Determining the need for improving education of complementary and alternative medicine to better serve patients and physicians

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A Current Inventory of the Need for Improving Education of Complementary and Alternative Medicine to Better Serve Healthcare Providers

Chapter 1: Introduction

Statement of the Problem

Complementary and Alternative Medicine (CAM) is a branch of healthcare that utilizes natural products and therapies to integrate a holistic approach to healthcare. This holistic approach "includes whole medical systems, mind-body medicine, biologically based practices, manipulative and body-based practices and energy medicine (Mayo Clinic, 2012). This dynamic approach is designed to incorporate the body, mind and spirit in order to improve their quality of life. Currently, with the cost of medical care, the dangers associated with pharmaceuticals, dissatisfaction of conventional medicine to treat chronic illnesses, and the longevity in lifespan seen in individuals, there is a drastic need to educate healthcare providers with accurate knowledge to provide a multidimensional care system for their patients.

There is an increase in interest of health conscious individuals who are turning towards CAM. "In the United States, approximately 38 percent of adults (about 4 in 10) and approximately 12 percent of children (about 1 in 9) are using some form of CAM" (Barnes et al, 2008). Generally, individuals who choose to investigate and use CAM are "seeking ways to improve their health or well-being or to relieve symptoms associated with chronic, even terminal diseases or the side effects of conventional treatments for them. Other reasons for choosing to use CAM include having a holistic health philosophy or a transformational experience that changes one's world view and wanting greater control over one's health." (Barnes et al, 2008).

One of the major issues in the past, is that there were very few medical colleges educating physicians on the types and benefits of CAM. In 1995 only 27 medical schools reported they included any form of CAM into their curricula (Konefal, 2002) It is reported that "Today, a group of more than 50 U.S. and Canadian medical schools and teaching hospitals, called the Consortium of Academic Health Centers for Integrative Medicine, includes CAM in its curricula" (Howell, 2012). Much of the teaching is limited to "elective modules, core curriculum lectures, and inclusion in problem based learning at undergraduate and residency level. Institutions such as Harvard and Stanford offer continuing postgraduate education courses, and the universities of Maryland and Arizona offer research and clinical fellowships. In addition, special interest groups in complementary and alternative therapy have been formed in professional organizations such as the Association of American Medical Colleges, and the Society for Teachers of Family Medicine has issued guidelines on including complementary and alternative therapy in the curriculum for residents (Berman, 2001).

Purpose of Study

The purpose of this study is to determine the attitude and general knowledge physicians have on various forms of Complementary and Alternative Medicine (CAM) in order to design and implement an asynchronous curriculum to increase physician knowledge of CAM. While interest in CAM among patients and the general public is high, CAM is not a subject to which significant time has traditionally been devoted within medical school curricula. Thus physicians have minimal formal training on how to evaluate the efficacy of CAM or how to prescribe and integrate CAM into medical practice. Results from this study will provide insight into how medical schools can integrate CAM curriculum into their existing programs to meet the increasing demands of the number of patient's seeking alternative therapies.

Chapter 2: Literature Review

Review of Related Literature

There is an increasing demand for information and education on CAM. Frenkel and Ayre (2001) indicate that there is an increasing number of individuals seeking out forms of CAM to provide preventative care, palliative care, and medical treatment of acute and chronic illnesses. The demand for information on acupuncture for the treatment of pain, chiropractic care, herbal remedies, healing energy, massage and homeopathy, to name a few, is evident by the number of articles, advertisements, computer and phone applications, magazines and periodicals that have emerged in the last two decades. In 1997 a national survey of the number of individuals using CAM therapy was 44% of the population of the US, adding up to over 629 million visits (Wolsko, Eisenberg, Davis, Ettner & Phillps , 2002). Astin, Marie, Pelletier, Hansen & Haskell (1998) continued to identify the same issues and other reviewers. In their review of surveys, they found that the numbers of patients turning towards CAM increased 7% over a four year period. Barnes, Bloom, and Nahin (2007) compared surveys from 2002 and 2007 and discovered that 4 out of 10 individuals were using some form of CAM within the studied 12 month period. Oldendick, Coker, Wieland, Raymond and Probst (2000) conducted a survey via telephone and concluded that greater than 40% of Americans were currently using CAM, and even a larger percentile would advise a friend on CAM.

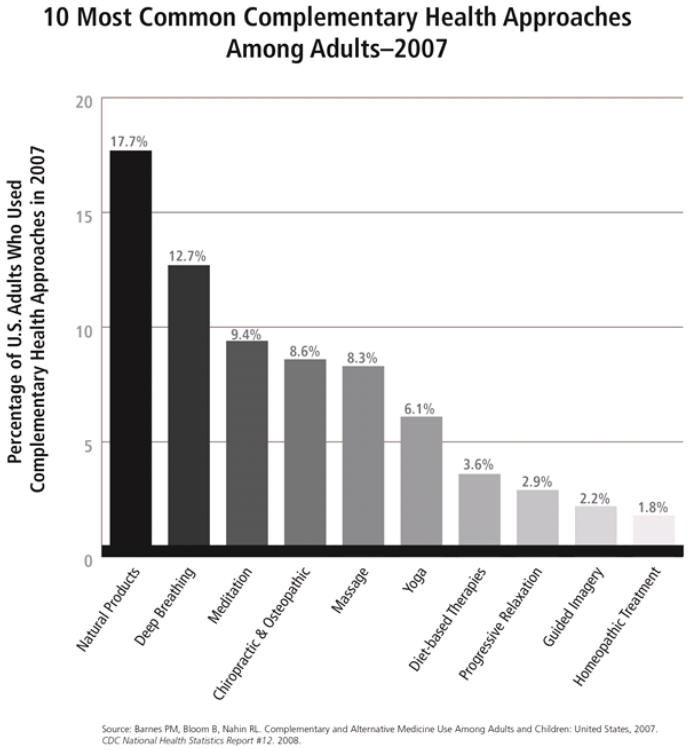
Patient Interest

According to the National Center for Complementary and Alternative Medicine of the National Institutes of Health (NIH), complementary and alternative medicine (CAM) can include the following:

- acupuncture
- Alexander technique
- aromatherapy

- Ayurveda (Ayurvedic medicine)
- biofeedback
- chiropractic medicine
- diet therapy
- herbalism
- holistic nursing
- homeopathy
- hypnosis
- massage therapy
- meditation
- naturopathy
- nutritional therapy
- osteopathic manipulative therapy (OMT)
- Qi gong (internal and external Qigong)
- reflexology
- Reiki
- spiritual healing
- Tai Chi
- traditional Chinese Medicine (TCM), and
- yoga. (NCCAM, 2008)

Barnes et al, in their report determined that "non-vitamin, non-mineral natural products are the most commonly used CAM therapy among adults. Use has increased for several therapies, including deep breathing exercises, meditation, massage therapy, and yoga". The table below provided by Barnes et al (2007) records the most common CAM approaches among adults.



With the growing demand for safe alternatives to traditional healthcare, there is a steady rise in interest regarding Complementary and Alternative Medicine (CAM) within the Western culture. According to Whitney Howell (2012) there has been a rise in the number of medical schools providing basic education on various forms of CAM, but we need to better educate and improve the attitudes of physicians on Complementary and Alternative medicine (CAM) therapies. With the cost of medical care, the dangers associated with pharmaceuticals, dissatisfaction of conventional medicine to treat chronic illnesses, and the longevity in lifespan seen in individuals, there is a drastic need to educate healthcare providers with accurate knowledge to provide a multidimensional care system for their patients. An attempt at understanding patient interest, the challenges faced in the education medical communities, and physician interest and attitudes will be addressed.

Challenges Facing Medical Institutions

Therein lies the challenge and that is how to educate medical professionals on the types, benefits and contraindications of CAM and to what degree of knowledge they need in order to provide safe and effective advice for their patients. "The push to bring CAM into medical training began in 1999 when the National Center for Complementary and Alternative Medicine (NCCAM), part of the National Institutes of Health, launched the CAM Education Project. Initially, the center awarded 14 grants of $1 million to $1.5 million to medical schools, teaching hospitals, and AMSA for research projects, such as training pediatric residents on the benefits of CAM in treating childhood diseases or teaching students to communicate effectively about it with patients. Today, a group of more than 50 U.S. and Canadian medical schools and teaching hospitals called the Consortium of Academic Health Centers for Integrative Medicine, includes CAM in its curricula (Howell, 2012).

This increase in medical schools incorporating more CAM therapy curriculum is partially due to the fact that more patients are looking for other approaches and the physicians must have a basic understanding of CAM. Frenkel et al. (2001) discuss the fact that it is critical for the physician to be informed about various CAM therapies. They do not need to be able to carry out the CAM, but they should have a sound understanding of how certain therapies could benefit specific client needs. Owen, Lewith and Stephens (2001) discuss the integration of including modules into the undergraduate medical programs at the University of Southampton . Sessions were created to increase the medical student's knowledge, attitudes, the benefits, and limitations of CAM. Learning objectives were established in order to make sure that students had the opportunity to study and to witness CAM in use. Konefal (2002) in her research of CAM and education discuss the need for curricula in medical schools. This would provide medical personnel the tools necessary to provide patients with general information with limited liability. Ideally, this would allow physicians to design a comprehensive medical plan for their patients, treating them holistically versus just treating disorders. Konefal (2002) also discuss the idea of continuing

education for those medical providers who have an interest in incorporating CAM into their practices. This would allow physicians to discover new ways to treat patients in their particular area of expertise.

Interest and Attitudes of Physicians on CAM

Despite the growth in medical schools increasing their curricula to include areas of CAM, it is still necessary to identify the interest of medical professionals in respect to CAM. The research on attitude is extensive, yet only a few articles provided thorough information on the interest of the medical community becoming more educated in CAM. Frenkel et al. (2001) examine surveys of physicians towards CAM and reported that most found certain forms of CAM useful and effective and nearly half remarked that CAM should be taught in medical school. Ben-Arye (2008) discusses the idea of "dual trained physicians in conventional medicine and CAM". The findings reveal that the dual trained physicians were more supportive of both traditional practitioners and CAM practitioners, whereas those specifically trained in conventional medicine were not as likely to provide referrals to CAM providers. This research expresses the fact that current medical students are more enthusiastic about learning CAM therapies and that there is an increased desire to collaborate on medical care. In another study by Milden (2010) a random sample of California physicians revealed that physicians' use or recommendations of CAM in their practices are limited by concerns about medical professional norms, yet are positively associated with their use of computer technology for self-education and communication with peers. Sixty-one percent of physicians do not feel sufficiently knowledgeable about CAM safety or efficacy, and 81% would like to receive more education on CAM modalities.

Much of the research did not fare well on the attitudes of the medical professionals on CAM. One of the main areas of interest is that the patient is leery to divulge that they are using CAM to their physicians. In articles by Frenkel et al. (2001), Konefal (2002), Sikand and Laken (1998), Oldendick et al. (2000),

Reese and Weil (2001), Lee, Khang, Lee, and Kang (2002), Perkin, Pearcy and Frasier (1994), and Astin (1998) authors agreed according to their research that the attitudes towards CAM by primary care physicians is less than enthusiastic. This then feeds into the idea that patients are not telling their medical provider about their use of CAM due to fear of negative feedback, cannot or will not provide advice on CAM. Not acknowledging the use of CAM in certain situations could be dangerous in certain situations, therefore another need to provide education and training to all medical professionals regarding the effective and safe use of CAM.

Chapter 3: Methodology

Study setting and population

A sample size of at least 25-50 physicians (MD, DO, PA) will be chosen by willingness to participate in the online survey. A basic letter of introduction will be sent to ask for participation in the research project. A follow-up email will include the attachments including the surveys and demographic constructs. Some of the physicians will be individuals that use my CAM practice as referrals for their patients. Others will be affiliated with two local hospitals, two local colleges, and two private practices. Examinees are randomly selected from different race, nationality, religion, gender, socioeconomic status, medical specialty, medical affiliation, and scope of practice.

Study Design

The online survey will include selected response formatting (MCQ, T/F) for measuring their knowledge of Complementary and Alternative Medicine, and for general demographic data collection. This information will be used to help further examine the construct, (i.e., see how demographic groups, age, sex, income all differ on the construct.)

Secondly, participants will complete a dichotomous scale survey to determine their attitudes towards CAM use. Questions were designed from similar surveys in order to determine whether the means for the two independent groups are significantly different. Test questions were designed to construct a total score for each person (summing their item scores), and the total score would be an indicator of the persons' attitude towards CAM. Scoring will be as follows; "Disagree"=1 point, unless it is a reverse ® it will be 5 points. "Agree"=5 points, unless it is a reverse ® which will be worth 1 point. Individuals with a low total score would have a low level of attitude towards CAM and someone with a high total score would have a positive attitude towards CAM.

Thirdly, another Likert scale survey would provide more useful information from the participants that can help further develop the construct. This will provide knowledge to see if individuals with low CAM attitude might not necessarily be interested in learning more about CAM. Those who are interested in learning more about CAM we will provide a pamphlet with the basic knowledge of CAM as well as websites and classes that they can look into to see if CAM is right for them. The first 5 Likert statements will be scored together with the "strongly disagree" = 1, "disagree" = 2, "neutral" = 3, "agree" = 4 and "strongly agree" = 5. The higher the scores the higher the use and knowledge of CAM.

The last two questions will be reviewed with the participant, if they would like information on CAM we will provide them with a pamphlet and other information as classes and websites to visit. This is if they put "Agree", "Strongly Agree", or "Neutral".

By choosing the Likert format, the selected response format will force the participant to rate their agreement based on their individual attitudes. A constructed response format, for example an essay, participants may not provide exactly the responses desired. This would jeopardize the content related validity due to biases in examinee responses and rater bias.

Data Analysis: Validity and Reliability

The Cronbach's alpha (KR-20) is a statistical tool that can be used to measure the estimated reliability of the written test and question item relevance. The KR-20 will allow us to look at the internal consistency of item responses with will allow us to determine if questions need revision or if more questions need to be added. The KR-20 will be the tool used to assess reliability of this study (Downing et al, 2009).

The selected response test (MCQ and T/F) is constructed by surveying professionals in the field of CAM as to what information they feel is necessary to include on the test. The content validity will then be measured using the average congruency percentage. Two chosen expert reviewers will determine the percentage of questions that they feel are congruent with the content of the study. An average will then be taken in order to define the average congruency percentage. With this being said, written tests will directly reflect our theory and should lead to a valid study. The construct demographics, could also be used to further accept or reject our hypothesis for validation, based on the several types of demographic information gathered.

In the response process, the use of the Likert scale which is a familiar format with a large majority of the population and is easy to complete. Seeing that these surveys will be administered online, there should

be no possibility for data error. A pilot test will help reform questions and make more depending how the validity and reliability of the test are. Further surveys may have to be piloted by CAM knowledgeable people, who teach CAM, perform aspects of CAM or are CAM patients to help get results that will decide how reliable and valid our test is.

Within internal structure there is item difficulty. If the participants are unaware of CAM, they will either get the question wrong or right. We can throw out tests that are done incorrectly. The score scale will stay the same, since it is SR there is no way to change the outcome of the answer to make the incorrect, correct. A differential item functioning would determine if the same responses were the same among participants. The average person who knows about CAM should be able to answer these questions compared to someone who does not know anything about CAM.

Relations to other variables can be evidence of validity if there are issues with generalizability, and might be limited with the design of the assessment due to how short it may be.

Another test that could be utilized, given the number of surveys completed, would be the Spearman-Brown formula which would look at the split half. This method allows for the total number of items to be divided in half and then determining the correlation between the two halves. This method would be also be used to measure reliability. If the reliability of the assessment will be higher if there is less random error, and that is something that needs to be tested for. Therefore if the test is given to several CAM knowledgeable people and have them take several different times with the questions in different orders we can test the reliability to see if the error is low by seeing if their answers change. This is the

Test-Retest Reliability. The differences of their test scores would be an error because we don't want their answers to change at all. This would predict that since this is a local test and there is nothing high stakes about this test then the reliability should be 0.80-0.89. Even 0.70-0.79 would be acceptable for the information we are trying to gather. We just want to see if the participants have knowledge about CAM so that we can then devise a way to get more information out there to those who want more information on CAM.

Summary

With the increase in the general public seeking alternatives to traditional medicine it is important to evaluate the knowledge and attitudes of physicians in order to provide optimal care for their patients. Ideally, this study will lead to the design and implementation of an asynchronous curriculum to increase physician knowledge of CAM. As noted earlier, an insignificant amount of time has traditionally been devoted within medical school curricula for CAM and it is critical to find a way to further educate physicians on the valuable use of integrative medicine.

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Appendices

Thank you for participating in our study of Complementary and Alternative Medicine (CAM). All results will be strictly confidential and will be used for study purposes only.		
******Please mark in the correct column a "X" for the answer you choose******	**Disagree**	**Agree**
Aromatherapy is a form of CAM.		

Flower Essences is a form of CAM that involves brandy.		
® Reiki is a form of CAM that uses the body to bend and balance in different positions while using a breathing technique to promote body healing.		
® Acupuncture is not a form of CAM because it uses needles.		
Acupressure is a form of CAM that uses the fingers to gradually press key healing points, which stimulate the body's natural self-curative abilities.		
Chiropractic care is a form of CAM where health professionals with a degree manipulate joints in the body to alleviate pain throughout your body.		
Yoga is a form of CAM.		
Some forms of CAM are covered by insurance.		
® The cost of CAM is more expensive than traditional medicine.		
CAM workers can be practitioners are doctors, nurses or other health professionals		
® You don't have to talk to your primary physician before beginning any form of CAM because it is all therapeutic.		
® It is okay to take herbal medicine and vitamins with your prescribed medicines because they are natural.		
Vitamin and mineral supplements are forms of CAM.		
3 out of 4 Americans use some form of CAM daily.		
Total Individual Score		

Key: ® is representing the question is "reverse" in order to get true CAM awareness from participants.

Likert scale to find out more information on the pariticpants and to see if they are willing to learn more.

Please indicate in the correct box an "X" for each statement you agree with. One answer per statement.
I am familiar with the term Alternative Medicine.
I am familiar with the term Complementary Medicine.
I have used Alternative Medicine to treat myself.
I know someone who has used Alternative Medicine to treat themselves.
My physician has suggested using Complementary Medicine.
I am interested in gaining more knowledge on the subject of CAM.
I am interested in being contacted to learn more about CAM.

Thank you for participating in our study of Complementary and Alternative Medicine. The results of this study will be used to increase the awareness of the general population. All results will be strictly confidential and will be used for statistical purposes only.

Participant Demographics

Please circle the correct answer as it pertains to you under each question

1. Gender:
What is your sex?

a.)Male
b.)Female

2. Age Group:
What age group are you in?

a. 16-25
b. 26-35
c. 36-45
d. 46-55
e. 56+

3. Education:
What is the highest degree or level of school you have completed? If currently enrolled, mark the previous grade or highest degree received:

a.) 9th, 10th, 11th, or 12th grade
b.) High school diploma or the equivalent (GED)
c.) Some college credit
d.) Associate degree
e.) Bachelor's degree
f.) Master's degree
g.) Professional degree
f.) Doctorate degree

4. Race/Ethnicity
How would you classify yourself?

a.) Arab
b.) Asian/ Pacific Islander
c.) African American
d.) Caucasian
e.) Hispanic
f.) Indigenous/ Aboriginal
g.) Latino