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Healing Touch and Guided Imagery as Covered Benefits in Health Care:

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Abstract

Each year increasing numbers of Americans report the use of some form of complementary and alternative medicine (CAM). The purpose of this descriptive study was to examine the implementation of a health benefits package including CAM therapies for employees of a small, self-insured manufacturing company. A secondary analysis guided by a decision-making theoretical framework was performed using data from the primary study, which examined the cost impact of adding two CAM therapies (Healing Touch and guided imagery) to the health care coverage for some employees of the company.

The primary hypothesis of the study was that the insurance expenditures of employees who did not participate in CAM therapies would be significantly higher than participating employees one year after the intervention. Other hypotheses included a cost comparison of insurance expenditures over six years, employee satisfaction, and a decision to continue to receive CAM therapy following completion of the study. Data files included insurance expenditure payouts for all employees from 1995 to 2000 following termination of the study intervention and surveys completed by the study participants (N = 41) during the year of intervention. The surveys used in this study included an intake questionnaire and a follow-up survey intended to elicit health benefits and levels of satisfaction before and after the intervention year.

Overall statistical analysis did not support two research hypotheses that addressed the insurance expenditures in the four years prior to the study and in the year following the study. Mean expenditures for the non-participant group of employees continued to be significantly higher than for the study participants.
An examination of employee satisfaction for the study participants revealed statistically significant support for the use of Healing Touch and guided imagery. Significant decreases in pain, stress and increase in emotional well-being (decreased anxiety and depression) were reported by the study participants following therapy. A majority of those remaining in the study at the time of a follow-up survey (n = 17, N = 41) indicated satisfaction with both the therapies and the Healing Touch practitioners (81%; yes = 13, no = 3). However, a majority of these study participants (75%; yes = 12, no = 4) made the decision to terminate CAM therapies at the end of the study citing lack of money and time.

Findings in this study did not support the addition of CAM therapies to a health benefits package. However, the conclusions drawn do not negate the importance of continued research to understand the roles of energy healing, mind-body interventions and other CAM therapies in managing health-related conditions and to explore cost of CAM therapy to employers and employees.
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Dedication

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May they always know the joy of learning!
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Chapter One

Statement of the Problem

Each year increasing numbers of Americans report the use of some form of complementary and alternative medicine (CAM) (Barnes, Powell-Griner, McFann, & Nahin, 2004), although the therapy is often not covered by health insurance. CAM is a term that refers to a large group of therapies that are not widely accepted in the mainstream of traditional health care. While many believe that the therapies are beneficial, clinical efficacy for most therapies has not been tested or supported through rigorous scientific research. CAM has not been closely regulated nor has there been a sufficient body of scientific research to determine effectiveness in therapeutic results (Herman, Craig, & Caspi, 2005).

Because of the lack of supporting evidence for CAM and because of the shrinking health care dollar, employers are cautious about including CAM in health care benefits (White House Commission on Complementary and Alternative Medicine [WHCCAM], 2002, p. xxvii). CAM is defined as “a group of medical, health care, and healing systems other than those included in mainstream health care in the United States” (WHCCAM, 2002, p. 9). CAM has six major domains: alternative health care systems (chiropractic, acupuncture); mind-body interventions (meditation, guided imagery); biological based therapies (herbal therapies, special diets); therapeutic massage, body work and somatic movement therapies; energy therapies (Healing Touch, Reiki); and bioelectromagnetics.

In spite of caution by many insurance companies, some movement exists toward adapting CAM as part of the health benefits packages of some businesses (Alternative Health Insurance Services, 2006; Atkinson, 1999; Grandinetti, 1999; Smith, 1997). Coverage varies widely. Some companies include CAM in a core package of services, while others include additional benefits that cover CAM but with higher deductible fees paid by the consumer. In
addition, services generally cover a small number of CAM therapies such as chiropractic, massage therapy, nutritional plans, and products. While these modalities in particular are most commonly considered to be therapeutically valid (Herman et al., 2005), many CAM therapies remain on the fringe of health care. CAM practitioners and their clients espouse the benefits of magnetic and herbal therapies, for example, but research projects that demonstrate the efficacy of these products are not reported in the professional health care literature.

*Consumer and Provider Interest in CAM*

Though scientific evidence is missing, consumers continue to search for strategies to manage their own health needs and quality of life looking for more than traditional medicine can deliver. Many choose to investigate complementary care providers and pay for services that are not reimbursed by their insurance companies (Shinkman, 1997; Tindle, Davis, Phillips, & Eisenberg, 2005). Word of mouth and availability of information over the Internet provide consumers with details about types of CAM therapies. Consumers can readily locate descriptions and reported benefits of CAM. Although clients do not consistently reveal CAM use to primary health care providers, 54% of consumers participating in a 2002 survey gave reports of symptom relief and satisfaction associated with CAM use (Barnes et al., 2004). These respondents were most likely to use CAM in combination with conventional medical treatments.

Consumers are not alone in the search for an improved quality of life. Rising health costs of diagnostic and therapeutic treatments have forced private insurers and government agencies to reexamine the accepted approach to health care. While many providers cling to the routines of the past, many others are looking forward to changes that encompass the concepts of health promotion and disease prevention through integration of CAM (Barrett, Marchand, Scheder, Appelbaum, Plane, Blustein et al., 2004; Cohen, Sandler, Hrbek, Davis, & Eisenberg, 2005).
Embracing that holistic approach to health care, hospitals are being designed to meet client needs for esthetics, quality care, efficiency and the latest equipment and techniques (Frampton, Gilpin, & Charmel, 2003). Introduced in 1978, the Planetree Model of planning for health care is an example of the change in planning for and delivering health care. Hospitals from Oregon to Connecticut have embraced the Planetree philosophy that includes patient-centered care; patient and family education; and cultural offerings of music and art, massage and Healing Touch (Frampton et al., 2003). Perhaps such a change is indicative of changing attitudes that will encourage the inclusion of expanded approaches to health care and CAM in traditional Western health care (MacBride, 2004).

Questions arise about the benefit or harm that could result from the use of CAM therapies. Inclusion of nutritional and herbal supplements has been discussed as a possible risk to consumers that may interfere with accepted pharmacological treatments (Pettigrew, King, McGee & Rudolph, 2004). Other difficulties surface when CAM users hesitate to report to their physicians that they are using CAM treatments in addition to or in place of traditional therapy (Barnes et al., 2004). Reasons for failing to disclose CAM use have been found to vary from “it was not important” to a belief that “the doctor would not understand” (Eisenberg, Kessler, Van Rompay, Kaptchuk, Wilkey, Appel et al., 2001, p. 349). Occasionally the use of CAM therapies is a final attempt to find a way to manage a disease or even to find a cure for an advanced illness.

Cost, Expenditure, and Cost Comparison

Whether the patient experiences a biological response or whether the reported response is psychological, the consumer is willing to spend large amounts of money for a wide variety of complementary and alternative therapies (Brolinson, Price, Ditmyer, & Reis, 2001). An estimated $34 billion dollars are spent on CAM yearly in the United States with $20 billion paid out of pocket (Barnes et al., 2004; Herman et al., 2005). The shrinking budget for health care on
a personal level and on a national level brings questions to bear on the decisions made by each consumer and practitioner. What type of treatment can be expected? How effective will the treatment be? Will the cost of that treatment determine availability to the consumer? Will the cost of complementary and alternative therapies be included in insurance coverage (Glick, 2001; Gold, Siegel, Russell & Weinstein, 1996)? Whatever questions occur, it is clear that CAM therapies are here to stay.

In the last 40 years, cost-effectiveness analysis (CEA) has been employed by companies and their health insurance partners. CEA can guide decision-making toward actions that result in better health and improved illness management. CEA is used to define the “opportunity cost” of health care choices: overall health benefits that were lost or overlooked when the next best alternative was not chosen (Gold, Patrick, Torrance, Fryback, Hadorn, Kamlet et al., 1996). A measure of outcome for health is determined and used for each intervention. When the same outcome measure is used for all interventions, they can be ranked on the basis of their cost-effectiveness ratios. A comparison of ratio outcomes can determine which interventions produce the best outcomes or prevent complications. When used by insurance companies, for example, CEA guides the choice of the most efficacious approach to treatment of specific diseases. One reason to use CEA is to provide a justification for specific therapeutic interventions (Herman et al., 2005; Upchurch & Chyu, 2005). Despite a lack of statistically significant support for the clinical effectiveness of CAM, patterns of use by consumers dictate the need for cost-effectiveness analysis of these therapies. This work in particular may be helpful to employers as they consider reimbursement for CAM therapies.

Relevance of CAM to Nursing

Health care consumers look to the provider for advice and guidance in making decisions about health care. The consumer may be reluctant to choose a treatment when the added expense
is not covered by insurance. If a consumer believes that the treatment will improve an existing health problem, then he or she may seek assistance from someone knowledgeable about options in health care (King, Pettigrew & Reed, 2000). The registered nurse could become the health care professional equipped to provide guidance to the consumer in the choice of adjuvant treatments that would be both cost effective and beneficial to the health of the client.

Looking for interventions to meet client needs, nurses have turned to forms of complementary and alternative medicine such as Healing Touch and guided imagery (Wardell & Weymouth, 2004). The principles underlying CAM are acknowledged by nurses who have long accepted a belief in a humanistic connection to healing (King et al., 2000). The universal energy that can be tapped for and by clients to aid in healing or in acceptance of peace in life or at the end of life represents the mind/body connection that helps to enhance client health and well-being (Hover-Kramer, 2002; Keegan, 2001). Conceptual models that incorporate the concept of universal energy are well anchored historically in nursing science and are congruent with a holistic world view (Barrett, 2000; Newman, 1994; Rogers, 1970).

The American Nurses Association (ANA) has published the ANA’s Health Care Agenda 2005, an action guide addressing the current health care crisis. Within that document, the ANA stresses the need to view the registered nurse not as a monetary burden or cost to health care but as a cost saving guide who focuses on health, wellness and prevention of the complications of disease. As use of CAM increases in the general population, the profession should acknowledge the importance of including programs of study about complementary and alternative therapy in general academic settings and in continuing education for nurses (King et al., 2000; Richardson, 2003). With greater knowledge about CAM and the effects of treatment on a variety of illnesses, the nurse could play a major part in advising clients in choosing the appropriate CAM therapy to use. With concerns about cost and the shrinking health care dollar, the nurse could move into a
key role as advisor for business and industry providing cost analyses for current therapies (Dunham-Taylor, Oldaker, DeCapua, Manley, Oprian, & Wrestler, 1993).

The proposed study uses data from a primary study that investigated the cost savings when two CAM therapies (Healing Touch and guided imagery) were added to the health care benefits for employees of a Midwestern manufacturing company. The purpose of the primary study was to determine if insurance costs would decrease from baseline in the year following the addition of CAM therapies. The cost expenditure variable was determined by the number of physician and hospital visits, cost of medication, and cost of other therapies. Initial analysis of data on participant visits to the physician showed no decline in insurance payments during the year of intervention. No cost effectiveness analysis was completed on the data.

**Purpose**

The purpose of the dissertation study, a secondary analysis of data from the primary study, is to expand the initial data analysis to include employee satisfaction with and willingness to assume payment for CAM therapy out-of-pocket. In addition, comparison of cost to the self-insured company will be made for the five years preceding the intervention year and the year following. The theoretical framework for the study is based on five stages of decision making presented by Carroll and Johnson (1990). In the recognition stage, the problem or decision is determined. In the formulation stage, the individual determines the source of the problem and what should be examined. With the alternative generation stage, the individual considers the options until he or she is satisfied with the choices. For the information/search stage, the individual examines outcome decisions and possible scenarios. During the evaluation stage, the individual examines choices within set parameters. Finally, the individual makes the decision and takes action. Part of this stage includes an examination of the results of the decision. This theoretical model serves as the foundation to test the following research hypotheses: Following
the introduction of selected CAM therapies (Healing Touch and guided imagery) as insurance benefits:

1) The insurance expenditures for each of the four years prior to study initiation for all employees will be significantly higher than the insurance expenditures one year after the intervention.

2) The insurance expenditures of non-participating employees will be significantly higher than participating employees one year after the intervention.

3) Participating employees and their dependents will have significantly decreased levels of pain and stress, and increased emotional well-being (decreased anxiety and depression) at the end of one year as compared with pre-intervention levels.

4) Participating employees and their dependents who express satisfaction with the intervention at the end of one year are significantly more likely to decide to pay for CAM therapies than are those who did not express satisfaction with the intervention.

Variables

The variables to be addressed in this study include:

Complementary and alternative medicine. Therapies that are outside traditional Western medical health care (WHCCAM, 2002). Two specific modalities are within the focus of this project: Healing Touch (HT), defined as an energy based therapy used by an individual to promote healing in another individual; and guided imagery (GI), defined as a mind-body intervention using one’s imagination to create mental images intended to improve the coping mechanism (Hover-Kramer, 2002; Kwekkeboom, Kneip, & Pearson, 2003).

Insurance expenditures. Amount of money paid by the company per year in a self-insured plan for the total number of employees and dependents.
Employee satisfaction. Self reported comments in response to questions on the follow-up survey about levels of pain, stress and emotional well-being (decreased anxiety and depression) before and after the Healing Touch and guided imagery interventions and about satisfaction with the therapy.

Decision to pay for CAM. Response to a question on the follow-up survey, “Did you continue Healing Touch after the completion of the study?”

Analysis of the data available in this research project will help to validate or dispute the cost-effectiveness of HT and GI when included in insurance benefit packages. Studying the relationships among the variables of insurance expenditures with employee satisfaction decisions to continue therapy may guide future research on cost and efficacy of HT and GI.
Chapter Two

Background, Significance, and Theoretical Framework

The cost of health care for consumers in the United States has risen dramatically in the last 30 years. Faced with increasing expenses for treatments and drugs, consumers are examining choices that include both traditional medicine and CAM. In the interest of preventive care, healthy people are routinely monitored with expensive diagnostic scans and laboratory tests for early detection and intervention (Purdy, 2001; Verweij, 1999). Following the changing concept from “patient to partner” in health care, Tinetti and Fried (2004) write of the need to consider a change from “a disease-oriented model” to an “integrated, individually tailored model” of health care (p. 181). They note that the focus on disease results in under-treatment, over-treatment, or mistreatment of clients. In addition, the authors point out that factors such as the aging of the population and changes in health priorities make the integration of current medical care with preventive decision-making in a model of partnership between the client and health care professional imperative (Tinetti & Fried, 2004). Finally, with more employers requiring employees to share in the cost of health care, employees are demanding more choice in their therapeutic regimen (Gonzalez, 2005; Jessee, 2003; Quality vs. Costs, 2000).

To explore the interplay between insurance expenditures, complementary and alternative medicine (CAM), and people’s decision to share in the cost of health expenditures for CAM, several aspects of the literature require scrutiny. First, the overall use of CAM therapies and their estimated cost to the consumer will be reviewed. Then the role of cost and cost comparisons will be explored. The role of CAM in the management of symptoms and disease will be discussed, accompanied by a discussion of the common CAM modalities. Finally the significance of the study will be discussed and a theory of decision-making will be described as the theoretical perspective for the study.
Use and Cost of CAM Therapies in the United States (U.S.).

Employers have responded to the growing use of CAM and to requests of consumers by partially covering cost of treatments for a few CAM therapies (Eisenberg, Davis, Ettner, Appel, Wilkey, Rompay et al., 1998; Shinkman, 1997). Eisenberg and others (1998) found an 8.3% increase in use of CAM during the seven years of their study. CAM use was found to be more common in women (48.9%) than in men (37.8%), and more common in the Western U.S. than in other parts of the country. The most common reasons for seeing alternative therapy practitioners were as follows: back problems, allergies, fatigue, and arthritis. Assessment of out-of-pocket expenditures for CAM increased from 9.4 billion dollars in 1990 to 17.2 billion dollars in 1997 (Eisenberg et al., 1998). By 2005, that figure had increased to 20 billion dollars (Herman et al., 2005).

Cost Comparisons and Insurance Expenditures

Cost-effectiveness analysis (CEA) is a technique that is employed for selecting among competing services or choices wherever resources are limited (Weinstein & Stasson, 1977). When applied to health care, CEA guides decision-making toward actions that result in better health, judicious expenditure, and improved illness management. Theoretically, CEA allows the comparison of benefits from health care resources that seem incomparable (Ubel, 2000). However, Ubel (2000) cautions that CEA is an imperfect tool basically intended to guide decisions in health care.

CEA is used to define the “opportunity cost” of health care choices: overall health benefits that were lost or overlooked when the next best alternative was not chosen (Gold et al., 1996). A measure of outcome for health is determined and used for each intervention. When the same measure is used for all interventions, they can therefore be ranked on the basis of their cost-
effectiveness (CE) ratios. The ratios then show which interventions produce the best outcomes or prevent complications (Primer, 2000):

\[
CE\ \text{ratio} = \frac{\text{cost}_{\text{new strategy}} - \text{cost}_{\text{current practice}}}{\text{effect}_{\text{new strategy}} - \text{effect}_{\text{current practice}}}
\]

The technique of cost effectiveness analysis is widely used in the literature. A Medline™ search since the year 2000 on the words, “cost effectiveness analysis” produced 1338 records. CEA has been used to study hundreds of disease management strategies including treatments for Crohn’s disease (Dubinsky, Reyes, Ofman, Chiou, Wade, & Sandborn, 2005), sexually transmitted infections (Gift, Malotte, Ledsky, Hogben, Middlestadt, Vandenverther et al., 2005), and metastatic breast cancer (Prior, Maurel, & Le Pen, 2005). In addition, CEA has also been used to determine the effectiveness of assessment and screening strategies for conditions such as Down syndrome (Odibo, Stamilo, Nelson, Sehdev, & Macones, 2005) and human immunodeficiency virus infection (Doyle, Levison, & Gardner, 2005).

When used by insurance companies, CEA guides the choice of the most efficacious approach to treatment of specific diseases. One reason to use CEA is to provide a justification for specific therapeutic interventions (Herman et al., 2005; Upchurch et al., 2005). A determination of cost effectiveness does not necessarily mean an intervention is less expensive. Rather it refers to the better value between two interventions (Primer, 2000). Since the purpose of cost-effectiveness analysis is to compare approaches, such as expenditure of insurance dollars for medical coverage, an examination of the trends of insurance dollars spent prior to the intervention year and the expenses during the intervention year helps to evaluate the effectiveness of the treatment (Russell, 1999).

The importance of careful allocation of resources can be overshadowed by the consumer’s belief that a particular treatment is beneficial to his or her health. Obviously, when
insurance dollars are spent for one treatment, those dollars are not available for another treatment that might prove to be more effective (Tsevat, 2001). The task facing any company involved in the choosing of an insurance package is just that – if allocation of health care dollars is given for CAM, will sufficient funds be available to continue the health benefits for the entire company?

Employment of cost-benefit analysis (CBA) and CEA by companies and health care insurers provides an objective examination of the outlay of money compared to the benefit and satisfaction gained for both employee and employer (Gold, Siegal et al., 1996). Analysis of insurance cost and health benefits often include both cost-benefit and cost-effectiveness techniques. While CEA examines overall health benefits, CBA measures the economic impact of health care interventions (Ubel, 2000). In a study of cost and employee/employer wishes, analysis of both cost effectiveness and cost benefit will be used. As the company whose management chooses to add CAM modalities to health coverage responds favorably to its employees, decisions will be made based on cost outlay as to whether coverage will be complete or will include co-payment, deductible limitations and physician referral or validation of illness requiring treatment (Weeks, 2000).

Increasingly, the need for cost evaluation of CAM therapies has come under the scrutiny of researchers using the technique of CEA (Barnes et al., 2004). Whether the methods employed are appropriate for CAM therapies is a concern as decisions are made about the cost and efficacy of CAM (Hulme & Long, 2005). In their review of 19 economic evaluations of CAM, Hulme and Long (2005) expressed concern that analysis by CEA, CBA and other techniques were not sensitive to the needs of CAM treatment. Examination, they believe, needs to include client perspective and satisfaction with outcome in addition to cost outlay. Focus on the effects of CAM treatment must be included in a thorough cost evaluation.
Complementary and Alternative Medicine

CAM is a group of therapies that have not been seen as part of traditional Western medicine (Barnes et al., 2004; Eisenberg et al., 1998). These therapies are not usually sanctioned by mainstream physicians and are often used in addition to the treatments prescribed by health care providers. A majority of consumers are paying out of pocket for the CAM therapies; an outlay of an estimated 34 billion dollars a year gives testimony to a belief that consumers are finding pain relief and increased positive management of many diseases through the complementary nature of CAM therapies (Herman et al., 2005). However, when choosing an alternative therapy, a general concern is that a client may refuse traditional Western approaches to treatment, a decision that some believe could affect healing or delay seeking traditional care (Barnes et al., 2004; Fairfield, Eisenberg, Davis, Libman, & Phillips, 1998). Vallerand, Fouladbachsh, and Templin (2003) found that 31% of the 487 participants in their study of CAM therapies for pain management did not inform the health care practitioner of the use of these therapies, a situation that may lead to potentially harmful drug/herbal interactions.

Confusion surrounds the types of modalities that come under the umbrella of complementary and alternative medicine. When asked, health care professionals include chiropractic, acupuncture, homeopathy, massage therapy, herbal therapy, and nutritional supplements in lists of treatments that they consider to be CAM (Berman, Singh, Hartnoll, Singh, & Reilly, 1998). Found less often in the literature are energetic healing modalities like therapeutic touch, Reiki, qigong, and Healing Touch (Wardell et al., 2004).

Research has been sporadic with investigators most frequently exploring the effects of the more accepted CAM modalities: chiropractic, acupuncture, and homeopathy (Berman & Straus, 2004; Birch, Hesselink, Jonkman, Hekker, & Bos, 2004; Cowley, Underwood, & Braiker, 2002). Eisenberg, Davis, and others (1998) published the results of a national survey conducted in 1990
and again in 1997, the purpose of which was to document the use and cost of alternative medicine in the United States. Following is a list of the 16 interventions included in the telephone interview with a total of 1539 adults: chiropractic, massage, relaxation techniques, homeopathy, biofeedback, self-help groups, folk remedies, energy healing, acupuncture, megavitamins, herbal medicine, imagery, spiritual healing by others, commercial diet, lifestyle diet, and hypnosis. Of particular interest to the dissertation work are guided imagery, a mind-body intervention, and Healing Touch, an energetic healing method. Both of these modalities have been included in research projects though findings have not frequently appeared in peer-reviewed journals (Wardell et al., 2004).

Healing Touch. Healing Touch (HT) was first introduced in the late 1970s and evolved from energy healing philosophies. Mentgen (2001) and Hover-Kramer (2002) continued to develop the healing concept into a continuing education program for nurses launched in 1989 to encompass a number of energy healing approaches that are intended to balance the energy field of the human being. The existence of this energy field has been accepted over the years in both medicine and nursing (Cook, Guerrerio, & Slater, 2004; Seskevich, Crater, Lane, & Krucoff, 2004). Research projects involving published accounts of the use of HT are often reported in the Healing Touch Newsletter, in conference reports and dissertations (Wardell et al., 2004). While a few are scientifically sound and reported in peer journals, many are less rigorously controlled attempts to demonstrate the value of the manipulation of an energy field in a healing environment (Geddes, 2002; Wilkinson, Knox, Chatman, Johnson, Barbour, Myles et al., 2002). These published articles and conference reports do show a loyal and determined following among health care professionals including nurses and social workers. Some scientific work in the area of HT has been completed, however.
Wardell and Weymouth (2004) reviewed 30 of the strongest research projects to analyze the effectiveness of HT in a variety of settings. Most studies examined the effects of HT on small numbers of participants with positive outcomes in stress management, pain and anxiety reduction. A few studies used physiological markers as measures of improved outcomes (Wilkinson et al., 2002). In most studies reviewed by Wardell and Weymouth, participants indicated an improvement in quality of life, defined as a qualitative measure that reflects a variety of responses from reducing pain and other symptoms of cancer to easing the anxiety, depression and fatigue of the caregivers of patients undergoing stem cell transplant (Post-White, Kinney, Savik, Gau, Wilcox, & Lerner, 2003; Rexilius, Mundt, Megel & Agrawal, 2002). Inconclusive findings, though, were attributed to many causes from design flaws to reporting mechanisms.

Research designs have included both qualitative and quantitative methods, with investigators using qualitative measures of self-reported pain relief, stress reduction and improvement in quality of life. Quantitative measures have included physiological markers to validate evidence of physical change during and after HT treatment. Wilkinson, Knox and others (2002) used a mixed-method repeated measures design to collect data on secretory immunoglobulin A (sIgA), stress levels and health enhancement per client self report following treatment with Healing Touch practitioners of varying skill levels. Qualitatively, the clients were asked to report perceived changes in feeling (column of energy, negative experience, heat and tingling sensations). Analysis of the physiologic measure of sIgA revealed a statistically significant interaction with a positive change four times greater in clients with the more highly trained practitioner. Stress ratings were significantly lower in post treatment analysis than in pretest ratings (p ≤ 0.0003). Content analysis of the qualitative data showed that 55% of the clients (N=22) reported pain relief after HT with most reporting sensations of heat from the
practitioner’s hands and tingling sensations. Overall the researchers found strong support for the clinical effectiveness of HT in several conditions but found that efficacy did vary depending on the level of practitioner training (Wilkinson et al., 2002).

Other research projects examined the physiological changes occurring during and following HT. Interventions of HT and massage therapy were both studied in an investigation of chemotherapy patients suffering pain, nausea, fatigue, and anxiety. A comparison of caring presence to standard treatment was made with both HT and massage therapy, which showed significant effects on reducing blood pressure ($p<.01$), heart rate ($p<.01$), and fatigue ($p<.05$). There was no significant difference affecting the nausea experienced by the study participants (Post-White et al., 2003).

Caregivers for patients undergoing stem-cell transplant were the participants of choice in a study designed to assist in reducing stress, anxiety and depression. Receiving both HT and massage therapy twice a week, 36 participants reported significant changes with massage therapy for anxiety reduction, depression and fatigue. Decrease in pain symptoms but an increase in fatigue was shown with HT (Rexilius et al., 2002).

Use of physiological markers in experimental designs for HT has been effective in demonstrating statistically significant benefits to the therapy. While the numbers of these quantitative studies are increasing, qualitative measures are employed more frequently to evaluate the client perspective following HT. Reports of the measurement of energetic and healing benefits of HT are only slowly appearing in published and peer-reviewed journals (Wardell et al., 2004).

**Guided imagery.** Guided imagery (GI) is an example of a cognitive-behavioral intervention that can be useful in patients needing pain management, stress management, and coping skills (Kwekkeboom, 2001). GI is a form of focused concentration intended to decrease
anxiety and pain (Antall & Kresevic, 2004). Use of audio tapes and the voice of a practitioner assist the patient in forming a mental picture intended to enhance relaxation and distraction. Interactive guided imagery (IGI) is an expansion of GI that employs breathing, relaxation techniques, meditative and imaging techniques dependent on the development of a therapeutic practitioner and patient relationship (Scherwitz, McHenry & Herrero, 2005).

Often GI is used in surgical situations, in symptom management, pain management, and stress reduction (Antall et al., 2004; Kwekkeboom, Kneip, & Pearson, 2003; Scherwitz et al., 2005; Van Fleet, 2000). Meditation and visual imagery were examined for their impact on an immune system disorder, dermatomyositis (Collins & Dunn, 2005). They reported on a dramatic, spontaneous recovery following one patient’s dedicated use of meditation and visual imagery. Using outcome measures of arm strength, rash and pain, the researchers identified independent variables of meditation, visual imagery and self-evaluated psychological stress. Using regression analysis, significant correlation was seen for both meditation (rash – p=0.0001; pain – p=0.02) and visual imagery (rash – p=0.002; pain – p=0.02) (Collins et al., 2005). The effect benefit lasted a shorter period of time when visual imagery was employed and measured. One drawback of this study was its case study design with just one participant. Generalizability was discussed but could not be determined.

Antall and Kresevic (2004) studied GI for pain management in an older population. Thirteen patients used audio taped music and affirmations during the immediate post-operative period. While the control group used music audiotapes, the intervention group participants were given GI audiotapes. Those in the intervention group stayed a total of five fewer days post-operatively, used half the amount of opioids and recorded a significantly lower pain rating on a 0-10 scale. The study findings supported the use of GI in the post-surgical period.
Scherwitz and others (2005) used IGI as a predictor of health outcomes in a study with 323 medical patients. Patients gained insight into their health conditions, reported satisfaction with the learned process, and expressed interest in recommending the technique to others. Factor analyses were used for both predictor and outcome variables. The researchers supported the close connection with the practitioner that heightens the benefits from IGI as the patient interacts with both the imagery and the practitioner. Though a difference between GI and IGI was described, the findings were helpful in supporting benefits of GI as well as IGI since both empower the patient to use internal strengths in healing. Hypothesizing positive health outcomes, the authors followed the participants over two months and six therapy sessions. Questionnaire responses from the participants and imagery practitioners provided data and analysis included simple descriptive statistics and ANOVA correlations. Successful factor analyses supported patients’ high ratings and positive outcomes in practitioner expertise and personal feelings of health improvement (Scherwitz et al., 2005).

Menzies (2004) studied the effects of GI on pain outcomes in a population of 48 individuals with fibromyalgia. Using several measurement tools including the Short-Form McGill Pain Questionnaire, the author found support for the effectiveness of GI in improved sense of self-efficacy for management of symptoms but insufficient support for pain relief as reported by participants in the study. In 75 women undergoing surgical intervention for gynecologic cancer, Kwekkeboom (2001) studied the effectiveness of GI based on participant use of imagery before surgery, coping style and provider credibility. Significant relationships were determined between use of imagery and outcome expectancy (p<0.01), coping style and outcome expectancy (p<0.01) but not with provider credibility (p>0.36). Outcomes demonstrated the importance of further research to evaluate the benefit of this supportive intervention. Several years later, this same author employed a pretest-posttest design with 69 patients diagnosed with
cancer and experiencing cancer pain. GI was useful for a number of patients in the study, but 10% reported no change in pain experience. Other variables included previous use, perceived credibility of the provider, and outcome expectancy as in the above study (Kwekkeboom et al., 2003).

GI has been studied over the years as a coping skill learned by patients who must deal with the difficulties of life-altering illnesses. Correlation between successful use of GI and a variety of symptoms has supported the efficacy of this CAM therapy (Antall et al., 2004; Collins et al., 2005; Eller, 1999). Reduction of pain and other symptoms of cancer and chemotherapy has been demonstrated (Kwekkeboom, 2001; Van Fleet, 2000). Use of GI has been successfully demonstrated during invasive medical procedures for cardiac and renal patients (Lang, Benotsch, Fick, Lutgendorf, Berbaum, M., Berbaum, K. et al., 2000; McCaffrey & Taylor, 2005). The low cost, limited potential for adverse effects and high levels of patient satisfaction with GI may be seen as contributing factors to numerous research studies (Seskevich et al., 2004).

**Significance**

Health care insurers have been slow to include coverage for CAM in the benefits packages offered to company employees. Within the last few years, owners and managers of a variety of companies and insurance providers have begun to investigate the possibility of expanding health benefits to include some categories of complementary and alternative therapies (Alternative Health Insurance Services, 2006; Pelletier & Astin, 2002). Emphasizing the change in attitude about CAM, the White House Commission on Complementary and Alternative Medicine was established in 2000 to review the research available and offer reliable information about CAM therapies to health care professionals. “The right to choose treatment” and “an emphasis on health promotion and self care” were included in the list of “ten guiding principles” identified by the Commission (WHCCAM, 2002, xvi).
If one acknowledges the client’s right to choose and to use CAM, two questions emerge. Will the use of CAM help in the promotion of health? Who will be responsible for payment? In his book, *Pricing Life: Why It's Time for Health Care Rationing*, Peter Ubel (2000) questions which health care services to include in basic health care coverage. He writes, "It is naïve to think that we can easily afford to offer every proved beneficial health care service to every patient who would benefit" (p. 25). While Ubel (2000) speaks to conventional medical therapies, his observation can easily be referred to complementary and alternative therapies. If health care dollars are scarce, how can employers consider inclusion of therapies in insurance benefits that are not fully sanctioned by the medical community or known to be effective as a whole?

Answers to this and similar questions cannot be given based on research published to date. Development of scientifically based studies is receiving increased support now through agencies like the National Center for Complementary and Alternative Medicine (NCCAM) established in 1999 within the National Institutes of Health (NIH). Healing Touch International encourages research and tracks projects and published works relating specifically to HT. GI has been the subject of several research projects with the most current results being conducted and tracked by the Academy for Guided Imagery (Academy for Guided Imagery, 2006; Fontaine, 2000). Projects designed to examine effectiveness of CAM therapies are slowly building scientifically based evidence that CAM and specifically HT provide viable integrative approaches to health care (Wardell, et al., 2004). Cost of complementary and alternative therapies must be considered as well.

*Decision Making*

Consumers take many factors into consideration when choosing health care options. A major deciding factor is whether the option is included in their insurance packages. Likewise, the addition of any complementary or alternative therapy to an insurance benefits package for a
company of any size depends on numerous issues. For both consumer and insurance provider, the method of making that decision will be similar. Decision research can be seen as a complicated, convoluted process. For purposes of this discussion, the stages of decision making presented by Carroll et al. (1990) will be used to provide a theoretical model guide for the study (Figure 1, Appendix).

From a phase prior to deciding what course of action should be taken, through examination of choices to taking action, the consumer who is looking at CAM is faced with information that is confusing and foreign to his or her usual health care selections. The nurse is the most likely health care provider to offer guidance to the consumer. Keeping in mind the final goal, the nurse can provide information about the types of CAM therapies in question, the benefits and/or risks of using certain therapies, the importance of continuing a proven medical regimen, and other points of concern. Employment of the stages of decision making delineated by Carroll and Johnson (1990) will guide the nurse/client in asking the appropriate questions to gather the most helpful information. In the recognition stage, the problem or health concern is identified. In the formulation stage, the nurse/client will ascertain the source of the problem and what should be resolved. With alternative generation, the options are presented and discussed until those involved are satisfied with the choices. For the information search, the nurse or client examines outcome decisions and possible scenarios. During the evaluation stage, choices are examined within set parameters. Finally, the decision is made and action is taken. Part of this evaluation stage includes feedback, an examination of the results of the decision. In this project, the examination of the cost impact and health benefit of the decision to include HT and GI will be needed to conclude this process.
Chapter Three

Research Methods

A retrospective, descriptive study design will be used for this secondary analysis of data collected during an original project known here-to-fore as the primary study. The primary study was designed to examine the cost effectiveness of adding two complementary and alternative medicine (CAM) modalities, Healing Touch (HT) and guided imagery (GI) to the health care benefits for employees of a manufacturing company in the Midwest. The primary study, an experimental design conducted by Associates in Healing, included two additional objectives: 1) to assess overall impact to the employer; and 2) to determine overall benefits to participants through self-report. Only participants with specific complaints were accepted into the study. To determine who might benefit from the energy intervention, Associates in Healing provided the following list of illnesses and conditions thought to respond to complementary health care: diabetes, heart disease, chronic bronchitis, emphysema, asthma, cancer, high blood pressure, arthritis, fibromyalgia, systemic lupus erythematosus, chronic fatigue syndrome, depression, ulcers, and skin conditions.

The original intent of the investigators was to conduct cost-effectiveness analysis to determine a financial benefit to the company. A comparison of costs for study participants to the total company expenditure was planned, as was a comparison of pre-study utilization of health care resources to the study year and the year following the study completion. Because a wide range of diagnoses was used, the investigators also hoped to show a difference in the chronic illness/high utilization subgroups from the study even if the overall costs were not influenced. Following a cursory evaluation, preliminary results indicated a high level of participant satisfaction and an increase in expense to the employer and insuring company. The investigators
believed that data analysis difficulty was due to no clear trend in costs in the years prior to the study year. (Mary Beth Lodge, primary investigator, personal conversation, October 20, 2003).

Realizing the need for further examination of the data collected in the primary study, the original investigators shared the data with this researcher for use in this secondary analysis. The data, collected over the 13-month period of the original project, included insurance payouts by the company for the four years prior to and including the intervention year and for the following year presented in excel spreadsheets. Also, qualitative and quantitative data reflecting employee satisfaction with health status was compiled from preliminary and follow-up surveys; assessment forms and treatment records; periodic questionnaires related to health status; a progress report midway through the intervention year; and responses to a quality of life questionnaire at intervals throughout the year of intervention.

Based on the outcome of analysis of the data listed above, the secondary analysis will focus on findings related to financial cost to the company, financial cost to the employee, and health status of the employee based on self-report from the qualitative and quantitative data collected through the periodic surveys. Analysis outcomes will be combined into the theoretical framework of decision-making to test the previously identified research hypotheses as indicated below:

Following the introduction of selected CAM therapies (Healing Touch and guided imagery) as insurance benefits:

1) The insurance expenditures for each of the four years prior to study initiation for all employees will be significantly higher than the insurance expenditures one year after the intervention.

2) The insurance expenditures of non-participating employees will be significantly higher than participating employees one year after the intervention.
3) Participating employees and their dependents will have significantly decreased levels of pain and stress, and increased emotional well-being (decreased anxiety and depression) at the end of one year as compared with pre-intervention levels.

4) Participating employees and their dependents who express satisfaction with the intervention at the end of one year are significantly more likely to decide to pay for CAM therapies than are those who did not express satisfaction with the intervention.

The secondary analysis will add to the results of the primary study in several ways. The dissertation study outcomes include not only a cost comparison and more complete analysis of employee satisfaction, but also an assessment of the participants’ decision whether or not to continue CAM therapy. Data available for these analyses includes a six-year span of insurance expenditures for the entire company as well as for the study group, quality of life measurement within self-satisfaction responses and treatment records for the participants. These analyses differ from the primary study, in which investigators analyzed cost to company through baseline expenditure trending and one year of data collected for the study group. Qualitative and quantitative data related to employee satisfaction were collected but was not analyzed in the primary study.

Setting

Associates in Healing, whose therapists were the HT practitioners, contracted with a manufacturing company in the Midwest. This family-owned company, founded in 1957, has grown to 7 manufacturing sites worldwide providing customers with commercial pressure fryers, blast chillers, warming cabinets and other food preparation and service products. Only the company in Ohio was involved in the experiment that added HT and GI to covered benefits in health care. During the six years of data collection, 440 employees grew to 500 at this plant.
Primarily manufacturers of industrial-strength kitchen equipment, the work environment required employees to handle heavy pieces of equipment, movement of which by employees necessitated use of large muscle groups. The owner of the company cited frequent complaints of aches, pains and headaches by the employees. He was searching for a way to prevent or lessen the undesirable effects of the work. Discussion with Associates in Healing focused on the addition of CAM therapy to the benefits package offered to employees at this self-insured company as an added and less costly intervention. That discussion led to the primary study.

Variables

*Insurance expenditures.* This variable reflected the amount of money paid by the company in a self-insured plan for the total number of employees and dependents. Included is coverage for physician visits, medication and treatments provided by a company to employees and their families. Measurement of this variable will be carried out by comparing the money paid out by the company during the four years prior to and during the intervention year and for the year following the intervention. Data on insurance expenditures were obtained from the company comptroller and entered into excel spreadsheets by a member of the primary study team who was a financial analyst.

*Complementary and alternative medicine.* This referred to therapies that are outside traditional Western medical health care (WHCCAM, 2002). Two specific modalities are within the focus of this project: 1) HT, defined as an energy-based therapy used by an individual to promote healing in another individual; and 2) GI, defined as a mind-body intervention using one’s imagination to create mental images intended to improve the coping mechanism. Participants were considered in the CAM group if they expressed interest and reported a health concern that was thought to respond to HT. The principal investigators did not require referral and accepted participants based on their self-report of health need. Participants were asked to
obtain a signed agreement from their primary care physicians regarding their patients’ participation in the study. All physicians agreed with the decision of their patients to participate in the HT/GI study.

Employee satisfaction with health status. This variable was composed of self reported levels of contentment for pain and stress reduction and increased levels of emotional well-being. Employee satisfaction with health status was measured by several interview guides completed by participants in the original study. Three instruments were developed by the principal investigators of the primary study and included an intake survey, a progress report and a follow-up survey consisting of questions related to the employee’s pain/stress levels, mobility, spirituality and perceived QOL. The surveys did not undergo psychometric testing prior to use but were reviewed by the investigative team, were based on the literature, and were determined to have content validity by the investigators. QOL was measured by the European Organization of Research and Treatment of Cancer questionnaire (EORTC QLQ-C30), which was given to determine employee response. The EORTC QLQ was developed to assess the quality of life of cancer patients and is scored on a 0 to 100 scale. For functional and global quality of life scales, higher scores mean a better level of functioning. For symptom-oriented scales, a higher score means more severe symptoms. Reliability and validity for the QLQ C30 has been well established with high statistical significance in populations of patients diagnosed with cancer (Ahlberg, Ekman, & Gaston-Johansson, 2005; Beser & Oz, 2005; Gotay, Isaacs, & Pagano, 2004). In a population of cancer patients undergoing radiation, test/retest reliability as measured by Pearson’s correlation coefficient was high for functional scales (r = .82 - .91). For symptom scales (nausea/vomiting, pain, fatigue), reliability was established (r = .63; r = .86; r = .83) (Hjermstad, Fossa, Bjordal, & Kaasa, 1995). In a population of patients with breast cancer, questionnaires were completed, and responses to the subscale for psychosocial items were
subjected to factor analysis for internal and external validity (McLachlan, S., Devins, G., & Goodwin, P., 1998). Two dimensions, emotional distress and functional ability, were identified. Results supported the validity of both dimensions with slightly more than 60% of the variance explained. External validity of the scale was strong when assessed with two established scales, the Psychological Adjustment to Illness Scale (PAIS) and the Profile of Mood Status (POMS), (r>0.60, p <0.00001).

A copy of the QLQ-C30 and a scoring manual was obtained from the European Organization of Research and Treatment of Cancer. Participants in the original study were asked to complete questionnaires at the initial visit, at intervals throughout the treatment year, and at termination of the project.

Decision to pay for CAM. This variable was determined by the response to a question on the follow-up survey. On the follow-up survey completed by employees at the end of the intervention year, participants were asked, “Did you continue HT after the completion of the study?” and a dichotomous response, “Yes” or “No,” was obtained from the sample. Participants were also asked for the reason that treatment was discontinued and were given the following choices: “condition resolved”; “saw no benefit”; “financial”; “other (please explain)”.

Procedures and Study Participants in the Primary Study

Participants for the original study were recruited from the general employee population and, in some cases, from insured dependents of the employees following an informational session led by the company owner and two of the principal investigators. Told that participation in the study was entirely voluntary, employees and their dependents were then given the opportunity to participate in the initial research project. Treatment modality and frequency of visits to HT practitioners were determined based on participant complaints and illnesses. At introductory sessions, the concept of complementary health care was explained to the employees.
Benefits and limitations of CAM were discussed. A description of the modalities to be included was given: an energy modality (HT) and a modality from the mind-body interventions (GI). At the beginning of the intervention period, 41 out of 440 employees volunteered to join the study, and 38 employees/dependents remained in the study after one year. Of the 41 employees who began the study, the mean age was 44.3 (SD = 12.14). Ages of the participants ranged from a minimum of 13 years to a maximum of 65 years of age with a median age of 47 years. Illnesses included complaints of asthma, back pain, headache, fibromyalgia and stress. When the original study ended, no plans were made to continue to offer HT and GI to the employees of the company.

Approval for exempt status was granted through the University of Cincinnati Institutional Review Board (IRB), following a request for exemption made to Dr. Margaret Miller, Chair of the IRB for Social & Behavioral Sciences. Approval was granted following submission of a protocol entitled, ‘Healing Touch and imagery as covered benefits in health care”. The protocol was given the tracking number of 03-07-14-04. Protection of the privacy rights of the participants in this secondary analysis included the elimination of any personal identifying information from the files by the principal investigator. A system of coding had been devised during the original study using a number linking the participant to the HT practitioner for consistency in recording and reporting. This identification number was useful in the tracking done during this study. No link to the individual participants was available to this researcher.

*Procedures for the Current Study and Data Management*

Since the original study ended six years ago, no plans exist to collect additional data for this analysis. Secondary analysis will be performed using the data collected over the six years from 1995 to 2000. Clinical records from 33 of the 41 patients will be included in an examination of self-satisfaction by employee report and by their responses to the EORTC QLQ-
C30. Data were provided to the investigator through email transfer of files after all personal identifiers had been removed. The information was saved and stored on the investigator’s personal computer.

Analysis Plan

To examine the data, a baseline of expenditures was established for the entire company as well as for the participants. Trending will provide a basic picture of expenditures for the company over the five-year period including four years prior to intervention and the intervention year. The results of the interventions experienced by the HT group in 1999 are expected to show an impact on visits to traditional health care providers for any reason.

Paired-sample t-tests of mean differences and Levene’s test for equality of variance using the Statistical Package for the Social Sciences (SPSS) will be applied to consider cost impact. Levels of satisfaction reported by study participants will be analyzed using paired-sample t-tests. In addition, examination of the study design will be undertaken within a theoretical framework of individual decision-making based on the research design of Carroll and Johnson (1990). A theoretical framework incorporating the decision-making theory and path taken by employees in the Primary study can be found in Figure 1 (Appendix).
Chapter 4

Results

This dissertation was designed as a secondary analysis to explore the benefits gained for an employer and enrollees in the company insurance package with the addition of Healing Touch (HT) and guided imagery (GI), two therapies used in complementary and alternative medicine (CAM). The hypotheses of the study were as follows:

1) The insurance expenditures for each of the four years prior to study initiation for all employees will be significantly higher than the insurance expenditures one year after the intervention.
2) The insurance expenditures of non-participating employees will be significantly higher than participating employees one year after the intervention.
3) Participating employees and their dependents will have significantly decreased levels of pain and stress, and increased emotional well-being (decreased anxiety and depression) at the end of one year as compared with pre-intervention levels.
4) Participating employees and their dependents who express satisfaction with the intervention at the end of one year are significantly more likely to decide to pay for CAM therapies than are those who did not express satisfaction with the intervention.

Data from the primary study included quantitative data (insurance costs) collected over a period of six years; surveys with data on pain, stress, and emotional well-being; and qualitative data (follow-up satisfaction surveys) collected over a 13-month period during which Healing Touch, guided imagery, and other energy modalities were provided for the participant group. Certified HT practitioners from Associates in Healing, an energy healing group, provided the assessments and treatments with clients being assigned to specific practitioners for the intervention year. Following initial assessment of each participant, the HT practitioner
determined which CAM therapy should be used and how many sessions were needed. While some employees met with the HT practitioner weekly, others met on a less structured schedule based on client-determined need. Collection of data was carried out by the attending HT practitioner who would offer the research tools and ask for feedback following a session.

Results from the Primary Study

The primary study was intended to cover a 13 month period from December 1998 through December 1999. Following completion of the study, the primary investigators reported findings to the manufacturing company that suggested an unexpected rise in cost for the participant group but a strongly satisfactory response from the employees and their dependents. Inclusion of three case studies in the primary study’s report to the manufacturing company supported the report of enrollee satisfaction. As reported in Table 4-1, the primary investigators had difficulty showing cost impact to the company and supplied the data in table form.

Table 4-1

*Total cost of health plan for employees and dependents (Enrollees), 1996 to 2000*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Payout</td>
<td>$1,328,022</td>
<td>$1,561,021</td>
<td>$1,353,594</td>
<td>$1,856,227</td>
<td>$1,941,362</td>
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<tr>
<td>Premiums</td>
<td>$17,229</td>
<td>$16,337</td>
<td>$18,329</td>
<td>$17,454</td>
<td>$23,799</td>
</tr>
<tr>
<td>Reimbursements</td>
<td>$184,472</td>
<td>$52,131</td>
<td>$99,646</td>
<td>$124,692</td>
<td>$562,720</td>
</tr>
<tr>
<td>Net Cost</td>
<td>$1,160,779</td>
<td>$1,525,227</td>
<td>$1,272,277</td>
<td>$1,748,989</td>
<td>$1,402,441</td>
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</tbody>
</table>

<table>
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<tr>
<th>Number of Enrollees</th>
<th>1138</th>
<th>1190</th>
<th>1258</th>
<th>1304</th>
<th>1341</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Cost per Enrollee</td>
<td>$1020.02</td>
<td>$1281.70</td>
<td>$1011.35</td>
<td>$1341.25</td>
<td>$1045.82</td>
</tr>
</tbody>
</table>
Results from the Secondary Analysis

The dissertation study consisted of a secondary analysis of the data collected over the 13 months of the intervention, which included providing two CAM modalities, Healing Touch and guided imagery for employees who volunteered to participate. The hypotheses expanded the research questions of the primary study to include an examination of self-reported results of pain and stress reduction and increased emotional well-being. The study variables, *complementary and alternative medicine* (therapies that are outside traditional Western medical health care such as Healing Touch and guided imagery) and *insurance expenditures* (amount of money paid by the company per year in a self-insured plan for the total number of employees and dependents), were considered directly in two research hypotheses. In addition, *employee satisfaction* was defined as self reported comments in response to questions on the follow-up survey about levels of pain, stress and emotional well-being (decreased anxiety and depression) before and after the Healing Touch and guided imagery interventions. A fourth variable, *decision to pay for CAM*, was defined as response to a question on the follow-up survey, “Did you continue Healing Touch after the completion of the study?” The study included analysis of employee reports of satisfaction with CAM therapies and the decision to continue with therapy after the intervention year ended.

*Sample*

The number of employees and dependents who volunteered for the primary study totaled 41 individuals. The study population was 67% female and had a mean age of 44.3 (SD = 12.5) with a minimum of 13 years and a maximum of 65 years. The study population was comprised of 39 employees and 3 dependents. More than half of the study participants (54%) indicated on their first contact that their primary complaint was pain; other complaints included asthma, diabetes, depression, anxiety and stress with many participants citing more than one concern.
Results from Hypothesis 1: The insurance expenditures for each of the four years prior to study initiation for all employees will be significantly higher than the insurance expenditures one year after the intervention.

Insurance expenditures were shared by the financial analyst at the partner company for the six years included in the primary study. The number of employees and their dependents in the health benefits package reflected company growth during that time period. Though the intervention was planned to cover just 13 months, the primary investigators included the four years preceding the intervention year and the year following. Descriptive statistics included in Table 4-2 reflects the increase in numbers of employees and dependents and an overview of insurance expenditures during those years between 1995 and 2000.

Table 4-2

Descriptive statistics for the four years prior to the study initiation, the year of intervention and the year following intervention

<table>
<thead>
<tr>
<th>Year</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Interquartile Range</th>
<th>Median</th>
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<td>1995</td>
<td>751</td>
<td>$2718.53</td>
<td>$38,330</td>
<td>0</td>
<td>$1,036,500</td>
<td>$44 - $681</td>
<td>$194</td>
</tr>
<tr>
<td>1996</td>
<td>833</td>
<td>$1581.18</td>
<td>$6830</td>
<td>0</td>
<td>$96,099</td>
<td>$36 - $782</td>
<td>$209</td>
</tr>
<tr>
<td>1997</td>
<td>934</td>
<td>$1593.66</td>
<td>$7866</td>
<td>6.40</td>
<td>$141,163</td>
<td>$51 - $830</td>
<td>$226</td>
</tr>
<tr>
<td>1998</td>
<td>952</td>
<td>$1422.58</td>
<td>$6628</td>
<td>15</td>
<td>$139,181</td>
<td>$56 – 927</td>
<td>$257</td>
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<tr>
<td>1999</td>
<td>1108</td>
<td>$1689.32</td>
<td>$7669</td>
<td>0</td>
<td>$209,819</td>
<td>$60 - $1003</td>
<td>$272</td>
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<tr>
<td>2000</td>
<td>1144</td>
<td>$172.05</td>
<td>$9055</td>
<td>0</td>
<td>$229,137</td>
<td>$55 - $1024</td>
<td>$258</td>
</tr>
</tbody>
</table>
Independent sample $t$-tests for equality of means and the Levene test for equality of variances were conducted to examine data for research hypothesis #1. Analysis of data for each of the four years compared with the year following the intervention year yielded similar results as seen in Table 4-3. Contrary to the research hypothesis, insurance expenditures for all employees in each of the four years prior to the intervention year were significantly higher than for the year following the intervention. Statistical analysis failed to support research hypothesis #1.

Table 4-3

<table>
<thead>
<tr>
<th>Year</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>df</th>
<th>$t$-test</th>
<th>$p$-value*</th>
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<tr>
<td>1995</td>
<td>751</td>
<td>$2718.53$</td>
<td>$38,330$</td>
<td>$0$</td>
<td>$1,036,500$</td>
<td>1893</td>
<td>.861</td>
<td>.39</td>
</tr>
<tr>
<td>1996</td>
<td>833</td>
<td>$1581.18$</td>
<td>$6830$</td>
<td>$0$</td>
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<td>1975</td>
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<td>$141,163$</td>
<td>2076</td>
<td>.288</td>
<td>.77</td>
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<tr>
<td>1998</td>
<td>952</td>
<td>$1422.57$</td>
<td>$6628$</td>
<td>$15$</td>
<td>$139,181$</td>
<td>2094</td>
<td>.792</td>
<td>.43</td>
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<td>2000</td>
<td>1139</td>
<td>$1802.60$</td>
<td>$10,295$</td>
<td>$0$</td>
<td>$229,137$</td>
<td>1138</td>
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</table>

*alpha = 0.05

Results from Hypothesis 2: The insurance expenditures of non-participating employees will be significantly higher than participating employees one year after the intervention.

Independent samples t-tests for mean differences and the Levene test for equality of variances were conducted to examine data for research hypothesis #2. Analysis resulted in findings of statistical significance between study participants and other employees during the year following intervention. However, the direction of significance was reversed as seen in Table 4-4 with the
mean insurance expenditure for the study participants being higher than for the non-participants \( (t=2.776, p<.01) \). Statistical analysis failed to support research hypothesis #2.

Table 4-4

<table>
<thead>
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<th>2000</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
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<th>IR</th>
<th>t-test</th>
<th>p-value</th>
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<td>Study participant</td>
<td>38</td>
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<td>$17,864</td>
<td>$27.50</td>
<td>$110,377</td>
<td>36</td>
<td></td>
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</tr>
<tr>
<td>Non-participant</td>
<td>1102</td>
<td>$1356.21</td>
<td>$3961</td>
<td>$0</td>
<td>$229,136</td>
<td>1142</td>
<td>2.776</td>
<td>&lt;.01</td>
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</tr>
</tbody>
</table>

Results from Hypothesis 3: Participating employees and their dependents will have significantly decreased levels of pain and stress, and increased emotional well-being (decreased anxiety and depression) at the end of one year as compared with pre-intervention levels.

Results from research hypothesis #3 were determined using both paired-sample \( t \)-tests and response distributions for the Intake Questionnaire and the follow-up survey. From the Intake Questionnaire, volunteers responded to questions about levels of pain reporting a number between 1 (no pain) and 10 (extreme pain). With responses from 33 of the 41 study participants, the mean was 5.36 (SD = 2.07, minimum = 1; maximum = 9). Assuming the presence of pain, participants were asked to indicate the level of pain usually experienced. In a response distribution, 30% indicated pain at 6 on a scale of 1 (no pain) to 10 (severe pain), while 60% reported pain levels between 6 and 9 on the scale. Those who experienced no physical pain (9%) were joining the study with diagnoses including hypertension, diabetes and asthma.

Paired-sample \( t \)-tests were conducted on the follow-up survey. Results are displayed in Table 4-5. In response to questions about pain levels, 17 of the 41 study participants rated pain
on a scale from 1 (low or minimal) to 10 (severe pain) with the mean pain level prior to HT of 6.547 and the mean for present level of pain at 2.353. In response to questions about stress levels, 17 of the 41 study participants rated stress on a scale from 1 (low or minimal) to 10 (extreme stress) with the mean stress level of 7.882 prior to the intervention and the mean for present level of stress at 4.188.

Responding to the statement, “Before receiving HT my level of emotional well-being (including anxiety and depression) on the average on a scale from 1-10 was”, 17 of the 41 study participants rated emotional well-being with a mean of 7.312. The same 17 participants also responded to “My present level of emotional well-being experienced on a scale from 1-10 is” with a mean of 2.647.

Table 4-5

| Levels of pain, stress and emotional well-being reported on the follow-up survey |
|---|---|---|---|---|---|---|---|
|    | n | Mean | SD | Min | Max | df | t-test | p-value |
| Pain |    |      |    |     |     |    |       |         |
| Pre  | 17 | 6.55 | 2.41 | 0    | 10  | 16  | 6.95  | .00     |
| Post | 17 | 2.35 | 1.27 | 0    | 4   |     |       |         |
| Stress |    |      |    |     |     |    |       |         |
| Pre  | 17 | 7.88 | 2.28 | 0    | 10  | 16  | 5.66  | .00     |
| Post | 17 | 4.19 | 2.79 | 0    | 9   |     |       |         |
| Emotional Well-being* |    |      |    |     |     |    |       |         |
| Pre  | 17 | 7.31 | 1.76 | 4    | 9   | 16  | 10.87 | .00     |
| Post | 17 | 2.65 | 0.86 | 1    | 4   |     |       |         |

*alpha = 0.05

*Emotional well-being (decreased anxiety & depression) (Scale: 1 = emotionally satisfied, minimal anxiety or depression, 10 = emotionally empty, severe anxiety or depression)
For all three measures of employee satisfaction, levels of pain, stress and emotional well-being improved for those employees and dependents who responded to the follow-up survey. Statistical analysis supported research hypothesis #3.

Results for Hypothesis 4: Participating employees and their dependents who express satisfaction with the intervention at the end of one year are significantly more likely to decide to pay for CAM therapies than are those who did not express satisfaction with the intervention.

One question on the follow-up survey asked the participants to comment on their satisfaction with the therapy. Statements of satisfaction or dissatisfaction were given by 17 of the 41 participants with comments reflecting improved physical or mental conditions, happiness and improvement in pain, stress and/or emotional well-being. From the 17 responses, 13 individuals (81%) indicated their satisfaction with the therapy through positive remarks. Another question referred to a decision to pay for CAM therapy after the study intervention in a dichotomous response: “Did you continue HT after the completion of the study?” Limited positive response (16.7% of the 17 remaining study participants) plus incomplete data listing reasons to discontinue HT limited the identification of clear findings to address this hypothesis.

Non-parametric tests including crosstabulation provided analytical data for Pearson Chi-Square and Fisher’s Exact Test. Comparison of the group and the two responses to questions of satisfaction with therapy and decision to pay for CAM are shown in Table 4-6.

Table 4-6

| Differences in Satisfaction with Therapy and in Decision to Continue CAM Therapy |
|-------------------------------|----------|----------|---------|---------|----------|
|                               | Values   | df       | Asymp Sig | Exact Sig (2-sided) | Exact Sig (1-sided) | $p$-value |
| Chi Square                    | 1.231    | 1        | .267     | >.05                |                   |
| Fisher’s Exact Test           | 1.946    | 1        | .529     | .393                | >.05                |
Matching responses from 17 of the 41 participants, a 2x2 crosstabulation was achieved. From this analysis, nine of the 13 satisfied participants would not pay for the CAM therapy. On the follow-up survey, the responses of employees and their dependents about decisions to pay for continuing CAM therapy were not similarly reflected in their satisfaction with therapy. Statistical analysis did not support hypothesis #4.

**Summary of Research Findings**

Findings for the research data available in this secondary analysis were inconclusive for the first two research hypotheses. The available of CAM therapies to employees and their dependents did not result in decreased insurance expenditures. In contrast, the study participants used more of the company’s resources during and following the intervention year. In both the participating and non-participating populations, the presence of outliers (individuals whose insurance expenditures were vastly greater than expected), affected the study results.

Hypothesis #3 was supported. Employees and their dependents responded to questionnaires indicating a significant reduction in pain and stress and an increase in emotional well-being following the year of intervention. Hypothesis #4 was not supported. Though employees reported satisfaction with the intervention and with the HT practitioner, they were not ready or able to commit to continuing the therapy without financial support from the employer.
Chapter 5

Discussion

The dissertation study was a secondary analysis of data collected to study the cost to a manufacturing company when an option for CAM was added to the health plan of employees and their dependents. The dissertation builds on the initial analysis to explore employee satisfaction and decisions to continue with Healing Touch (HT) and guided imagery (GI) as complementary therapies. The primary study, which used a quasi-experimental design, drew participants from a pool of employees who were given the opportunity to volunteer following an introduction to the study and its purposes. The decision to join the study and the ultimate decision to continue therapy after the study completion was made by each employee and his or her dependents, who were enrollees in the company insurance plan.

Theoretical Framework and the Relationship to Study Findings

The theoretical framework for this dissertation was that of decision making and the movement of the individual through five stages of a decision process (Carroll et al., 1990). For the company employees, the Recognition Stage was the point at which identification of a health concern or medical diagnosis that may or may not respond to CAM therapy was made. Information letters received by each employee listed physical conditions that were thought to respond well to HT and GI. As the employee entered the Formulation Stage, he or she was asked to discuss the study with a physician and to return to the primary investigators for clarification of questions about the CAM therapies and the planned intervention study. In the Alternate Generation Stage, the employee examined the options which were to join the study and combine CAM with traditional therapies or to continue with only traditional therapy for health concerns. The Information Stage involved the gathering of information about employer willingness to add CAM to the health benefits package, cost of CAM therapy to the employee, and satisfaction of
the employee with the therapies as reported in reduction of levels of pain, stress, and increase in emotional well-being. During the Evaluation Stage, the employee must decide whether to continue to receive CAM therapy knowing that he or she would be paying the full amount for the therapy at the end of the intervention study. Employees in the primary study also moved through this decision making process weighing costs of the HT/GI therapies against potential benefits as reported by the HT practitioners in introductory sessions. Regardless of satisfaction and health benefits reported to the HT practitioners, a majority of the study participants made the decision to stop the therapies, a result not supported by previous research on use of and self-pay for CAM therapies.

The decision-making framework, represented by Figure 1 (Appendix) was directed at the individual employee or dependent. It reflected the path taken as the participant entered the study through the time that the participant ultimately decided whether or not to continue with CAM therapy when it was no longer a covered benefit. The ultimate decision to continue CAM therapy was originally thought to depend on outcomes of therapy and satisfaction with the CAM therapy itself. However, while satisfied with the therapy, employees were not willing to continue CAM therapy at full cost. Reexamination of the Information Stage of the decision-making framework opened the possibility of adding two considerations: effectiveness of intervention and cost to individual (Figure 2, Appendix). The effectiveness of the intervention could affect the decision of the company to include CAM therapy in the health benefits package or to consider offering the therapy with expectation of a co-payment on the part of the participating employee. The ultimate cost, whether full or partial payment, to the individual employee must be added to the degree of satisfaction with one’s health status during this Information Stage so that an informed decision to pay for CAM could be made during the Evaluation Stage.
Comparison of Insurance Expenditures

Of the four research hypotheses, two were affected by consistently higher insurance expenditures for the study participants. Research hypothesis #1 included findings based on insurance costs and payouts to enrollees that were not statistically significant overall. Payouts made by the self-insured company continued to climb in spite of the belief on the part of the CAM practitioners that therapies including HT and GI would improve the overall health of the study participants and subsequently decrease health care costs to the company.

In the years prior to the intervention year of 1999, the company saw insurance expenditures increase from $1,160,779 to $1,272,277 as the number of enrollees in the company’s health care plan increased from 1138 to 1258. During this time, overall rising health care costs had an impact on insurance coverage costs. In the year following intervention, insurance expenditures increased to $1,402,441 as the number of employees and dependents enrolled in the health care plan increased to 1341. Overall reasons for such an increase in insurance expenditures are not clear. Explanations of increasing costs would depend on issues in addition to an increase in numbers of employees. Specific health and illness information, such as visits to physicians and emergency rooms, possible surgical procedures and greater use of prescription medications could help to explain such increases, although those data were not available to the investigator. A catastrophic illness for one or two individuals could skew the study results significantly. This information was available to the researchers for the study participants only but not for the entire company; therefore whether or not catastrophic illnesses elevated insurance expenditures is unknown.

Neither was support found for research hypothesis #2, which led to non-statistically significant results. Study findings indicated that mean insurance expenditures were higher for study employees ($5699.57) than for non-participant employees ($1564.71) in the year following
intervention. Although the reasons for higher insurance expenditures cannot be determined with certainty, study participants may have had more overall health problems than non-participants.

Certainly those who seek CAM therapies may be more inclined to seek assistance for issues of health and wellness than those who do not go outside the field of traditional medical therapy. Dissatisfaction with health care does lead to consumer searches for remedies not always found in traditional venues (Barnes et al., 2004; Brolinson et al., 2001; Eisenberg et al., 2001). Employees who volunteered for this HT/GI study may fall into the group of consumers eager to try something different to manage a chronic condition, especially if the cost is shared by the employer. Mixing traditional medical interventions with CAM therapies does appeal to consumers interested in exerting more control over their lives including health care.

The Role of Employee Satisfaction

Research hypothesis #3 was supported through statistical analysis of employee satisfaction defined as self reports of relief of pain and stress and increased levels of emotional well-being. Less than half of the 41 participants responded to questions on the follow-up study.

In response to questions about pain relief, all of those reporting (n = 17) found a statistically significant decrease in pain during and following the study intervention. Participants most likely described improvement of pain and stress for a number of reasons. This study was not intended to examine the effectiveness of HT or GI; however, it is possible that the energy exchange between HT practitioner and client effectively reduced pain levels and perception of pain that provided relief for a period of time. Learning to use GI effectively would provide increased coping skills to deal with issues of stress throughout the day. The opportunity to receive an hour of personal time and attention from the HT practitioner could contribute to increased relaxation thus affording relief of pain and stress and increasing emotional well-being.
Two participants responding to the question about stress levels were experiencing similar or greater stress levels following the intervention. Though doubtful, it is possible that a mismatch between HT practitioner and participating employee created increased stress and anxiety during and following the treatment sessions. Since the pairing of HT practitioner and employee was occurred without any attempt to match them based on any criteria, the connection of trust in the healing abilities of the practitioner may have been lacking for some. Evidence of this possibility can be found in two statements from enrollees given on the follow-up survey. One confided that there was no improvement and she “saw no benefit. I am still stressed. Migraine pain is the same. Anxiety/depression valleys and peaks are the same”. Another wrote, “The practitioner was very nice. I didn’t quite feel connected with her.” Perhaps a different HT practitioner would have made a difference in healing results.

In response to questions about emotional well-being (decreased anxiety and depression, all of those reporting (n = 17) found a statistically significant increase in emotional well-being during and following the study intervention. Comments included verbal expressions of satisfaction in emotional well-being as well with participants expressing thanks for improvement in feelings associated with anxiety and depression. One participant expressed appreciation for the HT practitioner and the work that they did together to increase energy flow and improve coping skills. “I’m a different person now than when the project started. My life is richer and so much better because of the effects of Healing Touch.”

*Intention to Continue with CAM Therapy*

Findings related to research hypothesis #4 were addressed through two questions on the follow-up survey, which conveyed participant satisfaction with therapy and an intention to continue HT/GI treatment after the intervention year. Analysis of data demonstrated that most participant responses were supportive and positively reflected enrollee satisfaction with the
HT/GI therapies [n = 16, yes = 13 (81%), no = 3 (19%)]. Inclusion of guided imagery was reflected in initial contact with enrollees, but questions on the study tools listed only Healing Touch. Both CAM therapies were employed by the HT practitioners in the intervention sessions. Knowing that they would be paying the full cost of treatment, most [n=16, yes = 4(25%), no = 12 (75%)] responded that they had made the decision not to continue. Given the opportunity to include a reason for this decision, 83% cited financial concerns for discontinuing treatment. Of the four who did continue, only one continued treatments for another 20 months. This unwillingness to pay the full cost for CAM therapy is not supported in the literature where consumers show a willingness to participate in CAM regardless of out-of-pocket costs (Barnes et al., 2004; Eisenberg et al., 1998).

The small number of study participants interested in and willing to continue HT combined with inconsistencies in sharing reasons to discontinue HT made identification of clear patterns in response to the final research hypothesis difficult. Review of comments supported participant satisfaction with the HT/GI interventions, but participants were unwilling or unable to continue following termination of the study. Though more specific reasons for discontinuing CAM therapy were not elicited from the participants, location of the company and size of the town leads to speculation that money for most employees is not readily available for other than basic needs. In this area where per capita income in 2000 averaged $23,869 (SETA, 2006), perhaps these consumers of health care viewed CAM therapies as luxuries rather than as health benefits. Previous research has revealed that major consumers of CAM therapies tend to be older, educated, and affluent women (Eisenberg, et al., 1998; Upchurch et al., 2005). It is somewhat more difficult to understand the two participants who listed a lack of time as a reason to discontinue CAM therapies when each session lasted just 60 minutes and recurred at the participant’s choosing.
Limitations of the Study

In the design of the primary study, investigators were searching for evidence of cost savings based on addressing health promotion and wellness needs of the study participants. Techniques employed in health care include cost effectiveness analysis and cost benefit analysis. Although the study was originally designed to determine cost effectiveness, measurement of the outcomes such as illness prevention, years of life added and/or improvement in quality of life experienced was not planned (Veney & Kaluzny, 2004). Neither was a comparable control and treatment group included in the design to allow the researcher to compare two groups of individuals receiving different health benefits at similar cost to the insurer. Inclusion of two clearly defined and matching groups would allow assessment of the responses of the two groups of employees in light of cost paid for the insured benefits and for the added CAM benefits in the study group. Emphasis on qualities of health such as pain reduction, stress and anxiety relief, attendance and work records would add a dimension of quality to work years measurable in a cost effectiveness analysis. Clearly the design would be strengthened if plans were included to interview and survey non-participating employees throughout the year of intervention as well as the study participants.

The primary investigators relied on the skills of certified HT practitioners to provide HT/GI interventions to the select group of enrollees in the company’s insurance health care plan. Also, the HT practitioners were asked to collect data using four study instruments, the Intake Questionnaire, the Progress Report, the QLQ-EORTC Quality of Life questionnaire, and the follow-up survey. Study participants scheduled sessions based on personal need and were not required to respond to study instruments. The variety of energy healing approaches and the irregularity of responses resulted in inconsistencies in treatment and gaps in data on all four
study instruments. These factors limited the internal validity of the study, as well as other factors discussed below.

*Sample size and data gaps.* The number of participants in the Primary study was small and varied from 30 to 41 at any one time creating difficulty in determining statistical significance. Tracking participants through the questionnaires and surveys was a challenge, since many responded to some but not all of the instruments. These data gaps made consistency in analysis extremely difficult. The primary investigator had originally planned for a core group of 20 participants. This factor may offer some explanation about the inconsistency of data collection through the 13-month period. Of the 41 original participants, data from all interview tools was complete for only two study participants. Most complete were the intake assessment tools and the follow-up surveys, although the number of responses varied from question to question. For these tools, 17 individuals provided consistent responses to questions on the follow-up survey.

*Instruments.* The secondary analysis intended for the dissertation study was hindered by lack of control of study instruments and collection of data. For example, the choice of the QLQ-EORTC quality of life instrument was made because questions that were asked on that instrument reflected the interests of the primary investigators. While validity and reliability had been well established, the original population for the QLQ-EORTC was intended to be patients with breast cancer. None of the study participants fit this criterion. Though the instrument was appropriate for some populations, another choice would have been more appropriate for this study.

*The intervention.* The study design included complementary and alternative modalities of Healing Touch and guided imagery, although each practitioner would add other techniques such as Reiki and polarity therapy based on current assessment of participant need and practitioner
certification in the different modalities. Hypnotherapy was incorporated as a healing tool for some of the study participants, again at the discretion of the HT practitioner. In addition, inconsistencies in treatment schedules combined with gaps in data responses severely limited the statistical analysis. Each participant chose appointment times based on intervals of his or her choosing. Some saw the HT practitioner weekly while others chose to have twice weekly appointments. Yet others scheduled therapy at longer intervals of 2 to 4 weeks. Each session was 60 minutes in length and included a head to toe assessment of energy flow and alignment. As a result, study participants did not receive equal treatment during the intervention year. The lack of control over the intervention was a serious limitation of the study.

Other limitations. Finally, data were collected six years ago over a 13-month period. Rapid changes in health care, in cost of health care and in consumer attitudes toward self determination in health matters may have altered the study findings.

The complexities inherent in using data collected by another investigator are numerous. Retrospection allows one to identify unanticipated differences in design, in data collection, and in initial analysis. With no control over selection of participants, identification of matching groups, choice of study instruments or collection of data, the researcher using secondary analysis is challenged to accept and work with available information only. There is no opportunity to add to or alter original data. Benefits of using secondary analysis include opportunities to recommend strengthening of the original study design to continue research in a given area. Secondary analyses are also a cost-effective way to maximize the time and effort that data collection entails. Reexamination of the original study can be used to illuminate the importance of further study of the questions involved.
Recommendations

No similar studies of inclusion of Healing Touch and guided imagery in a health benefits package have been reported in professional literature to date. Some CAM therapies are included in insurance packages, and a few companies have been formed to provide insurance coverage for consumers interested in specific CAM modalities (Alternative Health Insurance Services, 2006; Grandinetti, 1999). However, none of these companies cover energy healing or mind-body modalities, perhaps because efficacy of these treatment programs has not been conclusively presented in peer-reviewed journals. In 2004, Wardell and Weymouth reported the results of 28 studies on Healing Touch from which only six were determined to meet standards for quality research. Sample sizes were small, and results were statistically inconsistent. None included cost and insurance expenditures as variables.

The growth in popularity of HT has been the result of satisfied clients and practitioners convinced of the positive benefits of energy healing (Wardell et al., 2004). HT practitioners and their clients do not appear to be convinced of the need for research on the effectiveness of HT. They are confident that energy healing is effective. The subjective nature of consumer benefit does not fit easily with rigorous scientific investigation. While study design can and should include variables of cost impact and employer-employee satisfaction, this researcher is hesitant to recommend update and replication of this primary study until more tightly designed studies are conducted relative to the efficacy of HT in a variety of wellness issues and disease conditions. Though the last paragraph in the section above referred to previous research on HT, the focus of this study was not intended to prove the efficacy of either HT or GI. Given the nature of CAM therapies and consumer interest therein, cost and willingness of employers to include energy healing in health coverage will remain an unlikely combination.
Future work. That prediction should not deter the nurse researcher from investigation of energy healing and mind-body interventions. The researcher will want to design both quantitative and qualitative studies pairing physiological responses with subjective consumer and practitioner reports. Use of physiological markers and instruments with strong psychometric properties that can be used to measure responses will be imperative in determining efficacy at a statistically significant level. The primary study lacked matched samples for analysis thereby limiting statistical analysis. If replicated, this researcher would suggest a pilot study of 35 to 40 participants in an organization, a matched group of non-participating members, and a quality of life survey specific to the study population. Validity and reliability for all study instruments could be established as a part of the pilot study.

In the primary study, a self-insured company whose president was a patient of HT was willing to take a chance on the addition of HT/GI to the company health benefits package. Nurse researchers interested in replicating this study or in designing a similar study would need to partner with such a company or with an insurance company already covering some CAM therapies. Finding a study sample of participants committed to remaining in the study for the duration will be more difficult. Funding for CAM research is available from several sources. Receipt of grant funding would enable recruitment of study participants through some incentive promotion.

Additionally a useful approach might be to design a cost benefit analysis where program outcomes could be assessed in dollar amounts. Since cost-benefit analysis compares costs to benefits of a particular program, the results in insurance expenditures of a participant group receiving the CAM therapies could be compared with the insurance expenditures of a control group of employees who did not participate in the CAM therapies of Healing Touch and guided imagery. The information gained from a year of study interventions and insurance records would
be of value to the employer who is debating the addition of CAM therapies to an already extended insurance package. Adding employee interest and satisfaction with such therapeutic interventions could aid in the decision to be made by the employer.

Clinical relevance

Health care consumers have been seeking alternative and complementary therapies for thousands of years. Energy healing (Healing Touch) and guided imagery are less well known modalities that have been shown to partner well with traditional medical therapies. For relief of pain, stress and anxiety, HT and GI have been effective in assisting consumers to cope with the effects and side effects of traditional medicine. Issues of increased immunity and of improvement in mental health have been investigated and found to be influenced by HT in small studies (Wardell et al., 2004). Healing Touch has been a nurse-favored modality since its introduction as a certification program by Janet Mentgen in 1989 (Mentgen, 2001). The certification program available to nurses is rigorous and lengthy, ending with a year of supervised practice to ensure effective and safe practice among those who complete the program. Taught in workshops and in some schools of nursing, Healing Touch is seen as an extension of the caring and connection important to the profession of nursing (Mentgen, 2001). Clinical research designed to support the benefits of HT would add greatly to the body of nursing knowledge.

Summary

This dissertation study, designed as a secondary analysis, can provide valuable information for the health care practitioner interested in expanding the opportunities available to his or her patients. Dissatisfaction with traditional medical therapies has led increasing numbers of consumers to seek complementary and alternative therapies for unresolved health concerns. One question for future researchers centers on whether consumers benefit from CAM therapies
at all. Another question revolves around the overall cost of health care and whether employers should be willing to bear the cost for coverage that includes CAM therapies.

Studies similar to the primary investigation are needed to answer those questions. While results of the secondary data analysis were not supportive of all of the research hypotheses, the intent of the original study design was carried out. The primary study developed into a worthy pilot study that shed light on the importance of continuing to examine issues of cost impact and efficacy in adding CAM therapies to covered health care.

Perhaps the most important task ahead is to convince consumers and Healing Touch practitioners of the need for rigorous research into the benefits and potential drawbacks of CAM therapies, specifically energy healing and mind-body interventions. Given the mandate to identify and treat human responses to health concerns, nurses are expected to support and guide patients on the most efficacious treatment path. Many believe that path includes CAM modalities. Many more need statistically sound proof of the effectiveness of these non-traditional therapies.
Appendix

Figure 1: Decision Making Framework

Figure 2: Decision Making Framework - Revised

Figure 3: Average Insurance Expenditures per Enrollee in Health Benefits Plan

Figure 4: Health Concerns Prior to Study Initiation

Figure 5: Self-Reports of Levels of Pain, Stress and Emotional Well-Being

Figure 6: Individually Reported Levels of Pain

Figure 7: Individually Reported Levels of Stress

Figure 8: Individually Reported Levels of Emotional Well-Being
<table>
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<th>RECOGNITION STAGE</th>
<th>FORMULATION STAGE</th>
<th>ALTERNATE GENERATION STAGE</th>
<th>INFORMATION STAGE</th>
<th>EVALUATION STAGE</th>
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<tr>
<td>DIAGNOSIS OR HEALTH CONCERN</td>
<td>DECISION TO JOIN STUDY</td>
<td>TRADITIONAL THERAPY</td>
<td>INSURANCE EXPENDITURES</td>
<td>DECISION TO PAY FOR CAM</td>
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<td></td>
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<td>TRADITIONAL THERAPY + CAM</td>
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</table>

Legend:
CAM = Complementary and Alternative Medicine

FIGURE 1: DECISION MAKING FRAMEWORK
**DECISION-MAKING FRAMEWORK**

- **RECOGNITION STAGE**: Individual Diagnosis or Health Concern
- **FORMULATION STAGE**: Decision to Join Study
- **ALTERNATE GENERATION STAGE**: Traditional Therapy
- **INFORMATION STAGE**: Effectiveness of Intervention
- **EVALUATION STAGE**: Cost to Individual

Legend:

CAM = Complementary and Alternative Medicine

**FIGURE 2: DECISION MAKING FRAMEWORK - Revised**
Figure 3: Average Insurance Expenditures per Employee

Benefits from 1995 to 1999

- 200.00 400.00 600.00 800.00 1,000.00 1,200.00 1,400.00 1,600.00

Years

1995
1996
1997
1998
1999

Insurance Expenditures
Figure 4: Health Concerns Prior to Study Initiation

**Pre Intervention Primary Concerns**

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<th>Health Concerns</th>
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<td>Pain</td>
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</tr>
<tr>
<td>Stress</td>
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<tr>
<td>Hypertension</td>
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</tr>
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<td>Diabetes</td>
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</tr>
<tr>
<td>Asthma</td>
<td>2</td>
</tr>
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<td>Other</td>
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</tbody>
</table>

Other (one participant) = ADD, Crohn’s, Emphysema, Fibromyalgia, Glaucoma, Heart Attack, PMS, Scleroderma, Tinnitus

**Pre Intervention Secondary Concerns**

<table>
<thead>
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<th>Health Concerns</th>
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<tbody>
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<td>8</td>
</tr>
<tr>
<td>Pain</td>
<td>4</td>
</tr>
<tr>
<td>Stress</td>
<td>6</td>
</tr>
<tr>
<td>Fatigue</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
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</tr>
</tbody>
</table>

Anxiety* (Emotional Well-being includes depression)

Other (one participant) = Addison’s, Allergies, Crohn’s, Diabetes, Obesity, Thyroid
Figure 5: Research Hypothesis #3

Self-Reports of Levels of Pain, Stress and Emotional Well-Being

* Anxiety designation refers to emotional well-being (decreased anxiety and depression)
Figure 6: Research Hypothesis #3

Individually Reported Levels of Pain

*Levels of Pain: 1 = low or minimal; 10 = severe
Figure 7: Research Hypothesis #3
Individually Reported Levels of Stress

*Levels of Stress: 1 = minimal; 10 = extreme*
Figure 8: Research Hypothesis #3

Individually Reported Levels of Emotional Well-Being

*Emotional Well-Being (decreased anxiety and depression)
1 = emotionally satisfied (minimal anxiety or depression)
10 = emotionally empty (severe anxiety or depression)
References


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