The effects of Reiki treatment on mental health professionals who are at risk for secondary traumatic stress

Martha P. Novoa
Louisiana State University and Agricultural and Mechanical College

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_dissertations

Part of the Social Work Commons

Recommended Citation
https://digitalcommons.lsu.edu/gradschool_dissertations/2183

This Dissertation is brought to you for free and open access by the Graduate School at LSU Digital Commons. It has been accepted for inclusion in LSU Doctoral Dissertations by an authorized graduate school editor of LSU Digital Commons. For more information, please contact gradetd@lsu.edu.
THE EFFECTS OF REIKI TREATMENT ON MENTAL HEALTH PROFESSIONALS WHO ARE AT RISK FOR SECONDARY TRAUMATIC STRESS

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

In

The School of Social Work

by

Martha P. Novoa
B.S., Universidad Nacional Agraria- La Molina, 1987
M.S., Louisiana State University, 1993
M.S.W., Louisiana State University, 2003
December, 2011
DEDICATION

To my mom Martha Salas and my aunt Angela Salas de Vargas

who made the dream of coming to America possible…
ACKNOWLEDGEMENTS

I extend great appreciation and gratitude to my committee for their guidance, support, and unique contributions to this project. All of you have made a researcher out of me. To Dr. Juan Barthelemy, who patiently worked with me until I conquered my fear of statistics, thank you! Thanks to Dr. Michelle Livermore and Tim Page for the willingness to share your knowledge and challenge me to stay within the field of social work. I extend special thanks to my major professor Dr. Daphne Cain for both her excitement about the subject matter and patience through the dissertation process. Dr. Cain has always push me to seek more and do better while fostering enjoyment and appreciation for research. Thanks Daphne!

Very special thanks to Dr. Cecile Guin for her extraordinary support during this entire academic endeavor, and also to OSSRD for the encouragement. I will always hold a special memory of my cohort and friends, Dr. Rhonda Norwood, Dr. Younghee Kim, and Dr. Judith Rhodes who shared laughter, joy and dreams making the journey possible while becoming scholars.

Finally, I have to thank my family. To my siblings the late Elizabeth Novoa and also Jorge Novoa whose laughter and support never failed to renew my joy. To my late uncle Mario Vargas who taught me the value of being true to myself and opened the door to the world of energy healing. Thank you to my mom and to my aunt Angela de Vargas for their gift of perseverance. Last but not least thanks to Glenda Natale, I could not have done this without you. I will be forever thankful.
TABLE OF CONTENTS

DEDICATION .................................................................................................................. ii

ACKNOWLEDGEMENTS ............................................................................................... iii

ABSTRACT .................................................................................................................... vi

CHAPTER
1 INTRODUCTION ........................................................................................................ 1
  Scope of the Problem .................................................................................................. 1
  Definitions ................................................................................................................... 5
  Theoretical Framework ............................................................................................... 7
  Relevance to Social Work ......................................................................................... 12
  Purpose of Study ....................................................................................................... 13
  Research Question ................................................................................................... 13

2 LITERATURE REVIEW ............................................................................................... 14
  Secondary Traumatic Stress ....................................................................................... 14
  Treatment for Secondary Traumatic Stress ............................................................... 17
  Secondary Traumatic Stress and Psychoneuroimmunology ......................................... 19
  Psychoneuroimmunology and Reiki .......................................................................... 22
  Subtle Energy Therapies ............................................................................................. 22
  Reiki .......................................................................................................................... 23
  Summary on Empirical Studies of Reiki ..................................................................... 59
  Strengths and Limitations in Reiki Research ............................................................. 59
  Contribution to the body of knowledge ..................................................................... 65
  Summary of Reviewed Literature ............................................................................. 66

3 METHODOLOGY ....................................................................................................... 68
  Purpose ....................................................................................................................... 68
  Research Questions ................................................................................................... 68
  Hypothesis .................................................................................................................. 69
  Protection of Human Subjects .................................................................................. 69
  Operational Definitions ............................................................................................. 70
  Independent Variable ................................................................................................. 70
  Reiki Treatment .......................................................................................................... 70
  Dependent Variables ................................................................................................. 72
  Measurement ............................................................................................................. 73
  Population and Sample ............................................................................................. 76
  Recruitment Procedure .............................................................................................. 76
  Randomization Procedure ......................................................................................... 78
  Research Design ........................................................................................................ 80
  Data Collection and Instrumentation ......................................................................... 80
  Issues Related to Internal and External Validity ......................................................... 81
  Threats to Internal Validity in Current Study ............................................................. 82
ABSTRACT

The purpose of this cross-sectional experimental study was to examine the effects of Reiki on risk level for secondary traumatic stress (STS) among mental health professionals, such as, social workers and licensed professional counselor (LPCs). The sample (N=67) was mostly composed of master social work students (MSW) (61%) from the School of Social Work at Louisiana State University (LSU), professionals social workers (34%), and LPCs (5%). Study participants were randomly assigned to one of three treatment groups: Reiki, placebo or control group. Dependent variables measured at pretest and posttest were: risk level for STS, anxiety, depression, somatic symptoms, anger and hopelessness. Multivariate analysis of variance was conducted to determine if there was a difference between treatment groups. No significant difference was found between the Reiki, placebo or control groups on any of the variables measured. Implications for the social work profession are discussed.
CHAPTER 1: INTRODUCTION

The nature of the work for mental health professionals is to be a secondary witness to the traumatic events experienced by others. This constant exposure to a history of trauma makes mental health professionals at risk to symptoms of secondary traumatic stress (STS) (Figley, 1995; Wee & Myers, 2002, Trippany, White Kress, & Wilcoxon, 2004). Exhausted mental health professionals are at risk of failing to provide adequate services and can cause unintentional harm.

Reiki is a form of energy therapy whose popularity is increasing among the American public (Barnes, Power-Grinner, McFann & Nahin, 2004) and its effectiveness has been associated with STS symptoms (Olson & Hansen, 1997; Wardell & Engebretson, 2001; Shore, 2004; Mackay et. al., 2004; Tsang, Carlson & Olson, 2007). This non-directional, non-invasive technique can be a new tool for self-care for mental health workers to address issues of STS.

Scope of the Problem

STS is the stress individuals experience who are in constant contact with a traumatizing experience as a result of acting as a secondary witness to the traumatic event (Figley, 1995). Figley (1999) defined STS as “the natural, consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person” (p. 10). Researchers have reported predictors and symptoms associated with STS in mental health professionals including type of service provided, the nature of the work, age and years of experience, case load, amount of support from colleagues, work overload, time pressures, client characteristics, past trauma history, professional isolation, personal circumstances of the professional care giver, spiritual beliefs, and the work environment (Arvay & Ulhlemann, 1995; Prosper et al., 1996; Ursano, Fullerton, Vance & Kao, 1999; Wee & Myers, 2002) and symptoms such as, anxiety, stress,
disturbed sleep, insomnia, anger/rage, fear, social phobia, increased use of alcohol, anger, mistrust, isolation, perceptual distortions of reality, extreme protectiveness toward loved ones, feeling overwhelmed, depleted, worthlessness, suppressed emotions, flashbacks, irritability, feelings of insanity, loss of control, loss of purpose, suicidal thoughts, powerlessness, diminished concentration, preoccupation with trauma, trauma imagery, confusion, guilt, numbness, helplessness, mood swings, questioning the meaning of life, pervasive hopelessness, and mistrust (Crothers, 1995; Figley, 1995; Yansenn, 1995; Arvay & Ulhmann, 1995; Cornille & Myers, 1999). Other general physical conditions associated with STS are increased arousal, sweating, rapid heart rate, breathing difficulties, somatic reactions, aches and pains, dizziness, and an impaired immune system (APA, 1994; Yassen, 1995). Even though recognized as an occupational hazard, current research reports few incidences of STS among social workers. Existing studies are limited to specific populations with small sample sizes (Benoit, Veach & Leroy, 2007; Bride, 2007; Simon et al., 2005). However, the evidence provided by these studies indicates that social workers working with traumatized individuals are at risk for STS (Boscarino, Figley & Adams, 2004; Bride 2007; Nelson & Harris, 2003; Simon, Pryce, Roff & Klemmack, 2005).

In 2004, the National Institute of Mental Health (NIMH) reported that approximately 92% of psychotherapy in the USA is conducted by clinical social workers (Insel, 2004). Because social workers are the most significant source of mental health counseling in the U.S., they are also at high risk to develop STS. Social workers are vulnerable to STS because they may become over-invested and are frequently exposed to clients’ traumatic experiences. Despite their vulnerability to the effects of STS, and because STS may challenge the social worker’s ability to provide services and maintain personal and professional relationships (Collins & Long, 2003),
the National Association of Social Workers (NASW) Code of Ethics addresses this possible vulnerability by mandating social workers to maintain their own physical and psychological health in order to fulfill their responsibilities to clients and themselves (NASW, 1999).

Mental health professionals affected by STS may experience an array of trauma symptoms such as fear, depression, anxiety, stress, anger, irritability, intrusive thoughts, physiological arousal and hopelessness (APA, 1994; Arvay & Ulhmann, 1995; Bride, 2007; Cornille & Myers, 1999; Figley, 1995; McCann & Pearlmann, 1990; Yansenn, 1995). Debriefing has been the recommended therapeutic approach to treat STS (Arvay, 2001). However, the scientific community is scrutinizing this widely used method (Naturale, 2007). Research indicates that debriefing may cause more harm than help (Phipps & Byrne; Regehr, 2001). Regehr (2001) reported that individuals participating in debriefing groups who listen to the descriptions of others’ traumatic experiences or who themselves relive the incident may develop STS. Other recommended interventions for STS are preventative in nature, such as discussing the risks of developing STS with staff working with trauma clients, peer support, and supervision (Naturale, 2007). Pearlmann and MacIann (1995) recommend a comprehensive approach to address the individual’s needs, including the spiritual, emotional and physical component of the person.

Reiki is an energy therapy modality acknowledged by the National Center for Complementary and Alternative Medicine (NCCAM, 2002). Reiki is based on the belief that when spiritual energy is channeled through a Reiki practitioner, the client's spirit is healed, which in turn heals the physical body (Miles & True, 2003; Natale, 2010). Reiki is presently used in many hospitals throughout the country as an adjunct therapy to treat physical illness and facilitate well-being (Barnett et al., 1996; Nield- Anderson & Ameling, 2000; Natale, 2010).
Moreover, research suggest that Reiki may be an effective intervention for a variety of problems which are listed in the DSM IV and have associated descriptive features characteristic of individuals affected by STS (Shore, 2004; Mackay et al, 2004; Olson & Hanson, 1997; Tsang, Carlson, & Olson, 2007; Wardell & Engebretson, 2001). Research on Reiki has proposed its effectiveness on a number of physiological states, associated with STS, including heart rate (Mackay et al., 2004), blood pressure (Mackay et al.; Wardell & Engebretson, 2001), level of cortisol (Wardell & Engebretson, 2001), and subjective outcomes such as anxiety and stress (Shore, 2004), depression (Shore, 2004), fatigue (Tsang, Carlson, & Olson, 2007), and pain (Olson & Hanson, 1997). These are also symptoms related to STS (Yansenn, 1995).

However, to date, no research has been conducted specifically on the effect of Reiki on STS or its associated symptoms, including anxiety and stress, depression, anger, hopelessness, and somaticism on a sample of mental health professionals. In this study it is hypothesized that mental health professionals at risk for STS symptoms will be influenced by Reiki treatment.

Reiki research is relevant to the Social Work profession because a core characteristic of social work practice is to maintain a holistic perspective on the paradigms influencing and determining people’s lives. Recent statistics, reported by the Center for Disease Control and Preventions (CDC) National Center for Health Statistics (NCHS) indicated that there is an increased use of Complementary and Alternative Medicine (CAM) in mainstream America (Barnes, Powell-Griner, McFann, & Nahin, 2004). The data in this report were obtained from the 2002 National Health Interview Survey of 31,044 non-institutionalized, randomly selected adults (Barnes et al., 2004). Findings indicated that 62% of adults used some form of CAM for health reasons during the previous 12 months (Barnes et al., 2004). Most respondents to the CDC survey believed that the use of CAM combined with conventional medicine would help in their
recovery (54.9%) and that they would be interested in trying CAM (50.1%) (Barnes et al. 2004). Furthermore, because Reiki is a low risk, non-directive and non-invasive form of intervention it is being offered in healthcare settings such as, Harvard University, Columbia University, Darmouth-Hitchcock Medical Comprehensive Breast Cancer Program, and George Washington University Medical Center (DiNucci, 2005).

The increased interest in CAM is also present in the field of Social Work. Henderson (2000) reported that of a random sample of 321 clinical social workers who responded to a survey of complementary and alternative treatment methods, almost 9% either practiced energy therapy or referred patients to an energy therapy practitioner. A popular form of energy therapy is Reiki (Henderson, 2000). This is corroborated by the addition of continuing education courses in Reiki, at the University Of Maryland School Of Social Work, which ranks 19th in Schools of Social Work nationally. The purpose of the course is to provide social workers with a self-care tool to maintain well-being (Jackson, 2004).

Definitions

Energy Therapies

Energy therapies are defined by the NCCAM (2007) as a method of healing involving the conduction of healing energy through the hands of a practitioner into the client’s body with the purpose of restoring homeostasis in the system to induce health. Energy therapies are classified by NCCAM as putative energy fields. Examples of energy therapies are Reiki, healing touch, Qigong, and homeopathy.

Putative Energy Fields

Putative energy fields or biofields are defined by NCCAM (2007) as an organizing subtle universal energy field that interpenetrates, emanates and surrounds the body. Putative energy
fields are yet to be measured by repeatable means.

**Universal Energy Field**

The concept of universal energy field is based on the belief that all beings on the planet are infused with the same subtle life force energy. Eastern concepts such as, chakras, meridians, prana, Ki or chi are based on the belief that the human body conducts the universal energy field through them (NCCAM, 2007).

**Reiki practitioner**

The term “Reiki practitioner” is used in this paper and in the literature in reference to an individual who has received a Reiki attunement. In Reiki, the practitioner is enabled to conduit energy after being initiated in the practice through an attunement by a practicing Reiki master. This is believed to open the channels to conduct the Universal Life Force. The terms “Reiki practitioner level I or 1st degree” and “Reiki practitioner level II or 2nd degree” in this paper refer to different levels of Reiki practice. The terms “Reiki masters” or “level III” refer to the highest level that a Reiki practitioner can achieve (Miles & True, 2003).

**Sham Reiki/Placebo Reiki/Mimic Reiki**

The terms “sham Reiki”, “placebo Reiki”, or “mimic Reiki” are used in this paper and in the literature in reference to a false Reiki practitioner, typically used in research with the intent to deceive the participant in order to control for placebo effect.

**Sham Practitioner/Placebo Practitioner/Actor**

The term “placebo practitioner” or “sham practitioner” or “actor” is used in this paper and in the literature in reference to a false Reiki practitioner, who has been trained in the Reiki protocol but has never received a Reiki attunement.
Theoretical Framework

Ecological theory proposed by Germain (1978) and Germain and Gitterman (1987; 1995) focuses on the ongoing transactions between a person and the environment, this transaction is meaningful and constant and as a result the person and the environment change until the person adjusts to the environment. According to ecological theory the person and the environment are reshaping each other constantly under the influence of time, historical, and social context. The relationship of a person and a particular environment becomes the person:environment unit. The degree of adaptation is related to growth and development in the person:environment unit. Ecological theory views the relation person:environment holistically where the continuous adaptation may vary from a favorable goodness of fit, where continuous growth is achieved, to a minimal goodness of fit or unfavorable fit, where neither of the parties has growth opportunities (Germain & Gitterman, 1995).

Adaptation can be negatively influenced by life stressors that may cause excessive strains on how a person manages resources. Life stressors include traumatic events and any experience that disrupts the existing fit (Germain & Bloom, 1999). For the social work professional listening to the client’s traumatic experiences may turn into a life stressor and, when the social worker is not able to adapt and master the situation an unfavorable fit occurs and the risk for STS increases. Stress, in ecological theory, is defined as the internal response to a life stressor and is characterized by troubled emotional or physiological states, or both. A negative presentation of stress is demonstrated through the arousal of anxiety, guilt, anger, fear, depression and helplessness (Germain, 1980, 1991) which are symptoms of STS (Yanssen, 1995).

The strength of social work is to integrate knowledge from a variety of disciplines (Turner, 1995). Psychoneuroimmunology (PNI) is the interdisciplinary scientific field that
studies how an individual’s personal framework of their emotions, beliefs, and spirituality relate to the environment and how this dynamic results in positive or detrimental physical changes in the body (Cohen & Herbert, 1996). PNI seemingly locates the underlying mechanisms of disease and connects emotional and psychological states of being to the biological system. The interest of PNI in studying the mind-body connection and how their interaction affects our lives and how attention to levels of stress facilitates healing have resulted in empirical research that suggests that stress may have an impact on physical, mental, and emotional well-being (Cohen & Herbert, 1996).

In 1994, the Council on Social Work Education (CSWE) included spirituality and religion as integrated parts of the client’s system that need to be acknowledged and included by social workers into practice. In 2001, CSWE stated that the concept of “spiritual development through the life span” should be included in the social work curriculum for accreditation purposes (Doe, 2004). The concept of spiritual development through the life span is congruent with the Ecological Theory, as the spiritual component of life is part of the interaction in the PIE perspective. It is also integral to the biopsychosocial perspective in social work, which includes spirituality as one of the components of the client.

Recent statistics, reported by the Center for Disease Control and Preventions (CDC) National Center for Health Statistics (NCHS) indicated that there is an increased use of CAM in mainstream America. The data in this report were obtained from the 2002 National Health Interview Survey of 31,044 non-institutionalized, randomly selected adults. Findings indicated that when prayer was included as a CAM therapy, 62% of adults used some form of CAM for health reasons during the previous 12 months. When prayer was excluded from the definition of CAM, however, only 36% of adults used some form of CAM in the previous 12 months (Barnes,
Powell-Griner, McFann, & Nahin, 2004). As can be seen from the report, the inclusion of prayer as a CAM modality almost doubles the percentage of respondents acknowledging the use of CAM. Most respondents to the CDC survey believed that the use of CAM combined with conventional medicine would help (54.9%) and that it would be interesting to try CAM modalities (50.1%). Social work clients are likely to be included among this number. A core characteristic of social work practice is its holistic perspective of the paradigms influencing and determining people’s lives. Proficient social work practice involves an understanding of the client’s social, environmental, and cultural context that have an effect on their perception of the world and their consequential relationship to it (Turner, 1995). The NASW Code of Ethics reflects this concept: “Fundamental to social work is attention to the environmental forces that create, contribute to, and address problems in living” (NASW, 1999). CAM has followed an unusual trajectory into the healthcare system. It is a movement driven by the demand of the individuals not by conventional research. The underlying force that has triggered and maintained the evolution of CAM into conventional healthcare has been the increasing demand of the general public for CAM services (Barnes et al., 2004; NCCAM, 2004).

In March of 2000 former President Bill Clinton signed the Executive Order 3147 creating the White House Commission on Complementary and Alternative Medicine Policy (WHCCAMP). The purpose of the WHCCAMP was to write policy to maximize the benefits to Americans of complementary and alternative medicine. The final report was due in 2002. The most consequential recommendation made by this commission in its final report was that federal health plans (such as Medicare and Medicaid) begin to cover CAM and for public policy to maximize benefits of CAM to Americans. Other recommendations included research on CAM practices and products, the delivery of and public access to CAM services, as well as the
dissemination of reliable information on CAM to health care providers and the general public with attention to appropriate licensing, education, and training of CAM health care practitioners.

The NASW Code of Ethics (1999) mandates social workers to “promote social justice and social change with and on behalf of clients” in all professional settings, functions or the populations they serve. The inclusion of CAM in healthcare policy will substantially broaden the spectrum of social work practice. Social workers will increasingly be exposed to CAM and clients who will inquire about these healing modalities. The Code of Ethics states that social workers are professionally obligated to provide clients with up-to-date knowledge and evidence-informed interventions to promote progress toward well-being. The extent to which social workers incorporate new and emerging knowledge into practice is left to the individual social worker. The decision should be based on the existing Code of Ethics. Evidenced-based practice and “do no harm” are the guidelines to follow. The social worker needs to address issues of beneficence, considering existing empirical research and the potential to increase the client’s healing process, empowerment and well-being when incorporating new knowledge into practice. Research indicates that interest in CAM is also expanding in the field of social work.

Henderson (2000) assessed the knowledge and use of CAM by social work practitioners by sending an anonymous mail survey to a randomly selected sample of 1000 master’s clinical social workers. Only 321 responses were included in the data analysis. The survey was developed by the author and focused on the social workers’ knowledge of CAM modalities, number of CAM sessions the social workers provided, frequency and type of modalities used by the social workers, how often the social workers referred or provided CAM, and the social worker’s perception of the effectiveness of the technique. Findings indicated that 30.8% of the respondents had great knowledge or considered themselves experts and 50.2% had moderate
levels of knowledge in mind-body techniques. Less than 10% of respondents believed they had great knowledge of CAM techniques, however 44.9% reported having moderate knowledge of dietary and nutritional alternatives, 35.2% reported having moderate knowledge of manual healing techniques, and 31.8% had moderate knowledge of professionalized CAM techniques. An average of 14 clients per year were referred to a mind-body practitioner or received treatment from a social worker participating in the survey. Mind-body modalities were more likely to be provided by social workers (60.4%) while biological or botanical modalities were always referred to other practitioners.

The main issue, in case the practitioner incorporates CAM modalities into her/his practice would be whether or not the social worker using CAM provides services within her/his area of professional expertise. The importance of competence is cited in the NASW Code of Ethics (1999) in reference to the provision of services. A social worker should only be “…within the boundaries of their education, training, license, certification, consultation received, supervised experience, or other relevant professional experience” (Standard 1.04[a]). In addition, social workers should only use intervention techniques after receiving proper training, study, consultation or supervision from recognized experts on the technique (Standard 1.04[b]). In the absence of recognized standards, social workers should take responsible steps to ascertain that client’s would not be harmed (Standard 1.04[c]). Reamer (2006) recommends that social workers, if intending to utilize nontraditional interventions, should examine pertinent literature from a reputable source. Reviewing literature that focuses on scholarly judgment of the appropriateness and effectiveness of nontraditional interventions can help the practitioner in decision-making.

The demand for CAM by the public and its inclusion into the federal healthcare system is
an example of the ongoing transactions of the ecological theory. Social work practice will have to adapt to the new environment and find a point of equilibrium and balance within the boundaries of the profession where both client and the social work find goodness of fit. CAM modalities are congruent with the ecological theory of practice and empirical research suggests that the spiritual component of CAM practices have an effect on human physical, emotional and mental health (Koening, 2001). As CAM therapies are becoming more visible, they are developing within both the social work profession and within to other health and mental health disciplines (Henderson, 2000). The knowledge of CAM may enhance the services provide by the profession.

**Relevance to Social Work**

Turner (1995) encourages practitioner openness to theoretical pluralism which provides social workers with a wealth of approaches for clients from a variety of diverse origins and backgrounds. According to Turner (1995) this diversity of strategies helps prevent stereotypical responses to clients or practice from a narrow point of view. As Reiki is becoming more visible, emerging in both the social work profession and in other health and mental health disciplines (Booting & Cook, 2000; Shore, 2004; Henderson, 2000), social workers are required to understand the client’s cultural, social and environmental contexts (NASW, 1999).

In summary, our primary goal as social work professionals is to enhance human well-being. Because of the nature of the social work profession and their exposure to clients with a history of trauma, social workers are vulnerable to symptoms of STS. Exhausted social workers put at risk their ability to provide adequate care to clients and unintentionally may cause harm. Additionally, there has being an increased demand for CAM modalities among the American people, and the literature indicates that CAM modalities are also being used or recommended by
practicing social workers. Social workers are required to maintain a holistic perspective of the clients’ paradigm. This study will examine the effect of Reiki on mental health professionals at risk for STS. If there are any significant differences between the treatment, placebo and control groups, the information will increase the body of knowledge of the profession and enhance the lives social workers and, their clients.

**Purpose of Study**

The purpose of this research is to examine the effects of Reiki, a form of energy therapy, on risk level of STS among mental health professionals, such as, social workers and LPCs. The outcome will be measured in terms of change of risk for STS and its symptoms (e.g. risk level for STS, anxiety, stress, depression, anger, hopelessness and somaticism).

**Research Question**

Does Reiki have an effect on mental health professionals at risk for STS? Outcomes will be measured in changes in symptoms that research has identified as common in persons affected by STS, including (1) risk level for STS (2) anxiety, (3) depression, (4) anger-hostility, (5) somatic symptoms, (6) hopelessness.
CHAPTER 2: LITERATURE REVIEW

Secondary Traumatic Stress

The adverse impact on caregivers working with victims of trauma has been described in almost three decades of research. This phenomenon of secondary traumatic stress (STS) has been referred to as: contact victimization (Courtois, 1988), compassion fatigue (CF) (Figley, 1983, 1995), vicarious trauma (VT) (McCann & Pearlman, 1990), indirect trauma (Clark & Gioro, 1998) and empathy fatigue (Stebnicki, 2000). Boundaries between the terms are blurry, but all indicate that trauma symptoms are “contagious” to the individuals in contact with the victim of trauma.

The term secondary traumatic stress developed from the criteria for post-traumatic stress disorder (PTSD) in the DSM-IV (APA, 1994). The DSM IV (APA, 1994) also expanded the concept of trauma. While the DSM III focused on directly experiencing a life-threatening event, the DSM IV focuses on the effect of the traumatic event on the primary and secondary victims of the trauma. Thus, the new definition of PTSD implies that the vicarious experience of a traumatic event may cause secondary trauma (Figley, 1995; APA, 1994).

STS is the cumulative stress human service professionals face when working with traumatized individuals (Figley, 1995). STS cuts across human service providers and affects healthcare workers, mental health professionals, emergency care workers, police officers, fire fighters, clergy and others occupations that work with traumatized victims. Light (2003) reported that there are approximately two and a half million human service workers providing direct services to people in need. Among this group, social workers are identified as the largest providers of mental health services in the USA (Insel, 2004). Moreover, Insel (2004) reported that approximately 92% of psychotherapy in the U. S. is conducted by clinical social workers.
Because social workers are the most significant source of mental health counseling, they are at high risk to develop STS.

The existing literature on STS fails to report the prevalence of social workers and LPCs affected by the disorder (Bride, 2007). The available research is limited to specific populations of social workers (Boscarino, Figley & Adams, 2004; Bride, 2007; Simon, Pryce, Roff & Klemmack, 2005), small samples (Benoit, Veach & Leroy, 2007; Simon, et al., 2005), and mental health workers without specifying their profession (Cornille & Myers, 1999; Nelson & Harris, 2003; Wee & Myers, 2002).

Wee and Myers (2002) studied disaster mental health workers involved in long-term mental health recovery activities while providing crisis-counseling services to victims of the Oklahoma City bombing disaster. Eighty-one mental health workers responded to the Compassion Fatigue Self-Test for workers (Figley, 1995). The authors reported that 64.7% of trauma workers involved in the Oklahoma City bombing showed signs of PTSD symptoms similar to the people present during the explosion. Moreover, the researchers reported that 20.6% of counselors were rated at moderate to high level risk, and 23.5% were rated moderate to extremely high risk for the development of PTSD (Wee & Myers, 2002).

Bride (2007) conducted a survey to examine the frequency in which the diagnostic criteria for PTSD were met in a sample of social workers. The purpose was to determine the prevalence, frequency of individual symptoms, and severity of STS levels in this population. The survey was sent to 600 master level social workers, randomly selected from 2,886 licensed social workers from a Southern state. Reminders to complete the survey were sent one week and two weeks later after the first mailing. Bride (2007) reported a 47% response rate (n = 282). Participants had a mean age of 44.8 years ($SD = 10.5$), were mostly females (82%) and white
More than half of the participants reported mental health or substance abuse as their area of practice (57%). Twenty percent identified health care, 7% child welfare, or 5% school social work as area of practice. The remaining participants (10%) reported community organizing, developmental disabilities, public welfare or other as their area of practice. Years of experience reported was 16.15 ($SD = 9.59$) on average, with an average of 39.99 ($SD = 10.89$) hours of work per week. Participants reported that 97.8% of their clients experienced trauma and 88.9% reported addressing traumatic events their clients had experienced as part of their job. Bride (2007) reported that approximately 70% of participants experienced at least one symptom of STS, and 15.2% met the criteria for a diagnosis of PTSD.

**STS Symptoms**

Professionals affected by STS may experience trauma symptoms such as fear, nightmares, intrusive thoughts or other PTSD symptoms similar to those experienced by the individuals they help (Arvay & Ulhmann, 1995; Figley, 1995). STS has also been associated with depression, anxiety, stress, disturbed sleep, insomnia, anger/rage, fear, social phobia, increased use of alcohol, anger, mistrust, isolation, perceptual distortions of reality, extreme protectiveness toward loves ones, feeling overwhelmed, depleted, worthlessness, suppressed emotions, flashbacks, irritability, feelings of insanity, loss of control, loss of purpose, suicidal thoughts, powerlessness, diminished concentration, preoccupation with trauma, trauma imagery, confusion, guilt, numbness, helplessness, mood swings, questioning the meaning of life, pervasive hopelessness, and mistrust (Crothers, 1995; Figley, 1995; Yansenn, 1995; Arvay & Ulhmann, 1995; Cornille & Myers, 1999). Moreover, there are general physical conditions associated with STS. They include: increased arousal, sweating, rapid heart rate, breathing
difficulties, somatic reactions, aches and pains, dizziness, and an impaired immune system (APA, 1994; Yassen, 1995).

Research indicates that not all individuals exposed indirectly to a traumatic event develop STS symptoms. Personal experiences and work related risk factors play a role in individual vulnerability to STS (Wee & Myers, 2002; Newell, & MacNeil, 2010). Reported predictors of STS for mental health professionals include: type of service provided, the nature of the work, years of experience, case load, amount of support from colleagues, work overload, time pressures, client characteristics, past trauma history, professional isolation, personal circumstances of the professional care giver, spiritual beliefs, and the work environment (Arvay & Ulhlemann, 1995; Prosper et al., 1996; Ursano, Fullerton, Vance, & Kao, 1999; Newell & MacNeil, 2010).

Moreover, perceptual distortions of reality, due to STS, may cause a skewed interpretation of available information (Chrestman, 1995; Schauben & Frazier, 1995). However, the values of the social work profession reflected in the National Association of Social Workers Code of Ethics (NASW, 1999) demand that social workers be competent. Social workers affected by STS may not only fail to take care of themselves, but may also risk being unable to provide adequate care to clients. Under extreme distress, they may even cause unintended harm to clients.

Treatment for Secondary Traumatic Stress

Debriefing

Until recently, debriefing has been the recommended therapeutic approach to treat STS (Arvay, 2001). Debriefing is a therapy process where the therapist or facilitator coaches individuals to explore the facts, thoughts and impressions of a specific traumatic event and
discuss the reactions to the event. Afterwards the therapist will provide an educational component with the purpose to decrease the distress and strengthen coping skills. The intervention is usually done in group setting (Phipps, & Byrne, 2003; Tuckey, 2007). The existing literature describes a number of models for crisis debriefing. While these methods were developed to meet the needs of different aid workers and professions they share commonalities in the procedure (Regehr, 2001; Tuckey, 2007). The interventions recommend an educational semi-structured session shortly after the traumatic event. During the first session the facilitator will explain the purpose of the intervention and what the participants may expect from it. Additionally, rules for the session will be established. The facilitator will encourage discussion, recall of the event in detail, thoughts, emotions and decision processes. Next, the facilitator discusses normal reactions to the event and educates the participants on coping strategies. The session ends with the discussion of the return to a normal life (Regehr, 2001; Phipps, & Byrne, 2003; Tuckey, 2007).

However, the scientific community is scrutinizing this widely used method (Rose & Bison, 1998; Tuckey, 2007). Existing controversy about the effectiveness of debriefing is due to the lack of empirical research to support its efficacy. Furthermore, some research indicates that debriefing may cause more harm than help (Rose & Bison, 1998). After reviewing the literature on brief interventions, such as debriefing, for people who have been exposed to trauma, Phipps and Byrne, (2003) reported that mental health workers that listened to the descriptions of others traumatic experiences may themselves relive the incident, and this may exacerbate PTSD like symptoms and/or trigger STS (Phipps, & Byrne, 2003).

**Coping**

The recommended treatment for STS is self-care and prevention through coping
strategies (Pearlman, 1995). Coping response behavior is described as the way in which an individual deals with his or her social, emotional, and physical environment, specifically with shifting resources to manage stress. And indeed, research encourages mental health workers to engage in coping strategies to lessen the effects of stress (Murtagh & Wollershein, 1997). Coster and Schwebel (1997) described coping responses which include self-awareness and monitoring; support from peers, friends, spouses, mentors, therapists and supervisors, including a balanced life with vacations and other stress reducing techniques. Mahoney (1997) reported the following coping strategies as the most commonly used by therapists: pleasure reading, physical exercise, recreational activities, and hobbies. Also included were peer supervision, prayer, and meditation (Mahoney, 1997). The least reported coping techniques were massage, chiropractic services, attending church services, as well as journaling (Mahoney, 1997). Kramen-Kahn and Hanson (1998) reported other coping techniques employed were a sense of humor, participating in leisure activities, attending continuing education seminars, perceiving client problems as interesting, and using social support to cope with ongoing stressors. Pearlman and Mac Ian (1995) reported coworker support, positive reappraisal, developing a growth perspective, attending workshops, traveling, limiting their caseload, and balancing work stress, to be effective coping strategies by counselors and trauma therapists. Knight (1997) reported that clinicians might use maladaptive defense mechanisms such as denial, disbelief, and detachment to cope with disturbing emotions which have a negative effect on coping.

Secondary Traumatic Stress and Psychoneuroimmunology

Psychoneuroimmunology (PNI) is the interdisciplinary scientific field that studies how an individual’s personal framework of their emotions, beliefs and spirituality relate to the environment and how this dynamic results in positive or detrimental physical changes in the
body (Cohen & Herbert, 1996). PNI seemingly locates the underlying mechanisms of disease and connects emotional and psychological states of being to the biological system. Research in PNI addresses human physiology, stress, and relaxation and supports that our existence and health is influenced by the environment. Biomedical research is changing their understanding of the body systems. Physiological networks such as the central and autonomic nervous systems, the endocrine system, the immune system, and the stress system that previously were thought to be independent of each other are now being considered to interact on many levels. PNI is interested in the scientific basis of the mind-body connection within the above systems and how their interaction affects our lives and how attention to spirituality facilitates healing. It is in the interaction of the mind-body connection that the case for incorporating Reiki in the treatment of STS rests.

PNI research suggests that chronic stress suppresses the immune system, causing the physical body to become vulnerable to disease, which is viewed as a lack of homeostasis in the body by conventional medicine and alternative practitioners. Thus, a failed attempt of the body to restore balance results in disease. This result in the activation of chemical stress hormones such as cortisol typically associated with depression. Additionally, stimulation of the chemical neurotransmitter epinephrine is associated with anxiety (Wisneski, 2005).

The classic stress response “fight or flight” is the natural reaction in the body to a stressful external stimulus. It is designed to empower action by the threaten individual that will restore safety. Where there is a potential stressor, the event is perceived through the eyes, and it is determined by the amygdala whether or not a stress response is necessary. This information is forwarded to the pineal gland which translates the external environment into the electrical and hormonal signals (Wineski, 2005). At that point the hypothalamus receives the data, notifies the
pituitary gland via corticotropin-releasing hormone (CRH), which in turn releases adrenocorticotropic hormone (ACTH). ACTH triggers the autonomic nervous system (ANS) to release adrenalin from the adrenals glands, and the central nervous system (CNS) to release cortisol from the adrenal glands as well (Winesky, 2005). These processes impact the body at that point with increases in heart rate, serum glucose levels, platelet activity, as well as blood viscosity. In addition, these hormones cause increase arousal and anxiety. In cases of chronic stress, the amygdala’s fear response becomes over activated producing a prolonged constant reaction along with hopelessness and despair (Wisneski, 2005). Yahuda (2000) theorized that this over reaction could be the physiological set up of the fear conditioning that occurs in PTSD. Chronic stress may precipitate hypertension, abnormal clotting, irregular heartbeat, diabetes secondary to elevated glucose, and gastrointestinal disturbances secondary to decreased digestive tract circulation.

Wisneski (2005) proposes that the relaxation response is the logical reaction of the body to the stress response. The relaxation response integrates the mental, emotional, and physical information as a reply to the hormonal reaction produced by stress. When the body reaches a state of deep relaxation the mind reaches the theta state. Theta state is a brain wave pattern that resonates between 4 to 7 Hertz. Brain waves patterns are variations in the electrical current in the nerves cells in the brain. This fluctuation is measurable on an electroencephalogram (EEG). Theta is the liminal stage of approaching sleep. Theta rests directly on the threshold of your subconscious. During theta stage meditation there is an elevation in melatonin from the pineal gland. This begins a hormonal sequence that is believed to be part of the theta healing system (Jevning, Wallace, & Beidebach, 1992). Wisneski (2005) proposes that reaching the theta state will trigger a hormonal reaction that decreases chronic stress (Wineski, 2005). It will also help
release memories and emotions stored in the hippocampus as traumatic events. This characteristic of the theta stage can provide health care professional with a tool to prevent or improve the treatment of vicarious trauma or STS.

**Psychoneuroimmunology and Reiki**

Eastern beliefs refer to the pineal gland as being photosensitive with the capability of aligning with spirituality (Roney-Dougal, 1999). Wisneski (2005) proposes the pineal gland to possibly be the physiological connection between mind-body and subtle energy experiences. The pineal gland transforms neural input into endocrine output. The pineal gland is an external and internal transducer of energy, converting light, temperature and magnetic environmental data into neuroendocrine signals that dictate bodily functions. The pineal gland’s most understood function is to use light to regulate circadian and seasonal rhythms of the sleep wake cycle.

**Subtle Energy Therapies**

According to the NCCAM (2007) energy therapies may be classified into two types of energy fields: (1) veritable fields or (2) putative fields. Veritable fields include bioelectromagnetic forces such as laser beams, which can be measured. Putative fields of energy, also called biofields, have yet to be measured by repeatable means. Therapies involving putative fields are known as energy therapies and are based on the concept that human beings are infused with an organizing subtle Universal Energy Field, also called the Life Force or Universal Life Force, which emanates from and surrounds the body (Rubik, 2002). Putative fields include eastern concepts such as prana, chakras, chi or meridians. Examples of energy therapies are acupuncture, Qi-gong, Reiki, Homeopathy, Chinese medicine, and any CAM modality where the mechanism of action facilitates energy balance to achieve healing. Energy therapies are believed to affect the biofield that surrounds and penetrates the human body. According to practitioners,
energy therapies manipulate the biofield by placing the hands in, or through, the energy fields. Energy therapies are based on the belief that the Universal Life Force, Universal Energy, or Life Energy is channeled within the practitioner then through the patient’s “energy body” which includes various energy centers and pathways referred to as chakras and meridians (NCCAM, 2007). Wisneski (2005) theorized that the chakras are the energy transducers for subtle energy, converting this energy to a resonance that the body can use. He proposes that the chakras turns this energy into hormones and neurotransmitters through the pineal gland. The meridians are the body’s energy transportation system. Meridians are regarded as the base upon which traditional acupuncture theory is built. Several studies have reported the existence of electrical properties associated with the meridians (Lee, Jeong, Lee, Jeong, & Eo, 2005). The most common response seems to be the phenomenon of propagated sensation along meridians. The same response has been reported in Reiki research (Mansour et al., 1999; Miles & True, 2003; Wardell & Engebretson, 2001).

Reiki

Reiki is one form of CAM and is the treatment modality under investigation in this study. The word Reiki is a Japanese word representing Universal Life Energy, composed of two Japanese characters: Rei meaning spirit, air, essence of creation, and source of life; and Ki meaning power or energy that brings the Universal Life Force into form (Miles & True, 2003). Reiki as an intervention involves placing the hands one to two inches away from the body with ordered placement of the palms over different parts of the body, starting with the head and working down the body, front and back. The technique is neither symptom nor pathology specific but rather is based on transmitting the Universal Life Force. The Universal Life Force is
thought to have its own knowledge (Miles & True, 2003). A session can be as short or as long as needed, but full treatments typically last 45 to 70 minutes (Miles & True, 2003).

Although Reiki has been in existence since the early 1900s, there has been little empirical research conducted on this intervention despite the increased interest in the use of CAM (Barret et al., 2002; Eisenberg et al., 1998; Miles & True, 2003). The empirical studies of Reiki, conducted over the past 30 years, are limited to a small number of exploratory studies, most of which include a small number of subject-participants. These studies report the effect of Reiki as an intervention on oxygen carrying capabilities of blood in the human body (Wetzel, 1989), pain management (Olson & Hanson, 1997; Olson et al., 2003), epilepsy (Kumar & Kurup, 2003), biological markers related to stress (Wardell & Engebretson, 2001), stroke rehabilitation (Schifflet, Nayak, Bid, Miles & Agostinelli, 2002), cancer fatigue (Tsang, Carlson, & Olson, 2007), the autonomic nervous system (ANS) (Mackay, Hansen & Mcfarlene, 2004), stress and depression (Shore, 2004), Alzheimer’s disease (Crawford, Leaver & Mahoney, 2006), distress on women undergoing breast biopsy (BB) (Potter, 2007), as an adjunct therapy for fibromyalgia (Assefi, Bogart, Goldberg & Buchwald, 2008), well-being and levels of cortisol (Bowden, Goddard, & Gruzelier, 2009) and, as an adjunct therapy in patients treated for prostate cancer (Beard et al., 2011).

The impact of Reiki treatment on a number of physiological states, such as level of hemoglobin (Wetzel, 1989), heart rate (Mackay et al, 2004; Olson, Hanson, & Michaud, 2003), blood pressure (Mackay et al., 2004; Olson et al., 2003; Wardell & Engebretson, 2001), levels of cortisol (Wardell & Engebretson, 2001; Bowden et al., 2009), and epileptic seizure (Kumar & Kurup, 2003) have also been conducted. Reiki has also been used in studies to determine its effects on subjective outcomes such as anxiety (Tsang et al., 2007; Wardell & Engebretson,
2001; Shore, 2004; Potter, 2007; Bowden et al., 2009; Beard et al., 2011), stress and depression (Shore, 2004; Potter, 2007), fatigue (Tsang et al., 2007; Assefi et al., 2008), pain (Olson & Hanson, 1997; Olson et al., 2003; Assefi et al., 2008), memory and mild cognitive impairment (Crawford et al., 2006) and, sleep (Assefi et al., 2008). In addition, three studies compared the effectiveness of a placebo Reiki procedure used in Reiki research (Mansour, Beuche, Laing, Leis, & Nurse, 1999; Schifflet et al., 2002; Assefi et al., 2008). None of the studies reported harmful effects of Reiki treatment.

The existing body of research regarding the use of Reiki as an intervention will be examined in this section of the paper to determine the current state of empirically-based Reiki research. Articles or dissertations that use distance Reiki exclusively, where the practitioner and the participant are not in the same location, are not included in this review due to poor methodological planning in the distance Reiki research. The literature utilized for this analysis was gathered from published investigations in peer-reviewed journals from the electronic databases MEDLINE, PubMed, and CINAHL, Alt HealthWatch, Psychology and Behavioral Sciences Collection, PsycINFO, SocINDEX, Health Source: Nursing/Academic Edition, and MedicLatina.

The search resulted in 58 published articles on energy therapies, of which only 15 were published specifically on Reiki research. Information about research design, sample characteristics, the intervention being tested, data collection, data analysis and results will be provided for each article. These articles are organized according to outcome measures used in the studies: 1) physiological states, 2) subjective/psychological states, 3) physiological and subjective/psychological states and, 4) studies trying to generate a placebo Reiki protocol for Reiki research.
**Effect of Reiki on Physiological Outcomes**

Wetzel (1989) conducted a quasi-experimental pilot study that assessed the effect of receiving a Reiki first attunement on the oxygen carrying capabilities of human blood in the body within a 24-hour period.

A sample of 48 healthy adults was recruited from a Reiki training class for the treatment group, and 10 healthy medical professionals not involved in Reiki composed the control group. Exclusion criteria included individuals with immune alterations or pregnancy.

The treatment group received first degree Reiki attunement and the control group did not receive a Reiki attunement or any other treatment. Wetzel (1989) did not describe the attunement protocol.

Changes in the oxygen carrying capabilities of the blood in the body were measured by the changes in hemoglobin, the component of the red blood cells whose purpose is to carry the oxygen from the lungs to the tissues and hematocrit, a standardized value that reflects the percentage of red blood cells in the body (Wetzel, 1989). Two blood samples, drawn from each group 24 hours apart, were evaluated using medical instruments with demonstrated validity and reliability for clinical field study. The treatment group received first degree Reiki attunement in those 24 hours.

A paired t-test revealed no significant differences in the pretest blood samples between the groups, but there was a significant increase in hemoglobin and hematocrit values in the treatment group 24 hours after the Reiki attunement meaning that there was a positive increase in the components of the red blood cells that carries oxygen from the lungs to the tissues and the percentage of red blood cells in the body. The findings for the study were at a \( p = 0.01 \) which means that there was only a 1% chance that the changes in blood content of hemoglobin and
hematocrit could be accounted for by chance. No change was found in the control group. Methodological problems with this study included a lack of randomization and unequal group size. Additionally, the treatment group participated in a Reiki training class when selected for the study whereas the control group had no affiliation with Reiki. The treatment group participation in the Reiki class reflects openness to a potential belief in Reiki, thus the increase in blood cells may be in response to a placebo effect. In addition, participants in the study may not be representative of the larger population; therefore, the findings of the study are limited to the unique characteristics of those individuals.

Wardell and Engebretson (2001) conducted a single group, repeated measure design to study the effects of Reiki treatment on anxiety and other selected physiological measures of stress. The researchers reported using a power = .80 and a medium effect size.

A non-probability sample of 23 healthy volunteers was recruited by flyers distributed in a medical facility. Subjects received a small remuneration for participating in the study. Inclusion/exclusion criteria included being able to read and speak English, and having no immune alteration (e.g. AIDS, pregnancy), cardiovascular disease, or adrenal disorders. Participants included 18 females and 5 males, between the ages of 29 and 55. Fifteen of the participants had previously experienced some kind of CAM such as meditation or massage. None of the participants had had a Reiki treatment in the past.

The researchers utilized five measures in the study to determine the effects of Reiki as an intervention on psychological and biological markers of stress. Anxiety was measured using the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, Luchene, Vagg & Jacobs, 1983). The authors reported that the STAI is a standard measure for anxiety and has been widely used in stress related research. The biological measures selected in this particular study were typical
reactions related to the stress response, including elevated blood pressure, decrease in skin temperature, increased galvanic skin response, elevation of cortisol, and lowering of immunoglobulin activity (IgA). IgA is an antibody and is used as a measure of immunocompetence; IgA is produced in bodily secretions such as saliva, blood and breast milk (Wardell & Engebretson, 2001). Systolic and diastolic blood pressure (BP), skin temperature, cortisol, and IgA levels were measured with standard medical equipment. Researchers hypothesized that the biological and psychological measures selected would change after the Reiki treatment, specifically in the directions of increased relaxation, less anxiety, decreased cortisol, increased IgA, increased skin temperature, lower blood pressure, and decreased galvanic skin response (Wardell & Engebretson, 2001). Data for the STAI, cortisol, and IgA were collected before and after treatment. Data for blood pressure, skin temperature and skin resistance were collected 10 minutes before, during, and 10 minutes after the sessions (Wardell & Engebretson, 2001).

Each participant received a 30 minute Reiki session in a sound proof room, with dim lights, and by the same Reiki master. The treatment protocol included two hand positions, the first one over the eyes and the second over the abdominal area. The researchers monitored that 15 minutes were spent in each position for every participant. Although the treatment protocol was described, it was not specified whether or not the practitioner physically touched the subject during the treatment process.

The authors used a paired t-test for the statistical analysis of anxiety, cortisol, and IgA levels, and an ANOVA was used to analyze data on blood pressure, skin temperature and resistance. The results indicated that the levels of anxiety decreased after Reiki treatment and the findings had statistical significance \( t(22) = 2.45, p = 0.02 \). The physiological measures also demonstrated a significant increase in IgA levels after treatment, indicating a possible increase in
immune function ($t (19) = 2.33, p = 0.03$). Data analyses also indicated a significant drop in systolic blood pressure from the first measurement before treatment, to the second measurement during treatment, and a continued decrease after the third measurement after treatment ($F (2,44) = 6.60, p = 0.01$). While levels of cortisol decreased for 15 of the participants, they increased for seven of them, however the changes between pre-test and post-test were not significant. Changes in skin temperature and diastolic blood pressure were also not statistically significant. The findings suggest that Reiki treatment may have an influence decreasing self-perceived anxiety, lowering systolic blood pressure, and possibly increasing immunological function through an increase of IgA (Wardell & Engebretson, 2001). The lack of a control group and a small sample size are limitations in the study. In addition, limiting the sample to fluent English speakers increased the risk of sample bias.

Kumar and Kurup (2003) conducted a pretest- posttest quasi-experimental design to assess the effect of Reiki treatment on seizure frequency caused by refractory epilepsy. Their sample included 15 individuals recruited from a medical facility and 15 healthy individuals randomly selected from the general population of Trivandrum City (India). Inclusion criteria for the treatment group included experiencing persistent seizures and taking three or more anti-epileptic drugs in full dosage and compliance with medical recommendations for the past three years. The age range reported for the sample groups was 20 to 30 years. Each group had eight males and seven females.

Biochemical parameters were assessed with pretest and posttest measurements including concentrations of serum digoxin, magnesium and the red blood cell membrane (RBC), Sodium (Na+), and Potassium (K+) activity, and adenosine triphosphate (ATPase) activity. ATPase is an enzyme that catalyzes adenosine triphosphate with the purpose to release energy to the cell.
ATPase in combination with Na+ and K+ maintains the ionic balance within the cells (Kumar & Kurup, 2003). Participants’ self report of seizure frequency was used to assess effectiveness of treatment. The treatment group received Reiki treatment three times a week for three months. In addition to Reiki, the treatment group practiced one hour of transcendental meditation (TM) daily for three months (Kumar & Kurup, 2003). The researchers do not describe the Reiki or transcendental meditation protocol.

The authors reported an increase in the concentration of serum digoxin and RBC membrane. Na+ and K+ ATPase activity and serum magnesium were reduced. They reported that seizure frequency decreased significantly in the treatment group (Kumar & Kurup, 2003).

This study suggests that Reiki in combination with TM as an intervention that may influence seizure frequency in refractory epilepsy. Limitations of the study include confounding treatments (Reiki and transcendental meditation), a control group composed by healthy individuals not comparable to the treatment group, a small sample size, and lack of randomization. In addition, the use of self-report data may be considered less reliable.

MacKay, Hansen, and McFarlane (2004) conducted a quasi-experimental blind trial to determine if Reiki treatment has an effect on indices of autonomic nervous system (ANS) function.

A sample of 45 healthy individuals recruited among colleagues and associates at the South Glasgow University Hospital in the United Kingdom (UK), was used in the study. Exclusion criteria included a history of diabetes, epileptic seizures, or other neurological disorder. Participants were randomly assigned to one of three treatment conditions: no treatment/rest only, Reiki treatment, or placebo Reiki treatment. There were eight females and seven males in each group.
Quantitative measures of the ANS included: heart rate (HR), diastolic and systolic blood pressure, cardiac vagal tone (CVT), cardiac sensitivity to baroflex (CSB), and breathing activity. The physiological measures were recorded by standard medical equipment.

Each participant in the treatment group received 30 minutes of Reiki treatment without physical contact. The placebo group followed the same protocol except that the mimic practitioner had no knowledge of Reiki.

Baseline data was recorded before treatment, and then at 10 minute rest periods after which posttest scores were recorded. The results showed that the HR ($p < 0.005$) and diastolic blood pressure ($p = 0.005$) decreased significantly in the group receiving Reiki compared to the placebo and control groups (MacKay, Hansen, & McFarlane, 2004). There was also an increase in CVT and in CSB and a reduction in respiration rate indicating an increase in parasympathetic activity (MacKay, Hansen, & McFarlane, 2004).

Findings in the study suggest that Reiki as an intervention may have a positive effect on some indices of the ANS, such as decreased HR and decreased diastolic blood pressure. Limitations of this study include using a sham practitioner mimicking the Reiki protocol, which may have inadvertently changed the subjects energies, as well as the small sample size, and the lack of specificity with regards to the significance of the changes measured.

**Effects of Reiki on Subjective/Psychological Outcomes**

Olson and Hanson (1997) evaluated the effectiveness of Reiki treatment as an adjunct to opioid therapy for pain management, using a pre-experimental, one group, pretest/posttest design.

Their sample included 20 participants, 18 females and two males, who were recruited by flyers placed in retail establishments and community centers. Eligibility criteria were that
participants must be at least 18 years old, fluent in English, have normal cognitive function, were not receiving chemotherapy or radiotherapy, and would score at least a three on a Visual Analog Scale (VAS) used to measure pain, or two on a Likert scale measuring pain (Olson & Hanson, 1997). Participants reported experiencing pain for a variety of reasons, such as cancer, chronic illness, and muscle and bone problems (Olson & Hanson, 1997).

The VAS and Likert pain scales were completed immediately before and after treatment, which consisted of one Reiki treatment. Although the Reiki protocol was not described, the researchers described the environment surrounding the treatment as including dimmed lights and soft music playing in the background. All treatments were provided by the same second degree Reiki practitioner.

Demographic data showed that the sample had an age range from 23 to 62 years, ten participants had pain in their upper body, four in their lower body, and six participants had pain in both the upper and lower body. The length of time that the participants reported being in pain ranged from less than one year to 48 years (Olson & Hanson, 1997).

The researchers used a paired samples t-test to analyze the data collected. The researchers reported a significant reduction in pain level in the participants (Olson & Hanson, 1997). Limitations of this study include a small sample size, the lack of a control group, lack of control for placebo effect, the lack of randomization, and the risk of sample bias since voluntary participants may have been more opened to treatment and a failure to report the exact level of significance.

In another study, Olson et al. (2003) conducted a randomized control trial to evaluate the effectiveness of Reiki treatment as an adjunct to opioid therapy in the management of pain, quality of life, and analgesic use in cancer patients. This study was a phase II trial of Reiki for
pain management based on a prior study by Olson & Hanson (1997), described in detail above.

The sample included 24 participants recruited over a two-year period from an inpatient palliative care unit, a hospice agency, and an outpatient symptom management clinic. To be included in the study, participants must have never had a Reiki treatment before, have not received chemotherapy or radiotherapy for the past month, scored at least 23 on the Folstein mini-mental status exam (MMSE) (Folstein, Folstein, & McHugh, 1975) meaning that the participant has a mild or no cognitive impairment, rated their pain at three or greater on a ten point VAS, required 2-5 breakthrough doses of analgesic the day prior to recruitment, and were receiving palliative care due to advance cancer (Olson et al., 2003). Additionally, they needed to be fluent in English.

To measure the outcomes, the researchers utilized a Quality of Life Assessment (QOL) (Padilla, Present, Grant, Metter, Lipsett, & Heide, 1983) with physical, social, and psychological subscales, and a self-report VAS ranging from 1-10. In addition, blood pressure, heart rate, and respiration rates were obtained before and after treatment. The analgesics used were recorded and converted to morphine-equivalent units for analysis purposes. The QOL was completed on day one and again on day seven. A self-report pain VAS ranging from 1-10 was used several times in the day, at breakfast, lunch, supper and bedtime (Olson et al., 2003).

The participants were randomly assigned to one of two groups. The comparison group received standard opioid therapy plus rest (rest for 1.5 hours on days one and four), or the treatment group that received standard opioid therapy plus Reiki (two Reiki sessions on days one and four). Neither the participants, the practitioner, nor the data collectors were masked to the treatment status (Olson et al., 2003). The same Reiki Master provided all treatments. The protocol included 18 hand positions with physical contact; ten hand positions were administered
on the head and torso area, while the subject lay on his/her back. Then the participant was asked to lie on his/her stomach, where eight additional hand positions, covering the back, hip area and feet were performed. The treatment lasted approximately 1.5 hours (Olson et al., 2003).

Olson et al. (2003) reported no significant pretest differences across group characteristics. A Kruskal-Wallis analysis was used to compare changes in treatment and control group. The authors reported that the treatment group showed a significant improvement in pain ($p = 0.035$), and a decrease in blood pressure ($p = 0.005$) and pulse ($p = 0.019$) after the first treatment on day one (Olson et al., 2003). Significant differences were found only on pain improvement ($p = 0.002$) after the second treatment (Olson et al., 2003). In addition, the treatment group showed a significant improvement in the psychological component of the Quality of Life Assessment (QOL) ($p = 0.002$) (Olson et al., 2003). No significant difference was found in the use of analgesics between groups (Olson et al., 2003). The findings of this study indicate that Reiki treatment as an adjunct to opioid therapy may have a positive effect on levels of pain and the psychological components of QOL, but may not effect the use of analgesics among cancer patients. Limitations of the study include the lack of a placebo control and a small sample size.

Tsang, Carlson & Olson (2007) conducted a counterbalanced crossover pilot trial to evaluate the effectiveness of Reiki treatment on cancer related fatigue and to assess the length of the effects of Reiki on fatigue, pain, and anxiety by evaluating the length of time it takes for these symptoms to increase after treatment.

A total of 16 adults participated in the study. Inclusion criteria required subjects with cancer in stages I to IV, who had recently completed chemotherapy, and were living at home. Subjects were screened for eligibility by reviewing medical charts before being approached. After being approached, the subjects were screened for fatigue, and those with a score of 3 or
higher on the Edmonton Assessment System (ESAS) (Bruera, Kuehn, Miller, Selmser & MacMillan, 1991) were invited to participate.

The ESAS is a 9 item self-report visual analog scale developed to assess symptoms of patients receiving palliative care. Patients are able to rate the severity of nine symptoms: pain, tiredness, nausea, depression, anxiety, drowsiness, lack of appetite, well-being, and shortness of breath (Tsang et al., 2007). Only the tiredness, pain, and anxiety items were recorded in this study. The ESAS is considered a valid instrument.

Tsang et al., (2007) used three measurement tools in the study. The Functional Assessment of Cancer Therapy Fatigue subscale (FACT-F) (Yellen, Cell, Webster, Blendowski, & Kaplan, 1997), the Functional Assessment of Cancer Therapy, General Version (FACT-G) (Cella et al., 1993) questionnaire, and the ESAS. The FACT-F questionnaire is a fatigue assessment tool composed of 13 items scored on a 4-point Likert type scale. Higher scores indicate less fatigue. The authors reported that the FACT-F has demonstrated strong internal consistency and acceptable test-retest reliability.

The FACT-G questionnaire is a validated 28 item self-report measure of quality of life for cancer patients with any tumor type (Tsang et al., 2007). Only the global well-being score was reported in this study. The authors reported that the FACT-G questionnaire is widely used in clinical trials and has demonstrated strong internal consistency and acceptable test-retest reliability. Higher scores indicate a better quality of life.

Participants completed the FACT-F and FACT-G before the first and after the last Reiki treatment as well as before the first rest session and after the resting washout period (Tsang et al., 2007). Participants completed the ESAS before and after each Reiki or rest treatment (Tsang et al., 2007).
Participants were randomly assigned to one of two treatment groups: the Reiki/intervention group and the rest/control group. Each participant participated in both groups but in random order. The Reiki protocol was not described. The amount of time for each Reiki session varied according to the Reiki Master’s decision. On average, each session lasted 45 minutes. The same Reiki Master, who had more than 10 years of experience, performed all treatments. In consultation with the Reiki Master, “it was felt” that daily Reiki for five consecutive days was an appropriate dose to decrease fatigue levels (Tsang et al., 2007). This was followed by a no treatment period of one week, referred by the researchers as the ‘wash out period’ to assess the durability of Reiki effects (Tsang et al.). The participants then received two more treatment sessions to increase energy levels. After completion of the 7th treatment, participants had two weeks of no treatment then they crossed over to the resting treatment group (Tsang et al.). Those in the resting group were asked to rest for 45 minutes each day for five days (Tsang et al.). The control group did not rest the extra two days to parallel the 6th and 7th Reiki treatment (Tsang et al.). After two weeks of no treatment, the control group was crossed over to the Reiki treatment group.

Demographic analyses indicated that the sample was composed of 13 females and three males. The most common type of cancer, in this sample, was identified as colorectal cancer (62.5%) followed by breast cancer (12.5%) and lung cancer (12.5%) (Tsang et al., 2007). Participant’s ages range from 33 to 84 years old. All participants were non-smokers and 50% of participants reported exercising two to three days per week (Tsang et al.).

A paired samples t-test was used for the statistical analysis of the fatigue and quality of life data. Tsang et al., (2007) reported that there was no significant differences between the total mean change of the fatigue subscale (FACT-F) scores for the Reiki and the rest group. However,
there was a significant change within the Reiki group in the total mean of the FACT-F ($t (13) = -2.15, p = .05$). There was no change within the rest group ($t (14) = 0.189, p = .853$).

The Reiki group showed a positive statistically significant change between the 1st treatment and the 7th treatment scores on fatigue ($t (16) = 7.19, p < .001$; pain, $t (15) = 2.90, p < .05$), and anxiety ($t (16) = 3.38, p < .005$) (Tsang et al., 2007). The rest group showed no significant changes in fatigue, pain or anxiety. When the scores were compared from 1st to 5th session (because the rest group only had five resting sessions) only the fatigue item in the Reiki group showed a positive significant difference ($t (14) = 2.95, p < .01$) (Tsang et al.).

Tsang et al., (2007) reported that there was a positive and significant difference in the quality of life among the Reiki group ($t (13) = -3.73, p < .01$). The difference between pretest and posttest within the comparison group was not statistically significant ($t (14) = -1.05, p = .31$). In addition, there was a positive and significant difference, on quality of life, between the two groups ($t (12) = 2.25, p < .05$) indicating that the Reiki treatment was associated with an overall improved quality of life (Tsang et al.).

In regard to washout of the treatments, Tsang et al., (2007) reported that there was no significant difference between the two treatment groups in relation to fatigue ($t (13) = -1.31, p = .215$). With regards to washout for pain and anxiety, the researchers did not report if changes in pretest and posttest scores were significant.

These findings indicate that Reiki as an intervention was associated with a decrease in fatigue levels of cancer patients in the treatment group. In addition, the Reiki intervention may have improved the overall quality of life for those in the intervention group. Limitations in this study include the lack of a true control condition and a small sample size. An additional
limitation is history, uncontrollable events that might occur during the two weeks of rest or the “washout period” that might affect the final outcome.

Shore (2004) conducted a double blind experimental study to examine the long-term effects of Reiki treatment on symptoms of depression and stress. The sample included 45 participants randomly selected from a pool of prescreened respondents who had been recruited by flyers placed in retail establishments, community centers, healthcare offices, and local universities. Exclusion criteria for this study included not expressing perceived symptoms of depression or anxiety, severe physical illness, and individuals taking medication that could influence the outcome of the study. Individuals with medical conditions such as chronic fatigue syndrome, cancer, having a mental illness (e.g., psychotic disorders, borderline personality disorder, mood disorders, and anxiety disorders), multiple sclerosis, and fibromyalgia were not included in the study (Shore, 2004). Shore (2004) reported that pretest data analysis demonstrated a mean depression score on the Beck Depression Inventory (BDI) (Beck, Steer & Garbin, 1988) of 13.12, but they did not report cut-off scores that determined eligibility to participate in the study.

Shore (2004) used three measures in the study: the BDI, the Beck Hopelessness Scale (BHS) (Beck & Weissman, 1974) and the Perceived Stress Scale (PSS) (Cohen, Kamarck & Mermelstein, 1983). Shore (2004) reported that each of these measures has been assessed for validity and reliability and are widely used in depression, hopelessness, and stress research, respectively.

Each participant was randomly assigned to one of three groups: hands on Reiki, distance Reiki, or distance Reiki placebo. Shore (2004) reported implementing deception by leading participants to believe that mimic Reiki practitioners were performing hands on Reiki treatment,
thus the hands on Reiki participants believed they were receiving mimic Reiki and participating as a control group.

Twelve Reiki masters and three level II Reiki practitioners participated in the study. Criteria for their eligibility included the approval by the researcher, based on Shore experiencing a Reiki session with each candidate to assess strength of the energy flow. In addition the practitioners were required to have at least one year of experience practicing as a Reiki healer and must have performed a minimum of ten long distance treatments for distance healing conditions. All participating Reiki practitioners were instructed to follow the same protocol. The treatment was administered once a week for six weeks. Participants received Reiki from the same Reiki practitioner every treatment in similar environments. All subjects were masked to treatment condition. The Reiki treatments lasted between 1 to 1.5 hours per session. The researcher described the hands location, but did not specify time spent in each position. The protocol for this study required physical contact for all hand positions. Distance Reiki and mimic distance Reiki followed the same protocol.

Pretest and posttest data were collected as a group, before and after the 6 weeks of treatment. Following the posttest, the control group received six weeks of Reiki treatment and were administered the BDI, BHS, and PSS again. One year after completion of the posttest data collection, the BDI, BHS and PSS were mailed to the participants who were asked to complete and return the questionnaire within two weeks after receiving it.

The participants’ ages ranged from 19 to 78. No other demographic data were reported by the researcher. A repeated measures multivariate analysis of variance (MANOVA) indicated no significant group differences with the BDI, PSS and BHS at pretest. Shore reported significant differences on depression \( (p = 0.05, n^2 = 0.17) \), hopelessness \( (p = 0.02, n^2 = 0.12) \) and stress \( (p < \)
0.01, \( n^2 = 0.18 \) scores indicated improvement between hands on Reiki and placebo group and distance Reiki and placebo group (\( p < 0.01, n^2 = 0.17 \)), however no significant difference were found between hands on and distance Reiki groups. Shore (2004) reported that after 1 year the significant differences between treatment and control groups were maintained (\( p < 0.05 \)).

A paired t-test was used for the analysis of the placebo group scores upon completion of the study. Results demonstrated significant difference between pretest and posttest scores for the three measurement scales, depression (\( p < 0.0001 \)), hopelessness (\( p = 0.01 \)) and, stress (\( p = .002 \)) indicating improvement.

This study indicates that Reiki as an intervention is associated with a reduction in symptoms of depression, hopelessness, and stress, and that Reiki has long term effects of at least one year. Limitations to this study include the selection of the Reiki masters and practitioners based on the researchers’ subjective perception of their ability to channel the energy, and the use of sham Reiki on the control group. Selection of the practitioner based on subjective impressions reduces the internal validity of the study. In addition it makes it difficult to replicate or operationalize. The use of sham practitioners mimicking the Reiki positions are manipulating the participants’ energy fields, despite that no Reiki energy is coming through. Other energy therapies, such as Therapeutic Touch and Healing Touch are also based on manipulating the energy field and have shown positive results without the Reiki attunement.

Crawford, Leaver and Mahoney (2006) conducted a pre-test post-test quasi-experimental design to explore the efficacy of using Reiki treatment to improve memory and behavior deficiencies in patients with mild cognitive impairment or mild Alzheimer’s disease.

Two measurement instruments were used in the study, the Annotated Mini Mental State Examination (AMMSE) (Folstein, Folstein, & McHugh, 1975) and The Revised Memory and
Behavior Problem Checklist (RMBPC) (Cozby et al., 1992). The AMMSE consists of 12 questions that require the test taker to perform memory tasks. The RMBPC consist of 24 questions grouped in three factors: memory, disruption, and depression. The reliability and validity for both measurements were provided and were satisfactory.

The sample included 24 participants, 46% American Indian and 54% white who were recruited from the Passamaquoddy Indian Reservation and Perry, Maine. Inclusion criteria to participate in the study included scoring between 20 and 24 on the AMMSE. The normal range for this instrument is 24-30. A score below 24 indicates problems in memory functions.

Researchers do not describe recruitment method but they reported that participants were randomly selected. Twelve participants served as controls and received no treatment. The remaining twelve participants received a 30 minute Reiki treatment once a week for four weeks from two Reiki masters. The researchers did not provide information regarding whether or not the participants were assigned to the same Reiki master for the duration of the study. Crawford et al., (2006) do not describe the treatment protocol, nor did the researchers specify if the practitioners physically touched the subjects during treatment.

A Fisher Exact Test comparison indicated no significance difference between treatment and comparison group (p < 0.05) before treatment. Crawford et al., (2006) reported that a between groups t-test comparison of the AMMSE scores indicated a statistically significant improvement difference between control and treatment group (p = 0.05) after treatment. This finding indicates that Reiki treatment may have had a positive effect on memory related activity.

Crawford et al., (2006) reported that Reiki had a greater impact on the RMBPC scores (e.g. memory and behavior). The researchers used a between groups post-test comparison t-test and a Wilcoxon Signed Rank test on each question. Eight of the 24 questions showed significant
improvement ($p < 0.05$). The eight questions that showed significant improvement were related to: remembering recent events, losing or misplacing things, difficulty concentrating, waking at night, appearing anxious or worried, appearing sad or depressed, and expressing feelings of hopelessness, and feeling like a failure (Crawford et al.). The memory and depression related questions showed significant improved scores after Reiki treatment ($p = 0.041$). Limitations to this study are the small sample size, and the lack of a placebo control group, and lack of random assignment to treatment groups. In addition, there is a threat of selection bias and a lack of study specificity that disallows the study to be replicated with the information provided by the authors.

Potter (2007) conducted a randomized control pilot study to assess the effects of Reiki treatment on anxiety and depression on women undergoing breast biopsy (BB). A convenience sample of 32 women scheduled for BB was recruited over a 15 month period. Flyers requesting volunteers and describing the study were distributed in women’s clinics and mammography centers. Interested participants returned consent forms with contact information. Inclusion/exclusion criteria required that eligible participants were 18 years of age and over, being scheduled for BB without an active cancer diagnosis, being able to read and speak English, and being cognitively able to respond to the pre/posttests.

Potter (2007) used three measurement tools in the study. The State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1983), the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977), and the Hospital Anxiety and Depression Scale (HADS) (Zigmund & Snaith, 1983).

The STAI (Spielberger et al., 1983) consists of two 20 item questionnaires that measure how a person feels in a defined moment in time. The STAI indicates anxiety proneness by measuring four different dimensions and traits of anxiety: tension, nervousness, worry and
apprehension. The author reported that the STAI is widely used with women undergoing BB and women who have a breast cancer diagnosis.

The CES-D (Radloff, 1977) is a depression assessment tool composed of 20 items scored on a 3-point scale. The CES-D assess if the respondent has experienced a particular depression symptom. Greater scores indicate that the respondent may be suffering from depression. The author reported that the HADS has been validated with cancer populations and women undergoing BB. For patient groups, internal consistency had being reported with an alpha coefficient of .89, and .87 for the healthy comparison group (Hann, Winter & Jacobsen, 1999).

The HADS (Zigmund & Snaith, 1983) is 14-item scale encompassing two subscales: anxiety and depression. Items are scored on a 3-point scale. The subscales scores range from 0 to 21, where 8 is the cutoff that determines the existence of pathology. The author reported that the HADS is a reliable scale to determine anxiety and depression on cancer patients, including women with breast cancer (Potter, 2007).

Informed consent and initial data was collected the same day at the location where the treatments would be offered. Both groups received standard conventional care for individuals undergoing BB. BB was performed as an outpatient procedure. Women undergoing the procedure were notified that they were released from work the day after the biopsy with minimal discomfort.

Participants were randomly assigned to one of two treatment groups: the Reiki intervention plus conventional care group and conventional care only group. Participants in the Reiki group received 2 treatments. The first treatment was done 7 days prior to the surgery and the second one within 7 days of the surgery. Six Reiki practitioners with different levels of training gave the Reiki intervention. Practitioners were trained on the Reiki protocol to ensure
standard treatment. Reiki protocol was described by the author.

Demographic analysis indicated that the two groups were not significantly different. The sample described themselves as mostly Caucasian and married or living with spouse or partner. Participants described themselves as middle level income. Half of the participants had a history of previous BB. More women in the Reiki treatment had a history of breast cancer or other type of cancers. The distress scores among women with a history of cancer compared to the women without a previous history did not showed a significant difference.

Data was analyzed using SAS for Windows. Investigators used two groups one-way ANOVA for interval data and Fisher’s Exact Test for ordinal data. At baseline, groups were not significantly different on measurements. The STAI scores were moderate, the CES-D scores were below 16, the cutoff score required for referral to a physician. HADS scores were below 8, the cutoff value that indicates pathology.

To test the effectiveness of treatment group compared to conventional care, the author reported using repeated measures ANOVA while controlling for time and group by time effect. No significant differences were found in group means.

Potter (2007) reported that there was no significant difference on levels of depression and anxiety when measured by the CES-D and the HADS. Levels of depression were initially low as measured by the CES-D ($F (1) = 0.25, p = .62$) and on the HADS subscale ($F (1) = 0.15, p = .7023$). STAI was measured at 3 points in time. The findings indicate that there was a significant time effect when observing the STAI ($F (2) = 4.78, p = .0119$). In regards to the time effect the author reports that the levels of anxiety decreased within a measured time frame, however a complete description is lacking.

The findings indicate that Reiki as an intervention had no impact on the level of
depression and anxiety on the participants of the study. Limitations of this study are the sample selection. Pretest indicated that participant’s level of anxiety and depression was moderate for the STAI and below the cutoff point for the CES-D and HADS, leaving little room for changes in the variables measured. In regards to the Reiki treatment, even though there was an established protocol being followed, different levels of expertise among Reiki practitioner implies a difference in the ability to transmit the energy to the recipient.

Nassim, Bogart, Golberg & Buchwald (2008) conducted a blinded randomized control trial to evaluate the effectiveness of Reiki as an adjunct treatment for fibromyalgia. The sample included 100 participants recruited over a 17 month period. Flyers and advertising requesting volunteers and describing the study were distributed in hospitals, clinics, fibromyalgia support groups, and bulletin boards. Additionally, information was disseminated through newspapers, television, and healthcare providers. Inclusion criteria for potential participants included: fluent in English, over 18 years old, have a physician diagnosis of fibromyalgia, have a global pain score greater than 4 on a VAS (0 being no pain and 10 worst pain ever), participants had to agree to be randomized and make the commitment to remain complaint and constant with their medicines and therapies for fibromyalgia and use only acetaminophen and ibuprofen for breakthrough pain. Exclusion criteria included being pregnant or breast feeding, use of narcotics, or reported pain from conditions other than fibromyalgia. Participants also were excluded if they live more than an hour away from the center where the treatment was conducted, if they were receiving disability because of the disease, if they were involved in ongoing litigation related to fibromyalgia, if they could not comply with the biweekly treatment schedule for 8 consecutive weeks, and if they had received any energy medicine modality.

The researchers used a 10cm VAS, and the Medical Outcomes Study 36-item Short Form
Health Survey (Ware, Snow & Kosinski, 2000).

VAS is a 10-item self report used to measure pain (0 = no pain, 10 = severe pain), fatigue intensity (0 = no fatigue, 10 = severe fatigue), sleep quality (0 = worst possible, 10 = could not be better), and well-being (0 = worst possible, 10 = could not be better).

The Medical Outcomes Study 36-item Short Form Health Survey (Ware, Snow & Kosinski, 2000) has been reported by the authors to have high reliability and validity in diverse patient populations. The physical and mental component of this scale had being standardized with the American public and higher scores indicate better functioning.

Participants were randomized and assigned to 1 of 4 groups and were blinded to treatment. Three Reiki masters treated participants in private offices with similar characteristics. No music or incense was used. Four actors were matched to the Reiki masters in age and physical characteristics. Additionally, actors had no experience or training on energy therapies and no innate ability as a healer. Participants received treatment from the same individual each treatment. The first treatment group received a 30 minutes direct contact Reiki session. The protocol is described as 12 positions (eyes, back of head, crown, thymus/lungs, solar plexus/heart, abdomen, scapula, mid back, lower back, sacrum, feet, and energy brush from head to toes). The second treatment group received distant Reiki, where the Reiki master sat 2 feet away and sent energy through hands with intention toward the participants. The third and fourth treatment groups repeated the protocols for the first 2 treatments, however, the person delivering the treatment were actors without Reiki training mimicking the protocol. The actors in the distant healing session were instructed to do arithmetic, rehearse play lines, or review vocabulary in a foreign language to prevent any healing intention. Treatment was delivered on a massage table with participants laying on their backs for the first half of the session and turned on their
stomachs for the second half. Participants received 2 treatments weekly for 8 weeks.

Demographic characteristics, clinical characteristic, and expectations about treatment did not showed significant difference across groups. The sample described themselves as mostly Caucasian (80%), females (92%) and college graduates (53%). The average age of participants was 49, and 43% reported being married or living with partner. The mean VAS for pain was 6.4cm, for fatigue 6.8cm, for sleep quality 4.1cm and for well-being 4.5cm. The mean value for the physical component was 32, and for the mental component 42.

The authors reported no significant difference between treatment outcomes measured on the VAS. Measurements were made the same day as treatment on weeks 0, 4, 8 and 12 post therapy.

Adverse events reported by the researchers included 43% of participants reported excess energy or anxiety and 18% reported worsening of sleep and depressed mood. The authors did not specify the treatment received by these participants, and state that neither provider assignment nor treatment was linked to the adverse events.

The findings indicate that neither Reiki nor touch had an impact on symptoms of fibromyalgia. Limitations of the study reported by the authors included a modest sample size. Also, the Reiki positions did not cater to individuals needs and the duration of the treatment may have been insufficient.

Beard et al. (2011) conducted a randomized controlled pilot study to evaluate the effects of two different treatments, Reiki and relaxation response therapy (RRT), in men being treated for prostate cancer with external beam radiotherapy (EBRx). Outcomes were compared with a wait list control group. A convenience sample of 74 males was recruited over a period of 22 months. Inclusion criteria required male patients 30 years of age or older who received a biopsy
diagnosis of nonmetastatic prostate cancer and were receiving EBRx instead of chemotherapy as treatment at the Dana-Faber/Brigham and Women Cancer Center, and being able to read, write and understand English at the 8th grade level. Exclusion criteria included receiving ongoing psychotherapy, antidepressant medication, or had prior experience with either Reiki or RRT. Potential participants were identified from medical records at the Women’s Cancer Center. Participants were approached by their radiation oncologist an given information about the study after the participant had elected to receive EBRx as treatment. No financial incentive was offered, however the CAM therapies were free. Participants provided informed consent, health status and medical history at the time of enrollment.

Beard et al. (2011) used three measurement tools in the study: the STAI (Spielberg, 1970), the CES-D (Radloff, 1977) and the FACT-G Scale (Cella et al., 1993). The STAI (Spielberg, 1970) is composed of a 20-item Likert like scale scored on a 4 point range where 1 = “never” and 4 = “almost always”. The highest possible score is 80 and the cutoff point to determine anxiety is 42 or higher. The CES-D (Radloff, 1977) consists of a 20-item scale that scores on a 4 point scale where 0 = “rarely or none of the time” and 3 = “most of the time”. The CES-D measures the frequency of depressive and positive affect, somatic symptoms, and interpersonal relationships during the previous week. The highest score is 60 and 16 is the cutoff point that indicates clinical depression. Higher scores indicates higher levels of depression. The FACT-G Scale – version 4.0 (Cella et. al., 1993) is a 27-item Likert like scale scored on a 4 point range where 0 = “not at all” and 4 = “very much”. The FACT-G scale was specifically created to measure the quality of life in cancer patients. The questionnaire is grouped in 4 subscales: physical, social/family, emotional, and functional well-being. Higher scores reflect worse
functioning in all subscales except on the emotional well-being where higher scores indicate better functioning.

All participants received the standard procedure for patients receiving EBRx. EBRx was administered 5 days a week for a period of 8 to 9 weeks for a period of 15 minutes. Participants responded to the questionnaires after the 4th and 8th week of starting EBRx treatment, and after 8 to 12 weeks after EBRx treatment had concluded.

Participants were randomized into one of three groups, Reiki, RRT or control group. Participants in the control group were offered Reiki or RRT at the end of the study. Reiki and RRT sessions were scheduled on the same day and preceded EBRx. The healing space was provided by the hospital’s integrative medicine center. Reiki sessions were given in a quiet room, twice a week for 8 consecutive weeks. Reiki was administered by 3 Reiki masters who followed the same protocol. The protocol is describes as 12 hand positions in designated areas of the body. Each session lasted approximately 50 minutes.

RRT were directed by a psychologist, in a quiet space, once a week for a period of 8 weeks and each session lasted 60 minutes. The goal of RRT is to give the patient coping skills to deal with stress and negative thoughts. During the session, the psychologist guided the participant through a standardized script. Afterwards, the following cognitive restructuring technique was followed: how to self-monitor using a journal, how to recognize distorted, untrue or illogical thoughts, challenging negative thoughts, replacing the negative dialogue with rational responses, and training to practice the new internal dialogue in everyday living situations. Participants were encouraged to practice these techniques daily and to keep a journal.

From the initial 74 men that fulfilled the study requirements 54 completed the study. Reasons for dropping the study were family emergency, conflict of schedule with work, disease
progression, and concerns about participation in a study.

Demographic analysis indicated that there was no significant difference between the groups. The average age was 64, 91% were Caucasian, 82% were married, and 75% had received a college degree. In the RRT group 88% attended all weekly sessions while in the Reiki group 83% of participants attended the bi-weekly sessions. No statistically significance was found between the 3 groups on any of the measurement tools used. ANOVA was used for group comparison. When comparing the subgroups analysis of the STAI, in the participants who were anxious at baseline, the RRT group showed significant difference \((p = .02)\), and a positive trend was found in the Reiki group \((p = .10)\). Even though there was no statistically significance on the FACT-G scores, the emotional well-being subscale revealed significant improvement in the RRT group compared with the Reiki and control treatments \((p = .01)\). Results on the depression score showed no significant difference.

Limitations of the study are the small sample size and generalization of the findings is limited to demographic characteristics of the sample, mostly well-educated Caucasian males.

**Effects of Reiki on Physiological and Subjective/Psychological Outcomes**

Bowden, Goddard and Gruzelier (2009) conducted a randomized controlled single-blind trial to evaluate the effects of Reiki and positive imagery on levels of well-being and salivary cortisol. Additionally, a method of blinding participants to Reiki treatment was tested.

A total of 41 healthy psychology students from the University of London were recruited, 40 of which were freshmen. Students were given course credits or 30 British pounds on completion of the study.

Bowden, Goddard and Gruzelier (2009) used five measurement tools in the study, the Illness Symptom Questionnaire (ISQ), the Depression, Anxiety and Stress Scale (DASS)
(Brown, Chorpita, Korotitsch, & Barlow, 1997), the Activation-Deactivation Adjective Check-List (AD-ACL) (Thayer, 1970), the Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds, Monk, Berman & Kupfer, 1989), the Reiki blinding and expectation questionnaire and salivary cortisol levels.

The ISQ is a 20-item questionnaire used to evaluate the presence of symptoms that indicate a physical condition related to illness. Participants specified how many days in the past 2 weeks they had experienced symptoms such as: fever, chills, muscle pain, difficulty breathing, coughing, loss of appetite, abdominal pain, diarrhea, nausea, vomiting, dizziness, headaches, skin rash, cold sores, night sweats, phlegm, runny nose, painful lymph nodes, and/or general malaise. The scale scores range from 0 to 4 and measure the length of the symptom, 0 = the absence of symptoms, 1 = a symptom present for 1 to 2 days, 2 = a symptom present for 3 to 4 days, 3 = symptom present for 4 to 6 days and 4 = symptom present 7 to 14 days. A higher total score indicates less health.

The DASS (Brown, Chorpita, Korotitsch, & Barlow, 1997) is a depression, anxiety and stress assessment tool composed of 21-items. Items are score on a 4-point scale where 0 = not at all to 3 = most of the time.

The AD-ACL (Thayer, 1970) is an assessment tool composed of 26-items encompassing 4 subscales designed to measure 4 arousal states: general activation, deactivation sleep, high activation, and general deactivation. The respondents describe how they currently feel on a 4-point scale where 1 = definitely do not feel and 4 = definitely feel.

The PSQI (Buysse, Reynolds, Monk, Berman & Kupfer, 1989) is a multi-item assessment tool used to evaluate sleep components in participants over the previous month such as sleep disturbances, medication use, tiredness, and apathy. The post assessment version of the PSQI
also measured these components over the previous week to be able to measure the effects of imagery, if any.

The Reiki blinding and expectation questionnaire was created for the purpose of the study to evaluate the effectiveness of the Reiki blinding protocol. In this scale 0 = no, 2 = don’t know, and 3 = yes.

Cortisol levels were measured through saliva samples. After having participants chew on Sarstedt salivettes for 1-2 minutes, two saliva samples were taken from each participant at pretest and posttest. Samples were stored at 1º C and all samples were sent for analysis to the Freeman Hospital. Analysis was completed using an ELISSA assay kit. The first cortisol sample was collected 10 minutes after the participant’s arrival to the laboratory. The second sample was collected 40 minutes before a pre-assessment and 20 minutes into a post-assessment. The samples were collected between 11:00 am and 3:00 pm. The authors reported that at this time cortisol levels should be stable. Post sample collection was done at the same time of day the first sample was taken. Participants were instructed to not exercise 2 hours before sample collection and abstain from food, alcohol and caffeine - all variables that are known to influence levels of cortisol in the body (Lovallo, Farag, Vincent, Thomas & Wilson, 2006). All participants reported compliance with restrictions.

The main groups of the study were as follows: 1) conventional self-hypnosis relaxation with imagery of healthy immune system, 2) same conventional self-hypnosis protocol followed by the first group followed by an animated scenario of healthy immune system, 3) verbal instruction of deep relaxation. Participants were randomly assigned to 1 of 6 sub treatment groups within the main 3 groups, thus each one of the 3 main groups were divided into 2 subgroups: Reiki and non-Reiki. Each subgroup was assigned 6 participants. For randomization,
a 6 side dice was used to assign the first 6 participants to each group and the procedure was repeated until all participants had been assigned a group. Participants were blinded to what group (Reiki or non-Reiki) they were assigned.

Pre and posttest sessions lasted 60 minutes. Pretests of psychological measures were taken prior to first treatment and posttest was administered after the last session. Exception was the AD-ACL that was administered before and after every session. Each participant completed 10 sessions. The hypnosis and imagery protocol was completed at the same time the Reiki or non-Reiki session was being administered. Each session lasted 30 minutes and was provided twice a week.

The Reiki and non-Reiki treatment was administered by one of the researchers who is a Reiki master. The practitioner sat behind the participants and placed the hands a few inches away from the head and back through the chair of the participant when the participant belonged to the Reiki group. If the participant belonged to the non-Reiki group, the practitioner sat behind them without sending energy to the participant.

The Reiki master had being trained in different styles of Reiki and at the moment of administering the session did not follow a protocol but applied her knowledge according to what was felt the participant needed.

From 41 initial participants only 35 completed the study. Of those who dropped out, one belonged to the Reiki treatment group and 5 to the non-Reiki treatment group. Demographic analysis indicates that there were 27 females. The age range of the participants was between 18 - 30 years old.

Mixed ANOVA was used for data analysis to compare the scores from all the measurement tools expect the DASS between the Reiki and non Reiki groups. The researchers
also used paired t-tests to compare pre and post scores of the Reiki and non Reiki groups. For the AD-ACL the total score corresponded to the sum of all 10 sessions and Mixed ANOVA was used for analyses of the data collected.

Results from the ISQ comparison showed no significant changes in the Reiki group, however the no-Reiki group had significantly lower scores than the Reiki group (p = .001). The Dass, AD-ACL and PSQI showed no significant difference between the Reiki and non-Reiki group.

There were no changes in salivary cortisol and no correlation between cortisol and mood or health changes. In regards to the Reiki blinding, both groups reported at mid-treatment and after posttest that they were in the non-Reiki group.

The authors reported that there was a tendency towards improvement of health in the Reiki group; however they acknowledge that the baseline for the Reiki group was lower than the non-Reiki group, thus leaving more room for improvement.

According to the authors the limitation of the study is that the person administering the Reiki session was one of the researchers and had knowledge on the participants.

**Studies that Utilize a Placebo Reiki Protocol for Reiki Research**

Mansour, Beuche, Laing, Leis and Nurse (1999) assessed the effectiveness of a placebo Reiki standardization procedure using a four round crossover, experimental design. The purpose of the study was to evaluate if participants could discern a difference in treatment between a Reiki practitioner and a placebo Reiki practitioner. If successful, a true placebo Reiki procedure can be used as placebo control in Reiki studies. The convenience sample of 20 participants (twelve nursing students, four cancer survivors, and four observers) was recruited at a local university setting and cancer center. Participants were assigned to one of four intervention
conditions: Reiki plus Reiki, placebo plus placebo, Reiki plus placebo, or placebo plus Reiki. Participants were asked to evaluate the intervention using a self-administered questionnaire developed by the researchers. The questionnaire included questions pertaining to similarities or differences between sessions with different practitioners.

Two-second level Reiki practitioners and two placebo practitioners were recruited for the study. Reiki and placebo practitioners were trained in the standardized Reiki protocol to follow during the study. The protocol was described as the placing of hands on the participant in three locations for 5 minutes each time, but the Reiki practitioner determined the location of the hand positions. During the first and second rounds, four nursing students received either two Reiki treatments or two placebo treatments. After two consecutive treatments the Reiki and the placebo recipient evaluated the intervention using the self-administered questionnaire. A day later, round three followed the same Reiki protocol but different treatment (Reiki plus placebo or placebo plus Reiki) with different students. In round 4 the recipients were the cancer survivors and received placebo plus Reiki or placebo only. Four blinded observers evaluated the practitioner’s performance in every treatment (Mansour et al., 1999).

Frequency distributions were used to summarize the data. The questionnaire responses indicated that in the initial rounds, 25% to 50% of the participants were able to recognize their condition based on different sensations during treatments. However, Mansour et. al., reported that by round four none of the participants, recipients, or observers were able to recognize the treatment conditions, thus it appears that the placebo Reiki standardization procedure was effective and can be used as placebo control in Reiki studies. Limitations of this study include placebo practitioners who, by imitating the Reiki protocol, placed their hands in/over the subjects’ energy fields and it is possible that the subjects’ energies were inadvertently changed as
a result. In addition, responses to the questionnaire were based on subjective perception of energy flow during the treatment sessions.

Schifflet, Nayak, Bid, Miles and Agostinelli (2002) conducted a randomized, modified double blind placebo controlled clinical trial with an additional control group. This study had three objectives: first, to evaluate the effectiveness of Reiki treatment with people who have experienced a sub-acute stroke and who were undergoing standard rehabilitation procedure as inpatients. The second objective was to evaluate a procedure where Reiki practitioners and sham Reiki practitioners are blinded to their own status regarding their ability to administer Reiki treatment. The third objective of the study was to determine if masked practitioners were able to determine which category they belong to (sham or Reiki practitioner) based on their perceptions and physical sensations while administering Reiki treatment. The purpose of the second and third objectives was to establish a research protocol that will allow a double blind Reiki study.

A sample size of 50, 31 males and 19 females, was selected based on statistical power of 0.80 and a moderate effect size. Participants were recruited from one medical facility. Inclusion in the study was determined by an initial score less than 4 on the Functional Independence Measure (FIM) (Deutch, Braun & Granger, 1996) and admission to the medical institute as a result of sub-acute stroke with at least two weeks of inpatient rehabilitation time expected. The researchers reported that the FIM is a standard measure administered at most rehabilitation hospitals in the United States (USA) used to measure levels of physical and cognitive functions. Thirty-eight inpatients were recruited for the study, however four of the subjects were discharged before the treatment ended and another four withdrew from the study. The control group consisted of 20 individuals who were identified from hospital records. They were randomly selected from a pool of medical records from patients admitted to the medical facility. Inclusion
criteria was limited to patients admitted to the hospital six months prior to the beginning of the study and six months after the recruitment of the intervention participants ended. In addition, the participants in the control group had to meet the study inclusion criteria.

The researchers used two measurement tools in the study, the FIM and the Center for Epidemiologic Studies–Depression Scale (CES-D) (Shinar, Gross, Price, Banko, Bolduc & Robinson, 1986). Hospital staff trained and certified on administering the FIM conducted the assessment at admission and discharge.

The CES-D is a standardized measure of depression related behavior. The CES-D was administered to participants in the treatment condition before and after treatment.

The training and masking of practitioners was completed by one Reiki Master who trained 14 employees of the medical facility (nurses, physical and educational therapists). Only seven employees received the Reiki attunement, an alignment of energy, required to practice Reiki. The attunement was administered with all employees present. The Reiki Master did not approach or touch any of the individuals attuned to the energy. Only the study administrator and the Reiki Master knew the identity of the employees who had been initiated. The researcher does not describe the process by which the employees were selected to get the attunement. All practitioners, with and without an attunement, were trained together in the full first-degree technique. All trainees were aware that they had a 50-50 chance of being a real Reiki practitioner or a sham Reiki practitioner. On completion of the study, before it was revealed who was practicing sham Reiki, and then were attuned to the Reiki energy, the practitioners were asked to complete a questionnaire where they were to report any sensations that they experienced in their hands during treatment and if they believed they had an attunement. Participants in the study were randomly assigned to one of three conditions: treatment by a Reiki Master, treatment by a
first degree-Reiki practitioner, or treatment by a sham Reiki practitioner. The treatment protocol included 12 hand positions on the subject’s head and torso for 30 minutes per treatment. The treatment protocol was the same for all treatment groups. Each subject received up to 10 Reiki treatments over a 2 ½ week period (Schifflet et al., 2002).

The FIM scores were analyzed using analysis of covariance (ANCOVA). Covariance included age and pretreatment FIM scores. Schifflet et al., (2002) reported that some subjects were discharged early, and therefore received less than ten treatments. The minimum number of treatments included in the analysis was six. In addition to the attrition problem, the researchers reported that data collection for the FIM was incomplete. The physical functioning portion was available for all participants; however, the cognitive portion was not always entered in the patient’s records resulting in missing data. Thus, only the physical data were used in the data analysis. No significant differences in physical functioning were found before or after treatment (Schifflet et al.).

The CES-D depression scores were analyzed using ANCOVA with age, initial FIM scores, and initial CES-D scores as covariates. There were no significant differences between the groups (Schifflet et al., 2002).

Findings for this study suggest that Reiki as an intervention has no effect on the recovery of individuals undergoing rehabilitation for sub-acute stroke. In reference to the second objective of the study, Reiki and sham practitioners were not able to differentiate whether they were sham or attuned Reiki practitioners thus, the practitioners were blind to their condition. In reference to the third objective, there was no difference among the Reiki and sham practitioners in their ability to feel energy flowing from their hands, thus it is possible to have a true blind Reiki condition. Attrition (21%) and missing data were a major limitation in the study. In addition,
participants did not receive the same number of treatments, thus affecting the internal validity of the study.

**Summary on Empirical Studies of Reiki**

What we learn from the literature is that Reiki findings suggest that Reiki may have an influence as an intervention with decreased pain in chronic illness, cancer, muscle and bone pain (Olson & Hanson, 1997), decreased pain and increased quality of life in cancer patients (Olson et al., 2003), decreased fatigue, pain, and anxiety in cancer patients (Tsang et al., 2007), decreased depression, stress, and an increase feelings of hope on screened adult volunteers (Shore, 2004), decreased physiological measures of stress and anxiety among healthy adult volunteers (Wardell & Engebretson, 2001), decreased diastolic blood pressure and heart rate in healthy adult volunteers (MacKay et al., 2004), and increased memory-related activity in Alzheimer patients (Crawford et al., 2006). Reiki was also associated with an increase in the oxygen carrying capabilities of the blood in healthy adult individuals (Wetzel, 1989). Reiki was not effective as an adjunct to standard rehabilitation procedures for sub-acute stroke patients (Shifflet et al., 2002), did not effect the use of analgesics and opioid therapy among cancer patients (Olson et al., 2003), did not effect stress and anxiety on women undergoing BB (Potter, 2007), did not improved symptoms of fibromyalgia (Assefi et al., 2008), did not reduce physiological symptoms of stress and anxiety on healthy college students (Bowden et al., 2009) and, did not improved symptoms of depression, anxiety or well-being in patients treated for prostate cancer with EBRx (Beard et al., 2011).

**Strength and Limitations in Reiki Research**

The strength of present research on Reiki lies in the intention of researchers to follow scientific standards. As seen in the reviewed articles, data have been collected using validated
instruments and standard physiological and psychological measurements. Although researchers in some studies used random assignment with control and comparison groups and the statistical methods chosen appear to have been appropriate, there still remain many limitations and methodological flaws that need to be addressed in future Reiki research such as the Reiki protocol, the selection of the practitioner, treatment frequency, number of treatments, and residual Reiki effects, population and sample, control procedures, and cofounding treatments.

**Reiki Protocol**

A major problem that limits generalizability and replicability of the current Reiki studies is the inconsistency in the treatment protocols. As seen in the reviewed articles, there is no standard procedure established, treatments differ in length, contact or no contact, and Reiki level and experience of the practitioners varies. Moreover, the hand positions are not always described in the methodology to allow possible replication. Specifying the exact protocol is necessary for replication. And, establishing a universal Reiki protocol will be relevant in identifying the mechanisms of action for this treatment modality. Reiki researchers should provide practitioners with the universal protocol to follow and, if possible, pretest and monitor for treatment fidelity of all practitioners involved in Reiki intervention studies to ensure all are following the same steps. Moreover, any changes in the universal protocol should be reported.

This universal Reiki protocol will need to address the placement of the hands, their location on the participant’s body, and the sequence describing progressive movements top to bottom, front and back. Protocol should also describe if treatment involves physical or non-physical contact with the participant, length of treatment, and duration of placement of the practitioner’s hands. The universal protocol for Reiki research also needs to address the selection of the practitioner.
Selection of Practitioner

Because the Reiki practitioner is the tool for channeling the energy, researchers must pay close attention to his/her selection of practitioners. All of the studies described above specified the practitioners’ levels of training and some provided information on the length of time the practitioner had been practicing Reiki. Qualifications such as level of training should be taken into consideration to increase validity. Selection of the practitioner based on subjective impressions, such as “feel” for the practitioner, as reported by Shore (2004), reduces the internal validity of the study and should be avoided if possible. Selection of the practitioner should be done based solely on their level of training.

Treatment Frequency, Number of Treatments, and Residual Reiki Effects

Treatment frequency and number of treatments have not been studied in Reiki research. The rationale for the selection of the number of treatments in any of the reviewed articles is not explained. The frequency of treatments reported in the literature varies from daily (i.e. Schifflett, 2002) to weekly (i.e. Shore, 2004). The explanation for the number of treatments provided, and the interval between them, were based either on the recommendation of the Reiki master or practitioner helping to plan the study, or by time allocated by the hospital or clinic where the study was being conducted. In addition, the residual effect of Reiki treatment needs to be addressed. Indeed, Tsang et al. (2007) and Shore (2004) are the first studies that attempt to investigate the lasting effect or stability of Reiki treatment.

Population and Sample

Criteria for subject eligibility for inclusion in the reviewed articles was based on biomedical diagnosis, validated psychological measures, and clinical applicability; this is strength in Reiki research.
In six of the reviewed studies (Tsang et al., 2007; MacKay et al., 2004; Kumar & Kurup, 2003; Wardell & Engebretson, 2001; Mansour et al., 1999; Wetzel, 1989), the reported populations were small convenience samples from the medical institutions where the studies were conducted. Participants were either inpatients with a serious physical condition, volunteer outpatients, or medical personnel available at the time of the study. The generalizability of these studies is therefore limited.

An additional limitation to the eligibility criteria is the requirement in three of the studies for participants to be fluent in English (Wardell & Engebretson, 2001; Olson & Hansen, 1997; Olson et al., 2003). The exclusion of individuals not fluent in the English language results in a biased sample thus affecting the external validity of the study.

A potential limitation of Reiki research is that in most studies the inclusion criteria is too broad. For example, Tsang et al. (2007) used volunteers who had been diagnosed with different kinds of cancer and at different stages. Olson et al. (2003) used twenty volunteers to see the effect of Reiki on pain with a variety of etiologies (e.g., cancer, arthritis, chronic back problems, bone and muscle problems), with various courses (from 1 to 48 years of pain), and in 55 different pain locations within the body. Selecting a sample from a well-defined population with specific eligibility criteria will help to improve the internal validity of the research.

Another concern regarding sample selection for Reiki research involves previous exposure to CAM and Reiki treatment. Some of the reviewed studies did not control for patients’ previous experiences with other healing modalities. However, exposure to other alternative modalities or previous experiences with Reiki may increase receptivity toward the intervention and may bias the outcomes. Olson et al. (2003), reported participant’s unwillingness to accept assignment group receiving only the standard treatment even though no evidence
existed on the effectiveness of Reiki treatment in this population. Thus, individuals may be inclined to participate in Reiki research depending on their needs, beliefs, or values increasing the possibility of a biased outcome.

Control Procedures

Inadequate inclusion of control or comparison groups is among the major threats to internal validity in the design of much of the current Reiki research. Strategies for double masking and controlling for placebo effects have been employed. Assefi et al. (2008), Schifflett et al. (2002) and Mansour et al. (1999) attempted to test for and develop a double blinding and placebo control protocol for Reiki studies. The problem with Assefi’s, Mansour's and Schifflett's approaches to placebo control, however, lies in that fake practitioners mimicking the Reiki positions. These fake or sham Reiki practitioners may none the less be manipulating the participants’ energy fields, despite the absence of Reiki energy coming through. Energy therapies, such as Therapeutic Touch and Healing Touch are based on manipulating the energy field and have shown positive results without a required attunement as the practice of Reiki does. Thus this threatens internal validity of the outcome by unknowingly providing some possible treatment to the control group.

Confounding Treatments

One internal validity threat common to most Reiki research has been the use of an additional therapy in both treatment and control/comparison groups. In cases where the primary treatment was standard medical care, and Reiki treatment was added as an adjunct, it was appropriate for the study design. In other studies, however, researchers used a second alternative modality, such as relaxation or meditation in order to assess placebo or psycho-physiological factors involved in the process of healing. In all cases, the additional therapy was used in both
treatment and control groups. For example, Kumar and Kurup (2003) reported that epileptic seizures decreased significantly ($p = 0.01$) after participants received Reiki treatment three times a week and practiced transcendental meditation for an hour daily. Even though the researchers used biological markers, clinical parameters, and seizure frequency to assess efficacy of treatment, it would be impossible to determine the individual effects of either treatment on the participants. Researchers need to keep in mind that if the mechanism of action of an additional therapy employs the same mechanisms as Reiki, it will be impossible to distinguish the contribution of multiple therapies. Moreover, even if the mechanisms of action are different, the outcomes in the control group may be influenced by the additional therapy. Thus, the measurement of the treatment effect of the Reiki treatment may be diminished because the control group will have received the additional treatment(s) as well.

Other forms of possible therapeutic interference that the literature typically fails to describe include whether or not there was an undisturbed quiet environment, incense, or background music. Also, sudden loud noises, such as telephones, doorbells, or other session interruptions could effect treatment and outcome.

**Gaps in the Knowledge**

The reviewed articles suggest that Reiki intervention is effective in some situations, however, the procedures and methods used in the studies were inconsistent in reference to Reiki protocol, length of treatment, description of hand positions, length of time for hand positions, and level of training of practitioner administering the intervention. Additionally, the effects of frequency of treatment and the longitudinal effects of Reiki need further investigation. Moreover, since none of the studies had been replicated, there is no consistent empirical evidence that Reiki has an effect on the psychological or physiological conditions studied.
The major gap in the existing knowledge is that because of the limitations of the studies described above, researchers have not been able to show a standardized effect. For example, while Shore (2004) explained in detail her protocol, which will allow for replication, her selection of Reiki practitioners was based on her subjective perception of the flow of energy through them, thus preventing exact replication because of the bias selection of the practitioners.

**Contribution to the Body of Knowledge**

The purpose of the proposed study is to examine the effect of Reiki on social workers and LPCs at risk for STS. According to the existing literature, STS is a professional hazard for social work practitioners (Bride, 2007; Figley, 2002; Naturale, 2007). Additionally, the effectiveness of the existing model of intervention, debriefing, is being questioned by the scientific community. The present study will add to the body of knowledge on STS by researching a new model of intervention. The study will also add to the body of knowledge in Social Work by testing the effectiveness of Reiki, thus increasing the body of evidence informed practice. This study will also contribute to the current knowledge base of Reiki in several unique ways. Specifically, this study will be the first to investigate the effect of Reiki on mental health professionals at risk for secondary traumatic stress. The rigorous design of this study, which included a pre-test and post-test, experimental, placebo, and control groups, will also add to the dearth of empirically based literature on Reiki. In particular, this study will allow replicability and include a true placebo group in that all of the participants will be masked to their own treatment condition and the practitioner will not use her hands at all with the control group, avoiding possible unintentional changes in the energy fields. Previous research (Shore, 2004; Mansour et al., 1999; Schifflett et al., 2002) had tried to control for the placebo effect using sham Reiki practitioners. Fake practitioners mimicking the Reiki positions are none the less manipulating the participants’
energy fields, despite that no Reiki energy being emitted. The design of the placebo treatment in this study will avoid this particular confound and therefore increase the validity of results.

**Summary of Reviewed Literature**

STS is the stress mental health professionals experience when acting as a constant secondary witness to traumatic events (Figley, 1995). Mental health professionals affected by STS may experience an array of trauma symptoms such as fear, depression, anxiety, stress, anger, irritability, intrusive thoughts, physiological arousal and hopelessness (APA, 1994; Arvay & Ulhmann, 1995; Bride, 2007). Even though STS is recognized as an occupational hazard, current research reports few incidences of STS among social workers. Existing studies are limited to specific populations with small sample sizes (Benoit, Veach & Leroy, 2007; Bride, 2007; Simon et al., 2005). However, the evidence provided by these studies indicates that social workers working with traumatized individuals are at risk for STS (Boscarino, Figley & Adams, 2004; Bride, 2007). To date, debriefing has been the recommended therapeutic approach to treat STS (Arvay, 2001). However, research indicates that debriefing may cause more harm than help (Phipps, & Byrne; Regehr, 2001). Regehr (2001) reported that individuals participating in debriefing groups who listen to the descriptions of others’ traumatic experiences or who themselves relive the incident may develop STS.

Reiki is an energy therapy modality acknowledged by the National Center for Complementary and Alternative Medicine (NCCAM, 2002). Research provides preliminary evidence to suggest that Reiki may be effective intervention for a variety of problems which are listed in the DSM IV and have associated descriptive features characteristic of individuals affected by STS (Shore, 2004; Mackay et al, 2004; Olson & Hanson, 1997; Tsang, Carlson, & Olson, 2007; Wardell & Engebretson, 2001). However, to date, no research has been conducted
specifically on the effect of Reiki on STS or its associated symptoms, including anxiety and stress, depression, anger, hopelessness, and somaticism on a sample of mental health professionals. In this study it is hypothesized that mental health professionals at risk for STS symptoms will be influenced by Reiki treatment.
CHAPTER 3: METHODOLOGY

This chapter describes the research methodology for the study, including research questions, hypothesis and design. Next, sample characteristics, data collection methods, operationalization of the dependent variables and independent variables, instrumentation and measurement reliability will be described. Chapter 3 concludes with the description of data analyses for the study.

Purpose

The purpose of this cross sectional experimental study is to investigate the efficacy of Reiki to relieve the risk and symptoms of STS on mental health professionals. The goals of the study included evaluation of the effects of Reiki on (1) risk level for STS, and STS’s common symptoms (2) anxiety, (3) depression, (4) anger-hostility (5) somatic symptoms, and (6) hopelessness.

Research suggests that Reiki relieves anxiety and stress (Wardell & Engebretson, 2001), and depression (Shore, 2004). However, to-date, no research has been conducted specifically on Reiki to determine its effectiveness on relieving risk level of STS and its common symptoms. In this study it is hypothesized that Reiki will have an effect on mental health professionals that meet the inclusion criteria for being at risk for STS or have symptoms following Reiki treatment.

Research Questions

Does Reiki have an effect on mental health professionals at risk for STS? Outcomes will be measured in changes in symptoms that research has identified as common in persons: (1) at risk level for STS, and including common symptoms: (2) anxiety, (3) depression, (4) anger-hostility, (5) somatic symptoms and, (6) hopelessness.
Hypothesis

H₀₁: Reiki treatment will have no influence in risk level for STS, and the following common symptoms: anxiety, depression, anger, somatic symptoms, and hopelessness for mental health professionals.

Hₐ₁: Reiki treatment will have an influence in risk level for STS, and the following common symptoms: anxiety, depression, anger, somatic symptoms, and hopelessness for mental health professionals.

This study will address the following research sub-questions:

A) Are there any significant mean differences in levels of anxiety for mental health professionals at risk for STS after Reiki treatment?

B) Are there any significant mean differences in levels of depression for mental health professionals at risk for STS after Reiki treatment?

C) Are there any significant mean differences in levels of anger for mental health professionals at risk for STS after Reiki treatment?

D) Are there any significant mean differences in levels of somatic symptoms for mental health professionals at risk for STS after Reiki treatment?

E) Are there any significant mean differences in levels of hopelessness for mental health professionals at risk for STS after Reiki treatment?

Protection of Human Subjects

The proposal for this study was submitted and approved by the Institutional Review Board (IRB) at Louisiana State University. Potential participants were informed about the nature of the treatment and of their rights as research subjects. Individuals willing to participate voluntarily completed the informed written consent. Participants were informed that data
collected would be used for research purposes and confidentiality was guaranteed. In order to ensure confidentiality, participants were assigned an identification number to code participant’s responses for data collected. In addition, any identifying information and identification numbers were kept in a separate locked location. All current standards for the protection of human subjects were followed.

**Operational Definitions**

**Independent Variable**

**Reiki Treatment**

All Reiki was administered by the researcher who has twelve years of experience as a Reiki Master practitioner. The practitioner followed an established Reiki protocol to ensure treatments were uniformly administered. Specifically, the treatments started with the participant lying on their back, fully clothed, with a cloth over the eyes. The practitioner started at the head and worked toward the feet, keeping hands approximately 1.5 to 2.0 inches away from the body. After finishing the front, the participant turned over to the stomach and the practitioner again worked from the head to the feet. The treatment lasted 50 minutes.

**Reiki Protocol**

The positions are numbered according to the order in which they were performed.

The first three positions of Reiki are on the head.

1. Standing behind the participant place hands over the eyes.
2. Standing behind the patient place hands over the cheeks.
3. Standing behind the patient place hands under the head.

For the following positions the practitioner will step to the left side of the table:

4. Place hands over the collar bone (slightly below the throat).
5. Place hands over the torso.
6. Place hands below breasts over lower ribs.
7. Place hands just below waist.
8. Place hands across the pelvic area above the pubic bone.
9. Place hands across lower abdomen above the pubic bone.
10. Place hands over the front of both knees.
11. Place hands over the front of both ankles.

For the next position the practitioner moves to the end of the table facing the feet of the participant receiving Reiki.

12. Place hands over bottom of feet.

The practitioner returns to the head of the table and asks the participant to turn over.

Standing behind the participant, place one hand over the crown of the head and the other hand over the back of the head.

For the following positions the practitioner will step to the left side of the table:

13. Place hands over the back of the neck.
14. Place hands over the shoulder blades.
15. Place hands over the middle back.
16. Place hands over the lower back below the waist (over sacrum).
17. Place hands over the tailbone (coccyx).
18. Place hands over the back of both knees.
19. Place hands over the back of both ankles.

For the next position the practitioner moves to the end of the table facing the feet of the participant receiving Reiki.
20. Place hands over the bottom of both feet.

To end the session the practitioner goes to the head of the table and holds both hands downward approximately 8” above the body and moves downward in long strokes from the participant’s head to the feet. The practitioner will repeat this movement 3 times from head to feet each time.

**Dependent Variables**

The goal of the present study is to evaluate the effects of Reiki on social workers affected by STS. The variables being measured are:

1. Secondary Traumatic Stress is defined as the onset of symptoms due to exposure to other’s trauma. Symptoms include being afraid, anxiety, depression, hopelessness, anger, and somatic symptoms, such as having difficulty sleeping, avoiding remainders of the event, intrusive thoughts, exhaustion, and experiencing client’s PTSD symptoms (APA, 2004; Figley, 1995). Data to measure changes in STS will be collected using the Professional Quality of Life: Compassion Satisfaction and Fatigue Subscale (ProQOL R-V) which is described below.

2. Anxiety is defined as an unpleasant feeling of fear or state of intense apprehension, feeling tense, inability to relax, feeling frightened, scared or afraid, feeling nervous, shaky, or jumpy (Kellner, 1987). Additional symptoms include having frightening thoughts, feeling that something bad will happen, feeling panicked, worried, taking a long time to fall asleep, feeling highly strung, and wound up or uptight (APA, 2004). Changes in anxiety will be measured using the Symptom Questionnaire (SQ) which is described below.

3. Depression is characterized in the DSM-V-TR (2004) by altered mood including: loss of pleasure, feeling weary, unworthy, sad, depressed, feeling like a failure, reduced ability to concentrate, desperation, feeling inferior to others, inappropriate guilt, crying spells, sadness,
pessimism or feeling hopeless, loss of energy, thinking of death or dying, suicidal thoughts, loss of interest in things, and feeling that life is bad. Changes in depression will be measured using the SQ.

(4) Anger is defined as an emotional state that may vary in intensity from mild irritation to fury and rage (Kellner, 1987). The SQ uses the term anger and hostility interchangeably and anger is characterized in the SQ by irritability, feeling angry, annoyed, hateful, furious, feelings of rage, hot tempered or losing temper easily, getting angry quickly, feeling hostile or infuriated and enraged, feeling mad, feeling like attacking people, easily irritated by others, and resentful (Kellner, 1987).

(5) Somatic symptoms are defined as pain that is not explainable by a physiological cause. Somatic symptoms are believed to have psychological origin and connotes that the mind is having an effect on the body (APA, 2004). Some common somatic symptoms are headaches, stomach pain, muscle pain, nausea, heart beating fast or pounding, and general weakness (Neale, 1996). The changes in somatic symptoms will be measured by the SQ.

(6) Hope is defined as an individual’s perception that their goals can be met and their ability to plan activities that promote the achievement of these goals (Snyder, Sympson, Ybasco, Borders, Babyak, & Higgins, 1996). Changes in level of hope will be measured in the study using the State Hope Scale (SHS) which is described below.

Measurement

**Professional Quality of Life Scale: Compassion Satisfaction, Burnout & Compassion Fatigue/Secondary Trauma Scales (ProQOL R-V) (Stamm, 2009)**

The Professional Quality of Life Scale: Compassion Satisfaction, Burnout & Compassion Fatigue/Secondary Trauma Scales (ProQOL R-V) is a 30-item self-report, Likert-type scale developed to assess STS, burnout, and compassion satisfaction (CS). Each subscale has 10 items.
with a range of scores between 0 (never) and 5 (very often). It measures the experiences of the participants in the last month. The ProQOL R-V is composed of three discrete scales. Each scale has 10-items that cannot be combined. Coefficient alphas for each of the subscales are CS alpha .88, burnout alpha .75 and STS alpha .81 (Stamm, 2009).

For this study, only the Compassion Fatigue / Secondary Trauma Scale (STS) subscale will be used. The ProQOL R-V scale defines STS as work related secondary exposure to stressful events suffered by primary witnesses of the event (Stamm, 2009). STS is the end result of listening to the traumatic experiences of others. The symptoms can have a rapid onset and may include being afraid, anxiety, having difficulty sleeping, having recurrent thoughts of traumatic events experienced by others, and the avoidance of circumstances and things that may act as reminders of the traumatic event (Stamm, 2009).

The measures’ author does not recommend the use of cut off scores; however, in the need to create categories, they offer percentiles for general applicability and screening purposes: high (25%), medium (50%) and low (25%). The average score on the STS scale in the ProQOL R-V is 23 (SD =6, alpha .80). The author reported that about 25% of individuals in the health profession score below 43 and another 25% score above 57 (Stamm, 2009). The cut off score above 23 indicates a moderate risk for STS and a score over 57 indicates a high risk of being affected by STS (Stamm, 2009). The ProQOL R-V scale is not a clinical measure (Stamm, 2009).

**Symptom Questionnaire (SQ) (Kellner, 1987)**

The SQ is a 92-item self-report instrument utilized to assess depression, anxiety, somatization, and anger-hostility. The 92-items in the SQ include subscales of well-being and
assess for relaxation, content, somatic well-being, and friendliness. These aspects correspond to the symptoms of STS mentioned above.

The SQ is sensitive to changes experienced by the participant through the course of treatment and assesses the experience of the participant in different time frames: how he/she feels ‘right now’, ‘today’ or ‘in the last week’. For the purpose of this study, the participants will responded to ‘how they feel in the last week’. Respondents are asked to respond to “yes” or “no” or “true” or “false” questions.

The SQ reliability estimates had been assessed and the test-retest coefficients for anxiety were .71, for depression .95, for somatic symptoms .77 and for anger .82 (Kellner, 1987). Corcoran and Fisher (2000) reported that the validity of the SQ has been determined with a variety of samples where scores had shown to discriminate between psychiatric patients and “normal individuals” in eleven different studies. Additionally, the SQ is able to discriminate between different groups of psychiatric disorders, psychosomatic disorders, and physical disease (Corcoran & Fisher 2000).

**State Hope Scale (SHS) (Snyder, et. al., 1996)**

The State Hope Scale (SHS) defines hope as the belief that the individual has the capacity to reach a goal and the ability to plan the necessary actions to reach that goal (Snyder et al., 1996). This ability to create action is represented in the two subscales present in the SHS: goal directed determination and planning to meet goals (Snyder et al., 1996).

The SHS is a 6-item self-report Likert type eight point scale with a range of scores from 1 (definitely false) to 8 (definitely true). The SHS has reported excellent reliability, a coefficient alpha of .93 for the total scale, and .91 for both subscales (Snyder et al., 1996). The SHS also has good reported construct validity in correlation with the Dispositional Hope Scale, State Self-
Esteem, State Positive Affect, and State Negative Affect scales (Snyder et al., 1996).

**Population and Sample**

This study used a purposive non-probability sample. Recruitment for the study started in January 2010 and ended in May 2011. The recruitment process included multiple avenues to contact social worker practitioners and LPCs, including the LSU School of Social Work Alumni roster; the LSU Career Services roster; the e-mail list of license social workers published by the Louisiana State Board of Social Work Examiners (LABSWE) for Baton Rouge, Baker, New Orleans, Gonzales, New Roads, Denham Spring and Prairieville; contacting agencies, requesting assistance of faculty members to present information about the study in master level social work classes; and word of mouth. A total of 97 potential participants responded to the pretest questionnaires, and 79 of the potential participants met the inclusion criteria for the study. A total of 67 participants completed the study. The representation of the sample is limited to social workers and LPCs in Louisiana. Participants who responded to the invitation were screened to determine if they met the inclusion criteria for the study.

**Recruitment Procedure**

The initial attempt to recruit potential participants was through e-mail with the LSU School of Social continuing education roster. Two thousand electronic invitations were sent, on January 2010, to participate in the study, and 66 social workers responded to the invitation. For respondents, 3 different dates and times were set for potential participants to be informed about the study, their rights and informed consent signed, and respond to the pretest questionnaires at the location where the treatment would take place. From the 66 potential respondents, 25 social workers attended and signed informed consent and responded to questionnaires. From these 25 social workers, 6 dropped the study by not returning calls to schedule their treatment.
appointments. A second e-mail was sent out in February 2010, from the LSU School of Social Work Alumni roster without any results. Additionally, the researcher presented information to LPCs during a CEU meeting, and the Louisiana Counseling Association forwarded the e-mail invitation to participate in the study to 2500 LPCs included in their roster. From the e-mail invitation, 4 LPCs responded and 3 met the criteria to participate in the study. On March 2010, an e-mail with a total of 644 addresses was sent to social workers whose e-mails were published on the LABSWE for Baton Rouge, Baker, New Orleans, Gonzales, New Roads, Denham Spring, and Prairieville, no response was obtained from the invitation. Eighteen social workers were recruited from referrals from other participants, and 11 completed the study. On December 2010, the researcher presented the study to a master’s level social work class student and 18 signed informed consent and respond to the pretest questionnaires. Extra credit points were offered to those who participated in the study. From 18 students 15 met the inclusion criteria for the study; 3 dropped the study before treatment was completed. In January 2011, a second master’s level social work class was invited to participate and 20 students signed informed consent and responded to pretest questionnaires. Fifteen students from this group met the inclusion criteria and completed the study. Extra credit points were offered upon completion of treatment. On March 2011, 3 master’s social work level classes were invited to participate in the study, one class was offered extra credit points and the other 2 did not received any compensation for participation in the study. From these 3 classes, 19 students signed informed consent and responded to the pretest questionnaires. Two did not meet the inclusive criteria for the study and 5 dropped the study before completion of treatment.

For potential participants who were invited through electronic mail, dates were scheduled to collect baseline data. However, when the invitation to participate was done in a classroom
setting, baseline data was collected after the presentation in the classroom. Reiki was described to participants as a CAM modality that promotes well-being.

All potential participants responded to the 3 questionnaires including the ProQOL R-V, the Symptom Questionnaire (SQ) to assess depression, anxiety, somatization and anger-hostility, and the State Hope Scale (SHS) to measure. Participants were informed that if they met the inclusion criteria for the study they would be contacted within a week to schedule appointments for four Reiki treatment sessions, one treatment per week, for four weeks on the same day of the week at the same time for the treatment and placebo groups. Respondents who not were at risk for STS were not contacted.

Inclusion criteria for the study included identification of moderate to high risk level of STS as determined by the Professional Quality of Life Scale: Compassion Satisfaction, Burnout & Compassion Fatigue/Secondary Trauma Scales (ProQOL R-V). The cut off score ProQOL R-V ≥ 23 indicates moderate to high risk level of being affected by STS. The cut off scores for the ProQOL R-V were calculated for screening purposes.

Exclusion criteria was having received a Reiki treatment or other energy modality, such as Therapeutic Touch or Healing Touch in the past month, or if the participant had received Reiki training in the past month, and pregnancy.

**Randomization Procedure**

The initial estimated sample for the study was 97 participants. The researcher assigned treatment conditions to three different color pebbles as follows: orange corresponded to Reiki treatment, white corresponded to placebo, and blue corresponded to the control group. Thirty-three pebbles of each color were put in a paper bag and mixed. At recruitment each possible participant was assigned a number written on their informed consent and pretest questionnaires
which was entered on a list. Once the ProQOL R-V was scored and participants qualified for the study, the researcher pulled a random pebble from the bag and the participant was assigned to treatment according to the color of the pebble. Once the pebble had been selected it was discarded. However, because of attrition and to replace and achieve the sample number necessary for the study, new pebbles with the colors representing the attrition treatments were replaced to complete the required sample number when new participants were recruited.

Participants that met the inclusion criteria were randomly selected and assigned to one of the three treatment groups: 1) the treatment group that received four Reiki treatments once every week for four weeks for 50 minutes, 2) the placebo group that followed the same protocol as the treatment group except that they did not receive Reiki treatment, and 3) the control group who were informed that they would be receiving distance Reiki and that they would be contacted after six weeks to respond to the posttests, however no distance Reiki treatments was done. Every effort was made for the control group participants to respond the pre-test and post-test measurements in the same intervals as the other two treatment groups, however that was not always possible due to participant’s schedule. Baseline data was collected at least a week prior to treatment. Post-treatment data was collected one week after the last treatment.

Treatment participants met with the practitioner at scheduled times. All treatments were administered at the same location, in the same room, under the same environmental conditions. The room was a quiet space with no visual or auditory distraction. The practitioner greeted the participant and directed them to the massage table where the practitioner placed a piece of cloth over the participant’s eyes. Treatment was conducted as described in the Reiki protocol. No debriefing took place after the session.

For the placebo group, the practitioner greeted the participant and directed them to the
massage table. After covering the participants’ eyes with a piece of cloth, the practitioner stood next to the table and moved every 2.5 minutes, following the treatment protocol but without placement of hands. No debriefing took place after the session.

The control group received no treatment, however they were under the belief that they were receiving distance Reiki.

After the fourth Reiki or placebo treatment, participants were asked to return the following week to respond to posttest measurements, for debriefing, and to answer questions. The control and placebo groups were offered one Reiki session after posttest measurement.

**Research Design**

The study used a cross sectional pretest posttest experimental placebo control group design, testing the effect of Reiki treatment on social workers at risk for STS. The design included three groups with random assignment, and measurement before and after intervention as illustrated below.

R O₁ X O₂ represents the treatment group

R O₁ O₂ represents the control group

R O₁ P O₂ represents the placebo group

**Data Collection and Instrumentation**

Baseline data was gathered a week before the beginning of the intervention for all three groups - treatment, placebo and control. This included three self-report questionnaires and a demographic survey. Posttest data was collected a week after the last Reiki or placebo treatment. Participants, including the control group, were asked to meet with the researcher at LSU for students and at the office where treatment was provided for social workers and LPCs, to complete the post-test measurements, debrief, and to answer questions.
Issues Related to Internal and External Validity

The study used a pretest-posttest experimental placebo control group design to determine if Reiki treatment has any effect on risk level of STS in social workers. The study used an experimental placebo control design, with random assignment to one of three treatment groups (control, placebo or Reiki treatment), participants were blinded to treatment condition and data was collected using validated psychological instruments. Thus, a relatively high internal validity is expected. The current best practices knowledge on Reiki has limitations and methodological flaws that this research attempted to address in the study:

Placebo Effect is a serious threat to internal validity in energy modalities research. Because of the nature of Reiki, and the sense of connectedness experienced by many participants toward the practitioner, the unintentional bonding could act as a placebo. Also, the environment itself, relaxation for an hour, eyes closed in a quiet and safe space, could produce positive changes independent of the Reiki treatment. Thus, participants’ improvement could be due to practitioner/participant bonding or the environment instead of the actual Reiki treatment.

This study will control for the placebo effect. Participants in the placebo group received no Reiki treatment, however they experienced the same attention to facilitate the same bonding, and were in the same environment as the treatment group. Participants in the placebo group followed the same protocol as the treatment group except that the practitioner did not send Reiki energy to them by doing the hand positions; instead, the practitioner moved about a foot away from the treatment table and moved around the table following the established Reiki protocol without the hand placements.

Selection and training of the practitioner for the present study was based on the fact that the researcher was a Reiki master. The researcher provided all treatments. The same established
protocol was followed as outlined in this study with every participant. Prior research (Shore, 2003; MacKay et al., 2004) selected Reiki practitioners based on subjective impressions, reducing the internal validity of the study and making it difficult to replicate.

**Threats to Internal Validity in Current Study**

Maturation or the passage of time may influence the outcome of the study. Normal developmental changes in research participants, such as maturation due to age or experience, or anything that leads to increased knowledge or understanding between the pretest and posttest may impact the results of the study. Learning about STS, through their participation in the study, participants may gain new awareness, become more vigilant of witnessing other people’s trauma, and change their behavior, thus changing the outcome of the study.

History refers to any event between the pretest and posttest that may have affected the participants in different ways (Rubin & Babbie 2001). Since the participants began treatments at different periods of time and treatments were spread through a month period, changes in the general environment (e.g. policy changes at the work place, educational training, time of the semester for students) may affect individuals in a positive or negative direction. The study lasted for a period of 16 months, from January 2010 to May 2011.

Resentful demoralization is when participants are assigned to placebo or control groups they may become angry, and either attempt to boycott the study or stop cooperating. As a result of these reactions, the differences in outcomes in the study may change (Rubin & Babbie, 2001). To prevent resentful demoralization with the control group in this study, participants were told that they were receiving long distance Reiki treatment. Additionally, the researcher let all participants know that after the posttest, placebo and control groups would be offered one Reiki session. All participants in the placebo group scheduled their appointments for a free Reiki
session after responding to the post questionnaires. From the control group only a couple follow through with the free Reiki session.

Attrition refers to the loss of participants during the study (Rubin & Babbie, 2001). Attrition may be due to characteristics in the participants that prompt them to drop out of the study, thus the representativeness of the outcome may be affected by both the characteristics of the participants who attritioned out of the sample and dissimilar characteristics among the participants who completed the study. Binary logistic regression was used to compare the attrition group with the remaining participants in this study.

**Threats to External Validity in Current Study**

External validity is related to the capability of generalizing the findings of the study sample to the general population (Rubin & Babbie, 2001). Threats to external validity in the current study are highlighted by the demographic description of the characteristics of the sample. Thus, the generalization of the proposed study is limited to the characteristics of the sample of the present study. The sample is composed by social work master level students (61%), professional social workers (34%) and LPCs (5%). Detail description is provided in the results section.

Another threat to external validity is a lack of knowledge in the internal mechanisms of Reiki. Since the actual amount of energy coming through the practitioner cannot be measured, replicability of the study is difficult. Following a specific procedure, such as was done in this study, will allow for greater replicability of the study. Another threat to external validity is the possibility of the Hawthorne Effect (Rubin & Babbie, 2001). Participants may modify their behavior in response to being observed as an experimental subject.

**Data Analysis**

Power is the probability of rejecting a null hypothesis when it is false. Power analysis
helps the researcher avoid a type II error (Rubin & Babbie, 2001). Power analysis is used to determine the minimum sample size necessary for statistical analysis before collecting data (Rubin & Babbie, 2001). A power analysis was conducted to determine the proposed sample size for this study using Cohen’s statistical power table (Cohen, 1988 in Rubin & Babbie, 2001). According to Cohen’s table (1988), a sample size of 90 was determined to attain the recommended power of .83 with a medium effect size ($r = .30$) at a .05 significance level. This will result in a .17 (17%) chance of making a Type II error. According to Rubin and Babbie (2001), Cohen (1988) recommends 20% as a maximum of chance of making a Type II error. After multiple attempts the researcher was unable to recruit 90 participants for the study. A new power analysis was conducted for the study and was determined that with a sample size of 60 power of .65 with a medium effect size ($r = .30$) would be achieved at a .05 significance level. This results in a .35 (35%) chance of making a Type II error.

Descriptive statistics will be used to summarize demographic information of the sampled population, such as: gender, age, race, living arrangement, household income, level of education, licensure, area of social work practice, and past experience with energy therapies.

Bivariate correlations were conducted to examine the relationship between the dependent variables to determine if they measure the same information and see if multicollinearity was a problem. Multicollinearity occurs when two or more variables are closely related to each other, thus provide or measure the same information. Measures of constructs that theoretically measure different characteristics should not have a high correlation (Rubin & Babbie, 2001). Binary logistic regression is a form of multiple regression where the dependent variable is a dichotomous, categorical variable. Because binary logistic regression works with a categorical value it allows the researcher to predict membership or non-membership of a group (Mertler &
Vannatta, 2005). Logistic regression is an appropriate method when the dependent variable is categorical and there are one or more continuous or discrete independent variables (Mertler & Vannatta, 2005). Logistic regression calculates the probability of a specific outcome for each case involved specifying whether a subject falls in one category or the other. The results of the test are presented as odds ratio (OR). The OR determines the strength of the relationship by examining the influence of the independent variable on the dependent variable. A value of one indicates no relationship; in this case the probability is the same for each category. A value greater or less than one indicates that the odds are sufficiently different and a relationship exists (Mertler & Vannatta, 2005). Binary regression has less stringent assumptions than multiple regression and discriminant analysis. Logistic regression does not require a normal distribution of the variables or homoscedasticity and is insensitive to linearity of the relationship between the raw values of the dependent and independent variables (Mertler & Vannatta, 2005). For the present study logistic regression was used to compare characteristics between participants who completed the study and those who did not complete the study.

Multivariate Analysis of Variance (MANOVA) was used to test the study hypothesis. MANOVA is the most appropriate statistical method to test the hypothesis for this research design because this study uses one independent variable (Reiki treatment) and six quantitative dependent variables (risk level for STS, depression, anxiety, anger, somatic symptoms and hope). MANOVA will help assess whether an overall mean difference exists between groups (Reiki, placebo, and control group) on the dependent variables, and if those differences are significant or occurred by chance (Mertler & Vannatta, 2005). Stevens (1992, cited by Mertler & Vannatta, 2005) describes why a researcher should use more than one variable when comparing treatments. First, any effective treatment will affect the participants in more than one way
creating the need for more than one dependent variable, and second, a comparison of multiple measures will help detect more treatment effects than a single, dependent variable.

In the case of the proposed study, risk level for STS, depression, anxiety, anger, somatic symptoms and hope are the variables that were used to determine the changes between the groups, if any. Advantages to using MANOVA include protection against Type I errors that might occur if multiple ANOVAs were conducted independently (Mertler & Vannatta, 2005). For validity purposes, multiple dependent measures are preferred over single measures (Mertler & Vannatta, 2005). Additionally, MANOVA may reveal differences not discovered by ANOVA tests. When separate ANOVAs are conducted there is the risk that the distributions for each of the treatment groups overlap enough that no means difference will be shown (Mertler & Vannatta, 2005). In MANOVA, because the dependent variables are combined, the two groups may show significant differences between the groups. Finally, MANOVA incorporates the intercorrelation between dependent variables into the statistical analysis while ANOVA, by keeping the dependent variables separate, ignores these relationships (Mertler & Vannatta, 2005).

MANOVA requires that the following four assumptions are met (Mertler & Vannatta, 2005). First, the observations within each sample must be randomly sampled and independent of each other. If the researcher randomly assigns participants to treatment groups, like in the case of the study being proposed, this assumption should not be violated. Second, the treatment of all dependent variables must have a multivariate normal distribution. MANOVA is considered to be robust to moderate for violations of normality as long as the origin of the violation is skewness and not outliers. According to Mertler and Vannatta (2005) a sample size of 20 in the smallest cell should be adequate to ensure robustness to violations of normality. The sample size of the
proposed study is 67 participants, with each cell having more than 20 subjects each. The number of participants in each cell for the Reiki, placebo and control group was 22, 21 and 24 respectively. Third, the population covariance matrices for the dependent variables are equal. This assumption is also known as homogeneity of covariance matrices or the assumption of homoscedasticity (Mertler & Vannatta, 2005). This assumption is a necessary condition for multivariate normality. The proposed study assessed for possible violation of this assumption by checking for multivariate normality. If the assumption is violated, according to Mertler and Vannatta (2005), a robust multivariate test statistic, such as, Pillai’s Trace can be used to help interpret the multivariate results. And fourth, the relationship between all pairs of dependent variables must be linear. All assumptions for MANOVA were met in the present study, except homoscedasticity, thus Pillai’s Trace was used to interpret the results.

One way ANOVA was used to address the sub questions under the proposed hypothesis to determine whether there were any significant differences between the means of the three treatment groups. The test statistic used for ANOVA is (Mertler & Vannatta, 2005):

\[
F = \frac{\text{between group variability}}{\text{within group variability}}
\]

Where the numerator in the equation provides the value that describes the variance between the three sample means and the denominator provides the variances that might be expected from error or chance (Mertler & Vannatta, 2005).

The two possible causes for change in the equation are either by effect of treatment or by chance. However, the within group variability is due to random differences expected among individuals while the difference between groups is caused by the treatment. Thus, when the treatment has no effect the F ratio value is expected to be close to 1 (Mertler & Vannatta, 2005).
A value of 1 or close to 1 indicates that the treatment had no effect and there is no difference between groups. A value greater than 1 indicates a treatment effect and the researcher may conclude that at least one of the groups means is different from the others.

Since ANOVA is an omnibus test and does not define which groups are significantly different post hoc tests needs to be conducted if the outcomes determine that there is a significant group difference among treatments.
CHAPTER 4: RESULTS

Chapter 4 presents responses to the research questions presented in chapter 3 of the study. The results of the analysis are presented in the order the research questions were presented. First, descriptive statistics and frequency distributions of the sample population will be described. Binary logistic regression was computed to determine differences between participants who completed the study and those who did not complete the study. Bivariate analysis was conducted to determine if there were any relationships between the dependent variables. The chapter ends with the results of MANOVA to test the hypothesis of the study. Data collected was processed using IBM Statistical Package for the Social Sciences (SPSS) version 19 software. Alpha ≤ .05 was used to test hypothesis. Two tailed tests were used since previous research does not allow definitive predictions about the directions of the outcomes.

The purpose of this study was to investigate the efficacy of Reiki to relieve the risk and symptoms of STS on mental health professionals. The goals of the study included evaluation of the effects of Reiki on risk level of STS, and STS’s common symptoms such as anxiety, depression, anger, somatic symptoms and hopelessness.

Data Analysis

Descriptive statistics and frequency distributions were used to summarize characteristics of all variables. Data collected included demographic information of the participants, such as, gender, age, race, living arrangement, household income, level of education, licensure, area of social work practice, and past knowledge or experience with Reiki or other forms of energy therapy. The ProQOL R-V, the SQ, and the SHS were used to compare pre-test and post-test measures to determine whether differences exist between Reiki, placebo, and control treatment groups.
**Descriptive Characteristics of Possible Participants**

The following paragraph describes the demographic characteristics of the total number of individuals who accepted the invitation to participate in the study and responded to the pretest questionnaires. This group includes respondents who did not meet the inclusion criteria for the study because their PROQOL R-V scores were too low, participants who qualified and completed the study and those who qualified but drop out before completion.

A total of 97 individuals responded to the invitation to participate in the study. From those 97 participants, 91 (94%) were female, 78 (80%) were Caucasian, 13 (13%) were African American, and 6 (6%) self-identified as Hispanic, Asian or African. Seventy six (80%) of participants reported being Christian, 8 (8%) reported being Agnostic or Atheist, and 7 (7%) reported being Spiritual with no religious affiliation. Forty-two (43%) of respondents were social work interns, 18 (19%) were Licensed Clinical Social Worker (LCSW), 10 (10%) were Graduate Social Worker (GSW), 12 (12%) were Registered Social Worker (RSW), 9 (9%) were Licensed Clinical Social Worker-Board Approved Certified Supervisor (LCSW-BACS) and 4 (4%) were LPCs. Twenty seven (29%) participants reported that their area of practice was adult mental health, 9 (10%) reported working in child mental health, 9 (10%) reported their area of practice as family services.

**Attrition and Missing Data**

Of the 97 respondents, 67 (69%) completed the study, 12 (12%) dropped the study before completion, and 18 (19%) did not meet criteria to participate in the study.

Of the participants who dropped out of the study, 12 (100%) were female, 10 (83%) were Caucasian, 1 (7%) was African American, and 1 (7%) was Asian. Nine (64%) were social work interns, and 3 (18%) were LCSW-BACS.
For the purpose of the study, data belonging to attritional participants were manually removed and not included in the final statistical analysis. Missing data was less than 2% on demographics questions, such as age and area of practice; each case is noted on demographic tables. No missing data was present in the main variables of the study.

**Comparison of Participants and Non-Responders**

As described above 97 possible participants responded initially to the study invitation. From this group 79 met the inclusion criteria to participate in the study. From this group 67 participants completed the study, and 12 met the requirements but attritioned before completing the study.

For the purpose of this study binary logistic regression was computed to compare participants who completed the study (n=67) versus non-responders (n=12). Non responders are defined as those participants who meet the study requirements but did not participate, finish or respond to the posttest questionnaires.

Binary logistic regression was used to compare the risk level for STS and the symptoms of STS between study participants (n = 67) and non-responders (n = 12). The dependent variable was whether participants completed the study; not completed was coded as (0) and completed as (1). Pretest scores measured at baseline at recruitment were used as predictor variables. The pretest scores included level of risk for STS, anxiety, depression, somatic symptoms, anger-hostility, and hopelessness.

In the recruitment sample of mental health professionals (N=79), the likelihood of completing the study did not differ by level of risk for STS, anxiety, depression, somatic symptoms, anger-hostility, or hopelessness ($X^2(6) = 5.47$, $p = .485$) (Table 1).
Table 1.

**Binary Logistic Regression Model Comparison of Study Participants (n = 67) to Non-Responders (n = 12)**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk level for STS</td>
<td>.08</td>
<td>.13</td>
<td>.38</td>
<td>1</td>
<td>.539</td>
<td>1.08</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.09</td>
<td>.11</td>
<td>.66</td>
<td>1</td>
<td>.415</td>
<td>1.09</td>
</tr>
<tr>
<td>Depression</td>
<td>-.15</td>
<td>.10</td>
<td>2.14</td>
<td>1</td>
<td>.144</td>
<td>.86</td>
</tr>
<tr>
<td>Somatic Symptoms</td>
<td>.09</td>
<td>.09</td>
<td>.99</td>
<td>1</td>
<td>.319</td>
<td>1.09</td>
</tr>
<tr>
<td>Anger-Hostility</td>
<td>.02</td>
<td>.09</td>
<td>.06</td>
<td>1</td>
<td>.801</td>
<td>1.02</td>
</tr>
<tr>
<td>Hopelessness</td>
<td>.02</td>
<td>.06</td>
<td>.10</td>
<td>1</td>
<td>.757</td>
<td>.15</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.93</td>
<td>4.53</td>
<td>.18</td>
<td>1</td>
<td>.671</td>
<td>.15</td>
</tr>
</tbody>
</table>

Note. Study participants did not differ from non-responders ($X^2(6) = 5.47, p = .485$).

**Descriptive Characteristics of Study Participants**

From the participants who completed the study 62 (93%) were females, 57 (85%) were Caucasian, and 6 (9%) were African American. The minimum age reported by participants was 22 and the maximum 74 years old ($M = 34.27, SD = 12.84$). Twenty-five (37%) participants reported being married, and 24 (36%) reported being single or never married. Fifty-one (79%) reported Christianity as their religious denomination, 7 (11%) reported being religious with no affiliation, and 5 (8%) participants reported being agnostic or atheist. Nineteen (30%) reported annual household incomes under $25,000.00, and 11 (17%) participants reported a household income over $100,000.00. Table 2 shows the demographics characteristics of participants who completed the study in detail. With regards to their level of education and licensure, 34 (51%) participants reported completing college and 30 (45%) had a master’s degree. Table 3 depicts the
distribution of the highest level of education completed among treatment groups.

Table 2.

Demographics Characteristics of Participants who Completed the Study (N=67)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>62</td>
<td>93</td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>57</td>
<td>85.1</td>
</tr>
<tr>
<td>African American</td>
<td>6</td>
<td>9.0</td>
</tr>
<tr>
<td>African</td>
<td>2</td>
<td>3.0</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>2</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-25</td>
<td>22</td>
<td>33.3</td>
</tr>
<tr>
<td>26-30</td>
<td>13</td>
<td>19.7</td>
</tr>
<tr>
<td>31-35</td>
<td>9</td>
<td>13.6</td>
</tr>
<tr>
<td>36-40</td>
<td>5</td>
<td>7.6</td>
</tr>
<tr>
<td>41-45</td>
<td>4</td>
<td>6.1</td>
</tr>
<tr>
<td>46-50</td>
<td>4</td>
<td>6.1</td>
</tr>
<tr>
<td>51-55</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>56-60</td>
<td>2</td>
<td>3.0</td>
</tr>
<tr>
<td>61-65</td>
<td>4</td>
<td>6.1</td>
</tr>
<tr>
<td><strong>Living arrangement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>Count</td>
<td>Percentage</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>Married</td>
<td>25</td>
<td>37.3</td>
</tr>
<tr>
<td>Single/Never married</td>
<td>24</td>
<td>35.8</td>
</tr>
<tr>
<td>Separated/Divorce</td>
<td>11</td>
<td>16.4</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Living with partner</td>
<td>6</td>
<td>9.0</td>
</tr>
</tbody>
</table>

**Religious Affiliation**

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christian</td>
<td>55</td>
<td>78.5</td>
</tr>
<tr>
<td>Spiritual but not religious</td>
<td>7</td>
<td>10.8</td>
</tr>
<tr>
<td>Not religious, no affiliation</td>
<td>1</td>
<td>1.15</td>
</tr>
<tr>
<td>Agnostic/Atheist</td>
<td>5</td>
<td>7.7</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Household Income**

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 25,000</td>
<td>19</td>
<td>29.7</td>
</tr>
<tr>
<td>25,001 to 50,000</td>
<td>14</td>
<td>21.9</td>
</tr>
<tr>
<td>50,001 to 75,000</td>
<td>11</td>
<td>17.2</td>
</tr>
<tr>
<td>75,001 to 100,000</td>
<td>9</td>
<td>14.1</td>
</tr>
<tr>
<td>Over 100,000</td>
<td>11</td>
<td>17.2</td>
</tr>
</tbody>
</table>

N=67. Note. 1 Age of one participant is unknown. 2 Religious affiliation of two participants is unknown. 3 Household income of three participants is unknown.

Twenty-eight (42%) participants were social work interns, 12 (18%) were LCSW, 7 (10%) were GSW, 8 (12%) were RSW, 7 (10%) LCSW-BACS, and 3 (5%) were LPCs. Table 4 depicts the licensure distribution of participants among treatment groups. Forty-one (61%) participants were students and 26 (39%) were professionals.
Table 3.

Descriptive Characteristics of Highest Level of Education Completed for Participants who Completed the Study (N=67) and Treatment Groups Distribution

<table>
<thead>
<tr>
<th>Highest Level of Education Completed</th>
<th>Overall Sample</th>
<th>Treatment Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>(%)</td>
<td>Reiki</td>
</tr>
<tr>
<td>College</td>
<td>34</td>
<td>50.7</td>
<td>9</td>
</tr>
<tr>
<td>Masters</td>
<td>30</td>
<td>44.8</td>
<td>11</td>
</tr>
<tr>
<td>PhD</td>
<td>3</td>
<td>4.5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>100</td>
<td>22</td>
</tr>
</tbody>
</table>

Fifteen (23%) participants reported that adult mental health was their area of practice, 8 (12%) reported children mental health as their area of practice, and 6 (9%) reported family services as their area of practice. Table 5 depicts the distribution of area of practice among the treatment groups.

Table 4.

Descriptive Characteristics of Licensure for Participants who Completed the Study (N=67) and Treatment Groups Distribution

<table>
<thead>
<tr>
<th>Licensure</th>
<th>Overall Sample</th>
<th>Treatment Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>(%)</td>
<td>Reiki</td>
</tr>
<tr>
<td>RSW</td>
<td>8</td>
<td>11.9</td>
<td>3</td>
</tr>
<tr>
<td>GSW</td>
<td>7</td>
<td>10.4</td>
<td>4</td>
</tr>
<tr>
<td>LCSW</td>
<td>12</td>
<td>17.9</td>
<td>5</td>
</tr>
<tr>
<td>LCSW-BACS</td>
<td>7</td>
<td>10.4</td>
<td>2</td>
</tr>
<tr>
<td>LPC</td>
<td>3</td>
<td>4.5</td>
<td>2</td>
</tr>
<tr>
<td>Area of Practice</td>
<td>Overall Sample</td>
<td>Treatment Group</td>
<td>Total</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>(%)</td>
<td>Reiki</td>
</tr>
<tr>
<td>Social Work Intern</td>
<td>28</td>
<td>41.8</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3.0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>100</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 5.

**Descriptive Characteristics of Area of Practice of Participants who Completed the Study (N=67) and Treatment Groups Distribution**

<table>
<thead>
<tr>
<th>Area of Practice</th>
<th>Overall Sample</th>
<th>Treatment Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>(%)</td>
<td>Reiki</td>
</tr>
<tr>
<td>Children Protection Services</td>
<td>3</td>
<td>4.5</td>
<td>1</td>
</tr>
<tr>
<td>Children Mental Health</td>
<td>8</td>
<td>12.1</td>
<td>4</td>
</tr>
<tr>
<td>Adolescents</td>
<td>5</td>
<td>7.6</td>
<td>1</td>
</tr>
<tr>
<td>Family Services</td>
<td>6</td>
<td>9.1</td>
<td>2</td>
</tr>
<tr>
<td>Correctional Facility</td>
<td>1</td>
<td>0.7</td>
<td>1</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>3</td>
<td>4.5</td>
<td>0</td>
</tr>
<tr>
<td>Private Practice/Counselor</td>
<td>5</td>
<td>7.6</td>
<td>2</td>
</tr>
<tr>
<td>Mental Health Adult</td>
<td>15</td>
<td>22.7</td>
<td>4</td>
</tr>
<tr>
<td>Welfare</td>
<td>1</td>
<td>0.7</td>
<td>0</td>
</tr>
<tr>
<td>Veterans</td>
<td>1</td>
<td>0.7</td>
<td>0</td>
</tr>
<tr>
<td>Academic</td>
<td>2</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>3</td>
<td>4.5</td>
<td>2</td>
</tr>
<tr>
<td>Medical</td>
<td>4</td>
<td>6.1</td>
<td>2</td>
</tr>
<tr>
<td>Gerontology</td>
<td>1</td>
<td>0.7</td>
<td>0</td>
</tr>
<tr>
<td>School Social Worker</td>
<td>1</td>
<td>0.7</td>
<td>0</td>
</tr>
</tbody>
</table>
N=67. Note. \(^1\) Area of practice of one participant is unknown.

The average number of days from pretest to first treatment was 13 days \((M = 12.90, SD = 7.60)\), the minimum number of days from pretest to treatment was 7, and the maximum 43.

The average number of days from first treatment to last treatment was 22 \((M = 21.81, SD = 3.0)\), the minimum number of days from first treatment to last treatment was 21, and the maximum 35. The average total number of days to complete the study was 45 \((M = 44.52, SD = 6.94)\), the minimum number of total days was 33, and the maximum 74.

Thirty-seven (55\%) participants reported not having heard about energy therapies before they were invited to participate in the study. Forty-three (64\%) reported having heard about Reiki before they were invited to participate in the study and 19 (28\%) had experienced a Reiki treatment prior to the study.

**Descriptive Statistics of Pre-Test Dependent Variable Test Scores**

The dependent variables for the study were risk level for STS, anxiety, depression, somatic symptoms, anger-hostility, and hopelessness. The dependent variables in the three groups did not differ at baselines. The risk level of STS was measured throughout by the PROQOL R-V \((\text{Stamm, 2009})\), the scores for this scale range from 0 to 50. A score of 22 or less is interpret as low risk for STS, 23 to 41 is interpret as average risk for STS and 42 or greater is interpret as high risk for STS \((\text{Stamm, 2009})\). All participants in the study scored within the
average risk level for STS with a range of 24 to 38 points \( (M = 27.07, SD = 3.35) \).

Levels of anxiety, depression, somatic symptoms, and anger-hostility were measured by the SQ (Kellner, 1987). The scores for each subscale ranged from 0 to 23 points. For the dependent variable anxiety, a score of 7 and below is interpreted as within normal range, 8 to 11 is interpret as a moderate range, and 12 and greater is interpreted as in the substantial or severe range. Participants average was within the moderate range \( (M = 10.03, SD = 4.53) \). For the dependent variable depression, a score of 6 and below is interpreted as normal range, 7 to 9 is interpreted as moderate, and 10 and above is interpreted as substantial or within the severe range (Kellner, 1987). Participants average was within the normal range \( (M = 6.19, SD = 4.37) \).

For the dependent variable somatic symptoms, a score of 8 and below is interpreted as normal range, 9 to 13 is interpreted as moderate, and 14 and above is interpreted as substantial or within the severe range (Kellner, 1987). Participants average was within the moderate range \( (M = 11.22, SD = 4.60) \).

For the dependent variable anger-hostility, a score of 8 and below is interpreted as within normal range, 9 to 12 is interpreted as moderate, 13 and above is interpreted as substantial or within the severe range (Kellner, 1987). Participants average was within the normal range \( (M = 5.90, SD = 4.61) \).

Hope was measured by the SHS (Snyder et al., 1996). The scores in this scale range from 6 to 48, where higher scores indicate higher levels of hope. Participants in the study scored within a range of 20 to 47 \( (M = 36.96, SD = 6.18) \). Twenty-six participants (39%) scored between 40 and 47 points, 35 (52%) scored between 30 and 40 points and 6 (9%) scored between 20 and 28. Table 6 shows descriptive statistics for the dependent variables pre-test and post-test scores.
Table 6.

**Descriptive Statistics of Pre-Test and Post-Test Dependent Variables Scores (N = 67)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Test</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Level for STS</td>
<td>67</td>
<td>24</td>
<td>38</td>
<td>27.07</td>
<td>3.35</td>
</tr>
<tr>
<td>Anxiety</td>
<td>67</td>
<td>0</td>
<td>19</td>
<td>10.03</td>
<td>4.53</td>
</tr>
<tr>
<td>Depression</td>
<td>67</td>
<td>0</td>
<td>19</td>
<td>6.19</td>
<td>4.37</td>
</tr>
<tr>
<td>Somatic Symptoms</td>
<td>67</td>
<td>0</td>
<td>21</td>
<td>11.22</td>
<td>4.60</td>
</tr>
<tr>
<td>Anger-Hostility</td>
<td>67</td>
<td>0</td>
<td>20</td>
<td>5.90</td>
<td>4.61</td>
</tr>
<tr>
<td>Hopefulness</td>
<td>67</td>
<td>20</td>
<td>47</td>
<td>36.96</td>
<td>6.18</td>
</tr>
<tr>
<td><strong>Post-test</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Level for STS</td>
<td>67</td>
<td>12</td>
<td>35</td>
<td>24.22</td>
<td>4.68</td>
</tr>
<tr>
<td>Anxiety</td>
<td>67</td>
<td>0</td>
<td>17</td>
<td>6.34</td>
<td>4.61</td>
</tr>
<tr>
<td>Depression</td>
<td>67</td>
<td>0</td>
<td>18</td>
<td>4.18</td>
<td>4.29</td>
</tr>
<tr>
<td>Somatic Symptoms</td>
<td>67</td>
<td>0</td>
<td>19</td>
<td>8.51</td>
<td>5.22</td>
</tr>
<tr>
<td>Anger-Hostility</td>
<td>67</td>
<td>0</td>
<td>17</td>
<td>4.06</td>
<td>3.99</td>
</tr>
<tr>
<td>Hopefulness</td>
<td>67</td>
<td>20</td>
<td>48</td>
<td>39.25</td>
<td>5.62</td>
</tr>
</tbody>
</table>

**Relationships Among Dependent Variables**

Bivariate correlation was conducted to examine the relationships between the dependent variables to determine if they convey the same information and see if multicollinearity was a problem. Correlations among the dependent variables are shown in table 7.

Table 7.
A Pearson’s $r$ correlation was run to determine the relationship between the dependent variables. A medium positive correlation between risk level of STS and anxiety, which was statistically significant ($r = .425, N = 67, p < .01$). Other significant medium positive correlations found were between risk level of STS and depression ($r = .446, N = 67, p < .01$); anxiety and depression ($r = .577, N = 67, p < .01$), anxiety and somatic symptoms ($r = .510, N = 67, p < .01$), anxiety and anger-hostility ($r = .314, N = 67, p < .01$), anxiety and hopelessness ($r = -.306, N = 67, p < .05$), depression and somatic symptoms ($r = .345, N = 67, p < .01$), depression and anger-hostility ($r = .505, N = 67, p < .01$), and somatic symptoms and anger-hostility ($r = .283, N = 67, p < .05$). Other significant medium negative correlations found were between risk level of STS and hopefulness ($r = .255, N = 67, p < .05$), somatic symptoms and hopelessness ($r = .303, N = 67, p < .05$), and anger-hostility and hopelessness ($r = -.353, N = 67, p < .05$). All remaining correlations were not significant.

No strong relationship was found between the dependent variables, thus multicollinearity was not a problem in this study.
MANOVA

The goals of the study included evaluation of the effects of Reiki on risk level of STS, and STS’s common symptoms such as anxiety, depression, anger-hostility, somatic symptoms, and hopelessness. MANOVA was used to test the research hypothesis because this study uses one independent variable and six quantitative dependent variables. MANOVA will help assess whether an overall mean difference exists between independent groups (Reiki, placebo, or control group) on more than one dependent variable, and if those differences are significant or occurred by chance (Mertler & Vannatta, 2005). The data showed no violation for assumptions of normality and linearity. However, the Box’s Test result ($F(42, 49795) = 2.303, p = .000$) indicated a violation in the assumption of homoscedasticity. Nonetheless, a violation of variance-covariance is not fatal to MANOVA, the use of a robust multivariate test statistic, Pillai’s Trace, is recommended to interpret the results (Mertler & Vannatta, 2005). Two tailed tests were used since previous research does not allow definitive predictions about the directions of the outcomes. Alpha ≤ .05 was used to test hypothesis.

Research Question:

Does Reiki have an effect on mental health professionals at risk for STS? Outcomes will be measured in changes in symptoms that research has identified as common in persons at risk for STS, including (1) risk level for STS (2) anxiety, (3) depression, (4) anger-hostility, (5) somatic symptoms, and (6) hopelessness.

Hypothesis:

Reiki treatment will influence risk level for STS, and the following common symptoms: anxiety, depression, anger, somatic symptoms, and hopelessness for mental health professionals. A one way MANOVA was conducted to determine the effect of treatment (Reiki, placebo or
control) in risk level of STS, anxiety, depression, anger-hostility, somatic symptoms, and hopelessness. The Box’s test of equality of covariance matrices was significant indicating that homogeneity of covariance was not fulfilled, $F(42, 49795) = 2.303, p = .000$. Thus, Pillai’s test was used to interpret the results. MANOVA results revealed no significant statistical differences among the treatment groups on the dependent variables, Pillai’s $\Lambda = .135, F(12, 254) = 1.531, p = .113, \eta^2 = .067$. Observed power to detect the effect was .81. Thus the hypothesis was rejected.

Univariate ANOVA was conducted on each dependent variable as a follow up tests. No differences were found in pretest - posttest measures of risk for STS, $F(2, 131) = 2.666, p = .073, \eta^2 = .039$. No differences were found in pretest - posttest measures of anxiety, $F(2, 131) = .687, p = .505, \eta^2 = .010$. No differences were found in pretest - posttest measures of depression, $F(2, 131) = .845, p = .432, \eta^2 = .013$. No differences were found in pretest - posttest measures of somatic symptoms, $F(2, 131) = 2.122, p = .124, \eta^2 = .031$. No differences were found in pretest - posttest measures of anger - hostility, $F(2, 131) = 2.480, p = .088, \eta^2 = .036$. No differences were found in pretest - posttest measures of hopelessness, $F(2, 131) = 1.095, p = .338, \eta^2 = .016$. In summary, no statistical differences were found in pretest - posttest measures of risk for STS, anxiety, depression, somatic symptoms, anger - hostility, and hopelessness.

**Summary of Findings**

This study examines the influence of Reiki treatment on mental health professionals at risk for STS. Outcomes were measured in risk level for STS, anxiety, depression, anger, somatic symptoms, and hopelessness. There were no significant differences on any of the dependent variables between the three treatment groups.
CHAPTER 5: DISCUSSION AND CONCLUSIONS

The central hypothesis of this study was that there would be significant differences in risk level of STS, anxiety, depression, somatic symptoms, anger-hostility, and hopelessness between the Reiki, placebo and control groups. Findings were expected to contribute to the evolving field of Reiki research and to the field of social work and STS by testing a new model of intervention.

The multivariate analysis results reported do not provide support for the research hypothesis, and no significant differences in risk level of STS, anxiety, depression, somatic symptoms, anger-hostility, and hopelessness were found between the Reiki, placebo, and control groups. Thus, Reiki treatment was found to be non-effective for this sample on common symptoms of STS and risk for developing STS. Discussion about the meaning of these findings may contribute to the developing field of Reiki research and may better inform the field of social work and STS with regard to this new model of intervention.

Despite previous evidence that Reiki treatment may have an effect as an intervention in decreased pain and anxiety in cancer patients (Tsang et al., 2007), decreased depression, stress, and increased feelings of hope on screened adult volunteers (Shore, 2004), decreased pain and increased quality of life in cancer patients (Olson et al., 2003), and decreased physiological measures of stress and anxiety among healthy adult volunteers (Wardell & Engebretson, 2001), this did not appear to be the case in the current study. Reiki treatment did not appear to influence level of STS, anxiety, depression, somatic symptoms, anger-hostility and, hopelessness among the mental health professionals that participated in the study. However, this finding is supported by previous research where Reiki as an intervention did not effect stress and anxiety on women undergoing breast biopsy (Potter, 2007), did not reduce physiological symptoms of stress and anxiety on healthy college students (Bowden et al., 2009), and did not improve symptoms of
depression, anxiety, or well-being in patients treated for prostate cancer with external beam radiotherapy (Beard et al., 2011). A limitation in Reiki research is that outcome studies are limited in number, they are exploratory with small sample sizes, and studies have not been replicated (Barret et al., 2002; Miles & True, 2003, Natale, 2010). However, since the first empirical Reiki trial (Wetzel, 1989) the strength of Reiki research lies in the intention of researchers to follow scientific standards. It is in this light that the findings of the study will be explored before discussing its strengths and limitations.

**Demographics**

Most participants in the study can be described as female (93%), and Caucasian (85%). The average age was 34, 46% reported being married, and 79% reported Christianity as their religious affiliation. The literature suggests multiple predictors of STS in mental health professionals including age and years of experience, amount of support from colleagues, work overload, time pressures, client characteristics, past trauma history, professional isolation, personal circumstances of the professional care giver, spiritual beliefs, and the work environment (Arvay & Ulhlemann, 1995; Prosper, et. al., 1996; Ursano, Fullerton, Vance & Kao, 1999 and Wee & Myers, 2002, Newell, & MacNeil, 2010). Demographic findings in this study suggest that sample characteristics may have acted as a provision of support to decrease the risk for STS, anxiety, depression, somatic symptoms, anger-hostility, and hopelessness, or as a buffer to prevent an increase in levels of STS or the common symptoms. Sixty-one percent of participants were students and 39% were professionals. Even though research indicates that younger age and fewer years of experience may influence vulnerability to STS or the common symptoms (Bride, 2004), the younger population in this study consisted of social work students who were undertaking their internship (42%) with a field supervisor and a school liaison who assume some
responsibility for student actions and well-being. Thus, students may not carry the responsibilities of the job home with them at the end of the day. In addition, religious beliefs of the participants may have influenced the outcome of the study. Research suggests that individuals with religious beliefs are less likely to suffer from STS or its symptoms (Trippany et al., 2004; Newell, & MacNeil, 2010). Education has also been reported as a protective factor for STS (Trippany et al., 2004; Newell, & MacNeil, 2010). With nearly half of participants (45%) having a master’s degree, and 42% working on their master’s degree, education may have additionally influenced the study outcomes.

**Comparison Between Responders and Non-Responders**

Participants who completed the study were compared to non-participants using binary logistic regression in an effort to rule out sample selection bias. Risk level for STS and the symptoms of STS between study participants were compared with the expectation that the non-participants may have had a higher risk level for STS and its symptoms. It was hypothesized that higher risk for STS or the symptoms would have acted as an impediment to participate in the study. However, in the study there were no differences between the attrition group and the participants who completed the study, thus no sample selection bias was present.

**Dependent Variables**

The following section examines the test scores for the dependent variables. The dependent variables for the study were risk level for STS, anxiety, depression, somatic symptoms, anger-hostility, and hopelessness. Data analysis screening indicated that the dependent variables showed a medium to low significant correlation. Thus, no multicollinearity problem was found.

All participants in the study scored within the average risk level for STS ($M = 27.07, SD$
= 3.35), the moderate range for anxiety \((M = 10.03, SD = 4.53)\), the normal range for depression \((M = 6.19, SD = 4.37)\), the moderate range for somatic symptoms \((M = 11.22, SD = 4.60)\), the normal range for anger - hostility \((M = 5.90, SD = 4.61)\), and the high range for hopefulness \((M = 36.96, SD = 6.18)\). The recruitment criterion for the study was a minimum score of 23 in the secondary traumatic stress sub-scale of the PROQOL R-V. The study participants ranged from moderate to normal range for all variables except hope in the study, thus leaving little room for change in the dependent variables being investigated.

According to Ecological Theory, characteristics in the surrounding environment effect our perception of the world. In the ability to adapt and master the environment around us lies the opportunity for growth or goodness of fit (Germain & Gitterman, 1995). If the internal response to a life stressor is maladaptive it may cause emotional or physiological symptoms such as stress, anxiety, depression, anger, somatic symptoms, and helplessness, then the process of adaptation does not result in growth opportunity. This exchange with the environment is shaped and reshaped constantly by the influence of time, history, and social context (Germain & Gitterman, 1995). In the period of time that the study was done no major adverse event occurred that caused immediate concern for life endangerment of the people in South Louisiana, thus it is fair to assume that the mental health professionals who participated in the study did not witness or experience any unusual stressors other than the ones in their regular lives. This factor may be account for the difficulties the researcher found in finding mental health professionals with a high level of STS and its symptoms. Additionally, research suggests that master level students doing their internship appeared to be motivated and committed to the profession. The opportunity of professional growth through their internship may influence their perception of self as a helper and is reflected by higher scores of compassion satisfaction decreasing their risk for
The current research revealed mixed findings in relation to anxiety and somatic symptoms. Levels of anxiety had been reported to decrease significantly after Reiki treatment in previous research on healthy individuals, and cancer patients (Wardell & Engebretson, 2001; Shore, 2004; Tsang et al., 2007) as opposed to three other studies where no significant change was reported (Potter, 2007; Bowden et al., 2009; Beard et al., 2011) with women undergoing breast biopsy, healthy college students, and men undergoing external beam radiotherapy for prostate cancer. However, Potter (2007) and Bowden et al., (2009) reported that the anxiety baseline for a respondents was low and that this may account for the small change perceived in participants. With regard to somatic symptoms, no specific research has been done with this variable, but, decreased pain was previously reported as an outcome for Reiki research (Olson & Hanson, 1997; Olson et al., 2003). However, Asseffi et al. (2008) reported no change in levels of pain after Reiki treatment. Although the research seems to convey different outcomes, these differences may be related to the differences in methodology and the populations in the studies.

**Independent Variable**

The findings for this study do not provide support for the research hypothesis, and no significant differences in risk level of STS, anxiety, depression, somatic symptoms, anger-hostility, and hopelessness were found between the Reiki, placebo, and control groups. Thus, Reiki treatment was found to be ineffective on STS and its associated symptoms in the conditions and sample described in the study. As seen in the literature review research on Reiki is incipient. The current study attempted to follow rigorous scientific standards of research to allow replicability. The protocol described standardized Reiki positions and, duration and length of treatment. However, the time length of the hands position in this study may have been
insufficient to address the needs of the participants. In this study two minutes and thirty seconds were allowed for each hand position, bringing the total session to 50 minutes. Additionally, the number and frequency of treatment has not been studied in prior Reiki research. In this study treatment was performed once weekly for four weeks. Another factor affecting the study is the practitioner. Because the practitioner is the tool for channeling energy, and the amount of energy cannot be measured at this time, we are unable to determine if external factors such as personal stress, death in the family, or an array of life experiences affected the amount of energy transferred from the practitioner to the recipient depending on the level of well-being of the practitioner. Additionally, a significant factor to consider in light of the findings of this study is that Reiki as a treatment modality for STS and its common symptoms may just not be effective.

**Limitations of the Study**

The current study sample is considered a purposive non-probability sample and consisted of 67 participants who completed the study. Generalization is limited to populations with similar demographic characteristics and in similar settings, mostly Caucasian (85%), females (93%), married (36%), Christians (79%), enrolled in a MSW program (61%) in South Louisiana. Findings for this study may not support generalization to populations beyond similar demographic characteristics.

The sample size of 67 was smaller than originally planned and it decreased the statistical power available to detect medium effect sizes limiting the results and increasing the probability of committing a type II error (35%).

The measurements used in the current study were self report (i.e. ProQOL R-V, SQ and SHS) and were selected on the basis of their psychometric soundness and common use in the literature. Participants may have tailored their responses to be seen in a more favorable light.
(Rubin & Babbie, 2001). Students may have been sensitive to questions in relationship to the study variables that addressed personal states of mind (i.e. depression, anger - hostility, STS), and this may have influenced responses to certain feelings (i.e. rage, hate people, do not feel like helping others). This potential bias could have an effect on the research findings and needs to be taken into account for future research.

Resentful demoralization may have been present in the placebo group. Some participants in the placebo group mentioned or asked during the treatment timeline if they were placebo, or stated their suspicions of being in the placebo group. The participants who expressed this belief gave the impression of being deceived even though they acknowledged they were aware of the possibility at the beginning of the study. Participants who voiced this belief completed the study. However, five of the participants recruited who were assigned to the placebo treatment and who never expressed their discontent, stopped coming to treatment and finished their participation abruptly. There was no attrition in the Reiki group. However, as seen in the comparison between respondents and non-respondents, no bias existed between the participants who finished the study and the ones who attritioned.

Participant maturation and passage of time may have affected the outcome of the study. The study lasted 16 months. Learning about STS through their participation in the study, or by hearing about it from peers, may have impacted their awareness of the problem. Consequently they may have become more vigilant of witnessing other people’s trauma and changed their behavior, thus affecting the findings of the study.

Social interaction among students may have contaminated the study. Recruitment of social work students lasted four months. Students who were recruited at the end of the four months informed the researcher they learned about the study and Reiki from their peers. This
knowledge included the description of the sessions and what could be expected from the Reiki or placebo group. This prior knowledge of what occurred during the session may have affected the outcome of the study.

History may have affected individuals in either a positive or negative direction. Since participants began treatments at different periods of time, and treatments were spread throughout a sixteen month period, changes in the general environment (i.e. time of semester for students, policy changes at work) may have affected the findings of the study. Additionally, the time planned to complete the study was 35 days from pretest to posttest. However, to accommodate participants the number of days between pretest and posttest varied. Almost half of the participants completed the study in the average number of days ($M = 44.52, SD = 6.94$) however, 10% of participants completed the study within a 51 to 74 days range. Since the long term effect of Reiki is unknown, the difference in days since the last treatment to the posttest may not reflect the true outcome of the study. Additionally, the posttest results may have improved or worsen based on the life experiences during that period of time.

**Strength of Current Study**

**Research Design**

The rigorous design, which included a pretest and posttest, experimental, placebo and control groups, is one of the strengths of the current study. As seen in the literature review, inadequate inclusion of control or comparison groups is among the major threats to internal validity in the design of much of the current Reiki research. Strategies for double masking and controlling for placebo effects have been employed. Assefi et al, (2008), Schifflett et al. (2002) and Mansour et al. (1999) attempted to test for and develop a double blinding and placebo control protocol for Reiki studies. The problem with the double blinding and placebo control
protocols for Reiki that was developed lies in that fake practitioners are mimicking the Reiki positions and potentially manipulating participant’s energy fields, despite the absence of true Reiki. Thus this threatens internal validity of the outcome by unknowingly providing some possible treatment to the placebo group. In the current study the placebo group did not receive a mimicking Reiki protocol avoiding a cofounding variable error. However, because of the setting for the treatment, a quiet space with no interruptions, and the influence that this space may have on the participants in the placebo group, the inclusion of a control group in the study design was necessary to measure any possible changes due to this possible variable.

**Reiki Protocol**

The detailed description of the Reiki protocol is a strength of the current study. This study allows for replicability. As seen in the review articles, there is no standard procedure for Reiki research. Establishing a universal protocol is pertinent to identifying the mechanism of action for this modality. The protocol in the current study addresses all the placements of hands as described in Reiki manuals, length of placement of the hands positions, the sequence of the progressive movements front and back, and description of physical and non-physical contact with participants. A universal protocol is a valid strength in this study.

**Measurement**

The tools used in this study (i.e. ProQOL R-V, SQ, and SHS) were selected on the basis of their psychometric soundness and use in the literature. All have published reliability and validity. This is a valid strength in this study.

**Statistical Methods**

Sophisticated statistical methods were used in the current study. Participants who completed the study were compared to non-participants using binary logistic regression in an
effort to rule out sample selection bias. This procedure is frequently overlooked in other research, potentially introducing unknown bias due to the characteristics of participants who withdrew from the research. In the study there were no differences between the attrition group and the participants who completed the study, thus there was no sample selection bias.

MANOVA was selected as the most appropriate tool for data analysis because this study uses one independent variable (Reiki treatment) and six quantitative dependent variables (risk for STS, depression, anxiety, anger, somatic symptoms and hope). The sample size was small but adequate for the use of MANOVA. According to Mertler and Vannatta (2005) a sample size of 20 in the smallest cell should be adequate to ensure robustness to violations of normality. The sample size of this study is 67, with each cell having more than 20 subjects each.

Suggested Future Research

One of the contributions of the study was to provide a Reiki protocol that can be replicated. The proposed protocol included all the basic positions for Reiki treatment and does allow for replication. Treatment frequency, number of treatments and the duration of the hand positions have not been studied in Reiki research. The rationale for selection of the number of treatments is not explained in any of the reviewed articles. The frequency of treatments reported in the literature varies from daily (Schifflett, 2002) to weekly (Shore, 2004). The explanation for the number of treatments provided, and the interval between them, and the duration of the hands position were based either on the recommendation of the Reiki master or practitioner helping to plan the study, or by time allocated by the study setting.

Additionally, adding a biological component as a measurement tool, such as level of cortisol or oxygen in the blood, may help to identify whether any measurable changes occurred and to what degree. Psychoneuroimmunology findings indicate that there is a correlation
between emotions, well-being, and the physical body (Cohen & Herbert, 1996). Measurable physiological responses will allow identification of measurable changes without the potential participant biases.

Reiki does not reduce stress levels to zero just as it does not reduce blood glucose levels to zero; the purpose is to regain balance in the system (Wetzel, 1989; Wardell & Engebretson, 2001). Modern science requires validation with present models. Therein lies the greatest barrier to acceptance of Reiki therapy which may require a different way of knowing. What Ecological Theory teaches us is that concepts that challenge contemporary thought interact and influence transformation over time (Germain & Gitterman, 1995). Based on this, researchers on Reiki need to consider adding another group to the research design. Thus the research design will consist of Reiki, placebo, control, and a 4th group that for the purpose of this recommendation will be referred as a free style group. In the free style group the practitioner may act on intuition and is not limited by the protocol. Even though this addition to the study would not allow for replicability and decreased external validity it will help to clarify whether a rigorous protocol limits or enhances the effectiveness of the technique.

This addition will help to address the “black box argument” of the unknown in Reiki treatment where supporters claim that the standards of research do not accommodate the appropriate implementation of the technique and would rather accept anecdotal success as an indication of effectiveness. The free style group will provide the answer as to whether Reiki is effective or not when out of the containment of research. If the Reiki treatment, placebo and control group shows no effect and the free style group shows no effect then the argument ends. Additionally, future studies will necessitate a larger sample and a higher risk level for STS and its symptoms as inclusion criteria in the selection process.
Practice and Policy Implications

Social Work Research

Complementary and alternative medicine (CAM) has followed an unusual trajectory into the healthcare system. It is a movement driven by the demand of the individuals not by conventional research. The underlying force that has triggered and maintained the evolution of CAM into conventional healthcare has been the increasing demand of the general public for CAM services (Barnes et al, 2004; NCCAM, 2004). In 2002 the White House Commission for Complementary and Alternative Medicine Policy recommended that federal health plans (such as Medicare and Medicaid) begin to cover CAM and for public policy to maximize benefits of CAM to Americans. This recommendation included research on CAM practices and products, the delivery of and public access to CAM services, as well as the dissemination of reliable information to the public. As seen in the literature review, Reiki research is limited and findings are conflicted. Policy can be informed by the current study and may benefit from the suggestions for future research. Money allocated to Reiki research is limited and the current gaps in the knowledge combined with the conflicting findings may have influence in the decisions allocation of money for new Reiki research.

Social Work Practice

The NASW Code of Ethics makes provisions for the possible vulnerability of their members by mandating social workers to maintain their own physical and psychological health in order to fulfill their responsibilities to clients and themselves effectively (NASW, 1999).

The findings of this study suggest that Reiki was not effective at reducing risk of STS and its symptoms. Social workers need to be educated in the effects of STS and its possible effect in their lives. As the literature review reveals, the most appropriate treatment is prevention,
education, and care of self. The effectiveness of Reiki as a treatment modality intervention remains controversial with noted anecdotal success and no support from this study.

Social workers will increasingly be exposed to CAM and have clients who will inquire about these healing modalities. The code of ethics states that social workers are professionally obligated to provide clients with up-to-date knowledge and evidence-informed interventions to promote progress toward well-being. To what extent social workers incorporate new and emerging knowledge into practice is left to individual discretion. The decision should be based on the existing code of ethics, evidenced-based practice, and do no harm guidelines. Social workers need to address issues of beneficence, considering existing empirical research and the potential to increase the client’s healing process, empowerment and well-being when incorporating new knowledge into practice. Within the parameters of this study Reiki was found to be ineffective for STS. Research suggests caution with regards to the use of Reiki as a complementary treatment in social work.
REFERENCES


Press.


APPENDIX 1: IRB APPROVAL FORM

Application for:
Approval of Projects Which Use Human Subjects
This application is used for projects/studies that cannot be reviewed through the exemption process.

Applicant, Please fill out the application in its entirety and include two copies of the completed application as well as parts A-E, listed below. Once the application is completed, please submit it to the IRB Office for review and please allow ample time for the application to be reviewed. Expedited review usually takes 2 weeks. Carefully completed applications should be submitted 3 weeks before a meeting to ensure a prompt decision.

A Complete Application Includes All of the Following:
(A) Two copies of this completed form and two copies of parts B thru E.
(B) A complete copy of any grant proposal relevant to the project.
(C) Copies of all instruments to be used.
   - If this proposal is a part of a grant application, include a copy of the grant proposal, the investigative
     brochure (if one exists) and any recruitment materials including advertisements intended to be seen or
     heard by potential subjects.
(D) The consent form that will be used. A copy of the Waiver of Signed Informed Consent is attached and must be
   completed only if there is the intention to use an unsigned consent form. The script to be used as the unsigned
   consent script MUST be included with the waiver of signed informed consent.
(E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including
   students who are involved with testing or handling data, unless already on file with the IRB. Training link:

1) Principal Investigator*: Dr. Daphné Cain
   Rank: Associate Professor
   *PI must be an LSU Faculty member

Dept.: School of Social Work
Ph: 225-578-0433 E-Mail: dscain@lsu.edu

2) All Co Investigators: please include department, rank, phone, and e-mail for each

   Martha Novoa, MSW, PhD student
   Graduate assistant
   225-939-2761
   chryel@aol.com

3) Project Title: The Effects of Reiki on Secondary Traumatic Stress among Social Workers

4) Proposed Start Date: 02/01/2010    5) Proposed Duration Months: 1 year

6) Number of Subjects Requested: 90   7) LSU Proposal# __________________________

8) Funding Sought From: N/A
APPENDIX 2: PROFESSIONAL QUALITY OF LIFE R-V

Professional Quality of Life Scale (ProQOL)

Compassion Satisfaction and Compassion Fatigue
(ProQOL) Version 5 (2009)

When you [help] people you have direct contact with their lives. As you may have found, your compassion for those you [help] can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a [helper]. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

1. I am happy.
2. I am preoccupied with more than one person I [help].
3. I get satisfaction from being able to [help] people.
4. I feel connected to others.
5. I jump or am startled by unexpected sounds.
6. I feel invigorated after working with those I [help].
7. I find it difficult to separate my personal life from my life as a [helper].
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I [help].
9. I think that I might have been affected by the traumatic stress of those I [help].
10. I feel trapped by my job as a [helper].
11. Because of my [helping], I have felt "on edge" about various things.
12. I like my work as a [helper].
13. I feel depressed because of the traumatic experiences of the people I [help].
14. I feel as though I am experiencing the trauma of someone I have [helped].
15. I have beliefs that sustain me.
16. I am pleased with how I am able to keep up with [helping] techniques and protocols.
17. I am the person I always wanted to be.
18. My work makes me feel satisfied.
19. I feel worn out because of my work as a [helper].
20. I have happy thoughts and feelings about those I [help] and how I could help them.
22. I believe I can make a difference through my work.
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I [help].
24. I am proud of what I can do to [help].
25. As a result of my [helping], I have intrusive, frightening thoughts.
26. I feel "bogged down" by the system.
27. I have thoughts that I am a "success" as a [helper].
28. I can't recall important parts of my work with trauma victims.
29. I am a very caring person
30. I am happy that I chose to do this work.
APPENDIX 3: SYMPTOM QUESTIONNAIRE

Please describe how you have felt DURING THE PAST WEEK/TODAY and make a small check mark like this ✓. For example, the word NERVOUS is on the first line: if you have felt nervous, check YES like this: ✓ YES NO. If you have not felt nervous, check NO like this: ✓ YES

A few times you have the choice of checking either TRUE or FALSE. Do not think long before answering. Work quickly!

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nervous</td>
<td>YES NO</td>
</tr>
<tr>
<td>2. Weary</td>
<td>YES NO</td>
</tr>
<tr>
<td>3. Irritable</td>
<td>YES NO</td>
</tr>
<tr>
<td>4. Cheerful</td>
<td>YES NO</td>
</tr>
<tr>
<td>5. Tense, tensed up</td>
<td>YES NO</td>
</tr>
<tr>
<td>6. Sud, blue</td>
<td>YES NO</td>
</tr>
<tr>
<td>7. Happy</td>
<td>YES NO</td>
</tr>
<tr>
<td>8. Frightened</td>
<td>YES NO</td>
</tr>
<tr>
<td>9. Feeling calm</td>
<td>YES NO</td>
</tr>
<tr>
<td>10. Feeling healthy</td>
<td>YES NO</td>
</tr>
<tr>
<td>11. Losing temper easily</td>
<td>YES NO</td>
</tr>
<tr>
<td>12. Feeling of not enough air</td>
<td>TRUE FALSE</td>
</tr>
<tr>
<td>13. Feeling kind toward people</td>
<td>YES NO</td>
</tr>
<tr>
<td>14. Feeling fit</td>
<td>YES NO</td>
</tr>
<tr>
<td>15. Heavy arms or legs</td>
<td>YES NO</td>
</tr>
<tr>
<td>16. Feeling confident</td>
<td>YES NO</td>
</tr>
<tr>
<td>17. Feeling warm toward people</td>
<td>YES NO</td>
</tr>
<tr>
<td>18. Shaky</td>
<td>YES NO</td>
</tr>
<tr>
<td>19. No pains anywhere</td>
<td>TRUE FALSE</td>
</tr>
<tr>
<td>20. Angry</td>
<td>YES NO</td>
</tr>
<tr>
<td>21. Arms and legs feel strong</td>
<td>YES NO</td>
</tr>
<tr>
<td>22. Appetite poor</td>
<td>YES NO</td>
</tr>
<tr>
<td>23. Feeling peaceful</td>
<td>YES NO</td>
</tr>
<tr>
<td>24. Feeling unworthy</td>
<td>YES NO</td>
</tr>
<tr>
<td>25. Annoyed</td>
<td>YES NO</td>
</tr>
<tr>
<td>26. Feeling of rage</td>
<td>YES NO</td>
</tr>
<tr>
<td>27. Cannot enjoy yourself TRUE FALSE</td>
<td></td>
</tr>
<tr>
<td>28. Tight head or neck</td>
<td>YES NO</td>
</tr>
<tr>
<td>29. Relaxed</td>
<td>YES NO</td>
</tr>
<tr>
<td>30. Restless</td>
<td>YES NO</td>
</tr>
<tr>
<td>31. Feeling friendly</td>
<td>YES NO</td>
</tr>
<tr>
<td>32. Feeling of hate</td>
<td>YES NO</td>
</tr>
<tr>
<td>33. Choking feeling</td>
<td>YES NO</td>
</tr>
<tr>
<td>34. Afraid</td>
<td>YES NO</td>
</tr>
<tr>
<td>35. Patient</td>
<td>YES NO</td>
</tr>
<tr>
<td>36. Scared</td>
<td>YES NO</td>
</tr>
<tr>
<td>37. Furious</td>
<td>YES NO</td>
</tr>
<tr>
<td>38. Feeling charitable, forgiving</td>
<td>YES NO</td>
</tr>
<tr>
<td>39. Feeling guilty</td>
<td>YES NO</td>
</tr>
<tr>
<td>40. Feeling well</td>
<td>YES NO</td>
</tr>
<tr>
<td>41. Feeling of pressure in head or body</td>
<td>YES NO</td>
</tr>
<tr>
<td>42. Worried</td>
<td>YES NO</td>
</tr>
<tr>
<td>43. Contented</td>
<td>YES NO</td>
</tr>
<tr>
<td>44. Weak arms or legs</td>
<td>YES NO</td>
</tr>
<tr>
<td>45. Feeling desperate, terrible</td>
<td>YES NO</td>
</tr>
<tr>
<td>46. No aches anywhere TRUE FALSE</td>
<td></td>
</tr>
</tbody>
</table>

(OVER)
| 47. Thinking of death or dying | YES | NO | 70. Irritated by other people | YES | NO |
| 48. Hot tempered | YES | NO |
| 49. Terrified | YES | NO |
| 50. Feeling of courage | YES | NO |
| 51. Enjoying yourself | YES | NO |
| 52. Breathing difficult | YES | NO |
| 53. Parts of the body feel numb or tingling | YES | NO |
| 54. Takes a long time to fall asleep | YES | NO |
| 55. Feeling hostile | YES | NO |
| 56. Infuriated | YES | NO |
| 57. Heart beating fast or pounding | YES | NO |
| 58. Depressed | YES | NO |
| 59. Jumpy | YES | NO |
| 60. Feeling a failure | YES | NO |
| 61. Not interested in things | TRUE | FALSE |
| 62. Highly strung | YES | NO |
| 63. Cannot relax | TRUE | FALSE |
| 64. Panicky | YES | NO |
| 65. Pressure on head | YES | NO |
| 66. Blaming yourself | YES | NO |
| 67. Thoughts of ending your life | YES | NO |
| 68. Frightening thoughts | YES | NO |
| 69. Enraged | YES | NO |
| 71. Looking forward to the future | YES | NO |
| 72. Nauseated, sick to stomach | YES | NO |
| 73. Feeling that life is bad | YES | NO |
| 74. Upset bowels or stomach | YES | NO |
| 75. Feeling inferior to others | YES | NO |
| 76. Feeling useless | YES | NO |
| 77. Muscle pains | YES | NO |
| 78. No unpleasant feelings in head or body | TRUE | FALSE |
| 79. Headaches | YES | NO |
| 80. Feel like attacking people | YES | NO |
| 81. Shaking with anger | YES | NO |
| 82. Mad | YES | NO |
| 83. Feeling of goodwill | YES | NO |
| 84. Feel like crying | YES | NO |
| 85. Cramps | YES | NO |
| 86. Feeling that something bad will happen | YES | NO |
| 87. Wound up, uptight | YES | NO |
| 88. Got angry quickly | YES | NO |
| 89. Self-confident | YES | NO |
| 90. Resentful | YES | NO |
| 91. Feeling of hopelessness | YES | NO |
| 92. Head pains | YES | NO |

DO NOT WRITE BELOW THE LINE

A___ D___ S___ H___ T___

AS___ DS___ SS___ HS___

R___ C___ SW___ F___

SYMPTOM QUESTIONNAIRE
University of New Mexico
C. R. Kelner, 1981
APPENDIX 4: STATE HOPE SCALE

SHS
Read each item carefully. Using the scale shown below, please select the number that best describes how you think about yourself right now and put that number in the blank before each sentence. Please take a few moments to focus on yourself and what is going on in your life at this moment. Once you have this "here and now" set, go ahead and answer each item according to the following scale:

1 = Definitely false
2 = Mostly false
3 = Somewhat false
4 = Slightly false
5 = Slightly true
6 = Somewhat true
7 = Mostly true
8 = Definitely true

1. If I should find myself in a jam, I could think of many ways to get out of it.
2. At the present time, I am energetically pursuing my goals.
3. There are lots of ways around any problem that I am facing now.
4. Right now, I see myself as being pretty successful.
5. I can think of many ways to reach my current goals.
6. At this time, I am meeting the goals that I have set for myself.
VITA

Martha Paulina Novoa Salas was born in Lima, Peru, in 1959. Martha received a Bachelor of Science in Agronomic Science in 1987 from the Universidad Nacional Agraria - La Molina, Peru. Ms. Novoa came to the USA to pursue a Master degree in horticultural science at Louisiana State University. She received her master’s in Science in horticulture in 1993. After graduation she worked in landscaping for almost ten years. In 2001, she returned to LSU to pursue a master of social work degree, which she accomplished in 2003. That same year Ms. Novoa entered the doctoral program of Louisiana State University’s School of Social Work. The degree of Doctor of Philosophy in social work will be awarded at the December 2011 commencement.