Experimental

EFFECTS OF REIKI ON PAIN AND SELECTED AFFECTIVE AND PERSONALITY VARIABLES OF CHRONICALLY ILL PATIENTS

Linda J. Dressen & Sangeeta Singg, Ph.D.

ABSTRACT

This experiment examined the effects of Reiki (a laying-of-on-hands healing modality) on pain, mood, personality, and faith in God. Participants (N = 120) were randomly assigned to one of the four groups (ns = 30). The Reiki Group received ten sessions of Reiki. Progressive Muscle Relaxation Group received ten sessions of relaxation therapy. Control Group received no treatment. Placebo Group received ten sessions of false-Reiki. Statistical analysis led to the following conclusions: (1) Reiki is an effective modality for reducing pain, depression, and anxiety. (2) Reiki is effective in enhancing desirable changes in personality and strengthening the faith in God. (3) Gains made by Reiki tend to persist over longer periods of time. (4) Attunement seems to be a vital part in Reiki training. (5) Chronically ill patients experiencing stress and pain tend to be receptive to Reiki.

KEYWORDS: Reiki, pain, anxiety, depression, self-esteem, faith in God, locus of control, alternative healing

INTRODUCTION

In recent years, alternative methods of healing have gained popularity in the Western world. The idea, however, that patients can be diagnosed and healed with the help of some intuitive readings, laying-on-of-hands, and spiritual practices remains controversial, especially in the scientific community. Physicians are more receptive to psychological explanations of alleviating stress and pain of many patients suffering from psychosomatic disorders. In the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV),* the American Psychiatric Association recognizes "Psychological Factors Affecting Medical Conditions," and allows diagnoses, such as Anxiety Disorder Due to a General Medical Condition or Mood Disorder Due to a General Medical Condition.[1] The key factor in this psychophysiological connection is stress, an internal response to an external event or stressor, which can suppress the immune system leaving an individual vulnerable to illness.[2]

Currently the most accepted treatment of many chronic illnesses involving pain and emotional responses is a combination of medical and psychological therapies. To this end, psychotherapists rely heavily on relaxation techniques such as progressive muscle relaxation methods and relaxation via biofeedback modalities. The medical community, however, once depending heavily on pharmaceutical intervention, has begun researching and using alternative methods of healing as supplementary therapies to traditional allopathic care.[3] Of interest in this turn to alternative modalities is the willingness of the medical community to look at the role of spirituality, a core element of many alternative methods of healing, involving the recognition that spiritual aspects of patient care are not optional but essential components of healing process. In April 1997, deans and faculty of more than 45 medical schools attended a conference, "Spirituality in Medicine: Curriculum Development," which brought attention to patients' spirituality and its recognition by the mainstream medical education, research, and clinical care.[4] In practice, Medicine is opening to such spiritual concepts as prayer to supplement scientific technology.[5] Within mental health disciplines, there is also a trend towards the use of spirituality to assist in the psychotherapeutic process.[6] In spite of the changing attitudes of medical and mental health establishments, little if any published controlled research has either supported or refuted this emphasis.

Of the many alternative healing methods available now in the Western world, one modality being used in medical settings for stress reduction and pain management of chronically ill patients is Reiki.[7,8] As a type of noninvasive laying-on-of-hands method of energy balancing, Reiki has recently been incorporated into hospitals, hospices, and psychotherapy bringing with it subjective reports by physicians, nurses, psychotherapists, and patients claiming benefits, such as pain and stress management, integration and resolution of emotional issues, attitudinal changes, and somatic healing.[7-10] All this occurs through the process of transference of energy via laying hands on the recipient's body, the basis of Reiki therapy. The concept of an energy exchange which can bring about a significant change in a person's illness challenges conventional thought and demands investigation.

The purpose of the present study was to compare Reiki, progressive muscle relaxation, no therapy (control), and false-Reiki (placebo) with regard to pain reduction, emotional improvement, personality enhancement, and spiritual growth in chronically ill patients. Research shows that the patients with chronic illness show worse social and physical functioning, poorer mental health, and greater pain than patients without chronic illness.[11] No empirical study was found by the present investigators comparing Reiki with progressive muscle relaxation, control and placebo conditions to scientifically examine the efficacy of Reiki for emotional, personality, and spiritual changes.

Reiki Theory

One of the basic premises of Reiki is that there is a universal source of energy which impacts the physical, mental, emotional, and spiritual dimensions of human existence. This has lead to Reiki being called Energy Medicine.[7] With the advent of field theory, a field being "a condition in space which has the potential of producing a force,"[7,p. 22] the use of energy to heal has reemerged.[12] The medical community is beginning to notice the renewed interest of public and many professionals in energy healing. According to Gerber:[3]

> Within certain subspecialties of conventional medicine, the groundwork for a shift from the Newtonian pharmacokinetic approach to an Einsteinium view of pure energetic healing is presently being formulated. The permutation from conventional drug and surgical therapy to electromagnetic healing

> represents the beginnings of a revolution in consciousness for the medical profession.[3, p. 91]

The use of energy to heal has been known since the antediluvian times throughout the world. Russians have given it the name Bioplasmic Energy. In Hawaii it is known as Mana. Prana is the Sanskrit name given to it by the Vedic tradition in India. The Chinese call it Chi, while the Japanese call it Ki. Christians refer to it as the Holy Ghost.[9] The word "Reiki" (pronounced as Ray Key) is a Japanese word. *Rei* means "universal" or "spiritually guided" and *Ki* refers to the "life energy" that animates all living things.[9,13,14] A Reiki practitioner acts as a conduit for the flow of this Universal Life Force. It is believed Reiki flows through the practitioner's hands to a willing recipient and can be transmitted from any distance. The practitioner does not have to actively direct Reiki to a particular place; it is believed to have its own intelligence and flows where it is needed.[7] In this respect, Reiki differs from other laying-on-of-hands healing methods. Another difference has to do with how one becomes Reiki practitioner. Contrary to other laying-on-of-hands healing methods, Reiki is not taught but transferred from the Reiki master to the student during the initiation process called "attunement".[7,15]

Reiki's History

While Reiki is not a religion, cult, or sect; it may be confused as such because it is a derivative of an ancient Tibetan Buddhist practice of empowerment and is similar to energy transference in the Indian Shakti path. The universal form of Reiki now being taught and practiced throughout North and South America, Europe, Asia, Africa, Australia, and the former Soviet Union transcends professional, cultural, and religious boundaries. Reiki practitioners include medical professionals, psychotherapists, massage therapists, and laypersons from a vast variety of cultures, religions, and countries.

Most literature on Reiki traces its history to Japan. It is believed Reiki was brought to the West in 1937 by Hawayo Takata, a woman of Japanese descent living in Hawaii who had trained in Japan under Dr. Chujiro Hayashi.[13] Reiki has a rich oral tradition, one that has been passed from master to student over

the centuries. The written history of Reiki comes from the story Takata taught her Reiki students and has been recounted by several authors.[13,14,16] Despite some questions about its validity and variations of the story among those who teach Reiki, Takata's version of Reiki's history is the only written source available at this time.

As the story goes, Mikao Usui, head of a Christian boys' school in Kyoto, Japan, began a search for information on the healing ability of Jesus. He first attended a school in the United States. Unable to find the information he was seeking, he returned to Japan where he was told the Buddha was also credited with the same healing ability as that of Jesus. Usui began searching in the Japanese and Chinese Sutras, canonical collections of Buddhist scriptures. It was not until he studied the Tibetan Lotus Sutras by mastering the ancient language of Sanskrit that he found part of the information he was seeking. This information gave him the knowledge of healing, but not the empowerment or attunement which had been traditionally passed from master to student.

Following the suggestion of a monk, Usui gained the empowerment or attunement through the ancient tradition of fasting and meditation. Then he took his healing ministry into the slums of Kyoto and spent the rest of his life traveling to share Reiki. One of his most dedicated students was Dr. Chujiro Hayashi, a retired Naval officer who later established the first Reiki clinic after Usui's death.

In 1935, Takata, as a young Japanese woman living in Hawaii returned to Japan. In poor health she sought medical treatment and eventually came to Hayashi's Reiki clinic. Impressed by her recovery she stayed and studied Reiki before returning to Hawaii. Just before the outbreak of World War II, Hayashi came to Hawaii and attuned Takata into mastership. He died soon after charging Takata to carry on the Reiki tradition.

Escaping the enforced incarceration of many Japanese Americans, Takata used Reiki on her family and friends as well as those who sought her for healing. She passed the Reiki tradition to her granddaughter, Phyllis Furomoto, the founder of The Reiki Alliance in 1981. Takata died in 1980. In 1982, another student of Takata, Dr. Barbara Weber Ray founded the American International Reiki Association Inc.[9]

The National Directory of Reiki Healers and Masters lists 104 Reiki practitioners and masters, however, not all those who have been trained in Reiki are listed in the directory.[17] Because the practice of Reiki is passed from individual to individual it is difficult to know the total number of Reiki practitioners or Masters in the United States or anywhere.

Reiki Training

During Reiki training a person is taught how to work within the field of energy that surrounds all living things. Through the attunement, a ceremonial initiation of empowerment, the student is opened to become a conduit for universal life force, Reiki. Puryear defined attunement as ". . . a quickening, an elevation of consciousness.[18] It puts us in touch with a greater reality."[18,p. 13] Attunements are part of every level of Reiki training.

Depending on the teacher or master, Reiki is taught in either three or four stages.[15,19] The content of the classes varies from master to master. Basically, students learn Reiki's history, the Reiki hand positions for use on themselves and others, and receive a series of attunements opening them to the universal flow of energy. Second Degree training involves the use of symbols to focus and concentrate Reiki, work on a mental/emotional level, and to send Reiki to a distant source. At the Master level, students become teachers, receiving the symbol for attuning others and the attunement process itself. It is this level which some teachers divide into two or more parts.

Reiki Protocol

Once a person has been trained and attuned in First Degree Reiki, he or she is able to immediately begin giving Reiki to self or to others. A general protocol for treatment, which includes the laying-on-of-hands in a series of positions on the recipient's body, varies from master to master. The positions usually cover the endocrine glands, placing hands on both the front and the back of the body, concluding with the soles of the feet. The complete process may take from 60 to 90 minutes.

However, because of its flexibility Reiki can be given under multiple circumstances and used as needed, even in situations where touch may last only a moment or two. This flexibility has made Reiki popular with nurses who learn Reiki as part of their continuing education.[8] Barnett and Chambers recommend nurses simply place their hands on their patients during routine care or that a friend or co-worker comfort another with a momentary touch.[7]

Reiki, Psychotherapy, and Research

Personal accounts of many mental health professionals reflect that Reiki is being used in psychotherapy. The reported effects range from stress reduction to fostering sense of emotional well-being to somatic healing and facilitation of the dying process.[10,20] Barnett and Chambers state, "Reiki accelerates the process of psychotherapy by eliciting additional insights regarding the client's situation as well as by allowing the emotional residue to gently release from the body's cells.[7] The result is a sense of well-being and empowerment"[7,p. 75]

Although many anecdotes by Reiki practitioners and clients exist claiming Reiki promotes physical, mental, and spiritual well-being, the controlled scientific research supporting these claims is scant. The few Reiki studies that were found in the literature have focused mainly on the physiological variables and usually had small samples without randomization.

Wetzel compared blood hemoglobin and hematocrit values of 48 adults who received First Degree Reiki training with those of 10 medical professionals who had not received the Reiki training.[15] These were groups of convenience and no random assignments were made. Two blood samples were taken 24 hours apart. The Reiki group experienced a significant change in these blood values and there was no significant change in blood values of the comparison group. Wetzel reported that by doing the case by case analysis, 58% experienced an increase, while 42% experienced a decrease in the blood values.[15] In our opinion, this study was a good attempt to scientifically validate the subjective claims about benefits of Reiki, but the methodological limitations, especially the lack of randomization and heterogeneity of groups have not allowed a large leap toward solving the problem.

A pilot study conducted by Neklason for her master's thesis investigated the effects of Reiki on telepathic communication and the Taylor-Johnson Temperament Analysis (T-JTA) variables.[21] The treatment group had 2 subjects and the control group had 3 subjects. The results showed that Reiki influenced telepathy trial scores, but the data were considered insufficient for statistical analysis of T-JTA scores.

Three articles by Wirth and his colleagues reported empirical research on complementary therapies. The results of these experiments do not help much in shedding light on efficacy of Reiki because Reiki was not used in isolation or in comparison with other complementary therapies, but was used in combination with LeShan or Therapeutic Touch (TT), Intercessory Prayer, and Qigong.

Wirth, Brelan, Levine, and Rodriquez conducted a double-blind study (N = 21) comparing two groups of patients who had dental extractions and found that those who received Reiki had significantly less postoperative pain than those in the control group.[22] Wirth, Chang, Eidelman, and Paxton used a combination of TT, Reiki, LeShan, and Qigong on 14 subjects randomly assigned to treatment and control conditions in a within-subject, crossover design in a pilot study.[23] The results were significantly in favor of complementary therapies with regard to urea nitrogen and glucose values. In a series of five experiments, Wirth, Richardson, and Eidelman examined the efficacy of TT either in isolation or in combination with Reiki, LeShan, and Intercessory Prayer with regard to wound healing.[24] The sample size in these experiments ranged from 15-44. Although two of the five experiments yielded statistically significant accelerated rate of epithelialization for the treatment versus the control group, the overall results of the series were inconclusive because the experiments did not demonstrate a consistent reproducible treatment effect.

Brewitt, Vittetoe, and Hartwell used the Life Information System Ten (LISTEN) before, during, and after a series of 11 Reiki sessions on a group of 5 patients who either had multiple sclerosis, lupus, fibromyalgia, or thyroid goiter.[25] The LISTEN device was able to measure positive energy conductance through skin points, demonstrating measurable energy changes with statistical significance at eight of these points before, during, and after Reiki treatments.

Olson and Hanson examined the usefulness of Reiki as an adjunct to opioid therapy in managing pain.[26] This pilot study included 20 subjects experiencing pain at 55 sites for a variety of reasons. The results showed significant reduction in pain following the Reiki treatment.

Rationale for the Present Study

An individual's ability to live without debilitating or life threatening illnesses depends in part on the person's emotional state and personality traits in relation to coping with life stressors. Those who practice Reiki and those who receive Reiki report that a general sense of well-being is a key benefit of Reiki treatment.[8,9] While it may be difficult to scientifically assess the presence of an energy exchange with our current technology, although some are trying, it is within our means to scientifically examine the efficacy of Reiki, especially in terms of psychophysiological changes.[15,27] Thus, the present Reiki experiment was undertaken. The two independent variables were type of treatment and gender of the recipients. Treatment groups were Reiki group (R), progressive muscle relaxation group (PMR), wait-list control group (C), and placebo group (P). The dependent variables included present pain intensity, total pain rating index-R (rank-value method) (PRI-R), PRI-R: sensory quality of pain, PRI-R: affective quality of pain, PRI-R: evaluative quality of pain, depression, state anxiety, trait anxiety, self-esteem, locus of control, realistic sense of personal control, and belief in God's (Higher Power) assistance.

Consideration was given to the notion that any type of laying-on-of-hands modality generates an energy exchange as does the intent of the one giving the treatment. Therefore, a placebo group was included to see if there would be any statistically significant differences between Group R and Group P. Recently, Mansour, Beuche, Laing, Leis, and Nurse suggested that placebo controlled studies in Reiki are possible.[28] They conducted a study using 16 subjects and 4 observers to evaluate standardization procedures between real and placebo Reiki practitioners. The authors considered this study to be an essential step before proceeding to conduct their forthcoming study on Reiki.

The first main hypothesis of the study was that as compared to PMR, C and P groups, Group R would show significant pre-test-post-test reduction in five

measures of pain, depression, and state anxiety; desirable changes in personality variables (trait anxiety, self- esteem, locus of control, and realistic sense of personal control); and stronger faith in God. Also of interest was the interaction between type of treatment and gender; therefore, the second main hypothesis predicted significant interactions between these two independent variables on all dependent variables. Since the anecdotal reports claim long term or transformational changes in those who receive Reiki, our third main hypothesis stated that there would be no significant differences between posttest and follow-up scores of participants in Group R on all dependent variables.

METHOD

PARTICIPANTS

A sample of 120 unpaid volunteers who met the criteria for the present study were obtained from the West Texas area in the United States. They were referred by their physicians or they responded to a newspaper article describing the Reiki practice and the current research project offering free sessions. These English-speaking participants were 48 men and 72 women with mean age of 41.34 years (*SD* =11.32). Majority of the participants (92%) were Caucasian which corresponded well with the ethnic make-up of the communities in the sample. The largest medical condition category in the sample was headaches (45%). Other categories included coronary heart disease (10%), cancer (8%), arthritis (7%), peptic ulcer (6%), asthma (7%), hypertension (12%), and human immunodeficiency virus (HIV) infection (5%). While all participants experienced multiple symptoms, these conditions were listed on the GIQ as the first medical problems currently experienced.

All participants experienced symptoms due to their medical conditions for at least one year and all experienced some type of pain. The majority of the participants were single (57%), had high school or some college education (62%), and had an annual income of $29,000 or less (64%). Group size was set *a priori* as 30 for adequate subject management. Also, it was predetermined to stop the subject assignment when all four groups matched on equal number of men and women. Therefore, those who met the selection criteria were randomly assigned to one of the four treatment groups which ended up with

12 men and 18 women in each group. This resulted in eight (treatment x gender) subgroups. The drop out rate was extremely low (.8%). One male participant from the Group R withdrew his participation after two sessions and was replaced with the next man interested to participate in the experiment to maintain equal group size and gender ratio.

INSTRUMENTS

The instruments included a General Information Questionnaire (GIQ), Social Readjustment Rating Scale, McGill Pain Questionnaire, Beck Depression II Inventory, State-Trait Anxiety Inventory, Rotter I-E Scale, Rosenberg Self-Esteem Scale, and Belief in Personal Control Scale.

The overall pain intensity was measured by the 5-point rating scale, Present Pain Intensity (PPI) included in the McGill Pain Questionnaire (MPQ).[29] It provides pain ratings ranging from 1 to 5, indicating following number-word associations: 1--mild, 2--discomforting, 3—distressing, 4—horrible, and 5—excruciating. The mean scale values of these words represent equal intervals.[30] Although overall intensity is the salient dimension of pain, three other dimensions measuring quality of pain were included from MPQ to provide multidimensional nature of pain experience. The scores on these three dimensions were based on the rank values of the words in three subclasses measuring sensory (S), affective (A), and evaluative (E) qualities of pain, the method called the pain rating index (PRI). The MPQ is a 21-item instrument designed to measure multidimensional quality of pain. There is strong support for the reliability, validity and consistency of the MPQ. This instrument is also sensitive to detecting change in pain quality and intensity due to some manipulative procedure.[29,31]

The Social Readjustment Rating Scale (SRRS) is a widely used instrument to assess seriousness of changes in American people's lives and their chances of becoming ill.[32] The subject is asked to check the stressful life events from a list of 43 events that occurred in the past six months and circle the associated Life Change Units (LCU). The total LCU score gives the index for the severity of the life crisis. Scores of 300 and above indicate the highest health risk and scores between 150-300 indicate 50-50 chance of contracting a serious health change within two years.[33]

The Beck Depression Inventory Second Edition (BDI-II) is a 21-item self-report test designed for ages 13 and older.[34] This version of the instrument was developed for assessing the symptoms of depressive disorders listed in *DSM-IV*.[1] The BDI-II was a substantial revision of the original BDI developed in 1961. The internal consistency for the outpatients was 92 and for college students, 93. The test-retest stability was .93. The correlation between BDI-II and Hamilton Psychiatric Rating Scale for Depression was 71 indicating convergent validity.

The revised State-Trait Anxiety Inventory, Form Y (STAI) was used to assess state and trait anxiety.[35] This inventory consists of 40 items; 20 items assess how one feels presently (state anxiety), and 20 items assess how one generally feels (trait anxiety). As a well-established instrument, its reliability, stability, and construct validity are well-supported by research.

The Rosenberg Self-Esteem Scale (RSES) is a 10-item Likert-type scale designed to assess global self-esteem.[36] The scores range from 5-50. The RSES is considered valid, correlating in a range of .56 to .83 with other esteem measures. It is also considered reliable, with a test-retest correlation of .85 over two weeks.[37]

The Rotter Internal-External Locus of Control Scale was used to assess locus of control (IE).[38] Scores range from 1 to 23. High scores on the scale indicate an external locus of control and low scores indicate an internal locus of control. While no current norms for the I-E Scale have been established, it is generally accepted that scores above 9 can be considered as external.[39] Rotter reported test-retest reliability coefficients of .60 for males and .83 for females.[38] The scale also exhibited acceptable internal consistency coefficients ranging from .65 to .79.

The Belief in Personal Control Scale Revised Short Form (BPCS-RS) is a 45-item Likert type scale which includes three subscales: A (Internality/Externality), B (Exaggerated Sense of Control), and C (Control Through God).[40] Scale A (BPCS-RS: A; 19 items) is similar to the IE Scale. Therefore, we used scales B (BPCS-RS: B; 17 items) and C (BPCS-RS: C; 9 items) in the present experiment to measure the unrealistic belief in personal control and faith in God respectively. Scale C measures the belief that God (the use of the term God is similar to Higher Power) is a powerful agent whose aid can be enlisted to

meet one's goals. This is different than externality, because one believes one controls one's achievement outcomes indirectly through God. According to Berrenerg, the existing scales do not make this distinction.[40] Findings of four studies provide support for the BCPS-RS as a reliable and valid measure of personal control.[40] The Coefficient Alpha as a measure of internal consistency was reported to be .85 for Scale A, .88 for Scale B, and .97 for Scale C. The test-retest coefficients were .81, .85, and .93 respectively. Lower scores on Scale B show more realistic beliefs about one's ability to control one's environment and lower scores on Scale C depict greater belief in God's assistance in helping one gain internal control.

PROCEDURE

Participation criteria specified that the participants must not had ever received Reiki, PMR, or any type of laying-on-of-hands therapy prior to the present experiment and that they experienced the pain and stress for one or more years. All participants were treated in accordance with the American Psychological Association guidelines for treatment of human subjects. They signed the Informed Consent Form after the nature and possible consequences of the present study had been explained to their complete satisfaction. Then they were administered the GIQ. If they met the criteria for the study, they were included in the sample and randomly assigned to one of the four experimental groups. They were then asked to complete the SRRS, MPQ, BDI II, STAI, RSES, IE, and BPCS-RS. This phase was completed in spring 1998. Each participant was scheduled for ten biweekly (two times a week) sessions and a session to complete the post-tests and signing the debriefing statement. The post-tests were completed in fall 1998. Because the sessions for Reiki can take anywhere from a few moments up to 90 minutes, while the PMR may take only about 30 minutes, we decided to use a 30-minute time frame for all sessions in each group.

Each participant retained the same practitioner for all ten sessions. In order to be consistent, three Reiki Masters for Group R, four assistants for Group PMR, and four assistants for Group P were trained by the present co-author Dressen who is a Reiki practitioner/Reiki Master. Group C was conducted by Dressen. This phase was completed in fall 1998. All lay assistants were initiated

in the First Degree Reiki after the experiment as their reward for volunteering their time for the present experiment.

The Group R received ten biweekly sessions of Reiki by one of the four Reiki Masters. Each participant reclined face up, fully clothed on a massage table and was covered by a light sheet. A wedge shaped bolster was used under the knees to prevent stress on the lower back. Hand placement started at the head with the practitioner's hands directly covering the participant's sinuses and forehead, jaw, and the throat and thymus area. The practitioner then floated the hands 1/2 inch above the participant's torso, holding them over the heart, the solar plexus, the abdomen, on the knees and the toes. The participant then turned face down on the face cradle while the practitioner placed the hands on the back of the neck and head, covering the back of the head, between the shoulder blades, the back of the heart, the back of the solar plexus, the hips, the back of the knees and the soles of the feet.

The 30 participants in Group PMR received ten biweekly sessions of progressive muscle relaxation procedure and deep breathing exercises. The muscle relaxation technique was based on Jacobson's model where participants tensed and relaxed each muscle group before tensing and relaxing the entire body.[41] Participants reclined face up on a massage table and were covered with a sheet. A wedge was placed under the knees to alleviate stress on the lower back. Participants were asked to take a deep breath, exhale slowly, and close their eyes. The process of tensing and releasing was repeated twice for each muscle group starting with the hands, then the wrists, flexure of the elbow, shoulder shrugs, eyes, nose, mouth, jaw, shoulder blades, abdomen, buttocks, thighs, calves, feet, ending with full body tension. The participants of this group were offered ten Reiki sessions after they completed the ten PMR sessions, post-tests, and signed the debriefing statement.

The Group C consisted of 30 participants who came for ten biweekly sessions to Dressen's office and read any material of their choice without receiving any treatment. Then they completed post-tests and signed the debriefing statement. They were offered ten Reiki sessions after the study was completed.

The 30 participants of the Group P received ten biweekly sessions of false-Reiki treatment by four lay assistants who had no Reiki attunement and who

emulated the hand positions being used on Group R. After they completed the post-tests and signed the debriefing statement, they too were offered ten Reiki sessions.

Three-Month Follow-up

Three months after the post-testing, the Group R participants were contacted for the follow-up testing to examine the differences in mean scores between post-test and follow-up measures of Reiki Group. This was completed in spring 1999.

RESULTS

The present experiment used a 4 x 2 factorial design, fixed effects model. The alpha level was set at .05. First, to ensure the equivalency of the groups regarding life-stress, a one-way analysis of variance (ANOVA) was performed on SRRS scores obtained at pre-test. T results did not show significant differences in life-event stress levels among four treatment groups (M SRRS scores: R = 299.3, PMR = 282.1, C = 280.23, P = 310.86; $F_{3,116}$ = .82, ns). The overall mean SRRS score of the sample was 293.13 (*SD* = 118.73). Of the 12 participants, 58% scored between 200-299 indicating 50% health risk and 37% scored above 300 indicating 90% health risk. The overall pre-test mean scores for state anxiety and trait anxiety were 40.59 (*SD* = 14.18) and 40.62 (*SD* = 13.19) respectively. These scores are 5-points higher than the norms for the normal working adults.[35] These results indicated that the participants in the present sample were experiencing higher stress levels. The other sample mean scores were as follows: PPI, 2.2 (*SD* = 1.27); PRI-R: S, 10.08, (*SD* = 8.85); PRI-R: A, 1.84 (SD = 2.65); PRI-R: E, 2.12 (*SD* = 1.68); PRI-R: T, 17.49 (*SD* = 14.98); BDI-II, 13 (*SD* = 11.32); RSES, 24.8 (*SD* = 7.1); IE, 10.1 (*SD* = 5.23); BPCS-RS: B, 60.88 (*SD* = 10.32); and BPCS-RS: C, 19.67 (*SD* = 9.91).

One-way ANOVAs were conducted using pre-test scores of all 12 dependent variables to further determine the equivalency of groups. The results were not significant for any of the dependent variables, however, results for depression

approached significance ($F_{3,116} = 2.65$, $p = .052$). Participants in Group R showed greater depression than other groups. The $F_{3,116}$ values for all variables ranged from .43 to 2.65. See Table I for pre-test means and standard deviations.

Since age in the present sample ranged from 21 to 62, we conducted a factorial ANOVA with treatment x age. The ages were divided into two groups: younger (40 or less) and older (41 or more) with a median split. There were no significant main effects or interaction effects involving age. The $F_{3,116}$ values ranged from .23 to .93 for the main effect of age on the dependent variables. Therefore, age as measured in this experiment was ruled out as an intervening variable.

Because of multiple medical conditions in the sample, a two-way χ^2 was used to test the relationship between treatment and medical condition. Medical conditions were dichotomized as headaches and other conditions because 28 out of 32 expected frequencies were less than five. The results showed that the four treatment groups did not differ with regard to medical conditions ($\chi^2 = .40$ (3), $p = .94$) showing that multiple medical conditions did not confound the results. Table II presents the number and percent of participants in each medical condition subcategory.

The mean pre-test, post-test, and change scores with standard deviations for all dependent variables are presented in Table I and ANOVA results for pre-test-post-test change scores for these dependent variables along with Omega Squared are presented in Table III.

The results showed significant main effects of treatment on 10 of the 12 dependent variables. The data did not support the first main hypothesis for two pain measures: PRI-R: Affective quality of pain and PRI-R: Total scale. Tukey/Kramer procedure was used for all post hoc pair-wise comparisons. Table IV illustrates the direction of significant Tukey/Kramer procedure results for all dependent variables. Group R yielded significantly greater positive pre-test-post-test mean change scores as compared to the other three groups on all dependent variables, except in the cases of unrealistic sense of control and faith in God, and there were no other significant pair-wise comparisons. Group R showed significantly greater negative pre-test post-test mean change scores than groups PMR and C on unrealistic sense of control and faith in God variables; however, the mean change scores of groups R and P did not differ significantly.

Table I

Mean Pre-test, post-test, and Change Scores with Standard Deviations in Parentheses for Fopur Groups by Sex and Dependent Variables

Dependent Variable	Reiki Group			PMR Group			Control Group			Placebo Group		
	Pre-test	Post-test	Change	Pre-test	Post-test	Change	Pre-test	Post-test	Change	Pre-test	Post-test	Change
Present Pain Intensity												
Men	0.250	00.92	0.158	02.33	02.08	00.25	01.50	01.25	00.25	02.17	02.08	00.09
	(1.00)	(1.00)	(1.44)	(1.30)	(1.16)	(1.22)	(1.31)	(1.06)	(0.45)	(1.12)	(1.44)	(1.16)
Women	02.11	00.83	01.28	01.67	01.61	00.06	02.27	01.78	00.439	01.89	01.67	00.22
	(1.37)	(0.92)	(1.41)	(1.19)	(1.38)	(0.94)	(1.18)	(0.88)	(0.92)	(1.45)	(1.41)	(0.54)
All	02.26	00.86	01.40	01.93	01.80	00.13	01.97	01.57	00.40	02.00	01.83	00.17
	(1.23)	(0.94)	(1.40)	(1.26)	(1.30)	(1.04)	(1.27)	(0.97)	(0.77)	(1.31)	(1.41)	(0.83)
Pain Rating Index-R: Sensory												
Men	11.58	05.83	05.75	06.75	04.83	01.92	05.92	05.92	00.00	07.83	8.25	-0.42
	(7.52)	(12.58)	(12.06)	(8.28)	(5.04)	(5.45)	(9.04)	(10.84)	(3.41)	(6.75)	(7.29)	(4.68)
Women	15.11	10.78	04.33	10.17	07.11	03.06	12.22	10.33	01.89	08.28	07.78	00.50
	(10.73)	(9.48)	(9.50)	(8.71)	(7.43)	(4.51)	(7.27)	(7.88)	(8.03)	(8.96)	(9.42)	(2.55)
All	13.08	08.80	04.28	08.80	06.20	02.60	09.70	08.57	01.13	08.10	07.97	00.13
	(9.60)	(10.92)	(10.57)	(8.56)	(6.58)	(4.85)	(8.47)	(9.27)	(6.56)	(8.03)	(8.50)	(3.50)
Pain Rating Index-R: Affective												
Men	01.75	01.75	00.00	00.42	01.78	00.33	01.58	02.00	-0.42	02.25	01.920	0.33
	(2.56)	(4.07)	(3.91)	(0.93)	(2.54)	(2.65)	(3.06)	(3.16)	(1.44)	(2.89)	(2.65)	(2.57)
Women	02.83	02.88	-0.05	01.78	01.17	00.61	01.89	01.50	00.39	01.78	01.39	00.39
	(3.32)	(0.42)	(3.26)	(2.53)	(1.91)	(0.42)	(2.40)	(2.36)	(1.42)	(2.64)	(2.38)	(1.21)
All	02.40	02.43	-0.03	01.23	00.83	00.40	01.77	01.70	00.07	01.97	01.60	00.37
	(3.40)	(3.65)	(3.47)	(2.12)	(1.58)	(1.90)	(2.64)	(2.67)	(1.46)	(2.71)	(2.59)	(1.84)

Table I
Continued

Dependent Variable	Reiki Group Pre-test	Post-test	Change	PMR Group Pre-test	Post-test	Change	Control Group Pre-test	Post-test	Change	Placebo Group Pre-test	Post-test	Change
Pain Rating Index-R: Evaluative												
Men	02.82	00.91	01.91	01.55	01.09	00.46	01.36	01.09	00.27	02.18	02.55	-0.37
	(1.66)	(1.64)	(1.97)	(1.92)	(1.30)	(0.93)	(1.57)	(1.51)	(0.78)	(1.89)	(1.81)	(1.74)
Women	02.64	01.23	01.41	01.65	01.36	00.29	02.29	01.58	00.71	02.24	01.59	00.65
	(1.41)	(1.44)	(1.91)	(1.5)	(1.57)	(1.26)	(1.53)	(1.62)	(1.45)	(1.86)	(1.87)	(1.45)
All	02.71	01.11	01.60	01.61	01.25	00.36	01.93	01.39	00.54	01.21	01.96	00.25
	(1.23)	(0.94)	(1.40)	(1.26)	(1.30)	(1.04)	(1.27)	(0.97)	(0.77)	(1.31)	(1.41)	(0.83)
Pain Rating Index-R: Total Scale												
Men	21.25	10.50	10.75	10.75	08.58	02.67	11.58	10.08	-1.50	16.92	15.75	01.17
	(14.07)	(22.57)	(21.60)	(13.66)	(8.80)	(9.00)	(16.09)	(20.32)	(8.20)	(13.13)	(14.16)	(12.17)
Women	24.00	18.61	05.39	17.11	12.39	04.72	20.17	14.56	02.28	15.00	13.44	01.56
	(18.24)	(18.00)	(17.05)	(13.86)	(12.97)	(6.81)	(12.89)	(13.08)	(11.24)	(15.06)	(15.45)	(5.31)
All	22.09	15.37	05.53	14.57	10.87	03.90	16.73	13.97	00.77	15.77	14.37	01.40
	(16.49)	(19.99)	(18.83)	(13.51)	(11.47)	(7.68)	(14.62)	(16.04)	(10.31)	(14.12)	(14.74)	(8.53)
Depression												
Men	19.33	05.25	14.08	10.08	08.91	01.17	06.00	07.08	-01.08	10.58	10.16	0.42
	(11.10)	(2.99)	(8.77)	(7.72)	(7.50)	(3.74)	(5.12)	(4.62)	(2.61)	(7.77)	(9.42)	(6.83)
Women	15.83	09.55	06.28	09.72	08.78	00.94	13.89	15.44	-01.55	13.17	13.81	-0.11
	(15.01)	(10.41)	(8.62)	(8.90)	(8.28)	(4.35)	(11.22)	(12.01)	(4.38)	(14.13)	(13.95)	(3.46)

Table I
Continued

Dependent Variable	Reiki Group Pre-test	Post-test	Change	PMR Group Pre-test	Post-test	Change	Control Group Pre-test	Post-test	Change	Placebo Group Pre-test	Post-test	Change
State Anxiety												
Men	42.75	29.00	13.75	38.00	38.33	-0.33	30.83	30.25	0.58	42.50	42.08	0.42
	(12.24)	(6.99)	(9.13)	(17.18)	(15.16)	(3.98)	(10.46)	(10.46)	(3.90)	(13.45)	(12.46)	(6.10)
Women	47.89	34.06	13.83	41.56	39.94	01.62	42.28	41.06	01.22	37.33	36.89	0.44
	(13.17)	(11.37)	(9.13)	(14.96)	(12.32)	(7.77)	(12.67)	(13.79)	(5.68)	(14.40)	(14.15)	(6.09)
All	45.83	32.03	13.80	40.13	39.30	0.83	37.70	36.73	0.97	39.40	38.97	0.43
	(12.85)	(10.03)	(12.27)	(15.69)	(13.30)	(6.51)	(12.97)	(13.54)	(4.98)	(14.02)	(13.53)	(6.50)
Trait Anxiety												
Men	45.08	31.25	13.83	39.25	38.42	0.83	31.33	31.58	-0.25	45.75	42.25	03.50
	(12.05)	(7.90)	(8.03)	(15.39)	(14.25)	(5.39)	(5.77)	(7.29)	(3.33)	(13.78)	(11.40)	(11.56)
Women	43.94	33.83	10.11	43.50	43.28	0.22	40.00	39.94	0.06	36.61	36.22	0.39
	(13.54)	(8.33)	(10.76)	(13.24)	(12.63)	(5.30)	(12.90)	(14.31)	(3.51)	(12.69)	(14.45)	(6.37)
All	44.40	32.80	11.60	41.80	41.33	0.47	36.53	36.60	-0.07	40.27	38.63	01.64
	(12.77)	(8.12)	(9.79)	(14.04)	(13.28)	(5.25)	(11.35)	(12.55)	(3.38)	(13.68)	(13.45)	(8.77)
Self-Esteem												
Men	20.83	36.08	-05.25	21.17	20.83	-0.34	28.67	29.58	-0.91	24.67	24.83	-0.16
	(5.95)	(6.39)	(6.31)	(8.85)	(9.08)	(2.57)	(4.36)	(5.25)	(5.18)	(7.01)	(9.46)	(6.33)
Women	26.38	27.88	-01.50	24.50	24.61	-0.11	25.17	23.83	01.34	25.28	25.17	0.11
	(6.68)	(9.11)	(6.41)	(8.76)	(7.68)	(5.15)	(9.06)	(10.56)	(5.24)	(8.66)	(9.12)	(3.14)
All	24.10	27.10	-03.00	23.17	23.37	-0.20	26.57	26.13	0.44	25.03	25.03	0.00
	(6.86)	(8.06)	(6.53)	(8.80)	(8.46)	(4.25)	(7.64)	(9.17)	(5.24)	(7.92)	(9.09)	(4.58)

Table I
Continued

Dependent Variable	Reiki Group Pre-test	Post-test	Change	PMR Group Pre-test	Post-test	Change	Control Group Pre-test	Post-test	Change	Placebo Group Pre-test	Post-test	Change
Locus of Control												
Men	10.75	08.17	02.58	09.50	10.17	-0.67	08.41	08.00	0.41	11.00	09.92	01.08
	(6.14)	(4.99)	(4.54)	(5.44)	(5.42)	(1.23)	(5.76)	(5.75)	(3.03)	(6.63)	(6.02)	(3.40)
Women	08.50	06.94	01.56	10.61	10.78	-0.17	09.78	10.28	-0.50	11.61	11.77	-0.16
	(6.14)	(4.99)	(2.46)	(3.51)	(4.53)	(3.11)	(5.65)	(5.67)	(2.03)	(5.53)	(5.09)	(1.88)
All	09.40	07.43	01.97	10.18	10.55	-0.37	09.23	09.70	-0.47	11.37	11.03	0.34
	(4.86)	(4.09)	(3.41)	(4.37)	(4.83)	(2.51)	(5.64)	(5.71)	(2.43)	(5.89)	(5.46)	(2.62)
Unrealistic Sense of Control												
Men	60.08	64.33	-4.25	62.83	61.16	01.67	62.33	62.83	-0.50	56.75	60.08	-3.33
	(16.07)	(10.56)	(7.52)	(11.07)	(9.76)	(2.86)	(11.42)	(11.61)	(2.65)	(8.81)	(8.99)	(5.51)
Women	63.22	65.94	-2.72	60.50	60.28	0.22	62.38	61.83	0.55	58.39	61.39	-3.00
	(12.35)	(9.38)	(9.25)	(6.49)	(5.72)	(4.59)	(10.46)	(9.88)	(4.88)	(5.30)	(7.12)	(5.94)
All	61.92	65.30	-3.38	61.43	60.83	0.60	62.37	62.23	0.14	57.73	60.86	-3.13
	(13.78)	(8.73)	(8.50)	(8.52)	(7.47)	(3.96)	(10.66)	(10.42)	(4.11)	(6.83)	(7.80)	(5.68)
Faith in God's Assistance												
Men	24.25	22.50	01.75	20.33	20.16	0.17	18.25	18.58	-0.33	25.42	21.75	3.67
	(11.93)	(10.18)	(5.12)	(9.61)	(9.98)	(2.13)	(9.44)	(9.17)	(3.47)	(14.77)	(11.31)	(5.85)
Women	16.72	14.22	02.50	17.44	18.00	-0.56	18.67	19.00	-0.33	19.22	20.11	-0.89
	(7.25)	(5.82)	(5.04)	(6.53)	(6.12)	(2.31)	(9.72)	(9.76)	(1.85)	(9.35)	(8.78)	(3.83)
All	19.73	17.49	02.24	18.60	18.87	-0.27	18.50	18.83	-0.33	21.70	20.77	0.93

Table II
Number and Percent Participants Treatment by Medical Condition

Medical Condition	Total		Treatment Groups: Reiki		PMR		Control		Placebo	
	N	%	N	%	N	%	N	%	N	%
Headaches	54	**45**	12	**40**	14	**47**	14	**47**	14	**47**
Hypertension	17	**14**	05	**16**	05	**16**	10	**10**	04	**13**
Coronary heart disease	12	**10**	02	**07**	03	**10**	04	**13**	03	**10**
Cancer	09	**08**	03	**10**	01	**03**	02	**07**	03	**10**
Arthritis	08	**06**	02	**07**	02	**07**	03	**10**	01	**03**
Asthma	07	**06**	03	**10**	01	**03**	01	**03**	02	**07**
Peptic ulcers	07	**06**	01	**03**	02	**07**	02	**07**	02	**07**
AIDS/HIV	06	**05**	02	**07**	02	**07**	01	**03**	01	**03**

Total number of participants = 120
Number in each group = 30

Significant interaction effects of treatment x gender were found on depression and faith in God only. Tukey/Kramer procedure was employed to compare the cell means. Men showed significantly greater reduction in depression than women in Group R and Group R women showed significantly greater increase in faith in God than all other women in groups PMR, C, and P, and men in Group C. Also the Group P men showed significantly greater increase in faith in God than the women in Group P and men and women in both groups PMR and C.

Although the ANOVA results for ten independent variables were significant, only three main effects showed medium and four main effects showed large effect sizes as measured by Omega Squared ($_{W}^{2}$), see Table III. Omega Squared provides the proportion of variability on the dependent variable that is associated with the experimental treatments (independent variable).[42] According to Keppel, it is unusual to find 2 values larger than .25 in the experimental literature in psychology. Omega Squared of .15 or larger is considered large

Table III
Main Effects of Treatment and Only Significant Treatment x Sex ANOVA and Omega Squared Results Using Pre-test Post-test Change Scores for 12 Dependent Variables

Dependent Variable	*F*	*p*	w^2
Global Pain Intensity	9.67	.0001	.18**
Pain Rating Index-R: Sensory	2.87	.03	.05
Pain Rating Index-K: Affective	.17	.91	*ns*
Pain Rating Index-K: Evaluative	5.43	.001	13*
Pain Rating Index-K: Total Scale	2.24	.09	*ns*
Depression	23.57	.0001	.34**
Depression x Sex	2.98	.03	.03
State Anxiety	18.56	.0001	.28**
Trait Anxiety	17.29	.0001	.29*
Self-Esteem	3.29	.02	.05
Locus of Control	5.18	.002	.10*
Unrealistic Sense of Control	3.79	.01	.07*
Faith in God	2.80	.04	.04
Faith in God x Sex	2.68	.05	.02

**Large effect size
*Medium effect size

treatment effect. We found large treatment effects on present pain intensity, depression, state and trait anxiety, while the treatment effects were medium on PRI-R: evaluative, locus of control, and unrealistic sense of control. On PRI-R: sensory, self-esteem, and faith in God, small treatment effects were noted.

The independent *t* tests were used to compare the post-test and follow-up test scores on all dependent variables. See Table V for statistical results. Although, the results showed no significant differences between the post-test and follow-up test mean scores for any of the dependent measures except PRI-R: sensory

Table IV

Illustration of the Tukey/Kramer Procedure Results for Post Hoc Pair-Wise Comparisons

Variable	Tukey/Kramer Procedure Results Pattern
Present Pain Intensity (A)	Group R > PMR ↔ C ↔ P
Pain Rating Index-R: Sensory (A)	Group R > PMR ↔ P
Pain Rating Index-R: Evaluative (A)	Group R > PMR ↔ C ↔ P
Depression (A)	Group R > PMR ↔ C ↔ P
A x B	R ♂ > R ♀
State Anxiety	Group R > PMR ↔ C ↔ P
Trait Anxiety	Group R > PMR ↔ C ↔ P
Self-Esteem	Group R > PMR ↔ C ↔ P
Locus of Control	Group R > PMR ↔ C ↔ P
Unrealistic Personal Control	Group R > PMR ↔ C
Faith in God (A)	Group R > PMR ↔ C
A x B	R ♀ > PMR ♀ ↔ C ♀♂ ↔ P ♀
	P ♂ > PMR ♂♀ ↔ C ♂♀ ↔ P ♀

Key:
A = Treatment
A x B = Treatment x Sex Interaction
R = Reiki Group; PMR = Progressive Muscle Relaxation Group; C = Control Group; P = Placebo Group
> = significantly greater change; ↔ = no significant difference in change
♂ = Men; ♀ = Women

quality of pain, PRI-R: affective quality of pain, and PRI-R: total scale, the results showed significant reduction in scores on these pain scales after three months of receiving ten sessions of Reiki. Furthermore, even though there was no significant pre-test to post-test changes in affective quality of pain and PRI-R-Total score, at follow-up results showed significantly large reduction in scores on these pain measures.

Table V
Statistical Results Comparing Post-test and Follow-up Scores on All Dependent Variables for Group R

Variable	Mean Scores Post-test	Follow-up	*t* (58)	*p*
Present Pain Intensity	00.86	00.77	.35	.73
Pain Rating Index-R				
Sensory	08.80	02.03	3.14	.003*
Affective	02.43	00.73	2.33	.02*
Evaluative	01.11	00.93	.44	.92
Total	15.37	04.13	2.85	.006*
Depression	07.83	08.03	-.09	.96
State Anxiety	32.03	32.03	0	1
Trait Anxiety	32.80	33.30	-.10	.91
Self-Esteem	27.10	26.33	.38	.71
Locus of Control	07.43	06.53	.84	.41
Unrealistic Sense of Control	65.30	65.93	-.25	.80
Faith in God	17.49	19.00	-.63	.53

*Significant Results

DISCUSSION

The present research represents the first attempt to compare Reiki with progressive muscle relaxation and false Reiki with regard to chronically ill patients' pain, mood, personality, and faith in God. Our efforts were fruitful. Following is a summary of the findings for three main hypotheses of the present experiment.

The results partially supported the first main hypothesis indicating that Reiki is an effective modality for reduction of pain, depression and state anxiety in chronically ill patients. It was also effective in showing the desirable changes in personality indicated by reduction in trait anxiety, enhancement of self-esteem, shift toward internal locus of control and toward realistic sense of personal control. Further, it helped in strengthening participants' faith in God. No significant pre-test to post-test change was noted for PRI-R: affective and PRI-R: total scale.

The second hypothesis was supported only for two dependent variables indicating significant treatment x gender interaction on depression and faith in God. The results showed that men experienced significantly greater reduction in depression than women after receiving Reiki. However, women after receiving Reiki showed significantly stronger faith in God than all women who did not receive Reiki and men in Group C who did not receive any treatment.

The third hypothesis of no differences between post-test and follow-up measures on Group R was supported for all but three independent variables (PRI-R: sensory, PRI-R: affective and PRI-R: total scale). However, there was significant reduction in these three pain measures at the follow-up testing as compared to pre-test and post-test. These findings showed two things: first, that gains made by the recipients of Reiki were maintained over longer period of time, and second, that in case of two pain variables (PRI-R: affective and PRI-R: total scale) that did not show significant pre-test to post-test change, significant reduction in pain did take place at three-month follow-up testing.

Discussion of the Significant Findings

Treatment showed a large effect on pain assessed as the subjective measure of one's present pain intensity. Reiki, as performed in the present experiment, used gentle touch and comfortable environment in which participants felt more relaxed than before the treatment. Therefore, it is not surprising that the scores on present pain intensity decreased drastically indicating lesser pain. The sensory and evaluative qualities of pain were also assessed by the participants to be significantly lower in intensity after Reiki treatment but the effect sizes

were only small and medium respectively. The affective quality of pain which did not show significant results was to be judged as suffocating, punishing, cruel, wretched, etc., describing pain in terms of fear and autonomic properties.[31] On the other hand, adjectives representing sensory (hot, tingling, tugging, etc.) and evaluative qualities (intense, troublesome, unbearable, etc.) of pain seem to represent more temporal and thermal properties of pain and intensity of the total pain experience respectively. Maybe while describing the pain, the pain sufferers are more interested in giving more sensory and evaluative rather than emotional description.

The largest treatment effect was noted on depression with a dramatic decrease in depression in those who received Reiki. Also, it was interesting that there was significantly greater pre-test to post-test decrease in depression in Group R men as compared to Group R women. Although four treatment groups did not differ significantly at pre-testing with regard to depression, men had significantly more depression (M =15.76, SD = 12.83) at pre-testing than women (M = 10.24, SD = 9.61; t = 2.69 (118), p < .01) in the sample as a whole, which is contrary to previous research on depression.[34] It might be that men in our culture have a harder time dealing with chronic illness and pain than women.

Another explanation about significant gender difference could be based on the importance of touch. Humans appear to need touch, especially non-violent, non-sexual touch. Yet we live in a culture which tends to view touch in an abusive or sexual nature, leading us to be very reserved with physical touching, especially for males. In our culture, men touching or being touched is usually viewed negatively, and in particular sexual. The results of the present study make us wonder if this lack of touch has created a deep need for non-violent, non-sexual touch within the male psyche, a contention coinciding with the results reported by Horton, Clance, Sterk-Elifson, and Emshoff in their survey of patients' experiences with touch in psychotherapy.[43] They concluded that the judicious use of touch with patients who have a need to be touched may foster trust and/or communicate acceptance, enhancing patients' self-esteem. Because Reiki is gentle, nurturing, and non-sexual touch and because it is spiritual in nature, it might fill that need, 'lifting the spirit' so to speak.

Further, in our culture, men are supposed to show strength and resilience in the face of adversity without the support of touch. Women have no such

cultural constraints. The men in the present study already had some chronic illness and it could have been that the illness, combined with the lack of human touch, compounded the depression. The women, on the other hand, would have been more likely to have received some type of consoling touch by family and friends thereby lessening their level of depression. Our argument is supported by Willson and Mason.[44] In their review of role of touch in therapy, they concluded that touching could be therapeutic when used appropriately and that both men and women are more comfortable in accepting touch from women. Reiki was provided by four female Reiki masters in the present study.

Significant main effects with second and third largest treatment effects were found on both state and trait anxiety. The participants in the present experiment showed higher levels of stress and anxiety at pre-testing. The literature is abound with the evidence to show that people with chronic physical illness and pain show high levels of anxiety.[11,35,45] Perhaps the high levels of anxiety may be, in part, due to the uncertainty of resolution of chronic medical conditions. Sadigh reviewed literature on chronic pain and concluded that chronic pain patients display personality disorders, especially those with anxiety-related features.[46] Most often, high levels of anxiety are treated with medication and/or relaxation therapy. For those who refuse or cannot take medication and are in need of immediate help, a laying-on-of-hands method may be useful. Another method similar to Reiki which has been reported to be successful with such patients is Therapeutic Touch (TT) developed by Dr. Dolores Krieger.[47] In their study on anxiety, Olson and Sneed summarized several studies that reported reduction in anxiety using TT.[48] They also found that TT is more effective for those who feel highly anxious. In a recent review of quantitative research on TT, Spence and Olson reported that two areas in which TT was found to be most effective are anxiety and pain.[49]

The other two variables with medium effects of the treatment were locus of control and unrealistic sense of control. Most research on locus of control examines how internality/externality affect various responses of individuals. However, we examined the effects of Reiki on one's perceived sense of control on one's life. According to Brown, locus of control refers to one's expectancy that events in one's environment are contingent on one's behavior, however, the opposite could be stated that one's behavior is contingent upon events in one's

environment.[50] This assumption could justify saying that in the present study, with reduction of pain one might feel greater sense of control over one's life and one's sense of control might become more realistic. This realistic sense of personal control might be due to one's earlier experience of sense of helplessness while experiencing greater pain. Of course the validity of this explanation remains to be tested by future research. One of the claims made by those who experience Reiki is that they become more spiritual and internally focused.[7,9] This internal focus might make one more self-directed and therefore more internal.

Even though the results for sensory quality of pain, self-esteem, and faith in God were significant, the treatment effects were small. It might be that Reiki did not have a direct impact on these variables, rather they changed as a result of change in their correlates, such as other pain indices, depression, anxiety, and locus of control. These variables might be linking variables between Reiki and sensory quality of pain, self-esteem and faith in God, because when one feels less depressed and anxious, then one's faith in self and God might strengthen and one may sense less pain.

Post-Research Comments

This is the first experimental study of Reiki to our knowledge using randomly assigned groups of men and women comparing Reiki with progressive muscle relaxation therapy, no therapy, and false-Reiki and participants having similar levels of life-event stress. We were amazed with several things while completing this study. First, the willingness on the part of medical and mental health professionals to refer patients for this research project was most encouraging. Second, the subjective accounts of benefits of Reiki from most participants coincided with the subjective accounts presented by others in Reiki literature. One of the most astonishing reports came from an HIV positive patient whose lab work following only two of the ten Reiki treatments indicated a dramatic rise in CD4 cell count. Third, in all her academic career of over 20 years, present co-author Singg had never experienced such a low drop out rate in any other experiment as was the case in the present study. Participants in all groups were most motivated to receive Reiki. One reason might be the need to reduce chronic pain associated with their medical conditions. This may be because

pain motivates individuals to engage in activities aimed at stopping it as quickly as possible.[31]

Although a large sample was secured and participants were randomly assigned to the groups, it was not randomly selected, which is the major limitation of the present study. Another limitation is the possible confounding by a variety of intervening variables that were not controlled. The possible intervening variables could be seriousness of the illness, multiple experimenters, multiple sites, religiosity, and social support available to the patient. Hopefully, the random assignment of the participants and other controls used in the study reduced the risk of these uncontrolled variables. Another limitation of the study is not using a standardized comprehensive personality inventory such as California Personality Inventory or Revised NEO Personality Inventory. At the beginning of the study, we did not expect much change in the personality traits and did not want to add to the bulkiness of the battery of tests by using a lengthy personality inventory.

Although we ruled out the placebo effect in the present experiment, the possibility of confounding due to some uncontrolled variables still remains. Therefore, the results of this study should be considered preliminary until replications are done. Also, the external validity of the present study is limited as the sample consisted of mainly chronically ill persons, therefore, the results may not generalize to broader populations.

CONCLUSIONS

The following conclusions are made on the basis of significant results of the present experiment.

(1) Reiki is an effective modality for reducing pain, depression, and state anxiety. Of those receiving Reiki, men tend to show greater reduction in depression than women after receiving Reiki.

(2) Reiki is effective in enhancing desirable changes in personality. Persons tend to show decreased trait anxiety, self-esteem enhancement, and greater sense of internal locus of control. Further, their belief in their personal control tends to become more realistic.

(3) Reiki enhances one's faith that God is a powerful agent whose help can be enlisted. Women tend to experience this enhancement in faith more than men.

(4) Based on the results of the present study, it appears that attunement is necessary for practice of Reiki. A false-Reiki practice would not be effective in enhancing desirable changes in pain, affective states, personality traits, and spirituality.

(5) The gains made by Reiki tend to persist over longer periods of time. Furthermore, after three-month period, significant reduction tends to occur in sensory and affective qualities of pain and Total Pain Rating Index.

(6) Chronically ill patients experiencing high stress and pain would be receptive to Reiki practice.

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CORRESPONDENCE: Responsibility for this article is shared equally by the authors, whose names are listed alphabetically. Address correspondence to Sangeeta Singg • Department of Psychology and Sociology • Angelo State University • P. O. Box 10907 • San Angelo, Texas 76909 • Email: Sangeeta.Singg@angelo.edu

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