

**Physiologic and Psychodynamic Responses of Critical Care Patients to the Administration of
Therapeutic Touch**

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Abstract

Therapeutic Touch (TT) is a method of communicating 'I care' (Sayre-Adams and Wright, 1995) and providing undivided attention to another person. It may be considered a healing meditation (Cox and Hayes, 1999; Hayes and Cox, 1999). However, there are many ways in which people touch others, and many ways in which people respond to being touched. In today's healthcare system where high technology and complex medical treatments that distance the practitioner from the patient prevail, it is recognised that critical care environments are stressful for patients. Continuous bright lighting, and excessive noise prohibits the potential for relaxation and sleep. Consequently, many nurses are administering complementary therapies in an effort to promote comfort and reduce the anxiety experienced in high technology settings. TT is one of the complementary therapies that is being provided by some nurses (Hayes and Cox, 2000). Since 1998, publications have begun to question the efficacy of TT. The focus of attention in these publications has been on substantiating the existence of the recipient's energy field rather than on the physiologic and psychodynamic responses of the recipient to TT. In this paper the physiologic and psychodynamic responses during and following the administration of TT to critically ill patients are described. The research project described, involved the implementation of a time series design

in which physiologic and psychodynamic responses were measured. Within this context, the control of confounding variables was not possible, and therefore not an object of concern in the study.

Rather the responses to TT in the natural setting were of importance to discern.

Statistical repeated measures analysis of variance (one way) indicated there was no significant difference between pre, during and post physiologic variables in response to TT. However psychodynamic responses demonstrated significant correlation in terms of relaxation and sleep.

The non-significance of physiologic change in variables pre, during and post administration of TT indicates critically ill patients remained physiologically stable. Significant correlations of psychodynamic responses demonstrated it is possible for critically ill patients to experience periods of relaxation and sleep in an otherwise stressful environment. TT was found to be a useful therapy to enhance relaxation and sleep in critically ill patients.

Introduction

In this paper the findings of a one-year study examining the physiologic and psychodynamic responses to Therapeutic Touch (TT) in a critical care setting are described. Physiologic data has been triangulated to psychodynamic (experiential) data to illuminate responses to and outcomes of receiving TT. Rationale for the study was based on identification of a paucity of triangulated data in published research projects involving TT.

Historical Background

As has been described in previous papers published in the *Journal of Complementary Therapies in Nursing and Midwifery* (Cox and Hayes, 1997; Cox and Hayes, 1998) TT is a non-pharmacological

intervention that is administered with the intent to help others (McCrae, 1993; Sayre-Adams, 1994; Sayre-Adams and Wright, 1995). It is postulated TT can facilitate healing (Meehan, 1992; Quinn, 1993).

The technique of TT is a derivative of laying on of hands which is professed to be a-religious (Sayre-Adams and Wright, 1995). It is a trans-cultural intervention that employs principles associated with energy. McCrae (1993) indicates interactions occur between human energy fields and other energy fields. Rogers (1970) viewed human beings as open energy systems that extend beyond the boundaries of what is visually perceived as the self. Human beings are more than and different than the some of their parts (Rogers, 1970). The human energy field is normally balanced, however in states of physical or psychological disease or discomfort an imbalance in the human energy field may occur.

Research in which TT has been administered as a therapeutic intervention has evidenced a reduction in the anxiety level of hospitalised patients (Heidt, 1981), a reduction in preoperative anxiety experienced by open heart surgery patients (Quinn, 1984), a reduction in tension headache pain (Keller and Bzedk, 1986), a reduction in the perceived experience of postoperative pain (Meehan, 1991), the promotion of rest (Heidt, 1991; Samarel, 1992), the reduction of stress (Olson et al, 1992), an enhanced immune system of Therapeutic Touch practitioners and their clients (Quinn, 1993), the reduction of anxiety amongst patients in intensive care (Cox and Hayes, 1997), new and deeper meaning of total being (Green, 1998), experiences of relaxation, comfort, sense of peace and a new understanding of self (Cox and Hayes, 1998) and an enhanced self-awareness that facilitates introspection on the part of the TT practitioner and their recipients of TT (Hayes and Cox, 1999).

Of particular note is the work of Heidt (1991) and Samarel (1992) in which the experiences of giving and receiving TT were examined within the conceptual framework of Rogerian Science (Rogers, 1970; Rogers, 1990). Although it was identified that TT was found to be of benefit to patients, little report of physiological responses to TT or the actual descriptors that were expressed by the recipients was provided in their published works. In both studies a qualitative method was employed. The fullness of the phenomenon as experienced physiologically and psychodynamically by recipients should be made extant to contribute to the growing body of knowledge associated with TT.

Critiques of Therapeutic Touch

Recently articles critiquing the efficacy of TT have been published. These range from news paper articles debunking 'energy healing' (Kolata, 1998) to allegations of mysticism and research studies that are poorly designed and principally associated with doctoral dissertations in the United States (Rosa et al, 1998). These critiques have focused on the quest to substantiate the energy field of the recipient rather than considering the subsequent response of the recipient to the treatment.

TT is practised widely throughout the United States (Rosa et al, 1998; Kolata, 1998) and is gaining in popularity in the United Kingdom. It is argued in this paper that the focus of attention in critiques is misdirected. Consideration should be given to the recipient's physiologic and psychodynamic response to TT that can be substantiated rigorously through statistical analysis.

The Process of Therapeutic Touch

There are several schools of thought regarding the process of TT. For this project, the process as described by Sayre-Adams and Wright (1995) was employed. Of critical importance in the process is the conscious intention of the practitioner to help the recipient and thus, to facilitate an environment in which healing can occur. McCrae (1993) indicated the process of TT conveys a feeling of wholeness and well being to the recipient.

Context of the Research

The context in which this project was undertaken was a busy London District General Hospital Intensive Care Unit and Coronary Care Unit. For reasons of confidentiality, the institution is not named, however there are some general issues associated with critical care that are applicable within the context of this study and other critical care environments. Critical care is a stressful environment for patients in terms of lighting, noise and medical/nursing procedures (Thelan et al, 1990; Cox and Hayes, 1997). These stressors may impact on the patient's ability to experience episodes of relaxation and sleep. Previous research has identified continual exposure to bright lights and continuous sounds from machinery in the critical care setting predispose the patient to psychosis (Thelan et al, 1990). Medical and nursing interventions, which are often invasive, also predispose the patient to feelings of anxiety and emotional distress. Subsequently, patients are unable to sleep. One of the professed aims of nursing, as a holistic profession, is the promotion of comfort so that anxiety as experienced by the patient can be reduced (Warren, 1994; Cox and Hayes, 1997). Anxiety predisposes the patient to acute periods of wakefulness. To reiterate, the objective of this study was to ascertain the significance of physiologic and psychodynamic responses of patients to the non-pharmacological intervention of TT in a critical care setting.

Design.

A time series design was used to measure the physiologic responses of critical care patients to TT. Findings were triangulated to interview data (psychodynamic responses). Ethical approval to conduct the study was sought and granted by the East London and City Health Authority Ethics Committee. The study was explained to subjects or their next of kin in instances where subjects could not consent themselves. Following explanation regarding the study, informed consent was obtained from subjects or their next of kin to participate in the study. All subjects and next of kin were informed they could withdraw from the study at any time and that this would not impact their care in any way. Physiologic variables pre, during and post administration of TT were recorded. This was followed by interviewing the subjects where possible using an unstructured interview format. Physiologic variables were subjected to repeated measures analysis of variance (one way), as the outcome had been predicted (Alternate Hypothesis: There will be a significant change in physiologic variables during and post administration of TT, e.g., decreases in heart rate, blood pressure and respiration and increases in peripheral oxygen saturation.), and triangulated to the psychodynamic responses of the subjects. Analysis of the interview data was undertaken following confirmation that transcripts from the interviews were accurate. Accuracy of the transcripts was substantiated with the subjects. Colaizzi's (1978) analytic method was employed to qualitatively construct the primary categories of psychodynamic responses to TT. The categories of psychodynamic responses were then subjected to non-parametric statistical correlation.

Subjects

Power analysis ($\eta^2 = 0.06$, power = 0.8, $\alpha = 0.05$) indicated 100 sessions of TT were required before statistical significance could be discerned. This was accomplished with a sample size of

fifty-three subjects. Of this number, sixteen female and thirty-seven male subjects were recruited to participate in the study. The mean age of the subjects was 65 years (SD +/- 13.6); age ranged from 34 - 90 years. Twenty subjects were recruited from the Intensive Care Unit and thirty-three subjects were recruited from the Coronary Care Unit. Four of the subjects were unconscious during administration of one session of TT and one subject was unconscious for two sessions. Three of the subjects died at a later date as a result of their medical condition. Due to the heterogeneity of the critical care population baseline data from the subjects themselves acted as the control. The types of illness/injury are described in Table 1.

Table 1. Diagnosis of Subjects Recruited to the Therapeutic Touch Study

Diagnosis/reason for admission to Intensive or Coronary Care Unit	Number of subjects
Myocardial Infarction	12
Unstable Angina	9
Gastrointestinal/abdominal Surgery	8
Arterial Surgery	6
Chest Pain	6
Left Ventricular Failure	3
Respiratory Failure/Respiratory Arrest	3
Cellulitis, Fasciotomy and Sepsis	1
Cardioversion	1
Cardiogenic Shock	1
Atrial Fibrillation	1
Ventricular Tachycardia and Palpitations	1
Road Traffic Accident With Multiple Fractures	1

Procedure

A professional nurse (female, age 29), was trained in the technique of TT, as delineated by Sayre-Adams and Wright (1995), by an experienced Clinical Nurse Specialist who specialised in the administration of TT. Training comprised 36 hours of theory and 21 one to one contact hours of practice with the Clinical Nurse Specialist. Six months of supervised practice were subsequently undertaken to establish proficiency in the method of delivery of TT prior to commencement of the study.

The project was subsequently conducted in the Intensive Care Unit and Coronary Care Unit with the professional nurse administering all of the treatments to the patients whilst concurrent recordings of physiologic variables were made on Hewlett Packard Patient Monitoring equipment. Subjects were told they would feel the nurses' hands on their shoulders at the beginning of the session and that the session would be concluded by the nurse resting her hands on their feet. Subjects were informed that they could keep their eyes open or closed, which ever was more comfortable for them, and they were to attempt to remember any experiences they might have during the session so that these could be discussed subsequently during interviews. All subjects were made aware they might not experience anything and should feel comfortable in articulating this during the interviews. Subjects in the Intensive Care Unit were treated lying in bed in a supine position. Whereas, some of the subjects in the Coronary Care Unit were treated sitting in chairs which facilitated access to their backs. Throughout administration of TT the nurse attuned herself to subtle sensory cues occurring in her hands. The nurse indicated these sensory cues were in the form of warmth, coolness and/or tingling sensations in her hands that varied in intensity.

Immediately following each session of TT the nurse made note of any imbalances and/or sensations that she detected. Notations were made, for example, in terminology such as tingling, warmth and coolness. A diagrammatic representation of the subject's body was used to note the exact areas where tingling, warmth or coolness were felt by the nurse. These areas were then compared to the experiences of the subjects at the time of interview and during analysis of transcripts.

Physiologic variables (heart rate, arterial blood pressure, respiration and peripheral oxygen saturation) were continuously recorded from the Hewlett Packard Patient Monitoring equipment. The mean values for a 15-minute block of time before, during and after the TT session were calculated. Data were analysed using repeated measures analysis of variance.

All subjects received the same length of treatment. It was hypothesised that significant changes would be observed in heart rate, respiration, blood pressure and peripheral oxygen saturation during and following the administration of TT. Significant decreases in heart rate, respiration and blood pressure and significant increases in peripheral oxygen saturation would be indicative of the relaxation response related to stimulation of the parasympathetic nervous system. This data would then be triangulated with the subject's verbal responses during interview to describe the subjects' physiologic and psychodynamic responses to TT.

Findings and Discussion

A total of 100 individual sessions of TT were administered during the study. The fifty-three subjects received a mean of two sessions of TT (range 1-10 sessions). Mean values for heart rate, arterial blood pressure, respiration and peripheral oxygen saturation were calculated (Table 2).

Table 2. Mean Physiologic Data for Before, During and After Therapeutic Touch for 53 Patients

Parameter	Before	During	After	F Value	P Value
Heart rate (beats per minute)	84.6	86.6	87.4	1.25	< 0.3
Arterial blood pressure (MAP mmHg)	96.7	96.1	98.3	0.57	< 0.6
Respirations (breaths per minutes)	20.2	19.9	20.1	0.3	< 0.8
Peripheral Oxygen saturation (%)	96.4	96.2	96.5	1.1	< 0.3

Repeated measures analysis of variance (ANOVA - one way) indicated no significant increases or decreases in any of the physiologic variables measured between pre, during and post time segments for TT. The findings do not support the hypothesis that predicted a significant decrease in heart rate, blood pressure and respiration and a significant increase in peripheral oxygen saturation.

Data was only obtained in 15-minute blocks of time. This may have been adequate for the observation of parasympathetic activation, however, it may not have been adequate time to observe any alterations due to changes in endocrine function such as decreased cortisol secretion which may in turn have resulted in a delayed decrease in pulse and blood pressure. Scientific rigour required all subjects receive the same length of treatment. Future studies should take this timing factor into consideration. A critical component associated with the administration of TT, as a therapy, is that treatment continues until the field of the recipient is balanced. The time limit factor may have

adversely impacted the study. Additionally, the absence of significant changes in physiologic findings could be due, in part, to the medication regimens (such as beta blockers) the majority of patients were receiving. Alterations in parasympathetic activity as a result of receiving TT may have been counteracted adjunct to the effects of the medications. The findings of the physiologic variables indicate an overall picture of cardiovascular and respiratory stability throughout receipt of TT and the period of time that the variables were measured thereafter.

Measuring only one outcome variable (physiologic variables) may be misleading and result in misinterpretation of data. Therefore triangulation of methods is a useful tool in research.

Triangulation of the descriptions of the subjects' experiences (psychodynamic responses) of receiving TT was a critical component in the study. In total 25 different words and phrases were generated by the subjects in response to their experiences of receiving TT (Table 3).

Table 3 Words/Phrases Used to Describe the Experiences of Subjects in Critical Care Subsequent to Receipt of Therapeutic Touch.

Energy	Quiescence
Warmth (50)* Tingling(13) Heavy flow (1) Vibrations (1) Wave like (1) Fluttering (1) Pulsing (1) Cool (1) Magnetic (1) Pressure (1) Bubbling (1)	Relaxed (29) Went to sleep (29) Sleepy (28) Calm (9) Nice (4) Light/floaty (4) Peaceful (3) Comfort (3) Pleasant (1) Soothing (1) Good (1)

(-) Values in Parentheses indicate frequency of word usage

* Word that is associated with experiences of both energy and quiescence

The most frequently occurring words and phrases to describe the subjects' feelings were warmth, relaxation, tingling, calmness, sleepiness and the sensation of falling asleep. It was possible to cluster these words into categories reflecting energy (e.g., warmth and tingling) and quiescence (e.g., relaxed and sleepy). It is important to note that although the experiences are categorised as expressions of energy and quiescence they have been derived from the unique descriptions of each subject who participated in the study. In 29 of the sessions subjects fell asleep as soon as the TT was initiated or shortly thereafter. Many subjects awoke when they felt the nurse's hands touch their feet but then resumed sleep. Some subjects were awake during receipt of TT but fell asleep immediately after receipt of TT. These subjects slept soundly until they were awakened by nurses performing essential nursing care.

The words and phrases articulated by the subjects were coded for their presence or absence in each session for each subject. The data were correlated between the subjects' responses and also correlated to the experiences of the nurse who administered TT to the subjects. Non-parametric correlations were conducted on the coded data. Significant correlations were found between the subjects' experiences of warmth and the subjects' falling asleep ($r = -.223, p < 0.023$), between the subjects' experiences of warmth and feeling relaxed ($r = .27, p < 0.007$), between the subjects' feeling sleepy and falling asleep ($r = .41, p < 0.0001$), between the nurse's experiences of sensations in her hands of warmth and the subject feeling sleepy ($r = .25, p < 0.012$), between the nurse's experiences of sensations in her hands of warmth and the subjects experiences of feeling relaxed ($r = -.186, p < 0.048$), and between the nurse's experiences of sensations in her hands of tingling and the subjects' feeling sleepy ($r = .254, p < 0.001$). Analysis of data indicates the formation of

relationships between the two clusters of experiences i.e., that of feelings of warmth (energy) and of relaxation (quiescence) in relation to feeling sleepy. Patterning of the subjects' experiences was characterised in terms of the temporal dimension of time (Rogers, 1990) being experienced as slower. This was manifested through the subjects' verbalised experiences of relaxation, longer periods of sleeping and falling asleep during the therapy.

The results of this study emphasise the importance of triangulation in research design. Although there were no significant changes in physiologic variables, at a psychodynamic level the subjects found the experience of receiving TT pleasurable and calming. This is very important in an environment that is known to be stressful physically and psychologically to human beings. It is speculated here that for patients who have problems in relaxing and falling asleep in the critical care environment the administration of TT should be a part of routine nursing care.

Conclusion

TT is a complementary therapy intervention that can be utilised within the scope of professional practice by nurses in any setting. This is important in terms of the critical care environment that has been identified as anxiety producing for patients. Anxiety predisposes the patient to acute periods of wakefulness. A professional aim of nursing is the promotion of comfort so that feelings of anxiety can be reduced. It is suggested that the use of TT as a therapy provided by nurses in critical care may have benefits in terms of helping patients feel more relaxed and to sleep.

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