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Attitudes and Knowledge of Occupational Therapy Professionals
in a Multi-State Survey on Complementary and Alternative Medicine

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Abstract

Objective: The purpose of this study was to identify the knowledge of and attitudes toward complementary and alternative medicines (CAMs) of occupational therapy professionals from four states in the United States.

Methods: The current study was completed as an exploratory pilot study of survey research. The final sample included 1,000 randomly selected occupational therapists and occupational therapy assistants from four regions of the United States. The survey used was the Complementary/Alternative Health Care Questionnaire (Baugniet, Boon, & Ostbye, 2000). Out of the 1,000 surveys mailed out to participants, 13 surveys were undeliverable, resulting in 987 possible received surveys. A total of 287 were returned, resulting in a 29% response rate. Eighty one percent of those who responded were occupational therapists, and 19% were occupational therapy assistants.

Results: Approximately 93% of those surveyed believed that occupational therapy professionals should be aware of CAMs. In addition, 72% would be interested in CAM education. Overall, participants showed an overall positive attitude towards CAMs, a high level of knowledge regarding CAMs, and an increased level of usefulness concerning CAMs. In regards to attitude and knowledge, the more positive attitude the professional had about CAMs, the more knowledge the professional possessed of CAMs. Additionally, the more knowledge the professional had on CAMs, the more useful they stated CAMs to be.

Conclusion: This study helps to enhance findings made by other researchers that CAM knowledge is important for occupational therapy professionals (Baugniet et al., 2000; Anderson & Kopp Miller, 2009). Learning more about CAMs can help enhance occupational therapy interventions, and help therapists to better serve their clients.
Complementary and alternative medicine (CAM) is becoming more acceptable by patients as an addition or, in some instances, replacement to the traditional medicine they are already receiving. CAM usage is growing and should be studied further. It is important to know and understand how CAM can affect occupational therapy. With an increasing number of patients using CAM, occupational therapists should be able to inform their patients, answer their questions, and refer their patients to professionals who are reputable or who can answer their questions. The literature review will identify a definition of CAM and review the prevalence of CAM in the current population. Furthermore, the relationship of CAM usage to the occupational therapy profession will be reviewed. After an extensive literature review of CAM benefits, trends, and usage, the current study will be introduced. The purpose of the study was to outline the attitudes and knowledge of complementary and alternative medicine of occupational therapists in a multi-state survey.

Complementary and Alternative Medicine

Complementary and alternative medicine may be considered new to modern medicine. However, it has been used for centuries in some countries. Complementary and alternative medicine or CAM, as it is known, is defined by the National Center for Complementary and Alternative Medicine (NCCAM) as “a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine—that is, medicine as practiced by holders of M.D. (medical doctor) or D.O. (doctor of osteopathy) degrees and their allied health professionals, such as physical therapists, psychologists, and registered nurses” (2007, p.1). A major idea in CAM is the differentiation between
complementary and that of alternative medicine. Complementary medicine can be used together with traditional medicine, whereas, alternative medicine is something that is used in place of traditional medicine (NCCAM, 2007).

The NCCAM classifies CAM into four different categories (NCCAM, 2007). These four categories include: Mind-Body Medicine, Biologically Based Practices, Manipulative and Body-Based Practices, and Energy Medicine. There can be overlap within the categories.

Mind-body medicine focuses on keeping the mind functioning well with the belief that it affects how well the body functions. Many of the mind-body medicines are considered somewhat mainstream. These can include meditation, prayer, patient support groups, cognitive behavioral groups and other things that enhance the mind-body connection such as art or dance.

Biologically based practices focus on using substances that are found in nature to help treat illnesses or alleviate symptoms. These can include foods, vitamins, dietary supplements and herbs of which many are not scientifically proven.

Manipulation and body-based practices can include chiropractic services and massage. Energy therapies focus on energy healing and using a person’s energy to help heal. These therapies include qi gong, Reiki, Therapeutic Touch as well as many others. Qi gong focuses on using mechanisms like meditation and movement to improve circulation in the body. Reiki is another type of “energy healing.” The belief that healing energy is transported through the practitioner to the client to heal the client’s spirit and in turn, the client’s physical body, is the simple definition of Reiki. Therapeutic Touch involves the practitioner laying hands over the individual and healing problem areas to ‘balance’ the individual’s body energies.

Finally, there are Whole Medical Systems which can include parts of all four categories. These systems will be defined as well as those therapies that are not widely recognized. Whole
medical systems are solely based on theory and practice. These types of therapies have been in existence for years. Some examples include: naturopathic medicine, homeopathy, Ayurveda and traditional Chinese medicine. Naturopathic medicine includes diet, herbal supplements, lifestyle changes, counseling, as well as other methods to restore and maintain health through a person’s own healing power. Ayurveda has been practiced in India for over 5,000 years and this practice emphasizes the use of mind, body and spirit in health and wellness. Whereas, traditional Chinese medicine believes everyone has a “life energy” or “qi” and can be influenced by positive or negative energies. To have a balanced “qi” means to have a balanced spiritual, mental, emotional and physical state.

Multiple CAMs can be used by any one person. But the user should make sure there are no pharmacological interactions taking place. Very similar to the holistic perspective of the mind and body medicines that are CAMs is the profession of occupational therapy.

*How does Occupational Therapy Relate to CAM?*

Occupational therapy is a profession that looks at the patient as a whole and treats him or her accordingly. Therefore, CAM and occupational therapy are parallel in values and interests of the patient. Giese (2005), in an AOTA CAM position paper, stated that CAM can be used by occupational therapists or assistants as an all encompassing approach to a patient’s treatment. It was proposed that occupational therapists can use CAMs to prepare a patient for therapy or as a means of purposeful occupations in a patient’s daily life. Some of the CAMs mentioned that can be used in occupational therapy included: yoga, myofascial release, massage, imagery, and aromatherapy. The use of CAMs requires knowledge and education which occupational therapists should have before recommending and discussing its use with patients. This
recommendation increases the demand for CAM education and knowledge for occupational therapists.

Kelly and McCoy (1994) acknowledged that CAM can and should be used in occupational therapy. They considered that occupational therapy and CAM are aligned in promoting wellness and holism. Occupational therapy professionals already use some therapies, considered complementary, in their practice such as aromatherapy and massage. Since many therapists use these methods, it is important they are aware of CAMs and their effects. In addition, they believed that occupational therapists should be aware if a client needs a referral for other services. Sometimes conventional medicine does not get the results that are needed. Therefore, alternative approaches should be considered. Occupational therapists should know the appropriate times to suggest CAMs. Occupational therapists should be cognizant of the need to refer clients, inform them, and encourage clients to ask questions regarding CAMs. Since CAM is not declining in use, it is the duty of the profession to know about clients’ needs and further educate upcoming therapists about current health trends.

It is important to see the reasons of how occupational therapy can be involved in the patient use of CAM. Occupational therapists do have a role to play in helping patients understand what CAM is and how CAMs can interact with other treatments in occupational therapy or other services. To understand what interactions can occur with other therapies or the benefits of CAMs, it is important to understand why CAM is used.

Why is CAM used?

CAM can be used for a variety of ailments. Common uses for CAMs are pain management, anxiety or stress, brain injuries, as well as other orthopedic conditions. For instance, DiNucci (2005) researched energy healing and reported that energy healing is an asset
to the medical community and can be therapeutic if used in the right setting. Energy healing can lessen pain and be an alternative for patients to use. In another study conducted by DiNucci (2003, as cited in DiNucci, 2005), the focus was on empowering patients with health care alternatives. At a hospital, patients were put into energy healing self care groups. These patients attended a Reiki session where they learned Reiki techniques and had Reiki performed on them. At the end of the session, many of the patients reported feeling relaxed and had a reduction in pain. This study provides evidence that energy healing can provide benefits for patients.

In a study by Field, Quintino, Henteleff, Wells-Keife, and Delvecchio-Feinberg (1997), CAM effects on employees with high stress was examined. The effects of stress reduction therapies, like massage therapy, music relaxation, social support groups, and muscle relaxation with visual imagery, were studied with 100 hospital employees. The employees were divided into five groups in order to receive four therapies in a calm setting with a final group receiving massage therapy on a busy hospital floor. The design included pre-tests and post-tests. The results were statistically significant and showed that the employees’ mean scores on anxiety, depression, fatigue, confusion, and vigor, all decreased after 10 minute sessions with their assigned therapy during work hours. It was concluded that these types of therapies can have a positive effect on decreasing job stress.

An additional use for CAM is in individuals with a brain injury. A higher rate of CAM use was seen specifically in the brain injured pediatric population. In a study conducted by Chesire, Powell, and Barlow (2007) in the United Kingdom, 172 parents that included 179 children with brain injury were surveyed on the use of CAM. Questionnaires were sent out to the families that met the criteria. The study resulted in almost 30 different types of CAM being used. The most common were massage, aromatherapy, dietary supplements, and homeopathy. Over
half of the children, 56%, received CAM. Overall, the researchers concluded CAMs may have a benefit for the pediatric population. If more children use it, especially those with illnesses, it can have a beneficial effect on their injury.

Finally, a study by Astin (1998) explored why patients use alternative medicines. One thousand thirty five randomly selected individuals participated in the study. A written survey was mailed to willing participants. It asked about alternative medicine use during the previous year. The researchers questioned whether people seek out alternative therapies because they were not satisfied with conventional medicine, wanted more control over their own health care, or if alternative medicines were more compatible with participants’ views and beliefs on health care and life. With a response rate of 69%, dissatisfaction with conventional medicine was not a main predictor of CAM use. The main predictor of CAM use was because the alternative medicines were in line with the participants’ own values and beliefs of health and life. Other main predictors of CAM use were having a higher level of education, a poor health status, health problems such as chronic pain, urinary tract infections, anxiety, and having the same belief system that is parallel with CAM. No matter the reason, many more people were using CAMs than the researchers thought, thus prompting the researchers to conclude more research should be done on CAMs because more patients were using them.

As previously mentioned, CAMs have a variety of uses. CAM can be used for relaxation, anxiety and stress, orthopedic conditions, and even brain injury. Now that the different reasons a patient can use CAMs have been discussed, it is essential to explore the traits a typical CAMs patient possesses.

Prevalence and Trends in Use
A large number of CAMs have been used for many years, especially the traditional Chinese and Japanese medicines. In the last twenty years, CAMs have become increasingly popular. In 1993, Eisenberg et al. published a national survey that reported the prevalence, patterns of use and cost associated with CAMs. The researchers’ telephone surveyed 1539 adults over the age of 18. The most widely used CAMs were relaxation techniques (13%), chiropractic (10%), and massage (7%). The highest rate of usage was in the 25-49 year-old age group (38%) and with those who had a college education (44%) vs. those that did not (27%). Use was more common with those living in the West (44%) than in the rest of the country (31%). The researchers concluded that more people were using CAM than expected. Another important result from this study was the fact that 47% of those using CAMS did not inform their doctors about their CAM use. From this, they summarized the need for doctors to educate their patients on using CAM, and be mindful of what and how many CAMs their patients were using.

Eisenberg et al. (1998) conducted a follow up study to compare the trends in CAM usage from 1990 to 1997. The researchers’ telephone surveyed 2055 adults in 1997 which represented the United States population. Overall, the population that used CAMs were more likely to be women (49%) than men (38%). The highest rate of usage was in the age group of 35-49 (50%) and in those people who had a college education (51%). The lowest rate of usage was among African Americans (33%). Overall, about 83 million people or about 40% of the population used CAMs. Between 1990 and 1997, an increase was documented in the number of people who used CAM for the reason of preventing illness and maintaining health. Increases in CAM usage were documented in energy healing, homeopathy, massage, and herbal medicine. In conclusion, the authors provided evidence that showed CAM use was still prevalent and growing and needed to be considered as a serious topic by healthcare professionals.
The purpose of the final study conducted by Tindle, Davis, Phillips, and Eisenberg (2005) was to compare the trends in CAM use between 2002 and 1997. Over 31,000 adults participated in the study. One in three people used CAM, which was consistent with the previous study. Females still represented the majority of CAM users at 52%. An increase was seen in users aged 18-24 from 10% to 13%. Adults over 50 were still the largest group (37%) to use CAM. The most commonly used modalities in 1997 and 2002 were herbal therapy (12% vs. 18%), relaxation techniques (16% vs. 14%) and chiropractic techniques (7% vs. 10%). Among CAM users, 41% used more than one therapy. Over 60% of CAM users did not inform their doctors of their CAM usage. Overall, this study concluded CAM use was steady and becoming more mainstream. This is an issue that should be addressed, especially when considering side effects or interactions of therapies and conventional medicine.

In a survey conducted by Feldman and Laura (2004) CAM usage was measured among 500 Australian University students. Eighty one percent of the students surveyed used at least one CAM. Many of the reasons the students used CAMs were to reduce stress, headaches, and anxiety. For those students who did not use CAMs, the main reason reported was economic issues. This means the students could have used CAMs but may not been able to afford the cost or had the time. The main reasons students used CAMs were: looking for better results (34%), lifestyle (33%), and fewer side effects (32%). In general, this study shows an increase in CAM usage among college students. It also shows the different health concerns of a younger population compared to older populations.

The prevalence of CAMs and the demographics of users have been extensively identified. In addition, multiple studies have assessed the attitudes and knowledge of various healthcare professionals regarding CAMs. This will set the foundation for the current study.
Relevant Studies of Different Knowledge and Attitudes

In a survey by Harris, Kingston, Rodriguez, and Choudary (2006), 170 pharmacy faculty and students at the University of Minnesota were surveyed regarding their attitudes and perceptions of CAM use. With a 44% response rate for faculty and 63% response rate for students, the reported attitudes were positive and students believed training should be provided in the educational program regarding CAM. Sixty three percent of both the faculty and student populations reported having no education in all modalities listed in the survey. Some of the CAM modalities seen as the most effective by both faculty and student were acupuncture, chiropractic, herbal medicine, massage, nutritional supplements, and prayer/faith healing. In addition, 45% of faculty members and 43% of students would consider using all CAM modalities. This study also supported more research into CAMs and more education for all practitioners that could help in treatment plans and an increase of information for patients.

Research conducted by Baugniet, Boon, and Ostbye (2000), at two universities in Canada, compared the attitudes and knowledge of CAMs of final year medical, physiotherapy, occupational therapy, nursing, and pharmacy students. A cross sectional questionnaire was given to 442 students at the University of Western Ontario and fourth year health professions students at the University of Toronto. Over 90% of the respondents believed CAM use was increasing and, overall, the general consensus among students was a positive attitude toward CAM. An estimated 91% of the overall respondents agreed that practitioners should be aware of what CAM therapies are available in their geographical area. Specifically, 93% of occupational therapy students agreed that practitioners should have some basic knowledge about the most commonly used CAMs. This study also supported more discussion between patients and their healthcare professional about CAM, as well as more education and support of CAM use.
DeSylvia, Stuber, Fung, Bazargan-Hejazi, and Cooper (2008) analyzed the attitudes, knowledge, and usage of medical students at the David Geffen School of Medicine at the University of California, Los Angeles, on CAMs. The overall response rate was 59%. Suggesting CAMs to patients and having positive attitudes towards CAMs were likely to be associated with first and second year medical students. Overall knowledge and attitudes on CAMs appeared to be more positive with first and second year students compared to third year students. The authors stated an increased need for more education in healthcare on CAMs, so more physicians could be aware and know what forms of CAM their patients are using.

In another study by Brown et al. (2007) health professionals at a Canadian tertiary pediatric and women’s care facility were surveyed on their knowledge on CAMs. A total of 1,360 healthcare professionals were surveyed. The purpose of the study was to determine the level of knowledge, attitudes, and practices of health care professionals concerning CAMs. Eighty eight percent of those surveyed felt CAMs helped to prevent illness and keep a person healthy. Over 80% of the participants did not use or ever consider using CAMs. Sixty five percent said they did not ask their patients questions regarding CAM use. In addition, 69% did not have any formal education regarding CAMs and instead formed their opinions from media or friends. Overall, this study strongly suggested more education for all healthcare professionals to help booster discussions of CAM use with patients.

Wahner-Roedler et al. (2006) researched physicians’ attitudes and knowledge of CAMs. Sixty-three percent of physicians surveyed stated that the patient started the discussion of CAM benefits and risks. Forty eight percent stated they thought patient satisfaction would increase with the use of CAM. Many physicians surveyed did not feel prepared to adequately inform patients on CAM. But, 82% believed that physicians should have knowledge in order to properly
counsel patient on CAM use. This study further reiterates the point that healthcare professionals need increased education to be familiar with CAMs to properly counsel patients.

Anderson and Kopp Miller (2009) researched the attitudes and knowledge on CAM of occupational therapy professionals in the state of Ohio. The return rate was 29%. Ninety-five percent of the participants agreed occupational therapy professionals should be aware of CAMs. Of those surveyed, 67% felt the demand for CAMs was increasing. When asked about personal use, 59% of those surveyed reported they had consulted a CAM practitioner. A majority of the participants felt a positive attitude toward CAM. Positive correlations were found between level of knowledge and attitudes, as well as level of knowledge compared to ratings of usefulness. The higher positive attitude a person had contributed to an increased knowledge of CAMs. Overall, most participants rated that they “know something about”, “know a considerable amount”, or “know a lot” from nine out of twelve techniques. In addition, the higher knowledge a person had, the more likely they would rate CAMs to be useful. Eighty-six percent of respondents reported they thought professionals should have knowledge of the most common CAM techniques. Of these participants, 70% reported no formal training or education on CAMs. In general, this study demonstrated that many occupational therapy professionals feel there is a need for increased education and awareness to better accommodate the needs of clients. This study was limited to Ohio participants, and the authors recommended that this study be replicated at a national level to determine if the results were generalizable.

The Present Study

Currently, there has been very little research conducted on the attitudes and knowledge of occupational therapists regarding CAMs. Occupational therapy as a health profession should be aware of CAMs and their effects on patients. Giese (2005) stated occupational therapists should
decide whether CAMs are parallel with the patient values, if CAMs would be appropriate for the patient, and whether CAMs would help the patient to better participate in occupations of daily living. Giese (2005) further suggested that if CAMs can encourage a client’s participation in a meaningful and purposeful occupation, than they can be utilized as an appropriate adjunct to occupational therapy treatments. The AOTA position paper (Giese, 2005) additionally emphasized the need for advanced training and education on CAMs if they are going to be used as an adjunct to treatment. Knowing current general attitudes and knowledge on CAMs of occupational therapy professionals would allow increased awareness of CAM and enhanced education to be implemented. This knowledge will help occupational therapists decide if CAMs are an idea to incorporate with their patients that could potentially facilitate rehabilitation for daily occupations.

The current study is a replication of research conducted by Anderson and Kopp Miller (2009). As Giese (2005) stated, knowing current knowledge and skill levels of occupational therapy professionals will increase education and research initiatives regarding CAMs. Anderson and Kopp Miller (2009) only including only Ohio occupational therapy professionals. This study expanded that effort to research the knowledge and attitudes of occupational therapists in a multi-state survey. There is currently no research published on the direction of attitudes and knowledge of occupational therapy professionals regarding CAM on a national scale. This study examined whether demographics and geographical location apply to the direction of attitudes and knowledge of occupational therapy professionals. The research questions posed in this study were the following: (a) Does geographical location play a role in the attitudes or knowledge of CAMs? (b) Are the attitudes and knowledge of occupational therapists supportive of the use of
CAMs? and (c) What do occupational therapists feel the role of CAMs is in occupational therapy? and (d) Does demographics play a role in the attitudes or knowledge of CAMs?

Methods

Participants

One thousand participants were randomly selected from four regions of currently practicing certified occupational therapists and occupational therapy assistants. These regions as determined by the United States Census Bureau (n.d.) included: Northeast, Midwest, South, and West. All states in a region that gave mailing lists for free were combined and one state was randomly selected for the specific region. Overall, four states in four regions were randomly selected. In the Northeast, the state randomly chosen was Vermont. In the Midwest, the state randomly chosen was Ohio. For the Southern region, the state randomly chosen was Alabama. Finally, for the West, the state randomly chosen was Alaska. For each state, the sample size of surveys sent was 250 with an overall total of 1,000 surveys sent.

Design

The current study was completed as an exploratory pilot study of survey research. A three part survey assessing demographics, attitudes, and knowledge, was sent to every occupational therapy professional who participated.

Instrument

The survey used was the Complementary/Alternative Health Care Questionnaire (see Appendix A). This survey was used with permission from the University of Toronto (Baugniet et al. 2000). Items included in the questionnaire were found reliable and valid in a previous study performed by Verhoef and Sutherland (1995, as cited by Baugniet et al. 2000). The first section requested demographic information from the participant. Information such as age, gender and
area of practice was included. Attitudes towards CAMs were requested in the following section. Twelve questions assessed current opinions. Items also identified personal experiences with CAM as well as previous professional use in treatment. Knowledge was then assessed by the next seven questions by requesting the participants to state their level of familiarity of specifically listed treatments. Participants were also provided space for open ended comments.

**Procedures**

The surveys were sent out to 1,000 randomly selected occupational therapists and occupational therapy assistants in four regions of the United States. A cover letter, three part survey, and return envelope were included in the first mailing and a reminder card was sent four weeks later (see Appendix B and C).

**Results**

**Demographics**

Out of the 1,000 surveys mailed out to participants, 13 surveys were undeliverable, resulting in 987 possible received surveys. A total of 287 were returned, resulting in a 29% response rate. Three out of the 287 surveys returned were unable to be used for data analysis because one therapist was currently not practicing, and the other two surveys were incomplete. Out of the total 284 surveys that could be used, 30 of the surveys returned were from an unknown state. The final number of surveys that were used in this study was 284. Out of the four states used in the study and 254 surveys with known origin, the percentages of surveys returned from each state were as follows: 25% from Vermont \( (n = 72) \), 25% from Alaska \( (n = 71) \), 22% from Ohio \( (n = 61) \), and 18% from Alabama \( (n = 50) \).

Ninety three percent of respondents were female with 7% being male. Overall, 92% were Caucasian, 4% African-American, 2% Asian-American, 1% Hispanic, and 1% reported their race
as other. The percentage of occupational therapists who responded was 81%, and occupational therapy assistants responded with 19%. Levels of education were reported as follows: Doctoral degree (1%), Master’s degree (35%), Bachelor’s degree (48%), and Associate’s degree (16%). The average level of experience was 190.43 months (range 3 - 496, SD = 121.10). Reported work settings included: outpatient (11%), inpatient (10%), hand therapy (7%), rehabilitation (17%), long term care (9%), geriatrics (19%), pediatrics (41%), and other (17%). Other common settings mentioned included home health, mental health, and academic settings.

*Education and Awareness of CAM*

Of the 284 participants that responded in this study, 34% had received education in the area of CAMs. However, 72% would be interested, at some point in their careers, in receiving additional training in order to prepare them to practice any form of CAM. Fifty percent responded that they discussed CAM methods with patients. Respondents (93%) also thought they, or occupational therapy professionals in general, should be aware of CAMs.

*Perception of demand*

In regards to opinions of patient demand for CAM, 72% said it was increasing, 2% stated it was decreasing, and 25% reported patient demand was stable. Given six statements, the respondents were asked the top three reasons patients might seek CAMs. Top ranked items included, “desire for a holistic approach to health care” (81%), “treatment with conventional medicine has not been effective” (77%), and “desire for a therapy free of side effects” (40%).

*Description of Personal Experiences with CAMs*

Many respondents (75%) stated they had consulted a CAM practitioner for themselves. The CAM practitioners consulted most frequently included massage therapist (62%), chiropractor (43%), and homeopath and cranio-sacral (both reported at 23%). Out of the
respondents who consulted a CAM practitioner, over 95% reported that they perceived some benefit from consulting with that particular type of CAM professional.

Eighty four percent of practitioners responded that they had a friend or family member consult with a CAM practitioner at some time. Of those, the top practitioners consulted were massage therapist (61%), chiropractor (61%), and acupuncturist (30%). In addition, over 95% said their friend or family member had benefitted from seeing a CAM practitioner.

In regards to self-administering a CAM therapy, 48% stated that they had done so. The therapies most reported to be self-administered by respondents were herbal medicine (28%), aromatherapy (19%), and homeopathy (16%). Ninety eight percent reported benefits from the self-administered CAM therapy.

*Description of Attitude Statistics*

The Cronbach’s alpha for the 10 attitude items was .87. Cronbach’s alpha level of .80 or higher is considered acceptable for internal consistency (Portney & Watkins, 2000). The possible range for total attitudes was 10 to 50. For total attitudes, results indicated overall positive attitudes towards CAM ($n = 278$, $M = 38.6$, $SD = 5.11$, range = 23 - 50). The overall mean and standard deviation for each state is as follows: Alaska ($n = 67$, $M = 38.71$, $SD = 5.24$), Alabama ($n = 48$, $M = 36.54$, $SD = 4.79$), Ohio ($n = 61$, $M = 38.1$, $SD = 4.74$), and Vermont ($n = 72$, $M = 40.11$, $SD = 4.74$). See Table 1 for more descriptive statistics. Occupational therapy professionals from Vermont had the highest positive attitudes toward CAM, while occupational therapy professionals from Alabama had the lowest. A one-way ANOVA was also done and was found to be statistically significant in regards to total attitudes between states [$F (3,244) = 5.18$, $p = .002$]. A post-hoc Tukey multiple comparisons was completed and the results showed
occupational therapy professionals from Vermont had significantly higher total attitudes than occupational therapy professionals from Alabama \( (p = .001) \).

**Description of Knowledge Statistics**

For the 14 items assessing knowledge, Cronbach’s alpha was .85 and is considered adequate \( (\text{Portney & Watkins, 2000}) \). Participants were asked their knowledge on various complementary/alternative medicine techniques. Possible scores could range from 14 to 70. In general, the mean scores reported for total knowledge indicated a high level of knowledge \( (n = 252, M = 39.94, SD = 6.53, \text{range} 26 - 57) \). See Table 2 for more descriptive statistics. Overall mean scores for total knowledge by state were reported as 41.2 for Alaska \( (n = 64, SD = 6.31) \), 36.0 for Alabama \( (n = 45, SD = 6.27) \), 39.04 for Ohio \( (n = 50, SD = 6.21) \), and 41.38 for Vermont \( (n = 65, SD = 5.73) \). In addition, a one-way ANOVA was completed for total knowledge differences between the states and it was found to be statistically significant \( (F(3, 220) = 8.60, p = .01) \). Post-hoc Tukey multiple comparisons also showed occupational therapy professionals from Alaska had significantly higher total knowledge scores than occupational therapy professionals from Alabama \( (p = .01) \), as did Vermont \( (p = .01) \). The top three techniques with the highest level of knowledge were massage, chiropractic, and herbal techniques.

The resources where occupational professionals acquired the most information about CAMs came from personal experience \( (69\%) \), friends or family \( (62\%) \), and colleagues and coworkers \( (56\%) \). The resources used least were professional training \( (30\%) \), curriculum \( (18\%) \), and other \( (7\%) \).

**Description of Usefulness Statistics**
Cronbach’s alpha for the total usefulness of the 14 CAM technique items was .86. The possible range for the 14 items scored was 0 to 56. The mean total usefulness score was 27.33 out of a possible score of 56 ($n = 257, SD = 10.86$). Mean scores reported for level of usefulness in each state included: 28.15 for Alaska ($n = 64, SD = 10.42$), 22.06 for Alabama ($n = 44, SD = 8.10$), 26.23 for Ohio ($n = 56, SD = 11.55$), and 30.53 for Vermont ($n = 65, SD = 9.90$). Results from the one-way ANOVA showed statistical significance for total usefulness between states [$F(3,225) = 6.42, p = .01$]. A statistically significant difference between occupational therapy professionals from Alabama and occupational therapy professionals from Vermont was found in the post-hoc Tukey multiple comparisons ($p = .01$). Vermont participants generally scored items more useful than participants from Alabama. The CAM techniques that were found to be the highest rated on level of usefulness were massage therapy ($M = 3.45$), chiropractic ($M = 2.90$), and acupuncture ($M = 2.71$). See Table 3 for more descriptive statistics.

Rule of Scientific Inquiry statistics

In the last section of the survey, researchers asked participants which rules of scientific inquiry were important in order for a practitioner to accept any given therapy. The rules of scientific inquiry that were found to be most essential included: “success in practice” (51%), “patient reports” (29%), “published case studies” (24%), and “personal experience” (22%). The rule of scientific inquiry that was found to be highest ranked as “unimportant” was “animal studies” (51%).

Additional Analysis

Pearson correlations were performed to measure the association between different variables. A positive correlation was reported comparing total attitudes to total knowledge ($r = .46, p < .01$). The more positive attitude a participant had the more knowledge a participant had
of CAM techniques. Comparing total attitudes and total usefulness a positive correlation was also seen ($r = .518, p < .01$). A participant with a more positive attitude would be more likely to indicate CAMs as more useful overall. In addition, a positive correlation was made between total knowledge and total usefulness ($r = .69, p < .01$), which indicated that a participant who had a higher level of knowledge of CAMs was more likely to state CAMs having a higher level of usefulness.

The last question on the survey asked participants if they had any general comments regarding occupational therapy and CAMs. With strategies supplied by Dillaway, Lysack, and Luborsky (2006) the comments provided were composed together and then put into similar groups. Overall, 53% ($n = 151$) of participants responded to this part of the survey. General comments, concerns, and opinions were brought up by participants with 266 individual comments being identified. Themes identified out of the 266 comments included: an increased need or concern for education on CAMs (21%), concern for evidence based practice (13%), need for awareness (12%), scope of practice (7%), reimbursement concerns (6%), and CAM as a compliment to traditional medicine (6%).

Increased education on the topic of CAMs seemed to be a common theme presented throughout the comments section with 21% ($n = 55$) of the comments mentioning this topic. Having proper education about CAMs in order to give credible referrals and information was prominent. Some statements about this topic included: Participant #91 stated, “A clearer understanding and knowledge of CAMs and how to evaluate their effectiveness would be of great benefit to consumers” and Participant #124 commented, “I think CAMs should be part of curriculum; we need to know more!”
The need for more evidence based practice to support the recommendations or use of CAMs was stated 13% \((n = 34)\) of the time. Statements made that support this generalization include: Participant #46 “I have the same concern regarding CAMs as I do any other area of OT practice; we need more evidence based practice!” and Participant #173 “Evidence based practice will necessitate increased studies for use of more of these methods.”

Need for awareness of CAMs in occupational therapy was also an important topic 12% of participants \((n = 18)\) suggested. Participant #142 said, “I believe that it is most important for OTs to be aware of CAM’s and know resources (credible) in the community for proper referral if the client chooses.”, and Participant #270 said, “I believe it is important to be aware of CAMs that pts or clients ask us about……however, I think it is useful to discuss with clients the pros and cons as well as the risks and benefits given the evidence available.”

Scope of practice was also a worry that concerned some of the participants as 7% \((n = 18)\) of the comments made were on that topic. Occupational therapy professionals stepping outside of their scope of practice for an up and coming topic made participants cautious. For example, participant #37 stated, “(I) wouldn’t want to overstep my bounds as an OT or give any bad information to clients.” Participant #3 also commented, “I feel most CAMs are well out of scope of practice for OT with the exception of some massage techniques. I feel OTs need to be aware of CAMs, as they might be important to and used by our clients.”

CAMs as a compliment to traditional medicine was another topic that 6% occupational therapy professionals mentioned in their comments \((n = 17)\). For example, Participant #63 supported this generalization by saying, “I believe CAMs are a more holistic approach which can be used alone or in conjunction with traditional Western medicine.”
Finally, reimbursement issues were another issue that 6% of the comments suggested ($n = 17$). Many professionals wondered what reimbursement issues could be for the profession if therapists did CAMs and what issues could be for patients they referred. For example, Participant # 54 commented, “Knowing how to document its use and effectiveness and be reimbursed is a concern for my setting.”

**Discussion**

Giese (2005) stated additional research was needed with occupational therapy professionals regarding CAMs. The current study fulfilled that need by examining occupational therapy professionals’ attitudes towards and knowledge of CAM in four regions of the United States. This study examined whether demographics and geographical location applied to the direction of attitudes and knowledge of occupational therapy professionals. The analysis of results showed there was a difference regarding attitudes and knowledge compared to demographics and geographical location of the participants.

This study was replicating research conducted by Anderson and Kopp Miller (2009). Results were similar to Anderson and Kopp Miller (2009) showing participants had an overall positive attitude towards CAMs, a high level of knowledge regarding CAMs, an increased level of usefulness concerning CAMs, and an increased concern for more education on the topic. Overall results were also similar to past studies cited (Baugniet et al., 2000; DeSylvia et al., 2008; Wahner-Roedler et al., 2006). Harris et al. (2006) also demonstrated similar results with attitudes being positive in relation to CAMs, and documented need for increased education for all healthcare practitioners. Implications from these studies reveal it would be beneficial to incorporate CAMs into occupational therapy education and curriculum as well as continuing
education sessions for professionals. The American Occupational Therapy Association also advocates for increased education on this topic (Giese, 2005).

In this study, 93% of participants stated they believed professionals should be aware of CAMs, which is comparable to Anderson and Kopp Miller’s (2009) study where 95% of practitioners thought they should be aware of CAMs. Ninety one percent of healthcare professionals believed they should be aware of CAMs according to a study conducted by Baugniet et al. (2000). It appears that awareness of CAMs is an idea many practitioners are in agreement with.

The need for increased education on CAMs was a prevalent idea many professionals commented on throughout the study. Even though 34% of practitioners did not have any formal education in regards to CAMs, 72% stated they would be interested in receiving training. Anderson and Kopp Miller (2009) also showed the need for increased education. DeSylvia et al. (2008) reinforced the need for education with physicians in order to be aware of what forms of CAMs patients are using. The study by Brown et al. (2007) showed 69% of health care professionals surveyed did not have previous education on CAMs. Instead, they formed opinions from family and friends. These results show a need for formal education for health care professionals. Wahner-Roedler et al. (2006) reinforced the need for increased education as well. Eighty-two percent of physicians believed they should have knowledge on CAMs to counsel patients. Many of these studies demonstrated the need for more educational opportunities regarding CAMs for occupational therapists, as well as other health care professionals. Increased education would allow professionals to better serve patients because they would have more information in order to give appropriate referrals.
Seventy-two percent of participants in the current study said they believed patient demand was increasing for CAMs. Results of the current study were similar to other studies in regards to perception of demand (Anderson & Kopp Miller, 2009; Baugniet et al., 2000). These perceptions support the need for an increased need for education on CAMs.

The top three items patients perceived why CAMs were of value were similar to Anderson and Kopp Miller (2009) and included “desire for a holistic approach to health care,” “treatment with conventional medicine has not been effective,” and “desire for a therapy free of side effects.” Overall, patients were perceived as being interested in health care alternatives if they were more holistic and less involved with traditional medical models.

Seventy-five percent of participants in the current study had responded they consulted a CAM practitioner previously. This is higher than the 59% of participants who had responded they had consulted a CAM practitioner reported by Anderson and Kopp Miller (2009). This is in contrast to Baugniet et al. (2000) who reported that only 28% of participants in their study had a CAM practitioner. The study conducted by Baugniet et al. was conducted in 2000, which could have explained the low percentage of participants who consulted a CAM practitioner. The most consulted CAMs in all studies, including the current study, were massage therapists and chiropractors (Baugniet et al. 2000; Anderson & Kopp Miller, 2009). In the current study, over 95% of professionals perceived that they had benefitted from consulting a CAM practitioner. These results were similar to Anderson and Kopp Miller (2009).

In the current study, 47% of participants had self-administered a CAM. Herbal medicines and aromatherapy were the most commonly self administered CAMs, which is similar to Anderson and Kopp Miller (2009).
General attitudes towards CAM were positive, which is similar to other studies conducted (Anderson & Kopp Miller, 2009; Baugniet et al., 2000). Occupational therapy professionals from Vermont had the highest positive attitudes toward CAM, while occupational therapy professionals from Alabama had the lowest. Occupational therapy professionals from Alaska and occupational therapy professionals from Ohio were similar with high positive attitude scores. Geographical differences were seen and may potentially require more education or introduction to CAMs in areas with lower reported attitude scores.

Total knowledge scores of CAM were high, which is similar to past studies (Anderson & Kopp Miller, 2009; Baugniet et al., 2000). Significant differences were reported between occupational therapy professionals from Alaska and occupational therapy professionals from Alabama as well as between occupational therapy professionals from Vermont and occupational therapy professionals from Alabama. Occupational therapy professionals from Alabama had the lowest knowledge scores compared to occupational therapy professionals from Alaska and occupational therapy professionals from Vermont. It could be implied that occupational therapy professionals in the Southern region were not as knowledgeable about CAMs compared to those in the Northeast or West regions. In the current study, most professionals had a substantial knowledge of massage and chiropractic techniques. Results were similar to Anderson and Kopp Miller (2009). Participants in the current study as well as past studies were informed about the same kinds of CAMs such as massage, chiropractic, and herbal techniques (Anderson & Kopp Miller, 2009; Baugniet et al., 2000). This information shows the need for more education on other kinds of CAMs.

Occupational therapy professionals from Vermont had the highest ratings for usefulness of CAMs, followed by occupational therapy professionals from Alaska, occupational therapy
professionals from Ohio, and occupational therapy professionals from Alabama. A statistically significant difference was shown between occupational therapy professionals from Vermont and occupational therapy professionals from Alabama. Occupational therapy professionals from Vermont had higher ratings for usefulness of CAMs, while occupational therapy professionals from Alabama had significantly lower ratings for usefulness of CAMs. Recall participants from Alabama also had the lowest knowledge towards CAMs as well as less positive attitudes towards CAMs compared to the other three states. It is not surprising that their usefulness rating would also be low.

The top three techniques that were cited as useful in the current study were massage therapy, chiropractic techniques, and acupuncture. CAM techniques found to be most useful were similar to other studies (Anderson & Kopp Miller, 2009; Baugniet et al., 2000). Perception of the usefulness of these three CAMs appears to be consistent across many studies.

In the current study, “success in practice” was found to be the most essential regarding rules of scientific inquiry for evaluating the effectiveness of CAMs. This is similar to Anderson and Kopp Miller (2009). Qualitative reports indicated many clinicians want to be knowledgeable about what the patient wants and needs regarding CAM (Anderson & Kopp Miller, 2009). More education on CAMs, as well as an increase in research, will aide clinicians in this manner.

The more positive attitude a participant had, the more knowledge a participant had of CAM techniques. A participant who had a higher level of knowledge and a positive attitude toward CAM also indicated CAMs as being more useful. All of the results were supported by previous studies (Anderson & Kopp Miller, 2009; Baugniet et al., 2000).

Implications
The results of this study demonstrate an increased need for education and awareness of CAMs in occupational therapy. It follows the trend established in other studies that occupational therapy professionals, as well as other health care professionals, are interested in education on CAMs (Anderson & Kopp Miller, 2009; Baugniet et al., 2000; Wahner-Roedler et al., 2006; Harris et al., 2006; Brown et al., 2007). Specifically, professionals wish to learn more about the most popular CAM methods. In addition, it may be helpful to understand CAM benefits, limitations, and functional implications for patients. Continuing education is important to keep professionals up-to-date on health topics, as well as prepare them to give quality care to future clients. AOTA advocates for increased education and training concerning CAMs (Giese, 2005). Other studies with health care professionals reported similar results (Baugniet et al., 2000; Wahner-Roedler et al., 2006; Brown et al., 2007), indicating a need for interdisciplinary educational seminars.

Evidence based research on the topic of CAMs is small and needs to continue to be a priority. The NCCAM is funding more studies on the effectiveness of CAMs, which will help occupational therapy professionals to better understand CAMs. Many of the participants of this study, as well as in the study conducted by Anderson and Kopp Miller (2009), reported their need to have more evidence based research on CAMs in order to give patients correct information on the topic. To ensure that patients are receiving the best quality of care, the occupational therapy profession should advocate for increased CAMs research, in order to meet the needs of future clients.

Limitations

The study was financially limited to use states that provided free registrant lists. Also, most of the study participants were Caucasian, female, and occupational therapists, opposed to
occupational therapy assistants. We only have an understanding of the information provided by participants who returned the survey. The attitudes and knowledge of CAMs are not known for those who did not return the survey. These limitations may decrease the generalizability of the study to all occupational therapy professionals.

In each region, there was only one state chosen. That state may not have been an adequate representation of all of the occupational therapy professionals in a specific region. In a small portion of the returned surveys, the origin state was not listed; therefore, that particular survey could not be used in geographical comparisons.

Conducting survey research limits the interactions between the researchers and the participants. The perceptions and views of participants that responded are demonstrated in the data collected. However, the researchers are limited because the views of those who did not respond to the survey are unknown. In addition, each participant could have interpreted the questions differently than they were meant to be understood. This could lead to misunderstandings in questions or answers that were provided. Finally, follow-up questions to answers provided by the participants cannot be conducted.

*Future Research*

Further studies include conducting an additional national survey to gain a better understanding of geographical differences. The current survey should continue to be used to increase generalizability. In order to keep occupational therapy professionals up-to-date on CAMs education, there should be an increase in evidence based studies conducted on CAMs. In order to understand the future of CAM education, continuous survey research should be conducted to determine the attitudes and knowledge of the occupational therapy professionals.

*Conclusion*
Results have concluded, in more than one study, that additional CAM education is wanted by occupational therapy professionals. Knowing the attitudes and knowledge of occupational therapy professionals is important to establish educational initiatives. With appropriate education, occupational therapy professionals can initiate informative and educational conversations on the topic of CAMs in order to promote patient safety. This line of research should be continued to promote continued education and understanding of CAMs. In addition to occupational therapy professionals, other health care professionals should be included in research to ensure the entire therapy team understands CAMs. This effort will help to provide quality, interdisciplinary care to the patient. In order to ensure quality care for patients, CAMs education should also be implemented in occupational therapy curriculum so that future occupational therapy practitioners are prepared to meet the needs of their future clients.
References

Anderson, K., & Kopp Miller, B. (2009). *Attitudes and knowledge of occupational therapy professional of complementary and alternative medicine*. Unpublished scholarly project, The University of Toledo, Health Science Campus, Toledo, OH.


Appendix A

Occupational Therapy Professionals’ Attitudes and Knowledge of Complementary and Alternative Medicine Questionnaire

Demographic Information

1. Are you? Female ☐ Male ☐
2. What is the year of birth? ___________
3. What is your age? ___________
4. What is your race?
   ☐ Hispanic ☐ Asian-American
   ☐ Caucasian ☐ Other (please specify) _______________
   ☐ African-American
5. How many years and months have you been in the occupational therapy field? ______
6. What is your highest level of education?
   ☐ Associate’s Degree ☐ Master’s Degree
   ☐ Bachelor’s Degree ☐ Doctoral Degree
7. What is your professional certification?
   ☐ Occupational Therapist ☐ Occupational Therapy Assistant
8. With which population is your main area of practice?
   ☐ Outpatient ☐ Rehabilitation
   ☐ Inpatient ☐ Long Term Care
   ☐ Hand therapy ☐ Geriatrics
   ☐ Other (please specify) ☐ Pediatrics
   __________________
9. Have you received any education as an occupational therapist about Complementary and/or Alternative Medicine (CAM)?
   ☐ No
10. At some point in your career, would you be interested in receiving training to prepare you to practice any form of CAM?

☐ No       ☐ Yes

11. Have you ever discussed CAM’s with your patients?

☐ No

☐ Yes (please explain)

__________________________________________________________________

__________________________________________________________________
## General Attitudes

1. Please indicate the level to which you agree or disagree with the following statements by checking the appropriate box.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementary medicine is a useful supplement to regular medicine.</td>
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<tr>
<td>The results of complementary medicine are in most cases due to a placebo effect.</td>
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</tr>
<tr>
<td>Complementary medicine includes ideas and methods from which regular medicine could benefit.</td>
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</tr>
<tr>
<td>Complementary medicine is a threat to public health.</td>
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</tr>
<tr>
<td>Complementary therapies not tested in a scientific manner should be discouraged.</td>
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</tr>
<tr>
<td>Most complementary medicine therapies stimulate the body’s natural healing powers.</td>
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</tr>
<tr>
<td>Occupational therapists should have some knowledge about the most common complementary medicine therapies.</td>
<td></td>
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</tr>
<tr>
<td>Occupational therapists should be aware of what complementary medicine therapies are available in their geographical area.</td>
<td></td>
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<tr>
<td>Occupational therapists should be able to advise their patients about commonly used complementary methods.</td>
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<td></td>
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</tr>
<tr>
<td>Occupational therapists should not discuss complementary medicine therapies with their patients as it may prompt them to use them.</td>
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</tbody>
</table>
Perception of Patient Demand for Complementary/Alternative Medicine

2. In your opinion, is patient demand for complementary/alternative medicine:
   - [ ] Increasing
   - [ ] Decreasing
   - [ ] Stable

3. In your opinion, what are the top 3 reasons why patients might seek complementary/alternative medical care? (Please rank your top 3 by writing 1, 2, or 3 beside the reason)
   - [ ] Skepticism about conventional medicine
   - [ ] Desire for more time and personal attention that conventional practitioners offer
   - [ ] Desire for a holistic approach to health care
   - [ ] Desire for a therapy free of side effects
   - [ ] Treatment with conventional medicine has not been effective
   - [ ] Desire for more personal control in health care decisions
   - [ ] Other (please describe) _______________________________________

Personal Experiences of Complementary/Alternative Medicine

4. Have you ever consulted a complementary/alternative practitioner for yourself?
   - [ ] No (go to Question 7)
   - [ ] Yes (please continue)

5. What type of complementary/alternative practitioner(s) did you consult?
   - [ ] Acupuncturist
   - [ ] Massage Therapist
   - [ ] Aromatherapist
   - [ ] Naturopath
   - [ ] Chiropractor
   - [ ] Ortologist
   - [ ] Faith Healer
   - [ ] Reflexologist
   - [ ] Herbal Medicine practitioner
   - [ ] Therapeutic Touch practitioner
   - [ ] Homeopath
   - [ ] Reiki
   - [ ] Cranio-sacral
   - [ ] Other ___________________
6. Did you benefit from consulting a complementary/alternative practitioner?

☐ No

☐ Yes  If yes, please describe briefly how you benefitted:

__________________________________________________________________

7. Do you have a friend or family member who has consulted a complementary/alternative practitioner?

☐ No (go to Question 10)  ☐ Yes (please continue)

8. What type of complementary/alternative practitioner(s) did that family member see? (please check all that apply)

☐ Acupuncturist  ☐ Massage Therapist

☐ Aromatherapist  ☐ Naturopath

☐ Chiropractor  ☐ Ortologist

☐ Faith Healer  ☐ Reflexologist

☐ Herbal Medicine practitioner  ☐ Therapeutic Touch practitioner

☐ Homeopath  ☐ Reiki

☐ Cranio-sacral  ☐ Other ________________

9. Did your friend or family member benefit from consulting a complementary/alternative practitioner?

☐ No (go to Question 13)  ☐ Yes (please continue)

10. Have you ever self-administered a complementary/alternative therapy have you self-administered? (Please check all that apply)

☐ No (go to Question 13)  ☐ Yes (please continue)

11. What type(s) of complementary/alternative therapy have you self-administered? (please check all that apply)

☐ Aromatherapy  ☐ Naturopathy

☐ Faith Healing  ☐ Reiki

☐ Herbal Medicine  ☐ Cranio-sacral
12. Did you benefit from self-administering the complementary/alternative therapy?

☐ No
☐ Yes If yes, please describe how you benefited:
__________________________________________________________________
__________________________________________________________________

Knowledge

13. What is your knowledge of the following complementary/alternative medicine techniques? (Please check one knowledge rating for each complementary/alternative technique)

<table>
<thead>
<tr>
<th>Technique</th>
<th>Know A Lot (Could treat patients)</th>
<th>Know A Considerable Amount (Could explain to patients)</th>
<th>Know Something About</th>
<th>Have Heard the Term but know nothing about</th>
<th>Never Heard of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Aromatherapy</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Chiropractic</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Cranio-Sacral</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Faith Healing</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Herbal Medicine</td>
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<td>☐</td>
<td>☐</td>
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<tr>
<td>Homeopathy</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>Hypnosis</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Massage Therapy</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>Naturopathy</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Ortology</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
14. Where did you get the information that you have about complementary/alternative medicine techniques? (Please check all of the informational sources that apply)

☐ Curriculum
☐ Medical Literature
☐ Popular Press
☐ Friends or Family
☐ Personal Experience
☐ Colleagues/Coworkers
☐ Professional Training
☐ Continuing Education
☐ Other (please describe) ______________________________________________

**Attitude Toward Specific Complementary/Alternative therapies**

15. What is your opinion about the usefulness of the following complementary/alternative medicine techniques? (Please select one usefulness rating for each therapy)

<table>
<thead>
<tr>
<th>Technique</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Somewhat Useful</th>
<th>Useless</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture</td>
<td></td>
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<td></td>
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<tr>
<td>Aromatherapy</td>
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<tr>
<td>Chiropractic</td>
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<td>Cranio-Sacral</td>
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<td>Faith Healing</td>
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<tr>
<td>Herbal Medicine</td>
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<td>Homeopathy</td>
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<tr>
<td>Hypnosis</td>
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</tbody>
</table>
Multi-State Survey of CAM

Massage Therapy  
Naturopathy  
Ortology  
Reflexology  
Reiki  
Therapeutic Touch

16. Controversy surrounding complementary/alternative medicine often centers on whether a therapy is scientifically proven or not. What rules of scientific inquiry are important to you for acceptance of a given therapy? (Please select one importance rating for each rule of scientific inquiry)

<table>
<thead>
<tr>
<th>Rule of Scientific Inquiry</th>
<th>Essential</th>
<th>Important</th>
<th>Somewhat Important</th>
<th>Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proven mechanism of change</td>
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<td></td>
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<tr>
<td>Proven biological mechanism of action</td>
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<tr>
<td>Randomized controlled clinical trials involving humans</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Animal Studies</td>
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<tr>
<td>Epidemiological studies</td>
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<tr>
<td>Published case studies</td>
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<tr>
<td>Success in practice</td>
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<tr>
<td>Colleague recommendations</td>
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<tr>
<td>Personal experience</td>
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<tr>
<td>Patient reports</td>
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</tbody>
</table>

17. Do you feel that occupational therapy professionals need to be aware of CAM’s?

☐ No  ☐ Yes
18. Would you be interested in education about specific methods?

☐ No

☐ Yes (please explain)

________________________________________________________________________

________________________________________________________________________

19. Please provide any comments/concerns that you may have as an OT professional regarding CAM’s.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Appendix B

Part one

Informed Consent Letter

IRB Number: 106153

Dear Colleague:

You were selected as part of a random sample of currently practicing occupational therapy professionals to participate in a survey regarding your attitude toward complementary and alternative medicines (CAMs). I am conducting this survey to fulfill the requirements for my Doctoral degree in Occupational Therapy at the University of Toledo Health Science Campus. The results of this study will be used for research purposes only.

The enclosed questionnaire will take approximately 20 minutes of your time. It is my intention to assess occupational professionals’ attitudes and knowledge of CAM’s. Occupational therapy needs to document interest in CAM’s just as other health care professions already have. The National Center for Complementary and Alternative Medicine (NCCAM) has defined CAM as a collection of medical and health care systems, products and practices that are currently not a part of traditional medicine.

Participation in this study is confidential, voluntary and anonymous. By completing the survey you are implying your consent to participate in this study. Please do not include any identifying information on your questionnaire. Return your completed survey by _______ in the enclosed self-addressed envelope. If you have any questions or concerns please feel free to contact Jennifer Herold at (440) 479-4308 or Barbara Kopp Miller at (419) 383-4289.

Thank you for your time and participation.

Sincerely,

Barbara Kopp Miller, Ph.D.
Principal Investigator

Jennifer Herold, OTDS
Co-Investigator
Appendix C

Dear Survey Participant,

Approximately two weeks ago you should have received in the mail a survey regarding occupational therapists’ attitudes and knowledge of palliative care. This card is just a reminder that if you would like to participate in this study the completed survey must be returned in the self-addressed, postage paid envelope provided by the November 14th, 2008. Your contribution to this study will be greatly appreciated and will help us to understand the correct attitudes and knowledge base occupational therapists have of palliative care. If you have already completed and returned the survey, thank you for your time. Questions regarding this survey can be directed to Jennifer Herold at Jennifer.herold@utoledo.edu or Barbara Kopp Miller at (419) 383-4289.

Thank you again for your time and participation.

Jennifer Herold, OTD Student
Barbara Kopp Miller, PhD, Research Advisor

UT IRB #106153
### Table 1

**General Attitudes**

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Agree %</th>
<th>Agree %</th>
<th>Neutral %</th>
<th>Disagree %</th>
<th>Strongly Disagree %</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Complementary medicine is a useful supplement to regular medicine.</td>
<td>35</td>
<td>50</td>
<td>14</td>
<td>1</td>
<td>0</td>
<td>4.20 (.69)</td>
</tr>
<tr>
<td>b) The results of complementary medicine are in most cases due to a placebo effect.*</td>
<td>1</td>
<td>3</td>
<td>38</td>
<td>47</td>
<td>11</td>
<td>3.65 (.72)</td>
</tr>
<tr>
<td>c) Complementary medicine includes ideas and methods from which regular medicine could benefit.</td>
<td>30</td>
<td>57</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>4.16 (.69)</td>
</tr>
<tr>
<td>d) Complementary medicine is a threat to public health.*</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td>48</td>
<td>38</td>
<td>4.22 (.73)</td>
</tr>
<tr>
<td>e) Complementary therapies not tested in a scientific manner should be discouraged.*</td>
<td>5</td>
<td>21</td>
<td>41</td>
<td>27</td>
<td>5</td>
<td>3.06 (.93)</td>
</tr>
<tr>
<td>f) Most complementary medicine therapies stimulate the body's natural healing powers.</td>
<td>14</td>
<td>53</td>
<td>29</td>
<td>3</td>
<td>1</td>
<td>3.78 (.73)</td>
</tr>
<tr>
<td>g) Occupational therapists should have some knowledge about the most common complementary medicine therapies.</td>
<td>22</td>
<td>64</td>
<td>12</td>
<td>3</td>
<td>0</td>
<td>4.05 (.65)</td>
</tr>
<tr>
<td>h) Occupational therapists should be aware of what complementary medicine therapies are available in their geographical area.</td>
<td>22</td>
<td>59</td>
<td>18</td>
<td>2</td>
<td>0</td>
<td>4.01 (.68)</td>
</tr>
<tr>
<td>i) Occupational therapists should be able to advise their patients about commonly used complementary methods.</td>
<td>16</td>
<td>42</td>
<td>32</td>
<td>9</td>
<td>1</td>
<td>3.64 (.87)</td>
</tr>
<tr>
<td>Statements *Reverse scored items</td>
<td>Strongly Agree %</td>
<td>Agree %</td>
<td>Neutral %</td>
<td>Disagree %</td>
<td>Strongly Disagree %</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------</td>
<td>---------</td>
<td>-----------</td>
<td>------------</td>
<td>---------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>j) Occupational therapists should not discuss complementary medicine therapies with their patients as it may prompt them to use them.*</td>
<td>0</td>
<td>4</td>
<td>29</td>
<td>48</td>
<td>19</td>
<td>3.81 (.80)</td>
</tr>
</tbody>
</table>

**Score Code:** 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

**Reverse Score Code:** 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree
## Table 2

Knowledge of specific complementary/alternative techniques

<table>
<thead>
<tr>
<th>Technique</th>
<th>Know A Lot %</th>
<th>Know A Considerable Amount %</th>
<th>Know Something About %</th>
<th>Have Heard the Term but know nothing about %</th>
<th>Never Heard of %</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture*</td>
<td>1</td>
<td>15</td>
<td>72</td>
<td>10</td>
<td>0</td>
<td>3.06 (.51)</td>
</tr>
<tr>
<td>Aromatherapy*</td>
<td>2</td>
<td>16</td>
<td>59</td>
<td>19</td>
<td>0</td>
<td>3.01 (.67)</td>
</tr>
<tr>
<td>Chiropractic*</td>
<td>3</td>
<td>39</td>
<td>50</td>
<td>4</td>
<td>0</td>
<td>3.42 (.61)</td>
</tr>
<tr>
<td>Cranio-Sacral*</td>
<td>9</td>
<td>16</td>
<td>49</td>
<td>19</td>
<td>4</td>
<td>3.08 (.93)</td>
</tr>
<tr>
<td>Faith Healing</td>
<td>1</td>
<td>8</td>
<td>37</td>
<td>43</td>
<td>5</td>
<td>2.55 (.76)</td>
</tr>
<tr>
<td>Herbal Medicine*</td>
<td>2</td>
<td>23</td>
<td>54</td>
<td>17</td>
<td>0</td>
<td>3.09 (.69)</td>
</tr>
<tr>
<td>Homeopathy*</td>
<td>1</td>
<td>17</td>
<td>48</td>
<td>25</td>
<td>4</td>
<td>2.86 (.80)</td>
</tr>
<tr>
<td>Hypnosis*</td>
<td>1</td>
<td>12</td>
<td>56</td>
<td>25</td>
<td>1</td>
<td>2.87 (.66)</td>
</tr>
<tr>
<td>Massage Therapy*</td>
<td>19</td>
<td>52</td>
<td>27</td>
<td>1</td>
<td>0</td>
<td>3.89 (.71)</td>
</tr>
<tr>
<td>Naturopathy*</td>
<td>2</td>
<td>15</td>
<td>36</td>
<td>25</td>
<td>17</td>
<td>2.57 (1.0)</td>
</tr>
<tr>
<td>Ortology</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>24</td>
<td>65</td>
<td>1.37 (.60)</td>
</tr>
<tr>
<td>Reflexology*</td>
<td>4</td>
<td>16</td>
<td>47</td>
<td>27</td>
<td>3</td>
<td>2.91 (.83)</td>
</tr>
<tr>
<td>Technique</td>
<td>Know A Lot</td>
<td>Know A Considerable Amount</td>
<td>Know Something About</td>
<td>Have Heard the Term but know nothing about</td>
<td>Never Heard of</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------</td>
<td>---------------------------</td>
<td>----------------------</td>
<td>--------------------------------------------</td>
<td>----------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Reiki</td>
<td>7</td>
<td>13</td>
<td>29</td>
<td>28</td>
<td>19</td>
<td>2.59 (1.1)</td>
</tr>
<tr>
<td>Therapeutic Touch*</td>
<td>7</td>
<td>16</td>
<td>42</td>
<td>27</td>
<td>6</td>
<td>2.91 (.97)</td>
</tr>
</tbody>
</table>

*Indicates >50% have some knowledge (“know a lot,” “know a considerable amount,” or “know something about”)

**Score Code:** 5 = Know A Lot, 4 = Know A Considerable Amount, 3 = Know Something About, 2 = Have Heard the Term but know nothing about, 1 = Never Heard of
Table 3

*Total Usefulness attitudes towards specific complementary/alternative therapies*

<table>
<thead>
<tr>
<th>Technique</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Somewhat Useful</th>
<th>Useless</th>
<th>Don't Know</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Acupuncture*</td>
<td>25</td>
<td>42.6</td>
<td>21.1</td>
<td>0</td>
<td>10.9</td>
<td>2.71 (1.17)</td>
</tr>
<tr>
<td>Aromatherapy*</td>
<td>7.4</td>
<td>26.1</td>
<td>38</td>
<td>4.9</td>
<td>22.2</td>
<td>1.91 (1.23)</td>
</tr>
<tr>
<td>Chiropractic*</td>
<td>29.2</td>
<td>38.7</td>
<td>23.9</td>
<td>2.8</td>
<td>3.5</td>
<td>2.90 (.991)</td>
</tr>
<tr>
<td>Cranio-Sacral*</td>
<td>17.6</td>
<td>29.9</td>
<td>22.9</td>
<td>1.1</td>
<td>26.4</td>
<td>2.13 (1.46)</td>
</tr>
<tr>
<td>Faith Healing*</td>
<td>9.2</td>
<td>17.6</td>
<td>28.2</td>
<td>6.3</td>
<td>36.3</td>
<td>1.56 (1.38)</td>
</tr>
<tr>
<td>Herbal Medicine*</td>
<td>415.5</td>
<td>36.3</td>
<td>31.3</td>
<td>1.8</td>
<td>14.1</td>
<td>2.38 (1.20)</td>
</tr>
<tr>
<td>Homeopathy*</td>
<td>16.5</td>
<td>27.8</td>
<td>22.9</td>
<td>2.1</td>
<td>29.6</td>
<td>2.00 (1.47)</td>
</tr>
<tr>
<td>Hypnosis*</td>
<td>7.4</td>
<td>20.4</td>
<td>31</td>
<td>8.8</td>
<td>31</td>
<td>1.64 (1.31)</td>
</tr>
<tr>
<td>Massage Therapy*</td>
<td>56.3</td>
<td>34.9</td>
<td>63.2</td>
<td>.7</td>
<td>1.4</td>
<td>3.45 (.767)</td>
</tr>
<tr>
<td>Naturopathy*</td>
<td>18.3</td>
<td>25.7</td>
<td>14.8</td>
<td>1.8</td>
<td>38.7</td>
<td>1.83 (1.59)</td>
</tr>
<tr>
<td>Orthology</td>
<td>1.1</td>
<td>1.4</td>
<td>7.7</td>
<td>2.8</td>
<td>81.3</td>
<td>.28 (.770)</td>
</tr>
<tr>
<td>Reflexology*</td>
<td>8.1</td>
<td>22.2</td>
<td>30.3</td>
<td>5.6</td>
<td>31.7</td>
<td>1.69 (1.34)</td>
</tr>
<tr>
<td>Reiki</td>
<td>9.9</td>
<td>14.4</td>
<td>21.8</td>
<td>6.7</td>
<td>45.1</td>
<td>1.36 (1.43)</td>
</tr>
<tr>
<td>Therapeutic Touch*</td>
<td>16.2</td>
<td>25.7</td>
<td>25</td>
<td>3.2</td>
<td>28.5</td>
<td>1.98 (1.45)</td>
</tr>
</tbody>
</table>
*Indicates >50% have some attitudes ("Very Useful," "Useful," or "Somewhat Useful")

Score Code: 4 = Very Useful, 3 = Useful, 2 = Somewhat Useful, 1 = Useless, 0= Don’t Know