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Regis University
Rueckert-Hartman College for Health Professions
Final Project/Thesis

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Rueckert-Hartman College for Health Professions Graduate Programs Final Project/Thesis

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EFFICACY OF COMPLEMENTARY AND ALTERNATIVE MEDICINE
ON PERCEIVED WELL-BEING IN GERIATRIC LONG-TERM CARE RESIDENTS

by
Shannon L. Baer

A Master's Thesis Presented in Partial Fulfillment
Of the Requirements for the Degree
Master of Science, Health Service Administration

Regis University

December, 2008

FINAL APPROVAL OF MASTER'S PROJECT

HSA696 MASTER'S THESIS

I have **READ AND ACCEPTED**

the Master's Thesis by:

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Efficacy of Complementary and Alternative Medicine
on Perceived Well-Being in Geriatric Long-Term Care Residents

Submitted in partial fulfillment of
requirements for the
Master of Science in Health Services Administration
degree at
Regis University

Primary Research Advisor: Maureen McGuire PhD

Date: December, 2008

Abstract

Non-conventional therapies have been termed and captured by the phrase *Complementary and Alternative Medicine* (CAM), since the establishment of The National Center for Complementary and Alternative Medicine (NCCAM), by the Federal Government in 1992. With the use of CAM on the rise in the baby boom population and the expectation that the number of nursing home residents is expected to double by 2020, it is imperative that healthcare providers gain more knowledge in effective means for treating the geriatric population holistically. The purpose of this study was to determine whether the implementation of a CAM intervention program in a sample of geriatric long-term care (LTC) residents would improve their perceived well-being over time. A quasi-experimental, pre-test/post-test, designed-study was chosen. Data from a control group and an experimental group were compared following the implementation of the independent variable with the experimental group. The independent variable was the CAM intervention program, which included music therapy, aromatherapy, and deep breathing exercises. Two LTC facilities participated and qualified participants for the experimental group were selected from one facility, while the qualified control group participants were selected from the alternate facility. Thirty minute CAM intervention sessions were implemented with the experimental group three times per week, over a period of four weeks, while the control group continued in their regular daily activities group. One week prior to the CAM intervention program and one week following the last CAM therapy session, participants in the control and experimental groups were instructed on completing the WHO-five Well-being Index, a five-item, valid, and reliable instrument used to measure health-related quality of life and positive psychological well-being, developed by Bech (1998). The experimental group showed a statistical difference in pre-test ($M = 11.7$) and post-test results ($M = 13.6$); whereas the pre-test

and post-test of the control group showed no significant change and the means remained the same ($M = 8.12$). The residents' overall response to CAM therapies was positive and this study provides support for the relationship between complementary therapies and well-being in geriatric LTC residents.

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Chapter 1: Introduction

In 2002, the National Institutes of Health (NIH) released a program announcement, encouraging research on interventions to improve the quality of life for residents of long-term care (LTC) institutions (2002, ¶ 1). There have been myriad studies demonstrating the efficacy in using Complementary and Alternative Medicine interventions to improve quality of life for persons with terminal illnesses, dementia, and agitated behaviors (Nelson, 2006; Remington, 2002; Tuck, McCain, & Elswick, 2001). However, there is little literature on the efficacy of using Complementary and Alternative Medicine interventions as a means of improving quality of life in the general population of geriatric long-term care residents.

A survey released in May 2004 by the National Center for Complementary and Alternative Medicine (NCCAM) found that in 2002, 36% of Americans used some form of alternative therapy in the past 12 months and 50% had used alternative therapy at some point in their lifetime (Barnes, 2004). It is imperative that healthcare providers gain more knowledge in effective means for treating the geriatric population holistically. By 2020, the number of nursing home residents is expected to double to 4 million from the 2 million who reside in nursing homes currently, an estimate influenced by growth in the population of older people in need of care (NIH, 2002, ¶ 2).

Purpose

The purpose of this study is to determine whether the implementation of a Complementary and Alternative Medicine intervention program in a sample of geriatric long-term care (LTC) residents, will improve their perceived well-being over time and examine whether there is a positive relationship between participation in a CAM intervention program.

Research Question

Does regular participation in a Complementary and Alternative Medicine intervention program by geriatric LTC resident's impact participants' perceived state of overall well-being?

Null Hypothesis

Participation in a Complementary and Alternative Medicine intervention program by geriatric LTC residents will have no impact on participants' perceived state of overall well-being.

What is Complementary and Alternative Medicine?

Within the realm of healthcare, the term *integrative care* can be defined as the combined use of non-conventional therapies with conventional therapies (NCCAM, 2007, ¶ 1) Non-conventional therapies have been termed and captured by the phrase *Complementary and Alternative Medicine* (CAM), since the establishment of The National Center for Complementary and Alternative Medicine (NCCAM), by the Federal Government in 1992. Although they are often used interchangeably, the terms *complementary* and *alternative* have separate meanings. Complementary therapies are used in addition to conventional therapies, whereas alternative therapies are used in place of conventional therapies (NCCAM, 2007, ¶ 3).

The list of CAM therapies is continually changing as new research is published and evidenced-based practices get scientifically noticed as being effective. Some examples of CAM therapies include aromatherapy, pet therapy, relaxation techniques, music therapy, art therapy, guided imagery, massage therapy, acupuncture, meditation, homeopathy, herbal medicine, and chiropractic interventions, just to name a few. A study focusing on the use of CAM to improve well-being in hospice residents (Nelson, 2006), found that “while complementary therapies did not necessarily provide a cure-all for all ailments,... (they did offer) residents a sense of well-

being that contributed to an experience of being more in tune with life” (152). In August 2001, the *Annals of Internal Medicine* published the results of a study entitled, *Long-Term Trends in the Use of Complementary and Alternative Medical Therapies in the United States*, which concluded that the “use of CAM therapies... is the result of a secular trend that began at least a half century ago... (and) suggests a continuing demand for CAM therapies that will affect health care delivery for the foreseeable future” (262).

Relevance of CAM for Health Services Administrators

The importance of recognizing and implementing CAM interventions within mainstream health care systems is growing, as does the interest for such interventions in the general population. Health Services Administrators will be increasingly tasked with having the knowledge and ability to offer these services to their patient population, in order to meet demands and stay competitive (Kessler, Davis, Foster, Van Rompay, Walters, Wilkey, Kaptchuk & Eisenberg, 2001).

There is a potential for the use of CAM to lower healthcare costs, as more costly western medicine interventions may be less necessary with the benefits patients should receive from CAM therapies. Additionally, one study found that the “caring culture” created with the implementation of CAM may positively influence job satisfaction and retention of healthcare workers (Nelson, 2006). The idea of fostering a caring culture should also increase patient and family satisfaction.

These interventions may be particularly useful for administrators of residential, LTC facilities. Health factors which impact the geriatric population are often more difficult to treat than in their younger counterparts, as people become more sensitive to medications with age (Avorn, Gurwitz & Rochon, 2003). According to the National Institutes of Health, CAM

interventions are non-invasive, and generally thought to be safer and more natural by those who use them personally or in professional practice (2007, Spring). Research demonstrates the efficacy of CAM to address psychological, social, and spiritual symptoms, which are often overlooked by healthcare providers, yet so prominent for LTC residents facing end-of-life issues (Klausner, Alexopoulos, 1999).

According to the National Institutes of Health, a report by the Institute of Medicine in 2000 concluded that there were significant positive changes, which occurred in the realm of LTC over the 15 years prior to the report. However, they reported quality of life for nursing home residents only improved minimally, with significant problem areas still needing attention (NIH, 2000, ¶ 1). “The continuing increase in lifespan for the U.S. population, including those with chronic diseases or disabilities that require long-term care will create a demand for more and improved quality of long-term care” (NIH, 2002, ¶ 4).

Chapter 2: Literature Review

Complementary and Alternative Medicine Defined

The National Center for Complementary and Alternative Medicine was established by the Federal Government in 1992 and defines CAM as “a group of diverse medical and healthcare systems, practices, and products that are not presently considered to be a part of traditional medicine” (NCCAM, 2007, ¶ 2). According to NCCAM, the mind-body approaches of CAM, which focus on “the interactions among the brain, mind, body, and behavior, and on the powerful ways in which emotional, mental, social, spiritual, and behavioral factors can directly affect health” (2007, ¶ 4), are evidenced through research to positively impact quality of life and psychological functioning, “and may be particularly helpful for patients coping with chronic illness and in need of palliative care” (NCCAM, 2007, ¶ 5).

Reasons People Use CAM in Conjunction with Traditional Medicine

Bodane and Brownson (2002), write, “As consumers and health care professionals gain knowledge of complementary and alternative therapies through research and personal experience, they discover that many therapies offer positive results, filling in a void that exists within conventional medicine” (p.21). A study by McCaffrey, Pugh, & O’Connor, (2007) revealed that patients who use CAM and orthodox medicine believe the combination of both is better than either alone and that “health is a combination of physical, emotional, and spiritual well-being” (p.1500). Participants of various studies have shared their dissatisfaction with conventional medicine for reasons such as, feeling rushed, feeling as though they were not heard by providers, feeling as though their complaints were quickly dismissed, and feeling failed by conventional medicine (Furnam & Kirkcaldy, 1996; Furnam, Vincent, & Wood, 1995; McCaffrey, Pugh, & O’Connor, 2007; McGregor & Peay, 1996). Other studies have identified

that a large portion of primary care providers who refer patients to CAM do so based on patients' requests, demands, and expressed interest (Borkan, Neher, Anson, & Smoker, 1994; Boucher & Lenz, 1998).

According to Eliopoulos (1999), some CAM options offer a safer alternative to conventional medicine interventions, while still noting that sometimes one may find conventional interventions to be the best choice. She also writes that CAM treatments often offer lower risks than more orthodox interventions, while also promoting a sense of empowerment in persons who use them (Eliopoulos, 1999). Kaptchuk also acknowledges the "natural" appeal of CAM in discussing the "unambiguous set of moral polarities: natural versus artificial, pure versus toxic, organic versus synthetic, low-technology versus high-technology, and coarse versus processed" (1998, p.261). The National Institutes of Health describe CAM interventions as non-invasive and identified by those who use them as being more natural and safe than many conventional medicine treatments (2007, Spring).

CAM as a Means of Cutting Medical Costs

According to Bodane and Brownson, our ability to enact better health for our nation's population does not measure up to other countries, despite statistics which demonstrate we spend more money on health care than any other country (2002). Many proponents of CAM identify CAM therapies as cost-effective alternatives to expensive conventional medicine treatments (Eliopoulos, 1999; Ernst, 1997; Ness, Dominic, Cirillo, Weir, Nisly, & Wallace, 2005; Nichols, 2005). However, there is some question as to whether implementation of CAM can actually help to minimize the amount of health care dollars spent (Ernst, 1997; Willison & Andrews, 2003) and further studies are needed to answer this question conclusively.

Use of CAM by the Older Adult Population

There is a great deal of literature indicating the prevalence of CAM use among the elderly population (Emslie, Campbell, & Walker, 1996; Himmel, 1993); with most data suggesting it's use is most prevalent among more highly educated females (Cherniack, Senzel, & Pan, 2001; Ness, Dominic, Cirillo, Weir, Nisly, & Wallace, 2005; Nichols, 2005; Tilden, Drach, & Tolle, 2004; Wellman, Kelner, & Wigdor, 2001). In a large 2006 study, which looked at the use of CAM by older adults with mental health problems, Grzywacz, Suerken, Quandt, Bell, Lang, and Arcury found that older adults with anxiety or depression were more likely to use CAM therapies than those without mental health problems. However, the majority reported use of CAM for reasons other than symptoms related to mental illness.

There is also a variety of literature, which cites older adults who do not take advantage of CAM to address chronic pain and psychosocial issues may share a few common reasons: the generational belief that medical professionals know all there is to know about health care (Wellman, Kelner, & Wigdor, 2001) and the common spiritual belief systems, held by many older adults, that they cannot look to the world or “new age” for healing, but only to their higher power (Eliopoulos, 2006; Eliopoulos, 1999, p.141).

In a report entitled, *Use of Complementary Medicine in Older Americans: Results From the Health and Retirement Survey*, the authors suggest CAM use in older adults must be more thoroughly researched as it looks to be a valuable treatment alternative for this age group, due to higher consumption of healthcare and common lifestyles based on fixed or limited income (Ness, Dominic, Cirillo, Weir, Nisly, & Wallace, 2005).

Relevance for Using CAM with Residents of Long-term Care

In Fraser and Kerr's 1993 study, they note "the dehumanizing effects of institutional care in a health care milieu where technological advance and cure are dominant have had serious and profound implications for elderly, chronically ill patients" (p.238). Herbert and Cohen discuss a person's loss of control, or independence, as a contributor to decreased immune system functioning (2001). Fraser and Kerr identify the act of human touch as a means of breaking down that barrier and suggest the common absence of touch for older adults in LTC contributes to a decreased sense of self-worth and increased feelings of being undesirable by others (1993). They also make an important point that elders are more sensory deprived than their younger counterparts, due to vision and hearing impairments that come with age and increased use of touch would be one means filling that sensory void (1993).

Gaylord and Crotty cite several factors, which support the use of CAM in LTC, in conjunction with, or in place of, conventional therapies. Some CAM approaches offer benefits similar to those provided by pharmaceuticals, which often come with harsh side effects when taken by older adults (Gaylord & Crotty, 2002; Woods, Craven, & Whitney, 2005). Gaylord and Crotty also write, "recent legislation restricting the use of physical restraints has intensified the need to find other means of managing agitated behavior" (p. 64).

Gaylord and Crotty also discuss a benefit of some CAM techniques which may be particularly useful for LTC residents, which is their ability to provide an outlet for socialization (2002), including Tai Chi, Qigong, group meditations, group breathing exercises, as well as music therapy, pet therapy, and aromatherapy when offered in a group setting (2002). They write, "many older people have lost their spouse or close siblings and friends, and are therefore at increased risk of becoming isolated and depressed" (p.75). Burton and colleagues identify depression as an impediment to recovery from physical health problems (2004). In a case study

conducted by Rowell, Lawrence, & Hawk, an elderly woman's depression is lifted with the introduction of the CAM technique, *Chiropractic Care* (2005).

According to McBee, 71% of residents in LTC endure pain in some form and 34% report chronic pain (2003). In a case study report, they write that older adults can benefit from CAM to treat pain, as pain medications do not always provide adequate relief and often offer additional uncomfortable side effects (McBee, 2003).

Research identifies the problem in LTC, in which residents facing end-of-life issues often have the associated psychological, social, and spiritual symptoms completely overlooked by their providers; they point to CAM interventions as an effective means of addressing these issues (Howdysshell, 1998; Klausner & Alexopoulos, 1999; McBee, 2003; Nelson, 2006).

CAM as a Means of Improving Well-Being and Quality of Life

Nelson (2006) defines well-being as, "the interactions between physical, psychological, social, and spiritual dimensions as interpreted through the individual's culture and value system" (p. 4). She points out that symptoms from all of these areas have a combined impact on a person's overall sense of well-being and believes CAM therapies can relieve these symptoms or control these symptoms (Nelson, 2006).

There are recommendations at the federal level, which support research on CAM as a means of improving overall well-being and quality of life, specifically within the realm of LTC (NIM, 2002, ¶ 1). In a survey conducted by Williamson, Fletcher, and Dawson, they concluded the older adult participants primarily used CAM to improve on their current quality of life, relieve pain, and to at least maintain current health status (2003). Additional surveys have also cited a large number of responses indicating the use of CAM purely to improve overall well-being (Ernst, 2000).

One study conducted in 1996 with patients who were undergoing rehabilitation after myocardial infarctions, concluded from various means of data collection, that complementary medicine did not have an impact on improved health or quality of life. However, when patients were specifically asked if they found it to be beneficial, the verbal responses were quite favorable (Jones, 1996).

There are arguments made for continued research on CAM as a means of improving quality of life, as current treatments offered by orthodox medicine are unable to touch this area (Meeks, Wetherell, Irwin, Redwine, & Jeste, 2007). McBee supports the notion that implementation of CAM in LTC settings can improve quality of life for older adults (2003).

Types of CAM More Easily Used with Older Adult Population

In, *Complementary and Alternative Medicine Interventions for Nursing Home Residents*, McBee offers a brief list of CAM interventions most suitable for nursing home residents including: aromatherapy, gentle massage, guided imagery, meditation, and deep breathing (2003). These interventions, in addition to music therapy, are non-invasive, cost-effective techniques, which are relatively easy techniques for LTC staff to implement with little training (Remington, 2002).

The CAM Interventions of Touch and Massage Therapy

The gentle manipulation of soft tissues during massage therapy has been cited to increase a person's sense of well-being and relaxation (Bodane & Brownson, 2002), although Eliopoulos reminds practitioners that "tissue fragility and reduced muscle mass warrant special consideration when massaging older adults to avoid injury" (2006, p.1).

In a small study looking at the psychological effects of back massage with institutionalized older adults, there was no statistical significance showing benefits, although

participants did verbally indicate they found the massage to be quite valuable in reducing anxiety and promoting relaxation (Fraser & Kerr, 1993). Lorenzi identifies massage as a valuable therapy for older adults in terms of decreasing pain and stiffness, and increasing mobility. She also believes the act of massage can enhance overall health and well-being (1999). McBee writes about massage in terms of its qualities of enhancing well-being and reducing pain (2003). In, *Energy Balancing Through Touch For Health*, Gottesman writes that touch and massage promote feelings of self control and optimal health for individuals (1992). Howdyshell discusses the need to be touched throughout all stages of life and also writes about the property of massage, which creates a sense of empowerment and choice for its recipients (1998).

The CAM Intervention of Music Therapy

There have been a number of studies looking at the effects of music on persons with Alzheimer's disease or other types of dementia, especially those with aggressive behaviors, and the results have been mixed with the majority ranging from no effect to positive benefits in decreasing aggression at least on the short-term (Gerdner, 2000; Goddaer, 1994). In a study which looked at the impact of various types of music on participants' stress levels, Mornhinweg found that baroque, classical, and new age music can induce relaxation (1992). Schroder-Sheker defines music therapy as "the systematic application of music to engage and support life processes and produce deep relaxation in the patient, which , in turn, contributes greatly to the alleviation of physiological and emotional pain" (1994).

The CAM Intervention of Aromatherapy

In the article, *Scents or Nonsense: Aromatherapy's Benefit Still Subject to Debate*, Nelson identifies stress reduction, emotional regulation, relaxation, and improved immune system functioning, as just a few of the benefits that can be realized through aromatherapy

(1997). Lorenzi points out the mind-body benefits of aromatherapy and describes its energy balancing properties, which she says can safely be used in combination with any other therapy “to enhance quality of life” (1999, p.129). Proponents of aromatherapy find it valuable for promoting relaxation, healing, and well-being (Louis & Kowalski, 2002; McBee, 2003). Howdysshell acknowledges the benefits of aromatherapy for inducing relaxation and sleep and notes that it has been shown to have equal benefits to the prescription sleep drug, Temazepam (1998).

The CAM Intervention of Relaxation Therapy

Mindfulness meditation and concentration meditation both fall under the umbrella of CAM approaches and research suggests both can be helpful for inducing relaxation and reducing stress (Gaylord & Crotty, 2002; Lorenzi, 1999). Other forms of relaxation therapy are imagery, progressive muscle relaxation, music, and deep breathing exercises (Lorenzi, 1999; McBee, 2003), which are noted in the literature to increase immune system functioning and to decrease stress, fatigue, pain, and sleep disturbance (Benson, 1976; Ceccio, 1984; McBee, 2003; Wells-Federman, Stuart, Deckro, Mandel, Baim, Medich, & 1995).

Resistance to CAM Use

There has been resistance toward alternative therapies by the medical community for many years; the American Medical Association was founded in the 1900s in an attempt to align the medical community in standing up against these therapies (Bodane & Brownson, 2002). In the same article, Bodane and Brownson identify massage therapy as being the one commonly accepted alternative therapy by the medical community, even at this point in time (2002). In, A Systematic Review of Systematic Reviews (2002), Ernst concluded there is no evidence supporting the CAM approach of homeopathy as an evidenced-based form of therapy and is

viewed by some in the orthodox medical community as quackery. Although this is only one of many interventions under the umbrella of CAM, some people apply this perspective toward all forms of CAM (Eliopoulos, 1999).

Resistance toward implementing CAM therapies within LTC settings comes from a variety of sources, according to Cody, Beck, & Svarstad (2002). In their article discussing these barriers they identify the following as being the most common: infrequent communication between residents' physicians and staff, ethnic background of employees incongruent with CAM therapies, minimal training of frontline staff, staffing shortages, and reluctance to replace pharmaceutical interventions with non-pharmacologic therapies for fear of increased problematic behaviors and subsequently, increased workload (2002).

Gaylord and Crotty (2002) also point to a general unfamiliarity with CAM techniques, associated cost-prohibitive issues, increased staffing time which may be indicated to assess for CAM appropriateness and to actually carry out the CAM therapies, and pressure from the pharmaceutical industry, as other areas of resistance to implementation of CAM in LTC. They also counter these areas of resistance by pointing out "these costs may be offset by treatment efficacy that leads to quicker recovery, fewer negative side effects, increased participation of the patient in the healing process, and decreased recidivism" (2002).

Demand of Continued CAM Utilization for the Foreseeable Future

With various studies indicating increased use and endorsement of CAM by the Baby-Boom population, many interpret this as an indication we will see a demand for these therapies to be offered within LTC settings, as that generation grows older (Astin, Pelletier, Marie, & Haskell, 2000; Eisenburg et al, 1998; Tilden, Drach, & Tolle, 2004; Wellman, Keiner, & Wigdor, 2001; Willison & Andrews, 2003).

In, *Complementary and Alternative Medicine Interventions for Nursing Home Residents*, McBee cites the commonality for families of nursing home residents to request CAM interventions be used with their loved ones (2003). These families are made up of adult children of the baby-boom era, which would also support the above notion that “interest in CAM therapies is likely to increase as our population ages” (McBee, 2003).

A survey conducted of 2000 retired adults across America in 2005 concluded that “the magnitude and patterns of CAM use among elders lend considerable importance to this field in public health policy making and suggest a need for further epidemiological research and ongoing awareness efforts for both patients and providers (Ness, Cirillo, Weir, Nisly, & Wallace, 2005). In a 2001 survey of 2,055 participants across the United States, 67.6% endorsed using a CAM therapy at least once in their lifetime (Kessler, R., Davis, R., Foster, D., Van Rompay, M., Walters, E., Wilkey, S., 2001), which would also support the recommendation for health care professionals to educate themselves about CAM and for continued research to be conducted in the field.

Recommendations for Increasing the Implementation of CAM in LTC

Cody, Beck, & Svarstad identify the necessity for LTC administrators to fully embrace CAM and provide a safe environment for communication and teamwork, to make successful implementation of CAM possible (2002). They also discuss the resident-centered culture of care being more amenable to CAM as it tends to foster a staff and resident mentality of holistic health with a focus on all bio-psycho-social aspects of health (Cody, Beck, & Svarstad, 2002). With CAM use on the rise, we may also begin to see the role of State Surveyors more consistently recommending and reinforcing the use of these interventions, which would help to promote CAM implementation in LTC (Cody, Beck & Svarstad, 2002).

Dunn identifies promotion and teaching of holistic, self-care activities to older adults, as a means optimizing health (2007). Nurses can rise to the challenge of providing older adults maximum treatment of bio-psycho-social health issues by offering a combination of conventional medicine and CAM interventions for an optimal outcome with the least possible risks (Eliopoulos, 1999). Physicians should also play a more active role in discussing CAM with their patients (Meeks & Jeste, 2007). In, *Complementary and Alternative Medicine Use by Older Australians*, Zhang, Xue, Lin, and Story found that elderly persons are more likely to inform their doctors about CAM use than younger adults, but they still identify the need for doctors to make it a priority to ask individuals about their preference or knowledge of CAM (2007). “Holism involves understanding the individual as a unitary whole in mutual process with the environment” (Dossey, Keegan, & Guzzetta, 2000, p.28). CAM cannot truly be integrated into mainstream health care practices until practitioners begin to think differently about treating patients as people rather than addressing their disease as separate from their humanity (Gaylord and Crotty, 2002). In doing so, Rew discusses the secondary nature of this process, in which the patient and the nurse become equal players in the healing process (2000). Gaylord and Crotty acknowledge this challenge as being very difficult, although extremely rewarding once accomplished (2002).

“In an era of abbreviated office visits and hospital stays, CAM practitioners provide older adults with the time and attention that they need. Also important to geriatric care, CAM emphasizes self-care and empowers older individuals with the knowledge, skills, and encouragement that support it” (Eliopoulos, 2006, p.1).

Chapter Three: Methods

Several health agencies and health institutes have released announcements and federal mandates, encouraging research on interventions to improve the quality of life for LTC residents and the need for more research on CAM. Interest and demand for CAM therapies is likely to increase as our population ages (McBee, 2003). Healthcare administrators with the intentions of staying competitive, lowering healthcare cost, improving and maintaining quality of life in the LTC population, and supplementing traditional care, need to be knowledgeable in CAM practices and have the ability to provide these services to their patient population (Kessler, Davis, Foster, Van Rompay, Walters, Wilkey, Kaptchuk & Eisenberg, 2001). The ability to offer these viable services and create a caring culture should also increase patient fulfillment, family satisfaction, and employee retention and satisfaction (Nelson, 2006).

Design

For this study, a quasi-experimental, pre-test/post-test, designed-study was chosen because data from two separate groups, a control group and an experimental group, were used to compare the groups following the implementation of an independent variable with the experimental group. The purpose of this quasi-experimental, pre-test/post-test, designed study, was to quantify the effects of regular participation by geriatric LTC residents in a CAM intervention program and determine whether participants' perceived state of overall well-being is impacted.

Clearance to use human subjects and permission to conduct this research project was presented to the Institutional Review Board (IRB) at Regis University in Denver, Colorado. Succeeding approval by the IRB, the research design was explained and permission to conduct this study was obtained from each nursing home administrator at the two facilities involved.

The research team consisted of three people: one Licensed Clinical Social Worker (LCSW), one Licensed Professional Counselor (LPC), and the primary investigator, all of whom have been trained in holistic healing and CAM therapies. The LPC remained blind to the interventions process and assisted the subjects in completing the pre-test and post-test aspects of the research. The LCSW was responsible for facilitating all of the CAM intervention sessions.

Between April and July of 2008, thirty minute CAM intervention sessions were implemented with the experimental group three times per week, over a period of four weeks. A list of residents meeting the qualifying criteria of the study was provided to the research team by a long-term care facility. The control group consisted of 16 qualifying participants from a separate LTC facility who continued in their normal activities over the same period of time; CAM therapies were not administered to this group. The LPC, who was blind to the study, distributed the WHO-5 Well-Being Index to the experimental and control groups, provided instructions for completing the instrument, and then collected the completed instrument from each participant one week prior to and one week after the four week experimental period.

Subject Sample Inclusion Criteria

The sample population consisted of 39 LTC residents. These included a combination of men and women, chosen from two urban LTC facilities. Qualifying criteria required participants be age 60 or older, possess the ability to read and speak English, and have a preexisting score of 24 or higher on the Mini-Mental Status Examination (MMSE), also known as the Folstein test (Folstein, M., Folstein, S., McHugh, P., 1975). Demographic data such as sex and race were not considered.

The MMSE is a brief 30-point questionnaire that is used to assess cognition. It is commonly used in healthcare to sample various functions including, arithmetic, memory and

orientation (Folstein, M., Folstein, S., McHugh, P., 1975). Only elderly residents who were cognitively capable of participating, as determined by the preexisting MMSE, were considered as potential subjects. Secondary data used from the preexisting MMSE had been previously collected by the LTC facility during or prior to admission and was already a part of the residents' permanent medical file. MMSE's were not conducted during or for the purpose of this research.

Qualifying participants were recruited through first being approached by a facility staff member who offered a brief explanation/invitation. If the resident was interested in learning more, the staff member provided them an informative form letter, written by the investigator, which detailed their potential involvement in the study. Those who elected to participate notified the pre-determined staff member and their name was placed on the list provided to the research team.

Subject Sample Exclusion Criteria

Exclusion criteria included cognitive impairment represented by a MMSE score lower than 24 and persons less than 60 years of age. Any person not meeting these criteria will be excluded from this study.

Independent Variable

The independent variable of this study is the CAM intervention program, which includes music therapy using instrumental new age music, aromatherapy using essential lavender oil, and deep breathing exercises.

Dependent Variable

The dependent variable is the residents' perceived state of well-being assessed through psychological measures.

Instrumentation

One week prior to the CAM intervention program and one week following the last CAM therapy session, participants in the control and experimental groups were instructed on completing the WHO-five Well-being Index (WHO-Five, WHO-5, or WBI) (1998 version), a five-item, valid, and reliable instrument used to measure health-related quality of life and positive psychological well-being, developed by Bech (1998). Each of the questions on the WHO-5 is rated on a 6-point Likert scale from 0 (= not present) to 5 (= constantly present). The WHO-5 includes five positively worded questions which cover positive mood (good spirits, relaxation), vitality (being active and waking up fresh and rested), and general interests (being interested in things) (Bech, 1998).

Interventions

Music therapy was implemented using instrumental new age music. Studies of music therapy have revealed its potential to be a valuable CAM technique for a variety of medical conditions (Bonny & McCarron, 1984; Mornhinweg, 1992).

Aromatherapy was implemented using essential lavender oil. How was it implemented ie lotion , infuser etc It has been found valuable for promoting relaxation, calming effects, healing, and well-being (Louis & Kowalske, 2002; McBee, 2003).

Meditation and deep breathing exercises were taught and led by the LCSW, at the same time the music and aroma-therapies were being implemented. These exercises can be helpful for inducing relaxation and reducing stress (Gaylord & Grotty, 2002; Lorenzi, 1999).

Data Collection procedures

After receiving IRB approval a list of names of persons, with MMSE scores of 24 or higher and age of 60 or older, was provided to the investigator by the administrator from each of

the participating facilities. Both facility names were placed in a hat and one was drawn blindly and subsequently determined the experimental group. The facility left in the hat was the control group. One week prior to the CAM intervention program, persons who met the abovementioned criteria were gathered to meet the investigator. During this meeting participants were educated on the general design of the CAM therapies sessions, ability to withdraw at any time, and data confidentiality. Following verbal agreement to participate in the study, written explanations of the aforementioned items were distributed and written consent was obtained. Upon enrollment, the WHO-5 five-item questionnaire was distributed and explained by the LPC assisting with this research. Participants completed the WHO-5 one week before implementation of the CAM intervention program and one week after completion of the last CAM session. Questionnaires were collected by the abovementioned LPC and assigned an alphabetical letter for patient confidentiality and identification purposes.

Data Analysis

Data analysis occurred after the second questionnaire was completed by each participant and collected one week following completion of the four week CAM intervention program. Each of the five questions on the WHO-5 is rated on a 6-point Likert scale from 0 (= not present) to 5 (= constantly present). The theoretical raw score ranges from 0 to 25 and is transformed into a scale from 0 (worst thinkable well-being) to 100 (best thinkable well-being) (Bech, 1998). Thus, higher scores indicate better well-being.

The raw score was obtained by adding the figures in the boxes, scores range from 0 to 25. A score below 13 indicated poor well-being. In order to monitor possible changes in well-being, the percentage score is used. The percentage value was obtained by multiplying the score by 4. A 10% difference indicates a significant change (Bech, 1998). Scores from individual participants

in each group were added together to obtain one summary score. Pre and post test summary scores were compared for any change in overall quality of life. A dependent t-test was used to determine whether the means of the two groups were statistically different from one another.

The hard copy data collected was stored in a locked file cabinet and all electronic data was saved and secured via password. Only the investigator had access to the data. All data will be kept for seven years, according to IRB regulations.

Chapter Four: Results

Statistical Findings

The purpose of this quasi-experimental study was to determine whether the implementation of a Complementary and Alternative Medicine intervention program in a sample of geriatric long-term care (LTC) residents improved their perceived well-being over.

A purposive, nonrandom population of 39, LTC residents participated in this study; 16 in the control group and 23 in the experimental group. On average, participants attended 6 out of 12 CAM therapy sessions. The residents' overall response to CAM therapies was positive and this study provides support for the relationship between complementary therapies and well-being in geriatric LTC residents.

An independent sample *t* test was performed comparing the mean Well-Being index score for the intervention group ($M = 11.7$) with that for the control group ($M = 8.12$). The confidence interval was set at .05; this test was found to be statistically significant, $p \leq .001$. This indicates that the CAM interventions did increase overall well-being by 15.2% and there is a positive relationship between participation in a CAM intervention program and perceived well-being.

The post-test means of overall well-being in the experimental group and in the control group are presented in Table 1. The experimental group showed a statistical difference in pre-test ($M = 11.7$) and post-test results ($M = 13.6$); whereas the pre-test and post-test of the control group showed no significant change and the means remained the same ($M = 8.12$).

Thus, the researcher rejects the null-hypothesis that regular participation in a Complementary and Alternative Medicine intervention program by geriatric LTC residents will have no impact on participants' perceived state of overall well-being, concluding instead that it makes a significant difference in overall well-being.

Table 1
Paired Samples Test

Paired differences								
				95% Confidence Interval of the Difference				
	Mean	Std. deviation	Std. error mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1								
Pre-post	-1.86957	2.34141	.48822	-2.88207	-.85706	-3.829	22	.001
a. group = 2.00								

Chapter Five: Discussion

Conclusion

It is apparent in this study that the use of CAM therapies in LTC facilities does impact the overall well-being of geriatric LTC residents. As the need for complementary alternative medicines increase in the geriatric population, so does the importance for healthcare professionals to gain knowledge of alternative therapies to meet consumer demands and provide an alternative intervention to conventional medicine and care.

Findings here coincide with the research by Gaylord and Crotty, which support the use of CAM in LTC, in conjunction with, or in place of, conventional therapies (Gaylord & Crotty, 2002). McBee also supports the concept that implementing CAM into a LTC setting can improve quality of life for older adults (2003).

In striving to meet the demand for CAM implementation in LTC, it is important to recognize the challenges which will likely be faced. One obvious challenge is the cost of implementing such. Although many of the interventions themselves can be relatively inexpensive, facilities may be reluctant to take on the expense of hiring a clinician to implement the interventions. One way to overcome this challenge would be to solicit volunteers or persons currently in school for holistic therapies. Another option would be to train CNA's or activities staff already employed by the facility to implement the interventions as part of their daily routine.

Another challenge in implementation of CAM of within LTC settings would be that of ongoing participation by residents. Many residents of LTC facilities struggle with memory impairment and other physical disabilities, which would require staff assistance to ensure regular participation in CAM activities. One means of overcoming this obstacle would be to educate

staff and families on the benefits of CAM in hopes of enlisting their support. Admittedly, this could be an ongoing challenge in itself with the high turnover rates of LTC staff.

Limitations

Purposive sampling was used in this study which could bring in biases which may not have been known. However, the researcher argues that the population studied is representative of the geriatric long-term care community.

Carrying out a research study in a LTC facility presents numerous obstacles, for which the researcher has no control. Although an effort was made prior to the beginning of the study to ensure staff assisted residents to and from CAM sessions this was not always the case, which could have led to a decrease in consistent resident attendance.

Further Research

This study should be replicated with a number of similar samples to decrease the likelihood of selection bias. Given the challenges to implementing CAM within LTC settings, studies focused on training CNA's on the use of CAM would likely help to address additional obstacles from the perspective of the caregivers and may help to illuminate the best methods of training frontline staff.

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Appendices

Appendix A: WHO (Five) Well-Being Index (1998 version)

Please indicate for each of the five statements which is closest to how you have been feeling over the last two weeks.

Notice that higher numbers mean better well-being.

Example: If you have felt cheerful and in good spirits more than half of the time during the last two weeks, put a tick in the box with the number 3 in the upper right corner.

	Over the last two weeks	All the time	Most of the time	More than half the time	Less than half the time	Some of the time	At no time
1	I have felt cheerful and in good spirits						
2	I have felt calm and relaxed						
3	I have felt active and vigorous						
4	I woke up feeling fresh and rested						
5	My daily life has been filled with things that interest me						

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Appendix B: Experimental Group Consent Letter

Thank you for agreeing to participate in this study which will take place beginning mid to late-May and lasting six weeks. This form outlines the purposes of the study and provides a description of your involvement and rights as a participant.

The purposes of this project are:

- 1) To fulfill a graduate requirement toward a Masters degree in Health Services Administration at Regis University's Rueckert-Hartman College for Health professions.
- 2) To gain insight and experience in the area of Complementary and Alternative Medicine.

The methods to be used to collect information for this study are explained below:

One week before initiation of the study, you will be asked to complete a five item survey, entitled the WHO-5 Well-Being Index, in which you will rate five statements according to how you have been feeling over the two weeks prior.

Beginning in mid to late May, you will take part in 30 minute group sessions, three times weekly, over the course of four weeks. These sessions will be facilitated at XXX, by a clinician trained in the use of aromatherapy, music therapy, and breathing exercises. In conjunction with the music and aroma therapies, the clinician will lead you in relaxation breathing exercises for the duration of the 30 minute sessions. There will be no hands-on interventions, no topical interventions, and no invasive interventions utilized in this study.

One week after completion of the four week program, you will be asked to again complete the five item survey identified above – the WHO-5 Well-Being Index.

You are encouraged to ask any questions at any time about the nature of the study and the methods that I am using. Your suggestions and concerns are important to me; please contact me at any time at the phone number listed above.

The potential benefits of being involved in this study include:

- 1) The ability to contribute to improved services for residents of long-term care facilities.
- 2) The ability to contribute to valuable research.
- 3) You may also find enjoyment and/or therapeutic benefit from participating in this study.

The potential risks of being involved in this study include:

- 1) Participants who find they benefit from the therapies offered through this study could possibly experience a regression or decline once the study is completed and they are no longer participating in the therapies which were once beneficial.
- 2) Although there has been a great deal of researched and documented benefits from aromatherapy, music therapy, and relaxation breathing exercises, there is always the potential of negative emotional or physiological reactions with any therapy; the therapies mentioned above would not necessarily be excluded. A reaction of this sort would be considered rare.

I guarantee that the following conditions will be met:

- 1) Your name will not be used at any point of information collection, or in the written research report.
- 2) Your participation in this research is voluntary; you have the right to withdraw at any point of the study, for any reason, and without any prejudice.
- 3) Your decision to participate or not participate in this study will not influence the services you receive at XXX.
- 4) If you would like a copy of the results of this study, one will be provided for you at your request.

By signing below, I am agreeing to participate in this research and am providing informed consent for this study.

Respondent _____ Date _____

Appendix C: Experimental Group Information Letter

WHO:

You, as a resident of XXX, are invited to participate in a study to assess the impact of participation in various activities offered at your facility.

WHAT:

Two facilities have been invited to participate in a valuable research study and XXX is one of those! We would gratefully appreciate your participation in completion of a five item survey, entitled the WHO-5 Well-Being Index, in which you will rate five statements according to how you have been feeling over the two weeks prior. We are asking that you complete this survey once at the beginning and once at the end of a six week time frame.

WHEN:

Beginning the first week in June, you will have the opportunity to participate in various activities which will occur three times every week, over a span of four weeks. These activities will occur at XXX. A member of the research team will meet with you and instruct you on completing the above mentioned survey. The survey, which should take no more than ten minutes, will be collected by the same person who instructed you. This process will be repeated 6 weeks later.

WHY:

We would like to determine whether different activities, within a long-term care setting, will increase participants' perceived state of overall well-being.

Upon completion of this four week commitment, you will receive a *gift* in appreciation for your participation, if you choose to participate in this study. Additionally, we hope you will reap the *multiple physical and emotional health benefits* which others have received from these therapies!

Thank you for your consideration to participate in this important research opportunity!

Please notify Shannon Baer, Researcher, at XXX if you are interested in participating, or if you have any questions.

Appendix D: Control Group Consent Form

Thank you for agreeing to participate in this study which will take place in mid to late- May and lasting for six weeks. This form outlines the purposes of the study and provides a description of your involvement and rights as a participant.

The purposes of this project are:

- 1) To fulfill a graduate requirement toward a Masters degree in Health Services Administration at Regis University's Rueckert-Hartman College for Health professions.
- 2) To gain insight and experience in the area of Complementary and Alternative Medicine.

The methods to be used to collect information for this study are explained below:

You will be asked to complete a five item survey, entitled the WHO-5 Well-Being Index, in which you will rate five statements according to how you have been feeling over the two weeks prior.

Approximately six weeks later, you will be asked to again complete the five item survey identified above – the WHO-5 Well-Being Index.

You are encouraged to ask any questions at any time about the nature of the study and the methods that I am using. Your suggestions and concerns are important to me; please contact me at any time at the phone number listed above.

The potential benefits of being involved in this study include:

- 1) The ability to contribute to improved services for residents of long-term care facilities.
- 2) The ability to contribute to valuable research.

I guarantee that the following conditions will be met:

- 1) Your name will not be used at any point of information collection, or in the written research report.
- 2) Your participation in this research is voluntary; you have the right to withdraw at any point of the study, for any reason, and without any prejudice.
- 3) Your decision to participate or not participate in this study will not influence the services you receive at XXX.
- 4) If you would like a copy of the results of this study, one will be provided for you at your request.

By signing below, I am agreeing to participate in this research and am providing informed consent for this study.

Respondent _____ Date _____

Appendix E: Control Group Information Letter

You, as a resident of XXX, are invited to participate in a study to assess the impact of a Complementary and Alternative Medicine Program on overall well-being.

WHAT:

Two facilities have been invited to participate in a valuable research study and XXX is one of those! Of the two facilities, XXX was randomly assigned to the Control Group, meaning we will not be implementing a Complementary and Alternative Medicine Program at your facility. However, we would gratefully appreciate your participation in completion of a five item survey, entitled the WHO-5 Well-Being Index, in which you will rate five statements according to how you have been feeling over the two weeks prior. We are asking that you complete this survey once at the beginning and once at the end of a six week time frame.

WHEN:

Beginning mid to late May, a member of the research team will meet with you and instruct you on completing the abovementioned survey. The survey, which should take no more than ten minutes, will be collected by the same person who instructed you. This process will be repeated 6 weeks later.

WHY:

Complementary and Alternative Medicine has been shown to promote relaxation, reduce stress, and improve the overall healing process. We would like to determine whether the implementation of such a program, within a long-term care setting, will increase participants' perceived state of overall well-being.

This is an important area of research, which could not be completed without your help! Upon completion of the second survey at the end of six weeks, you will receive a *gift* in appreciation for your participation, if you choose to participate in this study.

Thank you for your consideration to participate in this important research opportunity!

Please notify Shannon Baer, Researcher, at XXX if you are interested in participating, or if you have any questions.