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The effect of therapeutic touch on stress reduction and immune function in persons with AIDS.

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THE EFFECT OF THERAPEUTIC TOUCH ON STRESS REDUCTION AND IMMUNE FUNCTION IN PERSONS WITH AIDS

by

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ABSTRACT OF DISSERTATION

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Using Rogers' Science of Unitary Human Beings, this study sought to determine the effectiveness of Therapeutic Touch in repatterning immune pattern subset and coping response to stress in individuals who are human immunodeficiency virus (HIV) positive. Twenty HIV positive males consented to participate in this experimental study.

The independent variable was Therapeutic Touch therapy. The dependent variables were CD4 counts and responses to the Coping Resource Inventory for Stress (CRIS). The subjects were matched according to age, pharmacological therapy, and CD4 counts, then randomly assigned to either the experimental or sham treatment group.

Statistical analyses with analysis of variance (ANOVA) revealed that there was a significant difference in the CD4 counts and the overall coping resource effectiveness (CRE) scores in the experimental group following Therapeutic Touch. This indicates an increase in lymphocyte subset pattern as well as an increase in coping skills.

This study demonstrates the effectiveness of Therapeutic Touch in repatterning the lymphocyte subset pattern and coping response to stress in HIV positive individuals.

Abstract Approved by: Committee Chairman ________________

Program Director ________________

Date 1/31/95 Dean of Graduate School ________________

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DEDICATION

This dissertation is dedicated to Tina and Steven, without whom it means nothing.

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This dissertation could not have been completed without the guidance and encouragement of my mentor, Dr. Ann Clark, and my committee who embodied Rogers' Principle of Integrality. My thanks go to Dr. Ann Edgil, Dr. Juanzetta Flowers, Dr. Vithal Gantha, and Dr. Ken Weatherman.

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CHAPTER 1

Introduction

No disease in modern times has had as great an impact on the civilized world as the acquired immunodeficiency syndrome (AIDS). While a tremendous effort has been devoted to biomedical AIDS research, discovery of a definitive vaccine or cure remains elusive. Medical research strategies are directed toward combating the virus or the resulting secondary infections (Adair, Nygard, Maddox and Adair, 1991). Nursing has defined its research interest related to AIDS as "the whole continuum of human immunodeficiency virus (HIV) infection" (National Center for Nursing Research, 1990, p. 4). Nursing research related to AIDS to date has primarily centered around psychosocial issues and adjustment to diagnosis (Larson and Ropka, 1991). Very little nursing research has focused on physiological issues or potential therapies. Identification of nursing strategies which strengthen the ability of the immune system to resist cell depletion related to immune deficiency is an appropriate nursing research interest (Lovejoy and Moran, 1988; Moran, Lovejoy, Vierle, Dodd and Abrams, 1988). Therapeutic Touch is a nursing intervention which utilizes purposive patterning of the human-environmental field process to maximize healing and well-being. Several psychological factors such as environmental stress, perceived loss of control, and feelings of helplessness have been associated with impaired immune functioning

(Baum, McKinnon and Silva, 1987). Associationsbetween psychological stress and the suppression of cellular immunity (Fletcher, et al., 1988; LaPierre, Schneiderman, Antoni and Fletcher, 1990) suggest that nursing interventions to ameliorate stress would enhance cellular immunity. Therapeutic Touch has been shown to be effective in the reduction of anxiety and stress (Fedoruk, 1984; Heidt, 1981; Quinn, 1984; Randolph, 1984).

Therapeutic Touch is an energetic healing technique developed by Delores Krieger, R.N., in doctoral studies in the University of New York. Utilizing the human-environmental energy field (Rogers, 1970), Therapeutic Touch maximizes healing through restoration of balance in the indvidual's energy field. Therapeutic Touch has been documented as an effective intervention in the reduction of stress (Heidt, 1981; Quinn, 1982, 1984) as well as stimulation of mitogenic response in lymphocyte subpopulations (Quinn, 1992).

Recent research indicates that there is a measurable interaction between the immune system and other physiologic processes which are sensitive to changes within the central nervous system such as stress induced changes (Houldin, Lev, Prystowsky, Redeim, and Lowery, 1991). The adrenocortical hormones and the sympathetic nervous system have been postulated as mediators of the effect of stress upon the immune system (Darko, Rose, and Gillin, 1989; Dunn, 1988; Landmann, et al., 1984). The relationship between life stressors such as bereavement, chronic illness, and academic stress and the incidence of disease has been well documented (Calabrese, Kling and Gold, 1987; Dorian, Keystone, Garfinkle, and Brown, 1982; Jemmott, Borysenko and

Borysenko, 1983; Kubitz, Peavy and Moore, 1986). Stress has been shown to deplete the CD4 lymphocytes, which are responsible for the body's defense against foreign antigens (Irwin, Daniels, Bloom, Smith and Weiner, 1988; Linn, Linn and Jensen, 1984; Teshima, et al., 1987). Stress is considered a possible co-factor in the imbalance of the ratio between the CD4 lymphocytes, the cells which enhance immune function, and the CD8 lymphocytes, the cells which suppress immune function. This imbalance contributes to the progression of immunodeficiency in AIDS (Solomon and Temoshok, 1990).

Individuals who are diagnosed with AIDS suffer from the chronic stress associated with other life threatening illnesses. Stress has been shown to induce recurrence of herpes virus (Glaser, et al., 1987). Chronic stress has also been related to impaired immune function in the caregivers of Alzheimer's patients (Glaser, et al., 1985). Stress reduction techniques have been investigated for their role in immune system enhancement. Relaxation techniques have been associated with increased immune function in psychiatric patients (Kiecolt-Glaser, et al., 1985). Control of stress has been reported as a significant factor in reduced immune function (Weisse, et al., 1990). Comparison of relaxation and imagery as stress reduction techniques demonstrated no significant effect on neuromodulation (Janoski and Kugler, 1987). Stress reduction training has not been significantly related to improved immune function in HIV positive individuals Coates, Mukusick, Kuno, and Sites, 1989). Stress reduction alone may not be sufficient to restore the balance of energy within the individual's energy field.

Nursing research associated with HIV infection has been focused primarily on nurses' knowledge, attitudes and practices (Larson and Ropka, 1991). Clinical nursing research is needed to explore effective nursing interventions related to physical care and symptom relief. It is hypothesized by he author that subjects treated with Therapeutic Touch will demonstrate a greater increase in immune function and a greater decrease in stress than subjects who are treated with a sham treatment.

Therapeutic Touch has been shown to decrease anxiety more effectively in hospitalized patients than casual touch (Heidt, 1981; Krieger, Peper, and Ancoli, 1979; Randolph, 1984). In addition, Therapeutic Touch has been identified as an effective hematologic and immunologic enhancement strategy (Krieger, 1974; Quinn, 1988, 1992). Newshan (1989) reported the effectiveness of Therapeutic Touch in the management of physical symptoms in persons with AIDS. To date, no studies have investigated the use of Therapeutic Touch to enhance the immune function of persons with AIDS (PWAs). This study seeks to determine the effect of Therapeutic Touch on stress response and lymphocyte subset patterns in persons with AIDS.

Therapeutic Touch differs from relaxation therapy in that restoration of balance of the human energy field is the focus of Therapeutic Touch. As the Therapeutic Touch practitioner assesses the energy field of an individual with the intent of enhancing the mutual patient-environmental field pattern, energy is directed through the hands of the practitioner to restore the balance of energy needed for restoration or healing. As balance is restored to the energy field,

physiologic manifestations of pattern such as immune function and stress response are strengthened. Utilization of immunomodulatory interventions with the HIV positive population may have significant physical and psychological impact, including retardation of disease progression, reduction of opportunistic infections, and improved quality of life.

Research Questions

This study is designed to determine the effectiveness of Therapeutic Touch in reducing stress and improving immune system function persons with AIDS. Persons with AIDS experience multiple diagnosis related stressors. Amelioration of stress is linked to improved immune function (Jemmott, et al., 1983; Kemeny et al., 1989; Kiecolt-Glaser, et al., 1987; Locke, et al., 1984). Energy field patterning has been shown to be an effective technique in stress reduction (Heidt, 1981; Kramer, 1990). The energy directed to the subject through the Therapeutic Touch practitioner should provide the subject with needed energy for restoration of balance within his/her energy field. Changes in the energy field toward reduction of stress and restoration of balance are demonstrated as changes in the manifestation of energy field pattern. The research questions under investigation include:

1) How is the immune subset pattern in persons with AIDS affected by Therapeutic Touch therapy?
2) How is the stress response pattern in persons with AIDS affected by Therapeutic Touch?

From these research questions, the following hypotheses have been derived:

1) Persons with AIDS treated with Therapeutic Touch will exhibit greater increase in immune subset pattern than those persons with AIDS who receive a sham treatment.
2) Persons with AIDS treated with Therapeutic Touch will exhibit greater increase in CRIS scores than persons with AIDS who receive a sham treatment.

Definitions

Definitions pertinent to this research are:

Therapeutic touch: A non-contact nursing intervention in which the hands are used to provide knowledgeable, purposive patterning of the human-environmental field process, utilizing the hands as focal points for the direction of energy.

Immunologic function: Immune function is a manifestation of field pattern reflective of an individual's energy field. Hematologic measurement of the number of CD4 lymphocytes is indicative of the number of cells which enhance immune system activity.

Stress reduction: Stress is theoretically defined as an individual's interaction with the environment which results in disharmony within the human energy field. While this disharmony is an abstract, manifestation of pattern is observable as the individual's response to a psychometric testing tool designed to reflect the likelihood of experiencing the noxious effects of chronic stress.

Operationally defined as the Coping Resources Inventory for Stress (CRIS) (Matheny, Curlette, Aycock, Pugh and Taylor, 1981, 1987), this 280-item instrument measures coping resources which are believed to help lessen the negative effects of stress. These resources consist of personal behaviors, attitudes, and beliefs which are largely modifiable through training and skill acquisition. Reliability and validity of the CRIS have been established with coefficient alpha values ranging from 0.97 to 0.84.

Persons with AIDS (PWAs): Persons infected with the Human Immunodeficiency Virus with a CD4 cell count less than 500/cu mm (Stage II, CDC, 1992).

Assumptions related to this study include:

1) There is a human energy field.
2) There is an environmental energy field.
3) Measurement of an individual's stress coping resources is possible through the use of a paper-and-pencil testing instrument.
4) Subjects will respond honestly to paper-and-pencil testing instruments.

Control of patient symptoms and enhancement of immune system function are clearly significant research goals for nursing. As pharmacologic therapies are developed which affect viral replication, AIDS will become a chronic disease, affecting the quality of life over time. PWAs experience significant life stressors related to diagnosis which have a potentially negative impact on prognosis. Identification of nursing interventions which effectively reduce stress and enhance immune function would not only lengthen, but also strengthen, the quality of life for PWAs.

CHAPTER II

Conceptual Framework

With few exceptions, the management of AIDS and the care of PWAs becomes the responsibility of nurses in secondary and tertiary care centers. In acute care hospitals, nurses provide constant, direct care to patients with AIDS with exacerbation of disease. Psychological and environmental stressors are posited to have a vital role in the etiology and exacerbation of physical illness. Nursing strategies which ameliorate the effects of stress should, therefore, lead to immunoenhancement.

AIDS is both an infectious disease and an immunologic aberration, manifested by infectious disease and/or opportunistic infection. The disordered immune regulation which occurs with AIDS results mainly from destruction of the CD4, or helper cells, of the immune system. Depletion of the CD4 cells alters the ratio of CD4 to CD8, or suppressor, cells. This imbalance creates a cytotoxic environment in which opportunistic infections proliferate.

Strategies are needed to enhance immune function and strengthen the ratio of CD4 to CD8 lymphocytes. Enhancement of immune function is possible through amelioration of distress and strengthening of the individual's ability to respond to stressors. Energy field patterning through Therapeutic Touch has been shown to be

effective in stress reduction (Heidt, 1981;Kramer, 1990; Quinn, 1982) and immune system enhancement (Quinn, 1992). This study will investigate the effect of Therapeutic Touch on stress response and immune system patterning in persons with AIDS.

Roger's Science of Unitary Human Beings

Quantum physics suggests that matter and energy are one and the same (Briggs and Peat, 1984). Rogers' (1990) Science of Unitary Human Beings posits human beings as "irreducible pandimensional energy fields identified by pattern and manifesting characteristics that are specific to the whole" (p. 7). Within this theoretical framework, human and environmental energy fields are considered open systems, integral to one another. By definition, these fields contradict the concepts of homeostasis, equilibrium, adaptation, and steady-state. Rogers (1970) defined the environmental energy field as "all that is external to a given human energy field" (p. 7).

Interaction between human and environmental energy fields is considered to be a continuous process. Although pattern, defined as "the distinguishing characteristic of an energy field," is abstract and not directly measurable, the manifestations of field pattern are "observable events in the real world" (Rogers, 1992, p. 30). Pattern recognition validates both the rhythmic nature of change and the creative emergence of the whole (Phillips, 1989). Manifestations of field patterning are posited to emerge from field interactions.

Principles of Homeodynamics

Three principles of homeodynamics derived from the Science of Unitary Human Beings help describe, explain, and predict the nature of human and environmental change (Rogers, 1990). These principles are stated as:

Principle of resonancy: The continuous change from lower to higher frequency wave patterns in human and environmental fields.

Principle of helicy: The continuous, innovative, and increasing diversity of human and environmental field patterns characterized by nonrepeating rhythmicities.

Principle of integrality: The continuous, mutual human field and environmental process.

Interaction between individuals is considered a field interaction as they become the immediate environment to one another. Therapeutic Touch, as deliberative mutual patterning, makes operational the concept of field interaction. During the mutual interaction between the human and environmental energy fields during the Therapeutic Touch experience, the nurse and client pattern the environmental field to promote harmony (Barrett, 1989). The resulting wave pattern should be manifested as a form or rhythmic vibration of the field. Since manifestations of field repatterning have been made operational as physiologic measurements such as heart rate and rhythm (Kramer, 1990), other physiologic parameters such as serologic determinants of immunologic functioning are appropriate measurable pattern manifestations of the resulting wave form.

Within Rogers' (1990) conceptual system, human and environmental energy fields are in a continuous, multidimensional mutual process in which causality and sequence are inconsistent. Nursing activities are directed at a continuous, mutual human-environmental field repatterning process. Nursing rejects causality, concerning itself with the integral nature of the human-environmental fields and the wave pattern manifestations of the mutual process (Phillips, 1991). Therapeutic Touch as a nursing activity is directed toward the repatterning of the human-environmental energy fields toward balance. Therefore, the research questions concern acquistition of knowledge related to pattern manifestation and human-environmental field interaction during the Therapeutic Touch experience.

Therapeutic Touch

Interest in the concept of energy field patterning as a nursing treatment modality has grown from isolated experiments in parapsychology (Grad, Cadoret, and Paul, 1961; McDonald, Hickman, and Dakin, 1977) to a series of well designed theory based research studies on the technique of Therapeutic Touch. Based on Rogers' (1990) Science of Unitary Human Beings, Therapeutic Touch focuses on the human energy field.

Therapeutic Touch was defined by Krieger (1975) as the use of the hands to help or heal someone who is ill. As Krieger developed the practice of Therapeutic Touch, physical contact was utilized as part of the therapeutic modality.

Quinn (1984), replicating earlier studies to test the energy exchange theory based on Rogers' Science of Unitary Human Beings (1970, 1990), demonstrated

identical response in those individuals treated with contact and non-contact Therapeutic Touch. Quinn therefore defined Therapeutic Touch as "an intervention which uses the hands to direct excess energies from the healer to another person for the purpose of helping or healing this individual" (p. 48).

Keller and Bzdek (1986) considered Therapeutic Touch the "direction of life energies" (p. 102) through the hands of a therapist to the recipient. Farnslow (1983) and Wright (1987) drew upon field theory explicated by Tiller (1977) to define Therapeutic Touch as channeling of the environmental energy field into the human energy field of the client. Payne (1986), Kramer (1990), and Thayer (1990) supported the concept of Therapeutic Touch as a transference of energy from the environmental energy field to the human energy field.

The purposeful transfer of energy with the intent to help or heal is essential to the Therapeutic Touch experience. Casual touch and mimic Therapeutic Touch were not found to be effective when compared with Therapeutic Touch (Heidt, 1979; Keller and Bzdek, 1986; Quinn, 1982; Randolph, 1984). Equally significant is the effectiveness of Therapeutic Touch despite the patients' belief systems or skepticism (Heidt, 1990; Quinn, 1984; Wright, 1987). Maintenance of balance is postulated to be significant in the repatterning of the human energy field.

In healthy subjects exposed to physical stress, Randolph (1984) reported no significant response to Therapeutic Touch compared to mimic Therapeutic Touch. Fedoruk (1984) reported no significant differences in neonates who received Therapeutic Touch treatments during stressful events and those who received

Therapeutic Touch treatments during stressful events and those who received casual touch or mimic Therapeutic Touch. Both researchers concluded that the stress reponse was appropriate for the subjects at that time to maintain balance. Therefore, a significant response to Therapeutic Touch treatment would have had a negative impact on the individual. From this preliminary research, it would seem that the human energy field utilizes energy to repattern itself in the direction of survival and healing.

Use of energy field repatterning to stimulate physiologic parameters was first documented by Grad (1961) who studied wound healing in mice. Krieger (1976) explored Therapeutic Touch to stimulate human hemoglobin with positive results. Quinn (1989) found that Therapeutic Touch affected the ability of lymphocyte subpopulations to respond to mitogenic stimuli. Knaster (1989) demonstrated significant reduction in temperature in patients using Therapeutic Touch. Wirth (1990, 1993) designed an experimental study, controlling for the placebo effect, which demonstrated increased wound healing in human subjects using Therapeutic Touch.

AIDS

The acquired immunodeficiency syndrome (AIDS) is related to infection of certain components of the human immune system by a retrovirus, human immunodeficiency virus (HIV-1), and is characterized by significant immunodeficiencies resulting in opportunistic infection (Levy, 1992). The focal point for the immunopathogenesis for infection with HIV-1 is the depletion of the CD4

lymphocytes which are associated with viral reception as well as enhancement of other immune cells. Initial infection with HIV-1 may involve a prolonged asymptomatic period, indicative of initial immune response, characterized by compromised immune function and the possibility of virus transmission (Fauci, 1991). Viral replication has been suppressed in some individuals through the normal activity of the CD8 lymphocytes, which are cytotoxic in nature (Walker, Moody, and Stites, 1986). However, in the majority of individuals, viral associated decline in CD4 lymphocytes is associated with an alteration in the normal ratio of CD4 to CD8 lymphocytes (Fletcher, Baron, Ashman, Fischl, and Klimas, 1987) from the normal 2:1 balance found among peripheral blood T-cells (Fauci et al., 1983). This deviation not only retards initiation of immune response but also suppresses immune reponsiveness (Fletcher, et al., 1988) through diminished cytotoxic function of the CD8 cells (Fauci, 1984). This decline in immune subset pattern is associated with decreased prospective clinical status (DeMartini, et al., 1988).

Since reduction in T-helper lymphocyte percent and absolute number is related to disease progression in AIDS, the value of immunologic profiles as prognostic and clinical markers is apparent (Taylor, Fahey, Detels and Giorgia, 1989). Sustained inversion of the CD4+ to CD8+ ratio has been documented throughout the HIV infection. Marked clinical decline has been associated with persistent elevation in CD8+ cell counts (Roos, Lange and Goede, 1992). Data from a longitudinal study indicate that the use of the number of CD4+ lymphocytes is

a reliable marker of immunologic status (Taylor, et al., 1989), although subject to diurnal fluctuation.

Decline in immune function and disease progression in HIV+ individuals in association with psychological stress have been reported (Cecchi, 1984; Coates et al., 1984; Solomon and Temoshok, 1987). These relationships are posited as a possible mechanism for activation of a latent virus to an activated state (Glaser and Kiecolt-Glaser, 1987: Sodroski, Rosen, and Haseltine, 1984). Although these specific pathways have not been identified, associations between stress and suppression of cellular immunity have been shown (Fletcher, et al., 1988; Ironson, et al., 1988).

Stress

Non-pharmacologic treatment options related to immune function center around the effect of stress on immune function. Academic stress has been identified as a contributor to a decline in immune function in medical students (Jemmott, et al., 1983; Kiecolt-Glaser, Garner, Speicher, Penn and Glaser, 1984). Functional aberrations in immune function were related to academic stress (Dorian, Keystone, Garfinkle, and Brown, 1982). Stress and loneliness contributed to changes in immune function related to herpetic lesions (Glaser, Kiecolt-Glaser, Speicher and Holliday, 1985). A decline in cytotoxic cell activity was associated with stress and anxiety (Locke, et al., 1984). Alterations in T and B cell function associated with neuroendocrine hormone expression related to stress were identified in macrophages exposed to different neuropeptides (Koff and Dunegan, 1985; Peck,

1987). Changes in immunoregulatory cells induced by physiological and physical stress were measured in healthy volunteers (Landmann, et al., 1984). Chronic stress has been related to decreased immune function in the families of Alzheimer's patients (Kiecolt-Glaser, et al., 1987). Stress related immune suppression was identified in divorced and widowed men (Glaser, et al., 1987).

Studies in humans suggest that control may be a moderating factor in immune response to stress. Behavioral control over stressor effects was positively correlated with mood and negatively correlated with immune system response in a 30 minute response to laboratory stressors (Weisse, et al., 1990). Subjects exposed to uncontrollable stress experienced a reduction in lymphocyte responsiveness. In contrast, perceived control was shown to be a significant variable in immune activity related to stress in that subjects who perceived a lack of control over a laboratory stressor demonstrated reduction in immune function while subjects with who believed they had control over the stressor exhibited no changes in immune function.

Amelioration of distress is posited to have a positive effect on immune function. High levels of distress assessed soon after diagnosis of malignant melanoma distinguished those patients who had an unfavorable outcome from those with no evidence of disease (Temoshok, 1985). Decreased lymphocyte function in patients with a major depressive disorder demonstrated remission when the illness responded to treatment (Schleifer, et al., 1984). However, in a study of 187

individuals, no relationship was found between stress related neuroendocrine levels, circulating lymphocytes, and HIV infection (Gorman, et al., 1991).

An organism's perception of the nature of a stressor and/or the availability of a coping response to that stressor has been found to trigger a specific pattern of autonomic nervous system changes (McCabe and Schneiderman, 1985). A specific pattern of autonomic nervous system activation, referred to as coping, occurs when coping responses are available and adequate to meet stressful demands. Activation of the sympathoadrenomedullary system during active coping response results in the release of epinephrine and norepinephrine, which prepares the organism for stressful confrontation. In stressor situations which are perceived by the organism to be uncontrollable or unpredictable, another physiological response pattern is apparent. This pattern, characterized by hypervigilence and lack of adequate coping resources is associated with behavioral inhibition and activation of the hypothalmic-adrenocortical system. Activation of this system results in release of cortisol, which suppresses cellular immunity (Felten, Felten, Carlson, Olschawka and Livnat, 1985; McCabe and Schneiderman, 1985; Plaut, 1987; Sachar, 1976). Psychological variables associated with impaired immune functioning have been identified as loss of control, environmental stressors, and feelings of helplessness (Baum, et al., 1987; Pericic, Manev, Boranic, Poljak-Blazi, and Lakic, 1987; Teshima et al., 1987; Shavit and Martin, 1987; Weiss, et al., 1981). Stress can therefore be viewed as a pattern of perceived demands and perceived resources. Enhancement

of the human energy field has been shown to strengthen the immune system and stress responses of individuals through Therapeutic Touch.

Krieger (1975) studied the effect of Therapeutic Touch on hemoglobin levels of hospitalized patients, noting a significant increase in those patients treated with Therapeutic Touch. Knaster (1989) demonstrated temperature reduction in AIDS patients treated with Therapeutic Touch. Wirth (1990) demonstrated a 99.3% improvement in wound healing in those subjects treated with Therapeutic Touch. Quinn (1991) demonstrated the effectiveness of Therapeutic Touch on the immune system in the ability of the lymphocyte subpopulations to respond to mitogenic stimuli. It is the contention of this investigator that subjects treated with Therapeutic Touch will demonstrate significant alterations in lymphocyte subset patterns.

CHAPTER III

Research Design and Methodology

In Rogerian science, practice modalities are concerned with human life patterning and reflect the wholeness of the unitary person in continuous innovative change with the universe. Using Rogers (1990) Science of Unitary Human Beings as a framework, the investigator sought to determine the effectiveness of Therapeutic Touch as a therapy for reducing stress and improving immune function patterns in HIV infected men.

Design

Using an experimental design, individuals who were HIV positive were randomly assigned to groups receiving Therapeutic Touch or a sham treatment. It was hypothesized that subjects treated with Therapeutic Touch would demonstrate greater improvement in lymphocyte subsets than a control group of subjects who received a sham treatment. It was also hypothesized that subjects treated with Therapeutic Touch would demonstrate a greater reduction in stress through an increase in coping resources, as measured by the CRIS, than those subjects who received the sham treatment.

Setting and Sample

The population for this study was recruited via newspaper advertisements in a major Southern metropolitan area. The subjects were Stage II HIV positive males ages 21-60. These subjects were receiving the antiretroviral agents AZT, dDI or dDC. It was anticipated that subjects who had demonstrated immunodeficiency would be treated pharmacologically; therefore, only individuals who were currently enrolled in clinical drug trials were excluded from the study on the basis of pharmacologic therapy. A total of 20 subjects were recruited. The subjects were randomly assigned to either the experimental or control group.

Protection of human subjects was assured through approval of the research protocol by the Institutional Review Board at the University of Alabama at Birmingham.

The setting for the study was a wellness center located in the downtown area of a major Southern metropolitan city. The clinic consisted of a waiting room with tables and chairs, and three treatment rooms used for treatments and venipunctures.

Outcome Measurements

CD4 counts were drawn from each subject in both groups before treatment began as well as at weeks 3, 6, and 9. Repatterning of the immune system following Therapeutic Touch therapy was expected to be demonstrated through changes in the lymphocyte subset patterns. Reduction of stress was measured through the Coping Resource Inventory for Stress (CRIS). The CRIS is designed to measure

coping resources which are believed to negate the deleterious effects of stress. These resources consist of personal behaviors, attitudes and beliefs as well as physical and financial well-being. The CRIS provides a global score called the Coping Resource Effectiveness Score (CRE). In addition, scores are provided for each of the primary scales as well as the composite scales and the wellness inhibiting items. Five other scores measure the respondent's test taking attitude.

The primary scales reflect behavioral attributes which contribute to the ability of the individual to cope with stress. Scale One, Self-Disclosure, measures the tendency to freely discuss personal thoughts, opinions and feelings with others. The act of self disclosing implies interpersonal trust. This scale is highly correlated with Scale Five, Social Support. The normative score for this scale is 12.60 with a standard deviation of 6.02.

The second scale, Self-Directedness, measures the degree to which the respondent respects their own judgement. High scorers are willing to think and behave independently of others. Implied within this score is an ability to assert oneself as well as willingness to express constructive criticism. The normative score for this scale is 11.46 with a standard deviation of 5.17.

Confidence is the third scale which assess the respondent's faith in their own ability to cope successfully with life. High scorers tend to see themselves as capable and competent. They are able to put their problems in perspective and control their emotions. This scale correlates highly with the overall CRE score. The normative score for this scale is 13.44 with a standard deviation of 5.48.

Scale 4, Acceptance, measures the beliefs and behaviors which indicate acceptance of self and others. High scorers are able to accept their imperfections as well as those of the environment. The normative score for this scale is 10.92 with a standard deviation of 4.76.

Social Support is Scale 5 which measures the ability of family members and friends who can buffer life's stressful event. A high score reflects a supportive network of family and friends who help reduce the stresses of life. The normative score for this scale is 15.13 with a standard deviation of 4.64.

Financial Freedom, Scale 6, assesses the extent to which a person is free from fiscal difficulties. High scorers feel they have adequate financial resources to meet their needs. The normative score for this scale is 13.59 with a standard deviation of 5.72.

Scale 7 reflects Physical Health which measures the individual's perception of their overall health. The activities of high scorers are unrestricted by illness or other health conditions. Free from worry about health matters, high scorers have energy to devote to their daily lives. The normative score for this scale is 15.13 with a standard deviation of 4.0.

In contrast, Scale 8, Physical Fitness, reflects personal health practices such as exercise and physical fitness. High scorers regard themselves as physically fit and highly motivated to exercise. The normative score for this scale is 9.71 with a standard deviation of 6.24.

Stress Monitoring is Scale 9 which measures an individual's awareness of stress and tension within themselves. Persons with high scores in this scale are able to take appropriate action to deal with stress and monitor their stress levels. The normative score for this scale is 14.01 with a standard deviation of 5.43.

Scale 10, Tension Control, measures the ability to lower stress through such practices as relaxation techniques, structured breathing and thought control. Persons with high scores in this scale are able to practice stress reduction techniques effectively. The normative score for this scale is 11.23 with a standard deviation of 5.20.

Structuring, Scale 11, measures the respondent's ability to organize resources. Included within this scale are time and energy management as well as planning and implementation abilities. The high scorer on this scale is able to set limits, establish priorities, and pace their efforts. The normative score for this scale is 13.97 with a standard deviation of 4.58.

The final primary scale, Problem Solving, measures the ability to resolve personal conflict. High scorers are able to define problems, develop goals and solutions, and evaluate the results. The normative score for this scale is 14.41 with a standard deviation of 4.65.

Three composite scales reflect individual thoughts and beliefs related to stressful situations and events. Scale 13, Cognitive Restructuring, measures the ability to alter thoughts to reduce stress. Persons with high scores are able to utilize

thought control practices to change patterns of stressful thinking. The normative score for this scale is 13.14 with a standard deviation of 5.16.

Scale 14, Functional Beliefs, measures personal beliefs which are helpful in lowering interpersonal stress. Acceptance of self and rejection of rigid absolutes characterizes high scorers in this scale. The normative score for this scale is 12.15 with a standard deviation of 5.46.

Social Ease, the last composite scale, measures the degree of comfort experienced by the respondent in social situations. High scorers are comfortable meeting people and feel confident in the presence of others. The normative score for this scale is 13.23 with a standard deviation of 5.46.

Reliability measures the extent to which test scores do not contain errors of measurement. Variation in measurement can result from characteristics such as changes in health, differing perceptions of test items, and differences in test conditions. Reliability of the CRIS was studied to assess response trustworthiness for both internal consistency (coefficient alpha) and stability (test-retest). Overall, the coefficient alpha reliability for each of these scales ranges from .84 to .97 (Curlette et al., 1987). Test-retest reliability indicated a high level of stability with a Pearson correlation of .95.

Use of the CRIS in the literature to detect physical and mental illness supports the validity of the instrument. Cupp (1985) utilized the CRIS to predict illness among graduate students at a major university. The CRIS scores had a significant inverse relationship with illness. Litton (1985) demonstrated significant

differences between bulemics and normal eaters in 7 of the 11 CRIS scales as well as the overall Coping Resource Effectiveness (CRE) score. Seitz (1989) used the CRIS to predict high and low illness in a sample of 194 military personne. White (1989) discovered an inverse relationship between coping resources and levels of psychopathology in a group of 180 graduate students.

Data Collection

Once consent to participate was obtained from the subjects, the investigator met with the subjects to fill out a demographic data form and medical treatment form (Appendix A). Subjects were then matched according to age, initial CD4 count, pharmacologic treatment regimen, and race. Each subject within the pair was then randomly assigned to either the control or the experimental group. None of the subjects were aware of the group to which they had been assigned.

Prior to any treatment, the subjects completed the CRIS and had an initial CD4 count drawn by the investigator. Additional CD4 counts were drawn prior to treatment on weeks 3 and 6. The subjects returned to the clinic on week 9 to have a final CD4 count drawn and complete the CRIS a second time.

Following completion of the lab work and the CRIS, the subjects were then escorted into a treatment room and seated in a recliner. An audio cassette headphone was placed over the subject's ears and an opaque sleep mask was placed over the eyes. The subjects were told that the audiocassette would play for twenty minutes. At the conclusion of the tape, the investigator would return to remove the sleep mask and headphones. The subjects were instructed to remain

seated with the headphones and sleep mask in place for the entire twenty minutes. After ensuring that the subject felt comfortable, the investigator left the room silently.

Therapeutic Touch treatments were administered by one practitioner recruited from a major Southern metropolitan area. The practitioner is certified in Therapeutic Touch and is in private practice with six years experience. The Therapeutic Touch practitioner entered the treatment room of the subjects in the control group silently, without speaking or creating a disturbance. None of the subjects indicated an awareness of the presence of the Therapeutic Touch practitioner through alteration in respiratory rate, pattern, or removal of the headphones or sleep mask.

The practitioner centered herself by shifting her awareness from an external to an internal focus and becoming relaxed and calm. Making the intention to assist the subject, the practitioner proceeded to assess the energy field of the subject by moving her hands four to six inches above the subject's body to assess the flow of energy. Following this assessment, she used her hands to redirect the flow of energy. Treatment time was standardized at 20 minutes, with 5 minutes used for assessment of the energy field and 15 minutes used to redirect the flow of energy. Following the treatment, the Therapeutic Touch practitioner left the room silently. The investigator returned to the room, gently touching the subject to avoid startling him, and removed the sleep mask and headphones. The subjects were then allowed to rest for 5 to 10 minutes before being escorted to the door.

The identical procedure was performed for the control group with the exception of Therapeutic Touch. After the subject was seated in the recliner with the opaque sleep mask and headphones in place, the investigator left the room silently. The subjects remained in the recliner for 20 minutes without arising or removing the sleep mask or headphones, at which time the investigator returned to the room, gently touching the subject to avoid startling him. The opaque sleep mask and headphones were removed and the subject was allowed to rest for 5 to 10 minutes before being escorted to the door.

Data Management and Analysis

Subjects were assigned a code number upon being enrolled in the study. This code number was used for identification on the CRIS and on all laboratory samples for identification. Each subject was assured that their identity would remain confidential and that the master list would be destroyed upon completion of the study. The CRIS score sheets were submitted together to Health Prisms, Inc. for analysis.

Laboratory samples were collected from subjects between the hours of 6:00 p.m. and 8:30 p.m. to control for diurnal variations (Ironson, et al., 1990). Peripheral blood samples were collected in heparinized tubes (Vacutainer-sodium heparin, Becton-Dickinson, Rutherford, NJ). Samples were refrigerated and held no longer than 24 hours before flow cytometry assays were conducted.

Descriptive statistics were obtained on all data pertaining to demographics and are presented in Table 1. Data analysis was performed by an independent computer programmer.

Analysis of variance (ANOVA) was the test used to examine the overall CRIS score and the subscale results. The independent variable was Therapeutic Touch therapy. The dependent variables were the post-test CRIS and sub-scale scores while the covariate was the pre-test CRIS and sub-scale scores. The F statistic was utilized to answer the study question involving the effectiveness of Therapeutic Touch therapy as a nursing intervention to repattern the human energy field resulting in reduction in stress. An analysis of variance (ANOVA) was also used to examine the lymphocyte subset pattern comparing the CD4 counts of the control and experimental groups on weeks 1, 3, 6, and 9.

Table 1

Age, Marital Status and Residence of Subjects

Group	Control Group	Experimental
Age		
22-25	3	3
26-30	4	4
31-34	3	3
Race		
White	9	9
Black	1	1
Marital Status		
Married	2	2
Single	3	3
Never Married	5	5
Residence		
Urban	6	6
Suburban	4	4
Lives alone	3	3
Lives with 1 other	4	4
Lives with 2 others	3	3

CHAPTER IV

Results

The purpose of this investigation was to determine the effect of Therapeutic Touch on patterns of coping responses to stress and immune function in persons with AIDS. Volunteers were recruited from a major Southern metropolitan area.

Description of the Sample

The sample consisted of 20 HIV positive males with a CD4 cell count less than 500/cu mm. The subjects were paired according to age, pharmacologic profile, and CD4 counts then randomly assigned to the experimental or control group using a coin toss (Table 2). The pharmacologic profile is tabulated in Appendix B.

The majority of the subjects ranged in age from 26-30. Eighteen of the subjects were white with two blacks enrolled. One half of the subjects stated they had never been married. Twelve subjects live in urban areas. Occupations ranged from professional-technical to disabled. Incomes ranged from $10,000 to $50,000. The majority of the respondents reported continuing education past high school. These results are illustrated in Table 3.

Personal practices which are considered "Wellness Inhibitors" are identified by the CRIS. Subjects who respond positively to any of these items are indicating the presence of emotional or physical problems as well as the practice of behaviors

Table 2

Initial CD4 Counts of Subjects

Pt. #	Experimental	Pt. #	Control
0001	373	0002	371
0011	244	0012	250
0021	429	0022	420
0031	325	0032	346
0041	297	0042	288
0051	349	0052	331
0061	451	0062	438
0071	309	0072	327
0081	201	0082	213
0091	357	0092	366

Table 3

Education, Employment and Income of Subjects

	Control Group	Experimental Group
Education		
12 years school	3	2
14 years school	4	4
16 years school	2	3
17 years school	1	1
Employment		
Disabled	3	3
Professional	1	1
Technical	1	1
Service	5	4
Income		
$10,000 - $19,000	3	2
$20,000 - $29,000	3	3
$30,000 - $39,000	3	3
$40,000 - $49,000	0	0
$50,000 - $74,000	1	2

which are maladaptive in the presence of stress (Curlette, Aycock, Matheny, Pugh, & Taylor, 1990). There was no difference in the groups in wellness inhibiting items. As expected, all of the subjects reported having a life threatening illness. The wellness inhibiting responses are summarized in Table 4.

Table 4

CRIS Identified Wellness Inhibiting Items

Item	Control	Experimental
Life Threatening Illness	10	10
Physical Handicap	0	0
Seriously Overweight	0	0
Eating Disorder	0	0
Frequent Headaches	4	5
Breathing Problems	6	7
Frequently Anxious	4	4
Often Angry	3	4
Smoking	4	6
> 4 Caffeine Drinks/Day	5	6
> 2 Alcohol Drinks/Day	5	6
Tranquilizers/Sleeping Pills	4	5
Daily Medications	10	10

Hypotheses Testing

Two hypotheses were tested in this study. Hypothesis I stated that subjects treated with Therapeutic Touch therapy would demonstrate greater improvement in lymphocyte subset pattern than a control group of subjects who received a sham treatment. An initial analysis of variance (ANOVA) demonstrated no significant difference between the control group (M=33.50) and the experimental group (M=33.35) on the initial CD4 count. An ANOVA was conducted on the lymphocyte subsets at weeks 3, 6, and 9 comparing the control and experimental groups. The

individuals in the experimental group who received Therapeutic Touch therapy (M=36.51) demonstrated a statistically significant difference in the CD4 counts at week 9 only compared to the control group (M=30.04). There was no significant difference in the CD4 counts of the control groups at weeks 3, 6, or 9. The analysis of variance in the CD4 counts of the control and experimental groups at week 9 indicated a significant improvement in lymphocyte subset pattern in the experimental group, $F(1,18) = 6.25$, $p < .05$. These results are illustrated in Figure 1.

Hypothesis 2 stated that subjects treated with Therapeutic Touch would demonstrate a greater increase in coping resources than those subjects who received a sham treatment. This hypothesis was also supported. An ANOVA revealed a statistically significant difference in the CRE scores of the experimental group following Therapeutic Touch. The mean CRE score in the experimental group prior to any treatment was 39.17 while the mean CRE score at week 9 was 63.28. The analysis of variance indicated a significant reduction in stress in the experimental group, $F(1, 18) = 225.18$, $p < .0001$. The mean CRE score for the control group at week 1 was 48.24 with a mean CRE score at week 9 of 47.78.

Of the primary subscales, statistically significant differences in the scores at week 1 compared to week 9 were noted in the experimental group in Self-Directedness, Confidence, Acceptance, Stress Monitoring, Tension Control, Structuring, and Problem Solving. The control group demonstrated no difference in the subscale scores before and after the sham treatment.

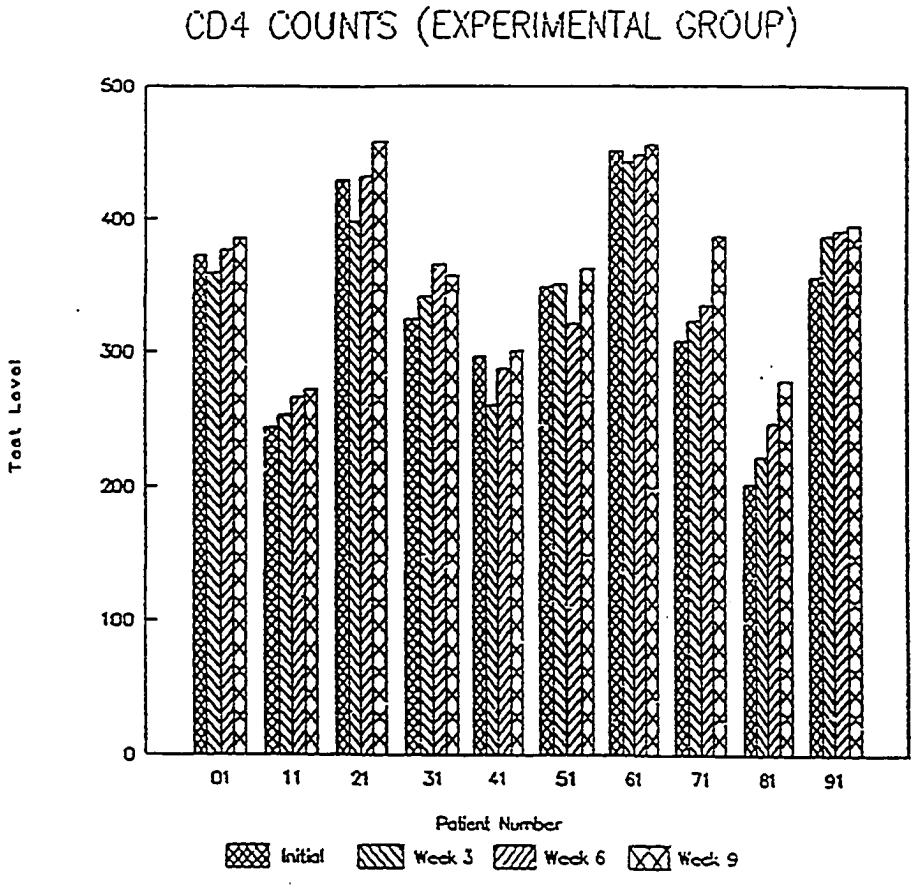

Figure 1. CD4 Counts of the Experimental Group

The apparent improvement in scores in the areas of Self-Directedness, Confidence, Acceptance, Structuring and Problem Solving can be related to the increases in Tension Control and Stress Monitoring. In the control group, the mean subscale scores for Tension Control and Stress Monitoring remain unchanged. The experimental group demonstrated a significant improvement in Stress Monitoring at the .01 level of significance (1487.19) as well as Tension Control (1459.23). The ability to monitor stress and deal effectively with the effect of stress in daily life clearly affects the ability to be assertive and independent, put problems in perspective, accept imperfection, organize resources, and resolve personal conflict.

Included in the CRIS report are three additional scales which provide information concerning the interpretability of the other scores generated by the CRIS. The Social Desirability Scale indicates the tendency to respond to questionnaire items in a way that is perceived to be desirable. A low score on this scale reflects candid responses. The normative scale mean for Social Desirability is 69.15 with a standard deviation of 17.00. Overall, pre-post intervention testing Social Desirability scores range from 0 to 57.9 across the control and experimental groups. This would support the assumption made by the investigator that the respondents would answer a questionnaire honestly.

The Infrequency of Response Scale consists of 24 items "indicative of undesirable conditions or practices that less than 20% of the normative sample exhibit" (Curlette et al., 1987, p. 7). Since eight of the twenty four items refer to wellness conditions or practices, this score is meaningful if the respondent suffers

from chronic illness. The normative mean Infrequency score is 12.96 with a standard deviation of 12.13. Respondents' scores range from 4.2 to 95.8 across the experimental and control groups. This response is appropriate for this population who all report having a life threatening illness.

The remaining two validity scales reflect omitted items and random responses. There were no omitted items in any of the score sheets. The random response scale indicates the likelihood of guessing or random responses. Within the experimental group, two individuals were identified both pre-and-post intervention testing as random respondents. No random respondents were identified in the control group.

Overall, there was a significant increase in coping response (CRE) in the experimental group pre-post treatment while the control group did not demonstrate any variation on scores from the pre-treatment testing to post-treatment testing. The significance of these results will be discussed in Chapter V.

CHAPTER V

Conclusions, Discussion, Implications and Recommendations

The purpose of this study was to determine the effect of Therapeutic Touch therapy on the lymphocyte subset pattern and the coping response patterns of HIV positive Category II infected men.

Following data analysis, the experimental group did demonstrate a significant improvement in lymphocyte subset pattern at week 9 while the control group did not demonstrate any significant strengthening of the lymphocyte subset pattern. In addition, there was a significant difference between the pre-post treatment overall CRE scores and the subscores of Tension Control, Confidence, Stress Monitoring, and Cognitive Restructuring in the experimental group. The control group did not demonstrate any difference in pre/post treatment testing on the global coping score (CRE) or any of the subscale scores.

Study question 1 focused on the lymphocyte subset patterns of the control and experimental groups. The investigator hypothesized that the experimental group receiving Therapeutic Touch therapy would demonstrate greater pattern strengthening at week 9 than the control group who received a sham treatment. In the experimental group, the initial CD4 counts ranged from 201 to 451/cu mm.

The CD4 counts increased at week 9, ranging from 271 to 457/cu mm., demonstrating significance at alpha 0.05.

This increase in CD4 counts in the experimental group is significant in that the expected average monthly decline in CD4 counts in the HIV positive population is 7/cu mm. (Bartlett, 1991). The onset of symptomatic opportunistic infections such as thrush, oral hairy leukoplakia, and vaginal infections is associated with a decline in CD4 counts less than 300/cu mm. (CDC, 1992). This reduction in CD4 counts is also associated with physiologic patterns of weight loss, fever and fatigue. The characteristic opportunistic infections found in patients with advanced HIV infection such as Pneumocystis carinii pneumonia, toxoplasmosis encephalitis, disseminated Mycobacterium avium, and cytomegalovirus reflect profound immunosuppression, with CD4 counts less than 200/cu mm. (Fauci, 1991). The response of the immune subset pattern to Therapeutic Touch suggests that palliative treatment is possible and that the onset of these life threatening opportunistic infections could be delayed or averted.

The CD4 cell count is a pivotal test in the evaluation of any patient with HIV infection for diagnostic purposes as well as differential diagnosis guidelines and therapeutic decision making regarding the use of pharmacotherapeutic agents. All patients with CD4 counts less than 500/ cu mm. are encouraged to begin antiretroviral therapy, commonly AZT (CDC, 1992). This therapy is expensive and is associated with significant side effects such as anemia, granulocytopenia, headache, insomnia and myalgias. As CD4 counts decline, medical management

includes the addition of the antiretroviral agents DDI, DDC, and aerosolized or intravenous pentamidine (Flaskerud, 1989). These medications are associated with unpleasant side effects such as pancreatitis, peripheral neuropathy, and hypoglycemia. Drug resistant strains of the HIV virus to antiretroviral agents have been documented (Larder, Darby, & Richmann, 1989). Stabilization of CD4 counts with Therapeutic Touch offers an adjunctive therapy to be used with these expensive and potentially toxic pharmacotherapeutic agents.

The second research question concerned the stress response pattern of those individuals who received Therapeutic Touch. All subjects completed the CRIS prior to any treatment (experimental or sham) and at the conclusion of a 9 week period, three weeks following the cessation of treatment. Subjects in the experimental group demonstrated an overall increase in CRE scores. Pre-treatment scores in the experimental group ranged from 33.7 to 43.9 while pre-treatment scores in the control group ranged from 4.8 to 90.8. Post-treatment scores in the control group did not demonstrate any significant improvement, with an actual decrease in raw scores.

Analysis indicated that there was a positive difference in the overall CRE score before and after Therapeutic Touch treatments in the experimental group. There was no significant difference in the CRE scores in the control group pre-post sham treatment. The primary subscales in which a significant difference was detected in the pre/post treatment testing of the experimental group include Self-Directedness, Confidence, Acceptance, Physical Fitness, Stress Monitoring,

Tension Control, Structuring, Problem Solving, Cognitive Restructuring, and Functional Beliefs. These differences reflect a change in the pattern of perception and response to life stressors. These results indicate that Therapeutic Touch was effective in repatterning the stress response and immune subset pattern in HIV positive individuals. The dramatic results in the experimental group pre-post testing in the areas of Confidence, Stress Monitoring and Tension Control suggest that repatterning of the energy flow through Therapeutic Touch enables the human energy field to utilize its resources more effectively to combat the deleterious effects of stress.

Practical Implications

Modification of behavior factors which affect immune function has tremendous potential in the area of immunodeficiency disease. The effect of stress on immune function has been well documented. Kiecolt-Glaser et al. (1984) identified decrease in the proliferation of T lymphocytes and natural killer cell activity in response to stress. A decrease in these crucial defense mechanisms is posited to be related to an increase in the incidence of infectious disease (Heberman & Holden, 1979). The alteration in the lymphocyte subset pattern in response to Therapeutic Touch in this study reflects similar results obtained by Quinn (1992) in which there was an increase in the ability of the lymphocyte subpopulation to respond to mitogenic stimulation following Therapeutic Touch. Therapeutic Touch, therefore, has application for AIDS patients in the stabilization of the lymphocyte

subset pattern. In addition, the stress-induced activation from the latent to the active form of HIV could be delayed or prevented through the use of Therapeutic Touch.

The significant increase in the CRIS subscale scores in the area of Tension Control, Confidence and Problem Solving following Therapeutic Touch have implications for long term survival. Persons who demonstrate feelings of powerlessness and helplessness are unable to negate the negative effects of stress. High problem solving skills are correlated with AIDS survival (Kobasa, Maddi & Courington, 1980). The experimental group who received Therapeutic Touch demonstrated an increase in the lymphocyte subset patterns as well as the immune correlates of "hardiness" (Kobasa, 1979). The ability of the individual to respond to their own awareness of stress allows them to respond proactively to environmental stressors. The Confidence and Stress Monitoring subscale scores reflect the individual's ability to regulate and cope with stress. Only those individuals who received Therapeutic Touch demonstrated an increase in this stress response pattern which correlates strongly with the overall CRE scores.

The use of Therapeutic Touch as a nursing intervention to enhance coping response patterns to stress is essential in the promotion of long-term survival in patients with AIDS. Therapeutic Touch has the potential to delay onset of opportunistic infection, enhance quality of life and promote positive coping response patterns.

Theoretical Implications

The Principle of Resonancy (Rogers, 1990) suggests that there is continuous change in the human-environmental wave pattern from lower to higher frequency. The use of Therapeutic Touch in HIV positive individuals was correlated with increased CD4 counts as well as a change in the coping response pattern from a lower to a higher frequency.

This change suggests that long term survival patterns in patients with AIDS could be lengthened with the use of Therapeutic Touch. As the individual receiving Therapeutic Touch begins to experience the lengthening of the human energy field pattern waves, both the physiologic manifestations of pattern such as CD4 counts should increase but also the individual's psychological ability to cope with disease induced stressors. In this study, the use of Therapeutic Touch promoted a change in the coping patterns of the patients in the experimental group through the enhanced sense of control over life events and confidence in the ability to cope with stress from a lower to a higher wave frequency.

Recommendations

In this study, Therapeutic Touch has been demonstrated to be effective in repatterning of the human energy to facilitate strengthening of the lymphocyte subset pattern. In addition, the use of Therapeutic Touch to strengthen the individual's ability to cope with stress has been demonstrated. Snyder (1992) suggests that protocols for touch therapy be established with appropriate identification of clients who might benefit from this non-traditional approach to

healing. In addition, other energy field therapies such as Healing Touch, Reiki and accupressure should be studied. Utilization of energy therapy for stress reduction is appropriate in a variety of settings from acute care to community based care. In addition, use of other energy field therapies such as Healing Touch, Reiki, and accupressure should be studied. Use of energy therapy for stress reduction is appropriate in a variety of settings from acute care to community based care. The use of energy therapy to enhance other physiologic patterns presents additional opportunities for research and practice.

The effectiveness of Therapeutic Touch supports Rogers' (1990) Science of Unitary Human Beings and the Principles of Homeodynamics. The integrality of the human energy field with the environmental energy field is manifested through wave pattern. That nurses are able to enhance the human energy field in its progression from lower to higher frequencies as manifested through physiologic patterning has implications for healing in every area of nursing.

Based upon these findings, the investigator concludes that there is much work to be done in the area of human energy field patterning. Therapeutic Touch studies should be conducted on larger population samples with inquiries into immunologic, stress and other physiologic patterns. Studies should be expanded to include subjects from all genders, ethnicities, ages and clinical conditions. Studies comparing Therapeutic Touch with other energy modalities would elucidate differences, if any, in the effect on the manifestation of wave pattern.

The interventions used in this study reflect Rogers' Science of Unitary Human Beings. Ferrence (1988) suggests that frequency of environmental waves such as light or sound may transform the pattern of the human energy field. Since both the control and experimental groups were exposed to the same level of lighting and music for the same amount of time, this variable is not a potential confound to this study but does warrant further investigation.

The use of a variety of other instruments to measure coping resources and/or stress levels and the comparison of those results is another consideration. A variety of instruments are available which are not as lengthy as the CRIS, and which provide a mechanism for investigator scoring.

Inclusion of qualitative format into the subjects' perception of stress response repatterning following Therapeutic Touch therapy is also warranted. Quantitative studies limit the amount of information which may be collected from the client, thereby limiting valuable contributions to the body of knowledge surrounding Therapeutic Touch.

This study should also be replicated utilizing additional physiologic pattern manifestations such as natural killer cell activity and thymosin levels. Thymic hormones are involved in neuroendocrine regulation (Hall & Goldstein, 1983). Identification of an increase in pattern from a lower to a higher frequency in this neuroendocrine circuit has potential for enhancement of immune subset pattern.

Although results of this study were significant, one question generated is in regard to long-term effects of Therapeutic Touch therapy. Since the statistically

significant difference in CD4 counts occurred week 9, three weeks following the conclusion of therapy, speculation arises as to the long term benefit of Therapeutic Touch, as well as the benefits of a longer treatment period. Alterations in the treatment schedule are also suggested to determine the schedule which provides the maximum potential for repatterning.

Summary

In this study, Therapeutic Touch enhanced the immune subset pattern and coping response pattern in persons with AIDS. Energetic therapies such as Therapeutic Touch offer cost-effective, non-invasive, readily available treatment modalities which will strengthen the individual's physiologic and psychologic response pattern to chronic disease. If findings are replicated, this modality may someday become an integral part of treatment for all HIV positive individuals to delay the onset of opportunistic disease as well as enhance both quality and length of life. Identification and implementation of therapies to strengthen the immune system are moral and ethical imperatives as nursing responds to this pandemic. Therapeutic Touch should be integrated into basic nursing curriculum and all practice settings. The efficacy of Therapeutic Touch in strengthening environmental field pattern continues to be demonstrated through nursing research. The results from this initial study of the effect of Therapeutic Touch on immune subset pattern and stress coping skills of HIV-infected men are uraging and warrant further study.

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APPENDIX A

Demographic Data Form

DEMOGRAPHIC DATA FORM

1. Name _____

2. Address _____

_____

_____

3. Phone _____

4. Age _____ Race _____

5. What medications are you currently taking? _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Are you currently enrolled in an experimental clinical drug trial?

Yes_____ No_____

APPENDIX B

Pharmacologic Profile

Pharmacological Survey

Pt#	AZT	dDI	dDC	TMX	AEP	PLU	CIPRO	FSC
0001	*			*			*	
0002	*			*			*	
0011		*						*
0012		*						*
0021	*					*	*	
0022	*					*	*	
0031			*	*			*	
0032			*	*			*	
0041		*			*	*	*	
0042		*			*	*	*	
0051	*							
0052	*							
0061	*						*	
0062	*						*	
0071	*	*			*	*	*	
0072	*	*			*	*	*	
0081			*	*	*	*	*	*
0082			*	*	*		*	
0091	*						*	
0092	*						*	

GRADUATE SCHOOL
UNIVERSITY OF ALABAMA AT BIRMINGHAM
DISSERTATION APPROVAL FORM

Name of Candidate: Clare T. Garrard

Major Subject: Adult Health Nursing

Title of Dissertation: The Effect of Therapeutic Touch on Stress Reduction and Immune Function in Persons with AIDS

Dissertation Committee:

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Date 7/28/98

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