TT intervention. Findings were displayed as a percentage of change. While there was no conclusive interpretation of the data, Quinn and Strelkauskas (1993) stated the data indicated that the TT treatment had an impact on lymphocyte subset composition and improved the helping function of the immune system.

It is difficult to draw any conclusions or relationships with such a small sample size (two practitioners and four clients) as was employed in the Quinn and Strelkauskas study. Percentages are misleading. Larger, more controlled studies need to be done so that correlations between variables can be made. The Quinn and Strelkauskas (1993) pilot study does, however, provide direction for further research.

Heidt (1990) conducted a qualitative analysis of nurses' and patients' experiences of TT using a constant comparative method. A sample of fourteen persons, seven nurses who had studied TT as taught by Krieger and who had practiced TT for a minimum of three years and seven clients who were chosen by the nurses, participated in the study. All clients had previous TT treatments. One TT treatment was observed followed by a 90-minute, tape-recorded,

interview with the nurse and a 50-minute interview with the client. Broad descriptive questions formed the basis of the interviews. The data were coded using key words and phrases. It was noted that clients and practitioners had remarkably parallel experiences. The investigator therefore combined the categories of experience for both practitioners and clients to indicate their complementary nature.

"Opening" was defined as the core variable linking the experiences of the practitioners and clients in the process of giving and receiving TT. "Opening" was defined by Heidt (1990) as "(a) the experience of allowing oneself to focus intent on getting the universal life energy moving again; (b) assessing the quality of its flow; and (c) participating in a healing relationship that unblocks engages and enlivens its movement" (p. 182). The primary outcome for the practitioners as a result of the energy exchange with clients during TT was a continuous opening and/or deepening of their consciousness. The experiences of the clients during treatment paralleled those of the nurses. This definition of opening creates a relaxation response as defined by Kunz and Peper (1985); a healing pattern is established in which energy flow is re-established or replenished. These findings parallel Rogers' theory that patterns are continually changing as energy fields remain in constant interaction in an universe of open systems; one energy field affects another. The study (Heidt, 1990) is limited because of the small sample size which decreases the

generalizability of the data. It is, however, the basis for further research.

In 1979, Krieger, in collaboration with Peper and Ancoli, undertook a study which sought to identify physiological response of both the client and the practitioner of TT during a TT treatment. Three clients from the Pain and Stress Control Outpatient Department of a California hospital received TT from Krieger (the practitioner). No significant changes were found on any of the three clients when they were monitored using physiological measures from electroencephalogram (EEG), electromyogram (EMG), galvanic skin response, peripheral skin temperature, and heart rate. However, because of the high abundance of large-amplitude alpha activity found on the EEG in both the eyes-open and eyes-closed states, the clients were considered to be in a relaxed state. Alpha activity is usually associated with a closed-eyes state without visual orientation. Also, each client reported attaining a relaxed state during TT.

The practitioner, Krieger, was attached to EEG, EMG, and electro-oculogram (EOG) while doing TT as well as while she was not doing TT. In all experimental conditions, Krieger's recordings showed an unusual amount of fast beta EEG activity that indicated a state of deep concentration. There was no reported evidence of a relaxed state in the practitioner.

The study is limited in that the sample size was very small (three clients and one practitioner). In addition, one of the investigators was a subject and had a biased interest in the outcome of the study. Different measures of physiological response were used on the clients and on the practitioner without explanation. Bullough and Bullough (1993), in a critical review of TT research, state that this study was found to be methodologically flawed by Clark and Clark (1984) because different measures of response to treatment were used on the clients and the practitioner. No real conclusions may be drawn from the study, but it does raise questions for further research. Such as: Is it the meditative state that is intrinsic to TT which most affects the practitioner? Does the energy transfer that occurs in TT have any effect on the practitioner? If the client demonstrates a relaxation response, will the practitioner mirror that response? Is the practitioner's response to administering TT independent of the client's response to TT? This investigator looked at the practitioner's response to administering TT independent of the client's response to TT.

All three of these studies have the limitation of a small sample size in common. They all attempt to empirically define the phenomenon of TT, but from different vantage points. It would be more helpful to the research base of TT to expand on these studies by duplicating procedures with samples of sufficient size to have enough power to test hypotheses.

Findings of controlled, clinical efficacy studies of TT and relaxation response are mixed. Randolph (1980) tested the physiological responses of female college students to a stressful stimulus while being treated with TT and found no significant differences between the treatment group and the control group on each of the physiological variables. Collins (1983) also reported no significant differences between experimental and control groups on all physiological measures of relaxation response. Fedoruk (1984) and Kramer (1990) used physiological measures of relaxation response, such as pulse, peripheral skin temperature, galvanic skin response, and transcutaneous oxygen blood gas pressure to evaluate relaxation response after TT in premature neonates and children between two weeks and two years, respectively. Both researchers reported significant differences on arousal or time to calm children between control and experimental groups reflective of relaxation response in the TT experimental group as opposed to the control group. Heidt (1991) and Samarel (1992) performed qualitative studies that narratively described relaxation response in clients after a TT intervention.

The finding of the research literature on TT and relaxation response is mixed, at best. The question of sufficient power to draw any conclusions statistically is a problem in all the studies. Also, even though Fedoruk (1984) reported significant differences between groups,

there were methodological inadequacies that could have skewed the results.

The increase or decrease of anxiety closely parallels the presence or absence of the relaxation response. Several research studies have been conducted that look at the clinical efficacy of TT in relationship to anxiety. Heidt (1980, 1981) reported that TT significantly decreased situationally induced anxiety in hospitalized patients. Quinn (1982, 1984) also reported that TT significantly decreased anxiety in a similar patient population. However, Quinn (1989) was not able to duplicate this finding in a replication study. Parks (1985) did not find a significant decrease in anxiety in hospitalized patients treated by TT. Three studies of the efficacy of TT as an analgesic are reported (Keller & Bzdek, 1986; Meehan 1985, 1990). Keller and Bzdek (1986) found that TT could be effective in significantly reducing tension headache pain. Meehan (1990) found that TT, given in conjunction with narcotic analgesic medication, could reduce the need for further analgesic medication in post-operative patients. Meehan's (1990) study built upon an earlier, controlled study (Meehan, 1985) with some modification. The findings were replicated.

These studies (Heidt, 1980, 1981; Quinn, 1982, 1984, 1989; Keller & Bzdek, 1986; Meehan, 1985, 1990) demonstrate an increasing sophistication in research methodology. Sample sizes are much larger, ranging from 60 to 159, and researchers are meeting the parameters of a true

experimental design. However, it would increase the reliability of the research findings if more studies were double blind. Nonetheless, the studies in general lead towards an opinion that TT decreased anxiety in hospitalized patients and reduced the need for analgesic medication.

In summary, much of the research on relaxation response, anxiety, and pain in relation to TT has been either flawed methodologically and/or of small sample size. Also, research effort has concentrated on hospitalized clients or the client, not the practitioner. Those studies that have been conducted on hospitalized patients have been strong, and the majority have shown significant results. Only three studies have been done on the effect of TT on the practitioner and all three used small samples. It is important to begin filling in the gaps in the research on TT between effect on client and effect on practitioner. The purpose of this study was to begin addressing this need by examining the effect TT has on the practitioner.

Methods

This section presents the study design, sample, operational definitions, instruments, data collection procedures, data analysis, protection of human subjects, assumptions and limitations.

Study Design

This study was considered to be of an exploratory, descriptive design. Since there are only three previous studies on the effect of TT on the practitioner and only two of those relate to TT and relaxation response in the practitioner, the concept of relaxation response in the practitioner of TT needs further exploration and description.

Sample

There were 103 cover/consent letters (see Appendix A) sent to all known registered nurses (RNs) who attended TT workshops sponsored by a large midwestern university in the past five years (1989-1993). The study targeted APNs, which included RNs with advanced certification, but also included RNs who were not APNs. In order to be included in the study, participants needed to be RNs who were actively practicing nursing, had been practicing TT for at least one year, utilized TT at least six times a year, and obtained a score of 97 or better on the Subjective Experience of Therapeutic Touch Survey (SETTS) questionnaire. Forty-one persons responded for a response rate of 40 percent. Of those who responded, 18 persons (44%) did not wish to participate. Of the remaining 23 respondents, 4 (10%) did not qualify for the study because they were not RNs and 19 (46%) indicated consent and willingness to participate in the study.

Study packets were therefore sent to the 19 respondents who appeared to qualify. Eleven of the 19 respondents returned completed study packets. Three of the eleven respondents were dropped from the study because one had a SETTS score below 97, one had practiced TT less than a year, and it was unclear if one was a RN. Therefore, eight subjects comprised the sample for the study. All subjects were practicing registered nurses who utilized Krieger's method of TT, were willing to complete the required instruments, and were willing to perform TT twice using the required measures. Four (50%) of the subjects were APNs and four (50%) were RNs. The subjects had practiced TT at least one year, a minimum of six times a year, and obtained a score of 97 or better on the SETTS questionnaire. These subjects were considered to be experienced practitioners of TT for this study.

Operational Definitions

Therapeutic Touch

The operationalization of TT was explained to the practitioners as defined in Quinn and Strelkauskas (1993):

1. Quietly center yourself by shifting your awareness from an external to an internal focus, become calm and make the intent to assist the client therapeutically.
2. Assess the client's energy field from head to toe by holding one's hands 4 to 6 inches from the skin's surface and slowly moving the hands around and through

the entire energy field of the client while attuning to the condition of the client by becoming aware of sensory cues in your hands.

3. Redirect, with the hands, areas of accumulated tension/energy in the client's body.
4. Focus attention on the specific flow of energy to the client using the hands as focal points.

The ability of the practitioner to do TT was assessed using an established instrument, SETTS, a tool that differentiates experienced TT practitioners from inexperienced TT practitioners.

Relaxation Response

Relaxation response was operationalized using change in peripheral body temperature as a measure of relaxation. The mean temperature change of two TT interventions for each subject was utilized to evaluate relaxation response. This was done to strengthen the validity or reliability of the findings. An increase in peripheral digital body temperature by 4°F if the temperature started before 90°F or an increase in peripheral digital body temperature of at least 1-2°F if the starting temperature was at 90°F or above was indicative of a relaxation response (Fischer-Williams et al., 1986).

Instruments

Three data sources were used in this study.

Demographic data sheet: The first was a demographic data sheet developed by the investigator. The questions elicited information about age, sex, ethnicity, level of education, number of years practicing as a registered nurse, certification, if an APN, major area of work, number of years practicing TT, and frequency of TT practice.

Subjective Experience of Therapeutic Touch Survey: The second data source was SETTS, which served to categorize practitioners of TT into experienced and inexperienced TT practitioner groups. Krieger, the originator of TT, (Winstead-Fry, 1983) developed this tool with the intent to measure the extent to which an individual is performing TT. Krieger, with an expert in meditation, formulated 70 statements that she believed described the TT experience for the person performing TT. These statements became the items in the SETTS tool (see Appendix B).

The number of items are coded into four categories: Physical experiences (items 1-24), emotional experiences (items 35-42), mental experiences (items 43-54), and altered states of consciousness (items 55-68). There are two practice items. One practice item describes a mental experience and one item describes an emotional experience. A five-point Likert scale is used to reflect the frequency with which the experience described in the item occurs to the respondent while engaged in the process of TT, varying

from not at all (0) to all the time (4). All items in the tool are positively phrased except number 55. This item was reversed for analysis. The term healee is used in SETTS to refer to the client. For continuity in this study, the term healee was changed to client. SETTS has a reported Cronbach's alpha of .97 and the ability to distinguish between experienced and inexperienced practitioners of TT (Ferguson, 1986). The highest possible score on SETTS is 272. Ferguson (1986) describes a minimum score of 97 on SETTS as indicative of an experienced TT practitioner. For the purpose of this study, a score on SETTS of 97 or above was indicative of an experienced TT practitioner as confirmed by Meehan (1989). A score below 97 was indicative of an inexperienced practitioner of TT.

Thermometer: The thermometer was a small, portable, electronic unit produced by Human Measurement Systems that has a reliability of plus or minus 1°F (Human Measurement Systems' specifications). The thermometer was specifically designed to measure peripheral skin temperature. The unit has a range of 0°F to 160°F, can be calibrated and updates the temperature every one second. A small probe, 3-1/4 inches high by 1-3/4 inches wide was attached to the tip of the finger with tape and a 20-inch cord extends from the probe to the electronic measurement device which displays a digital readout. The investigator calibrated the thermometers for accuracy by comparing the thermometer readings of all thermometers at the same ambient room

temperature. Ten readings per instrument at one-minute intervals were recorded to determine variability among instruments and establish the error of estimate at a 0.99 confidence interval. The standard error of estimate was within a confidence interval of .44 to .86 at the 99% confidence level before intervention. A repeat test, after intervention, on six returned thermometers (two thermometers were missing) was found to have a standard error of estimate within a confidence interval of .05 to .45 at the 99% confidence level . The mean variation of the thermometers was therefore within the acceptable variation of plus or minus one degree Fahrenheit.

Data Collection Procedures

A cover/consent letter was sent to 103 potential participants from a mailing list supplied by the College of Nursing Outreach Office of a large midwestern university. A stamped, return envelope into which the subject placed her/his signed consent was enclosed. The letter indicated two of the three criteria for experienced practitioners. The SETTS criteria was not mentioned at this time. Those who felt that they met the criteria signed and returned the consent form. The consent indicated interest in participation in the study and included the name and address of the potential subject (See Appendix A). Included in the packet were the data instruments (demographic data sheet, SETTS and an intervention data sheet), instructions for

completion, a biofeedback thermometer (See Appendix B) and an addressed, stamped return envelope. Subjects were instructed to complete all questionnaires and two TT interventions with data collection and SETTS questionnaire in a two-week time frame. Completed questionnaires, results of the data collection, and the biofeedback thermometer were mailed back to the investigator in the supplied envelope.

Data Analysis

Data were summarized in several ways. Initially, SETTS scores were calculated to determine if subjects met the criteria for inclusion in the study by obtaining a score of 97. The demographic data were then compiled, and frequencies and percentages were calculated. The degree of change in digital temperature before and after TT intervention was calculated for two TT interventions and the means determined. Means, ranges, and standard deviations were calculated on room temperature, skin temperature before TT intervention, skin temperature after TT intervention, skin temperature change, and time taken for TT intervention. The frequency and percent of subjects meeting criteria (peripheral skin temperature increase of one degree Fahrenheit if baseline 90°F or greater or peripheral skin temperature increase of 4°F if baseline less than 90°F) and those not meeting the criteria for relaxation response were tabulated. Two groups were thus formed. One-way analysis of variance between skin temperature change and time of TT

intervention was done. Chi-square was computed to determine differences in proportion between the two groups.

Protection of Human Subjects

The study was approved by the University Committee on Research Involving Human Subjects (See Appendix C). The explanation of the research project provided in the cover letter informed each participant of the purpose, benefits, risks, and right to participation as well as non-participation without risk (see Appendix A). Confidentiality of each subject was assured by placing a two-digit numerical code on the tools, starting with 01, after they were returned. The name of the subject did not appear anywhere on the returned materials.

Assumptions of the Study

1. Subjects were able to follow the detailed procedure and answer the questionnaires supplied.
2. The thermometer was able to measure a 1°F change in skin temperature.
3. The subjects were experiencing some level of stress prior to doing TT.

Limitations

The study was limited in that it used a small convenience sample of eight practitioners who self-selected. This decreased the generalizability of the findings. Also,

chronic disease process, medications, nicotine product use, alcohol use, present infection in the practitioner, callous on fingertip, and meditative practices are variables for which there were no controls in this study.

Results

The purpose of this section is to present the study findings through: (1) description of the sample and (2) description of the study findings.

The sample, as illustrated in Tables 1 and 2, consisted of Caucasian females who had worked six or more years as RNs with 75% of them working in an institutional or agency setting. One participant was a family nurse practitioner working in a collaborative practice and one participant practiced in an ambulatory care pain management clinic. Two participants were family clinical nurse specialists, one working in collaborative practice and the other working in a hospital. Three participants had advanced certification: one family nurse practitioner (FCNS), one certified transcultural nurse (PhD in Nursing), and one certified geriatric nurse (BSN). Therefore, four subjects were APNs, one in primary care and three practicing in institutional settings, and four were RNs.

Mean SETTS scores for those meeting and not meeting criteria for relaxation response were 167 (range 123 to 230) and 153.5 (range 139 to 184), respectively. All subjects

obtained SETTS scores well above the score of 97. Therefore, no one was marginally experienced in TT.

Each of the eight study participants completed two TT interventions using the outlined procedure (See appendix A). The skin temperature change of the participant before and after the two TT interventions was calculated and averaged to yield an average skin temperature change in the TT practitioner. Four of the eight participants (50%) met the relaxation response criteria demonstrating an increase in peripheral skin temperature of at least 1°F if skin temperature started at 90°F or of 4°F if skin temperature started below 90°F (range 1.6 to 20.1) after the TT intervention. The other four participants (50%) did not meet the criteria for relaxation response demonstrating a peripheral skin temperature change of -3.2 to +0.8. Room temperature ranged from 68°F to 73.6°F (see Table 3 for description of the sample). There was no significant proportional difference in the number of participants who met the relaxation response criteria and those who did not meet the criteria ($X2(1, N=8)=0$, $p>.05$), with a mean of 69.8°F (n=16; SD=1.5). The time taken for the TT intervention was a mean of 11.9 minutes (n=16; SD=6.2) with a range between 5 and 26 minutes. One participant had a very large average skin temperature change of +19.75 with an average intervention time of 23 minutes (see Table 3).

There was no significant observed relationship between the variables of SETTS and level of practice (APN or RN) to

Table 1. Summary of Demographic Data

Category	Frequency	Valid Percent
Age		
30-39 years	2	28.6
40-49 years	3	42.9
50-59 years	2	28.6
Missing data	1	00.0
Total	8	100.0
Years working as a RN		
6-15 years	2	25.0
16-25 years	4	50.0
25 or more years	2	25.0
Total	8	100.0
Work Area		
Med/Surg or ICU	2	25.0
Parent/child/women health	2	25.0
Public health/education/hospice	2	25.0
Independent/collaborative practice	1	12.5
Other (pain clinic; write in)	1	12.5
Total	8	100.0
Education		
Associate Degree	2	25.0
BSN	2	25.0
BS other than nursing	1	12.5
MSN	2	25.0
PhD in nursing	1	12.5
Total	8	100.0

Table 2. Summary of TT Experience

Category	Frequency	Valid Percent
Years Practiced TT		
1-3 years	5	62.5
4-6 years	3	37.5
Total	8	100.0
How Often Utilize TT		
6 times a year	1	12.5
Once a month	2	25.0
Once a week or more	5	62.5
Total	8	100.0

relaxation response (See Table 3). APNs did not have higher SETTS scores than RNs or vice versa. Nor were high SETTS scores predictive of a demonstrated relaxation response. Review of the data in Table 3 suggested a relationship between time and relaxation response. Among those who did not meet relaxation response criteria (n=4), the mean time for the TT intervention was 8.6 minutes (SD 1.2, range 5 to 12 minutes). For those who did meet relaxation response criteria (n=4), the mean time for the TT intervention was 15.3 minutes (SD 2.5, range 5 to 26 minutes). A one-way analysis of variance of relaxation response between the two groups on mean time of TT intervention indicated a significant time of TT intervention effect, ($F(1, 8)=9$, $p<.05$). Therefore, those subjects who demonstrated a relaxation response demonstrated a significantly longer TT intervention time (See Table 4).

Time of TT intervention was therefore divided into two groups: (1) TT intervention of 15 minutes or greater; and (2) TT intervention less than 15 minutes. Study alpha was set at .05. A Chi-square analysis of relaxation response and time of TT intervention revealed significant proportional differences between the groups with the relaxation group having the larger intervention time, ($X_2(1,N=8)=7.3$, $p<.05$). Of the subjects whose mean TT intervention time was 15 minutes or greater (n=4), all demonstrated a relaxation response. Of those subjects whose mean TT intervention time was less than 15 minutes (n=4), 73

Table 3. Summary of Intervention Data

ID#	MRT	MSTBTT	SD	MSTATT	SD	MSTC	SD	MT	SD	SETTS	APN or RN
01	72.5	91.2	7.1	97.5	0.5	+6.3	6.6	5.5	0.7	123	*APN
02	68.6	71.8	2.1	70.3	2.1	-1.5	0.1	8	0.0	149	RN
03	69.8	95.7	0.8	95.7	1.3	0.0	0.5	11	1.4	184	RN
05	71.0	73.6	5.2	93.3	5.7	+19.7	0.5	23	4.2	230	*RN
06	69.3	91.4	0.3	93.7	0.1	+2.3	0.2	17.5	4.9	175	*APN
07	68.5	92.0	0.1	92.8	0.2	+0.8	0.1	6.5	2.1	142	APN
10	70.2	82.4	15.1	80.2	13.6	-2.2	1.4	9	1.4	139	APN
11	69.0	93.5	1.4	96.7	1.5	+3.2	0.1	15	0.0	140	*RN

Note:
MRT=Mean room temperature
MSTBTT=Mean skin temperature before TT
SD=Standard deviation
MSTATT=Mean skin temperature after TT
MSTC=Mean skin temperature change
MT=Mean time of intervention (in minutes)
SETTS=Subjective Experience of TT Survey score
APN or RN=Advanced practice nurse or registered nurse.
* Demonstrated a relaxation response by definition of the study.

Table 4. One-way Analysis of Variance of Relaxation Response to Mean Time of TT Intervention

Relaxation Response by Mean Time of TT Intervention					
Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	1.2000	1.2000	9.000	.024
Within Groups	6	.8000	.1333		
Total	7	2.0000			

percent demonstrated no relaxation response and 27 percent demonstrated a relaxation response. Therefore, it is highly likely that relaxation response is related to time of TT intervention.

Discussion

The current research was an effort to explore the effect of TT on the APN, relative to relaxation response. In this study, half of the subjects met the criteria for relaxation response. This may be due to variables for which there were no controls. One subject who did not show a relaxation response reported that she had just had a baby and that she had noted that her hands were cooler than usual. Other variables might be chronic disease condition, medications, nicotine use, alcohol use, present infection in the practitioner, callous on fingertip to which probe was attached, distractions during TT intervention, stress level of the practitioner, and meditative practices. Also, the ability to correctly use the thermometers provided by the study and if the thermometer hindered the TT treatment or distracted the practitioner were variables for which there were no controls.

These results support an inconclusive trend that has been illustrated in previous research (Quinn & Strelkauskas, 1993; Heidt, 1990; Krieger et al.; 1979) concerning TT and its effect on the practitioner. Quinn & Strelkauskas' (1993) study showed scores at or close to zero change in

state and trait anxiety scores for practitioners before and after TT intervention. However, this study suggested a positive influence of TT on practitioner immune system and raised questions about time of TT intervention, its relationship to an altered state of consciousness, and its effect on the resonance of a healing pattern (relaxation response) between the practitioner and client. Heidt's (1990) study described a qualitative outcome for all the TT practitioners of a continuous opening and/or deepening of consciousness which, as defined by Kunz and Peper (1985), creates a relaxation response. While the Krieger et al. (1979) study reported no evidence of a relaxed state in the practitioner, it appears that the effect of TT on the practitioner is hard to quantify and lends itself better to qualitative description. The quantifiable data related to TT and the practitioner has been collected on sample sizes too small from which to draw conclusions. It can only raise questions for further research.

As with previous research, the sample size of this study had insufficient power to make statistical inferences. The intent of the researcher was to obtain 30 study participants. However, only eleven persons completed the data collection, and three of those persons did not meet the criteria for the study. This may have been due to the fact that data was collected over the winter holiday seasons (November-December). Also, there may have been a significant difference in those who did not participate in

the study. Their ability, confidence, and experience with TT and time and place in which to perform TT may have caused them to self-select not to participate in the study. Subsequently, the study is limited to describing the data without drawing any inferences or being able to show trends. Four of the subjects were APNs and four were RNs. As stated earlier, there was no significant proportional difference in APNs or RNs who demonstrated relaxation response. The study does act as a pilot, but leaves the research question unanswered. Instead, it raises questions about the relationship of time of TT intervention and relaxation response. It also emphasizes the importance of method and sample size.

Because of the results and limitations, this study neither supported or refuted Rogers' theory of Unitary Human Being. In terms of this study, it is still open to question if a healing energy resonates from the practitioner to the client and back to the practitioner in a never-ending repatterning and flow of energy as the practitioner includes the client in her/his environment. Also, the question of whether this resonation of healing energy can be demonstrated by the defined relaxation response remains unanswered.

Implications

It is important that APNs utilize some strategy to assist in maintaining balance and energy in a busy practice

setting. If TT does elicit a relaxation response in the practitioner, as suggested by this descriptive study, then this unique nursing intervention has the potential to decrease stress in a primary care practice and help the practitioner remain more focused and efficient. However, if time is the major variable for eliciting a relaxation response in the practitioner (mean 15.3 minutes), TT may be impractical to use spontaneously in a busy primary care setting because of time, caseload, and financial constraints. Therefore, it may be better to schedule an appointment specifically for the purpose of a TT intervention and code the visit relative to a reimbursable procedure, such as pain management or hypertension management. For example, the practitioner may set aside a four hour time block once a week specifically for performing TT along with other alternative nursing interventions. Another option is for the APN to utilized the simple act of centering, intrinsic to TT when coming into contact with all clients; this intervention has the potential for relaxing the APN and the client. This effect has been suggested by Heidt (1990). It may be that one need not perform an entire TT intervention in order to elicit a relaxation response if the APN uses centering with each client contact. Further research may want to pursue this possibility.

The APN can integrate TT into the larger plan of care for the client and evaluate how TT can be utilized to empower the client and the family. This may be through

individual treatments or teaching the client and/or family how to perform TT. This type of empowerment has the potential for a positive effect on all concerned--the practitioner, client and family.

As the APN becomes confident in clinical skills and expertise in TT increases, she/he may be able to integrate TT with the physical assessment of the client. This would eliminate the pressures of time, and perhaps both client and APN may receive the benefits of TT. It would be important for the APN to measure outcomes related to TT interventions, such as increased sleep in an anxious client or a decrease in pain as evidenced by improved ability to perform activities of daily living in a client with cancer. These outcomes could be both short and long term. Utilization of the TT intervention would help substantiate the clinical efficacy of TT and be an interesting area for further research.

It is recommended that future research draw upon a large sample which might be available from groups such as the Nurse Healers Association and/or the American Holistic Nurses' Association in an effort to obtain more power. With a larger pool, the researcher may be able to add the qualifying criteria that the subject be an APN in primary care. This would allow a future study to focus more on the effect of TT on APNs in primary care. Data collection could be more controlled by collecting the data at one or more nursing conferences and having subjects in similar

environments with impartial, trained data collectors. This would eliminate some variables, but one would lose the "clinical setting".

It may also be possible to concurrently measure other indicators of relaxation response, such as pulse rate and oxygen saturation, to strengthen evidence of relaxation response in the practitioner during TT. At the same time, variables could be controlled so as to strengthen statistical findings. It would be interesting to assess time of TT intervention in relation to relaxation response in a larger population and evaluate if the 15-minute intervention time remained significant.

Refinement and decreased cost of instrumentation would be possible by utilizing the DermaTherm perfusion monitors by Sharn, Inc. These monitors are accurate within one-half of 1°F and are less cumbersome than the thermometers utilized in this study. It would be important for one to research existing technology to evaluate the most appropriate instrument at the time.

Summary

The purpose of the study was to explore the existence of a relaxation response in the practitioner of TT while performing a TT intervention. It was felt that if TT elicits a relaxation response in the practitioner, it may be utilized as a stress reducing strategy for the APN. The study results were critiqued in light of the conceptual

framework and current literature on the topic. Recommendations for nursing practice and future research were discussed bearing in mind the limitations of the study. How the findings in this study may contribute to advanced nursing practice and primary care were described. This study is a beginning in identifying and defining the potential of TT. Given the potential for relaxation that TT offers the practitioner, it behooves further investigation for the utilization of this advanced nursing intervention in primary care.

APPENDICES

APPENDIX A

COVER LETTER AND CONSENT FORM TO STUDY PARTICIPANTS

APPENDIX A

COVER LETTER AND CONSENT FORM TO STUDY PARTICIPANTS

Dear Fellow Practitioner of Therapeutic Touch:

I am a master's student in the College of Nursing at Michigan State University working with Dr. Gwen Wyatt. The purpose of my master's thesis is to investigate the effect of Therapeutic Touch (TT) on the practitioner as a result of performing TT.

The sample for this study is made up of registered nurses who are actively practicing nursing. The sample will consist of experienced practitioners of Krieger's method of TT who have practiced TT for at least one year with a minimum of six treatments per year. Completion of the SETTS and demographic questionnaires will take approximately 20 minutes.

In addition, you are also asked to perform TT using the steps described in the packet on a client of your choice. You are asked to record the room temperature, take a digital skin temperature on yourself with the thermometer provided just before the TT intervention and just after the intervention, and record your readings on the data sheet provided. You are to perform this procedure twice and return the completed research packet and electronic thermometer within a two week time frame. The completion of your questionnaires (demographic data sheet and SETTS) do not have to be done concurrent with the TT interventions. It may be done at any time within the two week time frame.

Your participation in this project is completely voluntary. You may choose not to participate, you may choose to participate in only certain procedures or answer only certain questions and may discontinue the study at any time without penalty. Please sign and date this letter below and return it in the provided envelope, if you are willing to give your informed consent to participate in this study. Your name will not be used in any report of this study, only group data will be reported.

Your participation will be most helpful in providing valuable information on the effect TT has on the practitioner. All individual responses will remain confidential. I will send a final abstract to any participant who wishes to receive one.

If you have any questions, please call me or write to the address below. I would appreciate your returning the consent form as soon as possible, so that I can mail you the research packet.

Thank you for your assistance in this study.

Sincerely,

Mary M. Sies, RN, BSN
2820 Osseo Road
Hillsdale, MI 49242
(517) 287-5835

I, _____
consent to participate in the above study.

Signed _____
Date _____

APPENDIX B

APPENDIX B

SUBJECTIVE EXPERIENCE OF THERAPEUTIC TOUCH SURVEY (SETTS)

INSTRUCTION: For each of the itmes listed on the following pages, please blacken, with a number 2 pencil, the appropriate oval on the computer answer sheet. The responses reflect the frequency with which the experience described in the item occurs to you while you are engaged in the normal touching of patients occurring during care. The ovals are labeled A through E. The meaning of each letter is:

A = not at all
B = once in a while
C = frequently
D = almost always
E = all the time

The following two items are practice items:

Practice 1. I am aware of a part of my own being that is verbally or intuitively supplying me with knowledge of the healee's illness.

Practice 2. I feel the totality of beingness and openness to the healee and other people around me.

SURVEY ITEMS

When I do TT:

1. My heart and respiration rates feel slower.
2. My breathing becomes slower and deeper.
3. I feel a sensation of heat and/or cold in my hands.
4. I feel tingling sensations in my hands.
5. I feel pressure in my hands.
6. I feel an electric shock sensation in my hands.
7. I feel energy pulsations in my hands.
8. I have the feeling that my hands are being spontaneously drawn to a particular area in the client's field.
9. I feel heat coming from my hands.
10. I seem to be able to maintain an uncomfortable posture much longer than usual.
11. I seem to stand or kneel straighter than usual.
12. My body movements become subtle, soft and flowing.

13. I become very sensitive to how I move my body and whether I am in an awkward or stressful position.
14. My movements feel slow, steady, smooth and alert.
15. I feel energy moving through me and out of my hands.
16. Energy flows more freely in my body.
17. I get a sense of stillness and balance in my body, mind and emotions.
18. My body feels in harmony and seems to be an instrument through which energy flows.
19. My body feels quiet, calm and relaxed.
20. I feel energy flowing rhythmically and evenly within my body.
21. I feel physically balanced, lined up or integrated.
22. I feel as though my whole body is working in unison.
23. I have a sense of physical and psychological attunement.
24. All my senses are heightened and sharpened.
25. I feel very close to the person I am healing.
26. I feel impersonal love for the client, regardless of whether I liked the person before TT or not.
27. I feel loving and accepting toward myself and the client.
28. I am more aware of my own emotions.
29. My own emotions seem to be set aside during the healing process.
30. I feel a sense of calmness, peace and inner strength.
31. I feel detached and purposeful.
32. I feel an increase in sensitivity.
33. I feel an increase in empathy.
34. I feel an increase in compassion.
35. Emotions of love and peace feel like waves of energy going from me to the client.
36. I am aware of the emotions of the client as different qualities of energy.
37. I feel joy.
38. I trust that I have understanding at a level other than my conscious experience.
39. I have a sense of the therapeutic touch process being a totally integrated flowing interaction.
40. I feel expansiveness.
41. I see spontaneous mental images that let me know what is going on in the client.
42. I am most aware of the client and less aware of activity going on in the surrounding environment.
43. When I focus attention on my hands and my feelings, the external environment seems to recede.
44. When I am focusing on the therapeutic touch process, my mind seems to split into one part that is primarily attending to the healing process and another part which simply remains in touch with events in the environment.

45. My mental perception seems clearer during the therapeutic touch process.
46. My thought processes seem to spring from intuitional insight rather than rationality.
47. I have no thought during the therapeutic touch process.
48. My thought processes seem to slow down.
49. I have thoughts, but I don't attend to them unless they relate to the client and the therapeutic touch process.
50. My thoughts stop and intuitions, images and impressions take over.
51. I recognize imbalances in the client's field.
52. I am aware of consciously directing my attention inward in order to center myself as I start the therapeutic touch process.
53. My sense of concentration increases.
54. I am more aware of my inner being.
55. I am not aware of time during the therapeutic touch process.
56. I feel as if time stops.
57. I feel as if time slows down.
58. I feel as if time speeds up.
59. Whiles doing therapeutic touch, I feel that all personality patterns of the client disappear and all I see is her/his inner beauty.
60. I feel unified with the client.
61. My body feels like an expanding mass of energy.
62. I feel as if my body is dissolving away and that I am becoming boundless.
63. I experience my body as a continuous flow of energy rather than a set of distinct parts.
64. My cognitive processes seem to step into the background and become secondary to a more intuitive process of knowledge.
65. Parts of my body not actively involved in the therapeutic touch process feel heavy or nonexistent.
66. I have a feeling of being united with the external environment.
67. I have a sense of my own wholeness beyond my personality.
68. I am aware of a part of my being that is verbally or intuitively supplying me with knowledge of how best to direct energies to the client's field.

DEMOGRAPHIC DATA SHEET

Please complete the following information. Circle the responses that apply to you.

69. Age in years:
    A. 20-29 B. 30-39 C. 40-49 D. 50-59 E. 60-69 F. 70+
70. Sex
    A. Female B. Male
71. How many years have you been a registered nurse?
    A. Less than 1
    B. 1-5
    C. 6-15
    D. 16-25
    E. More than 25
72. Major area of work
    A. Hospital or ambulatory setting: Med-surg/ICU
    B. Hospital or ambulatory setting: Psych
    C. Hospital or ambulatory setting: Parent/child/women's health
    D. Public Health/Education/Hospice
    E. Independent practice/collaborative practice
    F. Other. Please describe. _____
    _____
73. Ethnicity
    A. Asian
    B. Afro-American
    C. Caucasian
    D. Hispanic
    E. Native American
    F. Other. Please write in here._____
74. Educational level (circle all that apply to you)
    A. Associate degree/diploma in nursing
    B. Baccalaureate degree in nursing
    C. Baccalaureate degree in other than nursing
    D. Master's degree in nursing
    E. Master's degree in other than nursing
    F. Doctorate in nursing
    G. Doctorate in other than nursing
75. Were you trained in the Krieger method of therapeutic touch?
    A. Yes
    B. No

76. About how many years have you been practicing therapeutic touch?
    A. Less than 1
    B. 1 - 3 years
    C. 4 - 6 years
    D. 7 - 9 years
    E. More than 10 years
77. On the average, how often do you utilize therapeutic touch?
    A. Not at all
    B. 3 times a year
    C. 6 times a year
    D. About once a month
    E. About 3 times a month
    F. About once a week or more
78. Are you a clinical nurse specialist (CNS) or advanced practice nurse (APN)?
    A. Yes Please describe. _____
    _____
    B. No
79. Are you a certified CNS or APN by American Nursing Association or another organization?
    A. Yes Please describe. _____
    _____
    B. No

Instructions for Performing Therapeutic Touch Intervention

1. Select a client of your choice.
2. Record thermometer code number on record sheet.
3. Measure the ambient room temperature just before the TT treatment by placing the provided thermometer and probe on a non-metallic surface in the room. Do not unwind the thermometer probe at this time. Make sure the switch on the left is in the up position to record degrees Fahrenheit and that the switch on the right is in the down position to record temperature. Record the digital reading after one minute in the column headed "room temperature reading before TT".
4. Once you are ready to begin, unwind the thermometer probe and attach the probe on the palmar side of the middle finger of your right hand with the probe taped to the tip of your finger. See diagram 1. Make sure the unit is set on Fahrenheit and temperature. Wait one minute and record the thermometer reading on the provided record sheet in the column labeled "skin temperature reading just before the TT treatment".

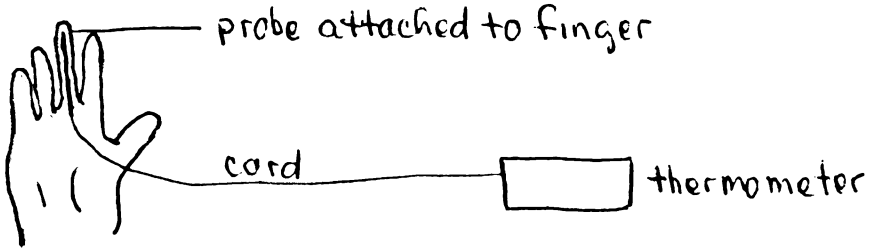

Diagram 1: Application of thermometer

5. Perform TT using the steps provide with the thermometer remaining attached to your finger. You may take as long as necessary to complete the treatment. Please record start time and finish time of TT treatment on the record sheet.
6. Please perform TT in the following way:
   a. Quietly center yourself by shifting you awareness from the external to the internal focus, become calm and make the intent to assist the client therapeutically;
   b. Assess the client's energy field from head to toe by holding one's hands 4 to 6 inches form the skin's surface and slowly moving the hands around and through the entire energy field of the client while attuning to the condition of the client by becoming aware of sensory cues in your hands;
   c. Redirect, with the hands, areas of accumulated tension/energy in the client's field;
   d. Focus attention on the specific flow of energy to the client using the hands as focal points to balance the client's energy field.
7. Immediately after your TT treatment, record your peripheral skin temperature from the thermometer attached to your right, middle finger in the column labeled "skin temperature immediately after the TT treatment".

Within the two week data collection period, please repeat all steps of this procedure. You do not need to use the same client nor the same physical environment, but you may if you wish. The two interventions may be performed anytime within the two week time frame.

RECORD SHEET

Directions: Please record information asked for treatments one and two (items 1-8).

	Date _____ 1st TT Treatment	Date _____ 2nd TT Treatment
Before TT		
After TT		
5. Skin temperature reading immediately after the TT treatment	_____	_____
6. Finish time of TT treatment	_____	_____
Anytime		
7. Environment in which TT done		
A = Hospital	_____	_____
B = Home	_____	_____
C = Clinic/office	_____	_____
D = Other (please specify)	_____	_____
8. Same client for each TT intervention	_____ Yes	_____ No

APPENDIX C

UCRIHS APPROVAL LETTER

MICHIGAN STATE
UNIVERSITY

October 13, 1993

TO: Mary M. Sies
2820 Osseo Road
Hillsdale, Michigan 49242

RE: IRB #: 93-455
TITLE: AN EXPLORATORY STUDY OF RELAXATION RESPONSE IN NURSES WHO UTILIZE THERAPEUTIC TOUCH
REVISION REQUESTED: N/A
CATEGORY: 2-C
APPROVAL DATE: October 13, 1993

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project including any revision listed above.

Renewal: **UCRIHS approval is valid for one calendar year, beginning with the approval date shown above.** Investigators planning to continue a project beyond one year must use the enclosed form to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

Revisions: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the enclosed form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable. the year, please outline the proposed revisions in a letter to the Committee.

Problems/ Changes: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517) 355-2180 or FAX (517) 336-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:pjm

cc: Dr. Gwen Wyatt

OFFICE OF
RESEARCH AND GRADUATE STUDIES
University Committee on Research Involving Human Subjects (UCRIHS)
Michigan State University
225 Administration Building
East Lansing, Michigan
48824-1046
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FAX: 517/336-1171

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