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Patients' Perspectives on Discussing Complementary and Alternative Medicine Therapies With Conventional Doctors

Deborah A. McNinch
Walden University

Walden University

COLLEGE OF HEALTH SCIENCES

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Deborah McNinch

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Review Committee
Dr. Precilla Belin, Committee Chairperson, Public Health Faculty
Dr. Cynthia Lanier, Committee Member, Public Health Faculty
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Chief Academic Officer

David Clinefelter, Ph.D.

Walden University
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Abstract

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MS, Walden University, 2007

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Dissertation Submitted in Partial Fulfillment

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Abstract

Currently, little is known about patients' perceptions and beliefs in discussing complementary and alternative medicine (CAM) with their conventional medical (CM) doctor. The purpose of this descriptive research was to show whether CAM-using patients have an interest in discussing CAM treatments with their CM doctor for comprehensive care as described by the health belief model (HBM) constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action. A sample of 165 participants age 18 or older from 2 chiropractic clinics in the midwestern United States completed a Likert-scaled survey. The data were analyzed using descriptive statistics and multiple regression to determine if there is a relationship between the variables of the need for a CAM discussion with a CM as the outcome using HBM constructs as the independent variables. The primary findings from this study were that (a) the participants were interested in discussing CAM with their physicians, with the majority of the participants stating that they discussed CAM either often (33.5%) or always (29.3%); and (b) perceived susceptibility, perceived seriousness, and perceived benefits of taking action were not predictive of a CAM discussion. Future studies should be conducted to (a) examine samples with varying demographic characteristics to assess the generalizability of the current findings; and (b) to include additional predictors of CAM discussions from the HBM such as barriers, cues to action, and self-efficacy. The results of this study add to the limited literature on CAM usage and may prompt future research. Implications for positive social change include understanding patient interest in discussing CAM which can help improve the overall quality of patient service.

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ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Dedication

I dedicate this dissertation to the loving memory of my mother Evelyn Hiykel, who died during the pursuit of this doctoral degree, and my loving father Frederick Hiykel, who died many years ago. They both continued to be my greatest inspiration in completing this process. They imparted wisdom, tenacity, and fortitude and taught me to reach for the sky, have big dreams, and never give up. They are my heroes.

Additionally, I dedicate this dissertation to my in-laws who passed away during this pursuit, Keith McNinch, Sr., Marilyn McNinch, and Roger McNinch.

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My primary thanks goes to all my committee members for their patience and guidance. I extend sincere gratitude to my chair, Dr. Precilla Belin, for encouraging me, providing support, and keeping me focused. Many thanks go to my committee members Dr. Cynthia Lanier and Dr. Manoj Sharma for their insightful direction, inspiration, expert advice, and feedback. I also am especially grateful to Walden's writing department, my editor, my statistician, and the participating chiropractic offices and their patients.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

In the United States, complementary and alternative medicine (CAM) use has increased over the past century (Eisenberg et al., 2001). Yet many of CAM users do not discuss this activity with their physician. The purpose of this study was to examine how the patient feels when this dialog is omitted. This chapter includes a background of the issue, statement of the problem, research questions and hypotheses, purpose of the study, theoretical base, definition of terms, assumptions, limitations and scope, significance of the study, importance of social change, and summary.

Over the past 100 years, most health problems have changed from acute disease to chronic disease (Turnock, 2004). In the United States, 70% of deaths are attributed to chronic diseases, which constitute the leading cause of morbidity (Centers for Disease Control and Prevention [CDC], 2009). To regain or control well-being, the use of CAM modalities among United States health care consumers has grown to 34% (Eisenberg et al., 2001). CAM is "a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine" (National Center for Complementary and Alternative Medicine [NCCAM], 2007, para. 2). One example of an unconventional form of treatment is biologically based therapy with herbs and vitamins (Eisenberg et al., 1998, p. 1575). Although some forms of CAM may improve the health of patients with no adverse reaction, medical personnel need to be open to these therapies and have knowledge about the benefits, drawbacks, and how conventional medicine (CM) interacts with these therapies (Eisenberg et al., 1998).

Researchers continue to show that people who use CAM therapies do not always consult with their physicians about this activity. According to Eisenberg et al. (2001), 63% of the respondents did not disclose use of at least one of their CAM therapies, and 28% disclosed all of their three or fewer CAM therapies to their medical doctor (p. 348). Respondents cited the most common reasons for not consulting their physicians as the doctor never asked, they did not know they should, or there was not enough time (AARP Knowledge Management and the NCCAM, 2007, p. 7). A review of the literature showed that there is a gap in the current research regarding the feelings and beliefs of the CAM-using patients about omitting a discussion of CAM between the physician and patient.

Natural products are one of the most popular non-Western medical therapies used in the United States (Eisenberg et al., 2001). Natural products are also referred to as biologically based practices that include materials found in nature, such as herbs, foods, or vitamins, and include special diets, vitamins, herbs, and homeopath (Department of Health and Human Services [DHHS], 2007, para. 8). Even though most of these treatments have no adverse affect when combined with conventional medicine, traditional doctors need to understand these therapies, how they interact with CM, and be able to advise and help their patients decide what methods can be safely used together (Eisenberg et al., 1998). Some of the most common CAM modalities include vitamins, herbs, prayer, chiropractic, diets, acupuncture, energy medicine, and massage (Barnes, Powell-Griner, McFann, & Nahin, 2004). Most of these therapies work well with CM,

although some herbs combined with certain medications can cause an unsafe reaction (Eisenberg et al., 1998).

The Consumer

Although certain populations may be more likely to use CAM than others, the increased use of CAM has not been specifically confined to any segment of society. Geffen (2007) found that as the Baby Boomers age, the health care industry is transforming. This demographic group is more demanding, educated, and wealthy than previous generations. Furthermore, they want choices, ask to be involved in the decision-making process, and are not afraid to share their experience with family and friends. Consumers of health products and services are becoming more knowledgeable shoppers. According to Harmon and Ward (2007), with the advent of the Internet, the consumers' knowledge base expanded and altered their options and behavior, increasing their freedom of choice. This wave of significant behavior modification demands that current health care mechanisms become more innovative to encompass this phenomenon. The public sector will continue to play a bigger role in the decision-making process regarding their health choices. People will become more empowered as a result of increased consumer decision making and innovative developments in health care (Harmon & Ward, 2007). Traditional medical professionals should examine the established system of current practice and act accordingly to improve their effectiveness and work together with their patients.

The Physician

The current system of medical training and practice has created the expectation that the physician is the only authority. A practical challenge for physicians is to sacrifice some degree of authority to be part of a more multidimensional health care system. It may be difficult for them to compromise their beliefs and behavior patterns. Dealing with this issue effectively is critical and requires flexibility and cooperation from the entire health care team. According to Geffen (2004), historic and cultural conditioning has created physicians who prefer a hierarchical approach.

Geffen (2004) changed his clinic to a multidimensional health care system, and discussed the experiences and lessons learned from this conversion. Transforming a mainstream, standard medical practice into a multidimensional one starts with a vision and must be embraced by the entire office staff. The new environment is rearranged to a team-oriented system. Everyone on the staff plays an important role and must be acknowledged, valued, and compensated equally.

Presently the U.S. health care system is approaching a transition regarding how medicine and healing are understood (Harmon & Ward, 2007). This transition involves a paradigm shift from a primarily rigid linear model of biology and health to one that is fluid and multidimensional. Furthermore, the repercussions of this revolution are wide-reaching and have the potential to change medicine and healing. Wisdom, courage, and vision are needed to help guide the way for smooth navigation through these remarkable times (Harmon & Ward).

Statement of the Problem

There is evidence that use of CAM in the United States has increased in the past few years. According to Eisenberg et al. (2001), many CAM-using patients do not discuss with their physicians what CAM treatments they are using. This lack of dialog may affect patient satisfaction about the care received. The combination of CAM and CM treatments generally have no adverse affects; however, traditional doctors need to understand these therapies and how they interact with CM and so that they can advise their patients appropriately about using these methods safely. In this study, the variables were defined as patients' interest in discussing CAM use and the health belief model (HBM) constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action. Quantitative data were gathered to better understand the research problem.

Lack of discussion between conventional medical doctors and their patients about CAM usage could create a gap in service pertaining to quality care, which may affect patient satisfaction from an office visit. There is little research on CAM use and patient and doctor dialog about CAM use. This study adds to the existing database of literature about CAM use and CAM therapies by determining if there is a relationship between the quality of care the patient receives and the omission of sharing CAM information. Thus, the purpose of this study was to investigate to what extent this lack of dialog affects patients' perceptions of quality medical care.

Nature of the Study

Little research has been completed on whether CAM-using patients have an interest in discussing these therapies with their CM doctor. In this study a cross-sectional design was used to examine the association between lack of CAM usage dialog and patients' feelings about this omission. This method allows quick accumulation of data from a subset of the population at a specific time. Additionally, a cross-sectional designs are used to describe and assess some characteristics of a group through hypotheses (Babbie, 2007).

Research Questions and Hypotheses

In this quantitative study, data were collected on participants' use of CAM treatments and the doctor and patient discussion regarding CAM use. The dependent variable was CAM discussions with the physician, and the independent variables were perceived susceptibility, perceived seriousness, and perceived benefits of using CAM. The data were analyzed with the Statistical Package for Social Sciences (SPSS 18) using Cronbach's alpha, descriptive statistics, and multiple regression.

This investigation was guided by the following overarching research question: To what extent do CAM-using patients have an interest in discussing CAM treatments with their CM doctor as described by the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action? Three subquestions were addressed. The first subquestion is: To what extent do participants believe comprehensive care is compromised by not discussing CAM? The null and alternative hypotheses for this subquestion are:

H_{01}: CAM-using patients do not believe comprehensive care is compromised by not discussing CAM.

H_{A1}: CAM-using patients do believe comprehensive care is compromised by not discussing CAM.

The second subquestion is: To what extent do participants believe that not discussing CAM is a serious issue that could affect their medical care? The null and alternative hypotheses for this subquestion are:

H_{02}: CAM-using patients do not believe discussing CAM is a serious issue.

H_{A2}: CAM-using patients do believe discussing CAM is a serious issue.

The third and final subquestion is: To what extent do participants believe discussing CAM will benefit the medical care they receive? The null and alternative hypotheses for this subquestion are:

H_{03}: CAM-using patients do not believe discussing CAM will benefit the medical care they receive.

H_{A3}: CAM-using patients do believe discussing CAM will benefit the medical care they receive.

Purpose of the Study

The purpose of this study was to determine whether CAM-using patients have an interest in discussing CAM treatments with their CM doctor for comprehensive care as described by the HBM constructs**.** The intent of this study was to show if the medical care patients receive is affected for those using CAM. The study examined if there is a relationship between CAM use and patient dialog regarding CAM use with their

conventional medical doctors and patients' beliefs about whether they have received comprehensive care.

Theoretical Framework

A well-established construct connected to health behavior is the HBM. This model provides a framework for explaining why specific health behavior is adopted. The variables of CAM patients' interest in discussing CAM, perceived susceptibility, perceived seriousness, and perceived benefits deal with the subjective world of the patient and are related to the physician's objective state (Rosenstock, 1966). Beliefs affect both cognitive and emotional elements in the decision-making process related to health behavior; the emotional aspects are more valuable than the cognitive aspects (Rosenstock).

The present research focused on individuals' feelings when they do not discuss CAM use with their physician. The HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action guided the research and survey questions. There has been little or no research conducted to evaluate how a patient feels when CAM use is not discussed with their CM doctor. This issue became known by discussing it with friends and family members.

Alternative medical treatments have increased substantially in recent years. NCCAM determined through a national survey that people use these therapies for neck, head, joint aches, or other painful conditions; colds; anxiety or depression; gastrointestinal disorders; or sleeping problems (as cited in DHHS, 2008). When these and other problems arise, the person then must decide how and where to seek care.

Rosenstock (1966) asserted that the individual moves through a series of stages or phases in the health decision making process. This process is objective, rather than subjective, and originates in the emotions. Five constructs are used to assess the attitudes and beliefs in the decision-making process: "perceived susceptibility, perceived seriousness, perceived benefits of taking action, barriers to taking action, and cues to action" (p. 99). Bandura (1977) later added self-efficacy to this model. These components influence the specific health-related behavior to control or prevent a health condition.

The HBM model views health care choices from the perception of need and is made up of stages that are affected by situations, beliefs, values, and cues (Rosenstock, 1966). Individuals move through the stages differently and depend on their attitudes, experiences, and thoughts. Perceived susceptibility is the assessment and acceptance of risk for developing an illness. The person perceives the degree of potential seriousness of the situation through either emotional arousal, difficulties that have been or may be created, or both. Judgment measures include whether a threat of disease can reduce physical or cognitive functions, lead to death, or cause permanent disability. Some judgments assess the effect of the situation on their job, family life, and social relationships (Rosenstock).

Once susceptibility and seriousness are acknowledged, the benefit of taking action is examined (Rosenstock, 1966). The decision to perform a behavior is then governed by the expected outcome and barriers. Beliefs about the benefits of adopting a specific behavior to achieve a particular outcome can differ among individuals and are dependent

on values and expectations. The effectiveness of the action is evaluated from the objective of the outcome. If the benefits outweigh the cost, that action will be considered. The effectiveness of activities is measured against the obstacle of performance. The availability of the method dictates acceptance. Perceived benefits may be influenced by barriers to taking action. Negative aspects of actions can create avoidance of the action (Rosenstock).

Barriers to action such as unpleasant or painful results diminish readiness to act. The action could be dismissed if the individual perceives the behavior as inconvenient, expensive, unpleasant, painful, or upsetting (Rosenstock, 1966). Cues to action can come from within or externally. Internal cues can be from observing one's bodily state. Influences may come from external sources such as social groups, the media, or family members. The level of readiness immensely affects action. If the readiness level is low, the behavior may not be assimilated. If self-efficacy and readiness are high, the individual is likely to act (Rosenstock, 1966). Self-efficacy is an individual's belief in his or her ability to perform the specific behavior to attain a particular outcome. Doubt about executing the necessary behavior can interfere with performance (Bandura, 1977).

The HBM was the framework used to develop the research for this study. This model works well to explain behavior when an individual attempts to avoid a condition. In this study, the condition is patients' potential negative feelings about office visits. Three concepts from this design help to explain people's behavior. The perceived susceptibility, perceived seriousness, and perceived benefits of taking action (Rosenstock, 1966) provided the framework for this research. Barriers, cues to action, and self-efficacy

were not included because this study did not examine these concepts. The focus was on the patient's interest in discussing CAM for perceived comprehensive care. Table 1 shows the HBM constructs that were the focus of this study and their relation to the research questions.

Table 1

HBM Constructs and Research Questions

HBM constructs	HBM application
Perceived susceptibility	To what extend do participants believe comprehensive care is compromised by discussing CAM?
Perceived seriousness	To what extent do participants believe that not discussing CAM is a serious issue that could affect their medical care?
Perceived benefit	To what extent do participants believe discussing CAM will benefit the medical care they receive?

An individual's acceptance of susceptibility varies widely (Rosenstock, 1966). Perceived susceptibility examines the participant's belief that unmet expectations from the office visit may affect the patient's satisfaction. Perceived seriousness is concerned with the patients' acceptance of a given action's consequence or result. Perceived benefits provides information regarding the patients' views about specific actions (Rosenstock).

In developing a framework for this research, the study variables were identified from the pertinent literature. The experience of patients with their physicians is described in the present research. This knowledge may be valuable for doctors and patients to become aware of the importance of a CAM discussion. This dialog is significant to both doctors and patients in terms of the potential ramifications for perceived comprehensive care from the patient's perspective.

Studying doctor-patient communication and satisfaction is not new. In 1968, Korsch, Gozzi, and Francis (1968) reported doctor-patient communication gaps. The results from the patient survey about doctor-patient communication showed that patients were

1. Highly satisfied (40%)
2. Moderately satisfied (36%)
3. Moderately dissatisfied (11%)
4. Highly dissatisfied (13%) (p. 859)

Two areas of Korsch et al.'s study focused on expectations and worry. The authors found that patients' expectations include a friendly physician who is concerned, sympathetic, and takes time for questions and explanations (Korsch et al., 1968, p. 860). Approximately 25% of the patients reported they would have liked to ask the doctor more questions. The highest incidence of dissatisfaction occurred when neither expectations nor main worries received attention (pp. 861; 864). Sixty-five percent of the expectations and 76% of the main worries were not mentioned by the patient. Patients expect a friendly, concerned, sympathy physician that takes time to answer questions.

Definitions of Terms

Biologically based therapies: The use of "substances found in nature, such as herbs, special diets, or vitamins (in doses outside those used in conventional medicine) and include vitamins, herbs, homeopath, and diets" (DHHS, 2007, para. 8).

Biomedicine: A system in which medical doctors and other healthcare professionals such as nurses, pharmacists, and therapists treat symptoms and diseases using drugs, radiation, or surgery (U.S. National Institutes of Health, n.d.).

Biopsychosocial: An approach that includes the biological, psychological, and social factors of disease and illness (Biderman, Yekeskel, & Herman, 2005).

Body-based procedures: Procedures "based on manipulation or movement of one or more body parts, and includes chiropractic, massage, and reflexology" (DHHS, 2007, para. 9).

Complementary & alternative medicine (CAM): "A group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine" (DHHS, 2007, para. 2).

Comprehensive care: Expected or desired treatment and service (World Health Organization, 2009).

Conventional medicine (CM): The practice of medicine by holders of MD (medical doctor) or D O (doctor of osteopathy) degrees and by other health professionals, such as physical therapists, psychologists, and registered nurses (DHHS, 2007).

Dietary supplements: Vitamins, herbs, minerals, amino acids, and other plant substances (DHHS, 2009).

Energy therapies: The use of energy fields, such as magnetic fields or biofields. Energy fields surround and penetrate the human body. Energy therapy includes magnetic therapy, qi gong, and reike (DHHS, 2007).

Mind-body techniques: A variety of techniques that "enhance the mind's ability to affect bodily function and symptoms" (DHHS, 2007, para. 7). Techniques include meditation, relaxation, guided imagery, and deep breathing.

Natural products: Dietary supplements or biologically based therapies (DHHS, 2009).

Perceived benefits of taking action: The advantages gained from performing a specific action (Rosenstock, 1966).

Perceived susceptibility: The assessment and acceptance of risk for developing a condition (Rosenstock, 1966).

Perceived seriousness: The conviction relating to the important and significance of a condition (Rosenstock, 1966).

For this study, perceived susceptibility, perceived seriousness, and benefit of taking actions were calculated as a summative score on four items, each using a 5-point Likert scale that included *strongly agree* (1), *agree* (2), *neutral* (3), *disagree* (4), and *strongly disagree* (5).

Assumptions, Limitations, and Scope

Assumptions

1. All participants use CAM.

2. Volunteers were able to understand the survey questions and responses were as accurate as possible.

3. Reporting bias should be low because participants did not divulge personal information regarding health issues. There were no identifying factors obtained.

4. Participants answered survey questions honestly and to the best of their ability.

5. The data from the study will be useful and possibly influence social change.

Limitations

Responses to the questions were dependent on the participants reporting their accuracy of CAM use discussions and feelings when this discussion is omitted. The survey was presented only in English, which excluded some participants and valuable information. Biased results could develop if subjects inaccurately reported CAM use discussions or the effect on their perceived medical when not discussing CAM use with the CM physician. Data were collected through self-reporting, which may cause bias such as over- or underestimating.

The study took place in one area of the U.S. and, therefore, the results may not generalize to the rest of the country. Also, chiropractic patients could be more willing to be open with their CM doctor because they have the support of their chiropractic doctor and the staff compared to a person that does not have this type of support system. Collecting data at a single point in time, specifically during the winter months when more people are sick with a cold and flu, or spring and fall during allergy season, may show a higher CAM use, especially for biologically based therapies that do not require doctor attention. The extent of these limitations and their effect on this study are unknown.

For this study, validity will be affected most by receiving sufficient surveys from minorities. One chiropractic office is in an area that should produce replies from a variety of participants. Because the study's focus is on the doctor-patient communication regarding CAM, no pre or posttesting for an intervention is required, although the questions were pilot tested for clarity.

Scope

The scope of this study was limited to approximately 165 CAM users in two chiropractic clinics in the midwestern United States. Limitations were minimized by pilot testing the instrument, making the survey simple, and employing the Likert scale for as many questions as possible. The results of this study (a) provided knowledge about how patients feel when CAM use is not discussed with their conventional medical doctor, (b) may help the physician to understand the patient better, (c) may help improve the doctor and patient relationship, and (d) could encourage further research in other demographic areas with a larger study population.

Significance of the Study

Forty years ago the majority of sick Americans would have seen an MD, obtained a prescription, or had surgery (Turnock, 2004). There were few other options. As a result, most people relied heavily on conventional Western medical methods for healing (Turnock, 2004). Today, Americans have greater choices in health care than ever before (Harmon & Ward, 2007). They can try a variety of remedies, select from dozens of CAM therapies, and call the family doctor. Among the healing therapies now available

are mind-body medicine, biologically based practices, manipulation and body-based practices, whole medical systems, and energy medicine (DHHS, 2007).

Patients have access to all forms of medicine considered more conventional, such as over-the-counter drugs, prescription drugs, high-tech medical procedures, and surgery techniques that are available in clinics and hospitals (Starr, 2002). The CAM healing methods present an opportunity to try something new. Combining CAM with CM is important. Although holistic medicine remains on the periphery of traditional medical education, American consumers have increased their CAM usage (Starr, 2002).

In this investigation examined patients' beliefs about whether not discussing their CAM use reduces the desired care and satisfaction from the doctor visit were examined. The information collected adds to understanding the effect of patient perception on complete care. In some cases, the results of this research could provide information that may save lives or reduce complications to potentially improve patient care.

The overarching goal of this study was to highlight the issue that a patient's desired care may be affected when CAM usage dialog between patient and doctor is omitted. The desired social change from this research is that doctors and patients develop a more open dialog about alternative treatments the patient may be using. Additionally, patients need to be more assertive and forthcoming about their holistic treatments, whichmay help prevent any complications from combining CM and CAM modalities and help protect the patient.

Importance for Social Change

Disease and illness are normal life events that each person approaches differently. Choices for cures have expanded significantly (Frenkel, Arye, Carlson, & Sierpina, 2008). One approach is treating the whole person, including the mind, body, and soul, which are the core foundation of CAM. Techniques are generally noninvasive, safe, and inexpensive compared to CM. Non-Western medical practices include biological-based practices, energy medicine, manipulation and body-based practices, and mind-body medicine (DHHS, 2009). The CDC (2009) listed 27 types of CAM therapies (Appendix A). According to Barnes et al. (2004), 36% of American adults tried some form of CAM in 2002, excluding prayer. This percentage is an increase of over 50% from the 1990 survey conducted by Eisenberg et al. (1998). Vitamins and herbs are two of the most popular CAM therapies. Most of these therapies work well with CM, although some herbs combined with certain drugs can cause an unsafe reaction (Eisenberg et al., 2001).

Eisenberg et al.'s (2001) study revealed that some patients do not discuss with their doctors what CAMs they are using (Eisenberg et al., 2001). Doctors need to be informed about what CAMs their patients are using and how they interact with CM. Doctors who are knowledgeable about these treatments can help their patients make informed decisions. If patients do not inform their doctors about their CAM use and doctors do not ask their patients if they use CAM, then patients may feel unsatisfied after the doctor visit. The desired social change for this research is that doctors and patients develop a more open dialog about CAM therapies the patient is using. Acquiring a better understanding of the patient's need to discuss CAM use might improve patient

satisfaction from the office visit and may lead to expanded CAM curriculum at medical schools and continuing education programs.

Summary

The theoretical and research concentration of CM is illness focused, compared to emphasizing intervention and prevention motivations (Geffen, 2004). According to Biderman et al., (2005), traditional medicine is the study of disease from a linear perspective. This type of medicine does not emphasize the etiological components of health (Biderman et al.). Holistic medicine operates within the principles of the biopsychosocial model for health and disease. This approach highlights treatment, illness prevention, and health promotion. While understanding the scientific principles of CAM may take decades, these modalities need to be considered.

With the help of the Internet, patients have greater access to medical information. They conduct research on their own and have become skilled and knowledgeable consumers of health care. Having open discussions between the provider and their patients allows for fully integrated care, reduces risks of interactions with conventional treatments, provides empowerment, and allows the patients to stay in control and effectively manage their health (Harmon & Ward, 2007). Furnishing a full picture for the doctor of what the patient is doing can help these parties manage the patients' health, reduce negative and possibly dangerous effects, and make the wisest decisions possible (Geffen, 2004).

A doctor and patient enter into a relationship for the purpose of improving the client's health (Geffen, 2004). Yet, when all medical therapies the patient is employing

are not acknowledged, a deficiency in perceived medical care from the patient's perspective may emerge. Today's patients require a health care system that accommodates their demands, provides them with a complete evaluation of their activities, and includes them in the decision-making process (Geffen). A question that has not been addressed in the literature is how patients feel when a dialog regarding non-Western treatments they are using are omitted from the office visit. The survey that was used in this study measures how patients feel when a CAM dialog is omitted from the medical history while visiting their CM doctor.

Chapter 2 will examine the available information about the history of medicine, CAM usage in America and other countries, federal regulations, and physicians' beliefs of CAM. Chapter 3 focuses on the methodological framework that guides this study. Chapter 4 will present an analysis of data. Chapter 5 will provide a summary and recommendations and will offer objective suggestions for future research.

Chapter 2: Literature Review

Introduction

In this chapter the literature about conventional and alternative medicine is reviewed. The search for research and literature began with a simple exploration of material on CAM. With each article read, more search words emerged and specific research articles of interest were found in the reference lists of other articles. The search expanded to include the extent of the use of CAMs in consultation with physicians.

The information for this section was retrieved from multiple databases in EBSCO, Medline, Pubmed, CDC, and other government resources. Some of the key words used during the search included *CAM*, *CAM use*, *CAM attitudes, doctors, patients, India, China, ayurvedic*, and *acupuncture*. The databases were searched from 2008 through 2010 and provided approximately 100 results for each search. After completing the systematic review, roughly 50 articles were found to provide scientific evidence and reliable information that objectively supports the research questions of the study.

Contemporary Medicine

The field of medicine has made great advances, replacing ineffective procedures with a more rational and scientific approach and laying the foundation for modern medicine. Over the past 100 years, medicine has undergone major changes in both philosophy and practice (Massad, 2003). CM focuses on diagnosing diseases, crisis management, prescribing medicine, and performing surgeries. The benefits of x-rays, blood tests, and research have helped the medical profession understand how to treat chronic and acute diseases, while vaccines have almost eradicated infectious diseases.

CM continues to be involved in cutting-edge information that opened the field for future scientists and medical personnel to develop other techniques and procedures to protect and monitor society, reduce the burden of disease, and develop preventive measures (Massad, 2003).

Scientific and technological advances have provided medicine with an array of treatment approaches and a seemingly endless supply of new methods and pharmaceuticals, resulting in more effective approaches but more uncertainty (Massad, 2003). Due to these advances, life expectancy has increased. Nonetheless, people are looking for safer and less intrusive treatments and have turned to CAM. Many CAM practices and therapies have been utilized for thousands of years. These therapies can be used alone or in conjunction with conventional treatments. Most of these therapies are usually not taught or available in U.S. medical schools (Massad, 2003).

The Focus of Medicine

Medicine's purpose is to promote health and well-being through state-of-the-art medical care that affects the physical, emotional, mental, and social aspects of the human experiences (Veatch, 2006). The initial concern is to relieve pain by focusing primarily on the physical dimensions. However, this approach is limited because it neglects the emotional, social, and spiritual aspects of the human experience.

People in Western society believe the purpose of medicine is to fix the problem swiftly (Geffen, 2004). CM primarily focuses on the physical with the goal of normalizing blood tests and alleviating pain. The emotional, mental, and spiritual aspects of life are not addressed. These limitations are beginning to change. At the core of this

process is the understanding that medicine is more than just healing the physical body. Medicine is multidimensional and a way to nurture the emotional and mental characteristic of the self at the deepest spiritual level.

Discriminating consumer demand has promoted the need to create a new medical paradigm. The healing focus has evolved and created a different healing environment that promotes awareness and transformation of the body, mind, and spirit at the deepest levels (Geffen, 2004). This paradigm shift is transforming the clinic and the whole medical organization. As medicine moves toward this new paradigm, it will embrace the characteristics of the human experience from a biomolecular perspective to a holistic dimension.

Geffen (2007) found that Baby Boomers, compared to previous generations, have a dramatically different point of view of what constitutes suitable medical care and acceptable doctor-patient relationships. As the Baby Boomers age, they are demanding an increased level of personalized care that is fundamentally distinctive from what the older population expects. These demands include access to the latest sophisticated medical technologies, the extensive variety of CAM therapies, and more consideration for their personal, emotional, and spiritual needs. The present health care system must understand these changes and fulfill the objectives of this challenging pattern.

Chaterji et al. (2007) found that few medical schools offer extended classes on CAM. In 1999, the CM community and academic and professional organizations strongly opposed CAM, which in turn might have caused patients to fear discussing CAM with their doctors (Cuolehan, 1999). Thousands of conventional medical personnel

were trained with this philosophy of opposing CAM and who continue to practice medicine today. Yet doctors do not need to endorse CAM to effectively treat CAM-using patients; all that is required is that they have knowledge about these therapies and be able to intellectually discuss these treatments with their patients.

Complementary and Alternative Medicine

CAM includes products and practices such as herbal supplements, chiropractic manipulation, meditation, and acupuncture. CAM remedies are divided into five categories: mind-body medicine, biologically-based practices, manipulation and body-based practices, and energy medicine. According to DHHS (2007), complementary and alternative medicine "is a group of diverse medical and health care systems, practices, and products that are not generally considered to be part of conventional medicine" (para. 2). Eisenberg et al. (1998) conducted a survey in 1997 and found that the American public's use of CAM increased 25% from 1990 to 1997, excluding prayer. By 2002, the total use had increased to 36% (Barnes et al., 2004). Although most CAM therapy use has remained steady, herbal therapy has substantially increased. In 1997, 12.1% reported using herbs compared to 18.6% in 2002; this is an increase of 50%. When high dose vitamins are included, the number increased from 17.6% to 21.4% for those years. Eisenberg (1998) also found that 58% used CAM modalities for prevention or health maintenance, while 42% used it for treating an existing illness.

The highest users were White females from the West between the ages of 35 and 49, with some college education and incomes above $50,000. Less than 40% of the participants who use CAM reported this activity to their physician, which was about the

same percentage as in 1990 and 1997 (Eisenberg et al., 1998). Furthermore, those in poorer health or with multiple chronic conditions are more likely to use CAM.

A study in San Diego of 541 adults with specific health problems who visited their family practice clinic found that approximately "60% of these patients had informed their primary care physician of their CAM use" (Palinkas & Kabongo, 2000, p. 1123). About 30% initiated at least one CAM therapy before visiting their doctor compared to 19% who did after the visit. The percentage and most common reasons for using CAM in this study were:

- 26% avoid side effects of regular treatment
- 26% a friend or coworker recommended the treatment
- 24% failure of regular treatment to cure their problem
- 14% prefer to deal with problem themselves
- 13% philosophical reasons
- 13% relative used these treatments for the same problem
- 12% failure to correctly diagnose problem
- 10% heard about the treatment in the news
- 6% unhappy with attitude of family physician (p. 1125)

In rural Illinois, a survey was conducted at five family practice clinics. Patients answered questions about attitudes about CAM use. Three fifths of the patients felt that their doctor should discuss CAM therapies with them (Herron & Glasser, 2003, p. 279). Murphy, Hong, Montgomery, Rogers, and & Safran (2001) reported on a study conducted from 1996 to 1999 in Massachusetts about the doctor and patient relationship

quality determined that patients reported declines in their relationship with their physician. The specific areas observed included interpersonal treatment, quality of communication, and trust. The only measurement that increased was knowledge of patient; however, this variable also declined when adjusted for the physician and patient relationship duration.

Brenton and Sheehan (2002) stated that the current health care system is threatened by other medical structures. Holistic medicine supporters are critical of CM and believe it provides only drugs and surgery to relieve society's ailments. About 30 years ago, social scientists and physicians recognized the American health care system could be taking a backward turn, characterized by failing patient-practitioner relationships, even though increasing technology and aggressive treatments were advancing the industry (Brenton & Sheehan, 2002).

Holistic treatments in include mind-body techniques, biologically based therapies, body-based procedures, and energy therapies. According to NCCAM, holistic treatments include the following:

1. Mind-body medicine: relaxation techniques, meditation, biofeedback therapy
2. Biologically-based practices: dietary supplements
3. Manipulation and body-based practices: chiropractic, massage, acupuncture
4. Energy medicine: reiki, healing touch (DHHS, 2007).

Biologically-based practices include vitamins, herbs, amino acids, minerals, and homeopathic preparations. The FDA listed CAM products that have been researched regarding adverse reaction with medicines (DHHS, 2009). Slightly more than 24% of

CAM consumers use natural products (Barnes et al., 2004). This percentage was an increase of 50% from 1997 to 2002.

Eisenberg et al. (1998) found that in 1997 consumers spent approximately $22 billion on CAM services, which is an increase of 45% from 1990. Out-of-pocket spending for services, megavitamins, diet products, herbal remedies, books, classes and other miscellaneous products was $27 billion. These survey results about demographics use were similar to the 2002 national survey.

Medical School Curricula

In the mid and late 1990s there was a strong interest in CAM use. However, this curiosity did not prevail. Consequently, there is little research in this area that is classified as current regarding medical school curricula. The most recent survey at medical schools regarding curricula was conducted in 1997-1998. Wetzel, Eisenberg, and Kaptchuk (1998), surveyed 125 medical schools and received 117 responses. The results showed:

1. 63% of schools offered a single course.
2. 37% of schools offered two or more courses.
3. 41% of schools include CAM topics in required courses.
4. 23% of schools offered one or more courses on CAM topics in required courses.
5. Hours devoted to CAM topics ranged from two to ten.
6. The average number of students per CAM elective courses was 16.
7. 63% of schools assigned required CAM reading.
8. 56% of schools assigned a required CAM paper or project.

9. 19% of schools gave a final on CAM (pp. 785-786).

Medical Students and Faculty Surveys

To gain a better understanding of the modern medical student and faculty, Peoples-Lee (2004) administered a survey to 937 participants in the early 21st century. The results showed that 50% believed the majority of Americans are using some form of CAM. Those in the pharmacy discipline believed CAM is a threat to public health (31.8%) compared to all other disciplines that felt there was no threat. Peoples-Lee (2004) found that medicine (55.5%) and pharmacy (60%) believe that CAM therapies that have not been tested scientifically should be discouraged; all other disciplines' agreement was fewer than 50%. Sixty-two percent felt CAM should be included in the medical curriculum. Both students and faculty believed CAM demand would increase. Eighty three percent believed health care professionals should be able to advise their patients about CAM (p. 88).

Levine, Weber-Levine, and Mayberry (2003) reported the results from a self-administered survey of 200 faculty members at Morehouse School of Medicine. The questions focused on their training, experience, and attitudes of CAM. From the 143 usable returned surveys, 70% believed only five therapies were legitimate medical practice, 85% reported some training in the 30 therapies listed while 50% claimed either a lot or advanced levels, when these five therapies were removed the number dropped to 71% for those with some training, and 62% were interested in additional training. Eighty-five percent of the respondent's general attitude toward CAM was positive and

they were most interested in receiving training in nutrition and diet, herbal medicine, and biofeedback (pp. 318, 320-321).

In 2001, Chaterji et al. (2007) administered a questionnaire to 266 first and second year students at Georgetown University Medical School. Overall the results showed that:

1. CAM should be integrated with CM (87.4%).
2. CM could benefit from CAM ideas (91.2%).
3. Many CAM approaches are beneficial (88.6%).
4. There should be a plan to offer some CAM therapies (80%).
5. CAM methods should be included in the school's curriculum (80%).
6. CAM is important to students (88.2%).
7. Non-scientifically tested CAM should be discouraged (43.6%).

Perceived barriers to accepting CAM include:

1. Lack of evidence (87.6%)
2. Lack of reimbursement (63.2%)
3. Legal concerns (52.5%)
4. Untrained staff (74.2%)
5. Lack of appropriate equipment (42.0%) (p. 32)

Females were more open than males regarding all aspects of CAM. Students in Chaterji's study overall were open to CAM, wanted more training in various modalities, and would be willing to refer patients and provide advice on some methods.

National CAM Survey

The most comprehensive and reliable survey of Americans' use of CAM was completed in 2002 and released in May 2004. The survey was given to 31,044 U.S. adults and included questions about provider-based therapies, such as acupuncture and chiropractic, and other therapies that do not require a provider such as natural products, special diets, and megavitamin therapy (Barnes et al., 2004). According to NCCAM, in 2002 approximately 62% of Americans used some form of CAM within the past 12 months. Furthermore, when prayer is excluded, CAM usage drops to 36%. Asians and Whites were the highest users at 43% and 40%, respectively. The most common therapies in this study included prayer, natural products, deep breathing, meditation, chiropractic, yoga, massage, and special diets (Barnes et al.).

Barnes et al. (2004) found in the United States, 74.6% of adults used some form of CAM during their life (Figure 1). When megavitamin therapy and prayer specifically for health reasons were excluded in the definition of CAM, that number decreased to 50%. Usage in the last 12 months for any CAM was (62.1%), excluding megavitamins (61.6%) and prayer (36%).

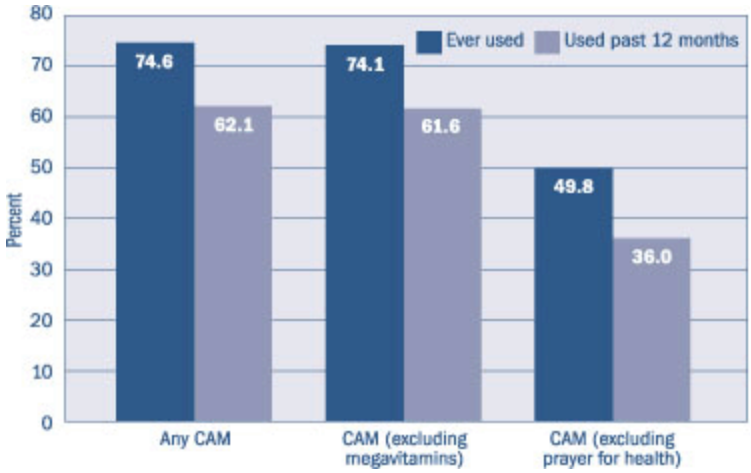

Figure 1. CAM use by U.S. adults.

Note. From Department of Health and Human Services, Center for Complementary and Alternative Medicine, 2008.

Asians and Whites used CAM most at 43.1% and 35.9, respectively, excluding prayer and megavitamins, followed by Hispanics use at 28.3% and Black with 26.2% usage (Figure 2). Those most likely to use CAM included females, those with higher educational levels, those who have been hospitalized in the past year, and former smokers (Barnes et al., 2004). Barnes et al. (2004) showed when prayer is included, the mind-body medicine domain was the most commonly used form of CAM (53%; Figure 3). When prayer is excluded, the number dropped to 17% compared to biologically-based therapies (22%), which became the most popular method. The other therapies included manipulation and body-based practices (11%), whole medical systems (3%), and energy medicine (5%).

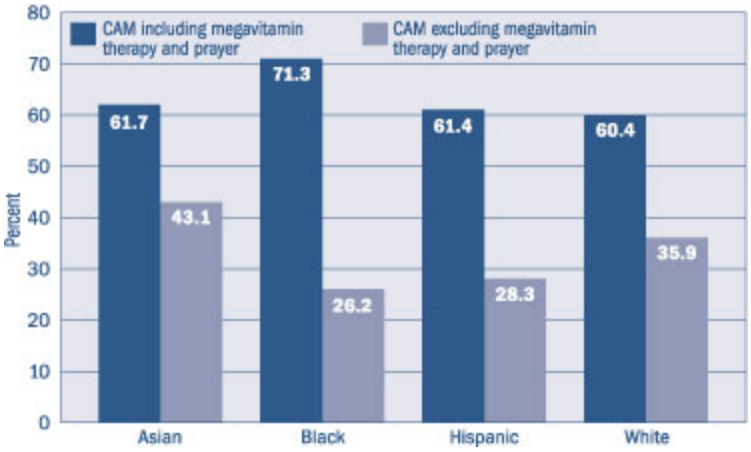

Figure 2. CAM use by race and ethnicity.

Note. From Department of Health and Human Services, Center for Complementary and Alternative Medicine, 2008.

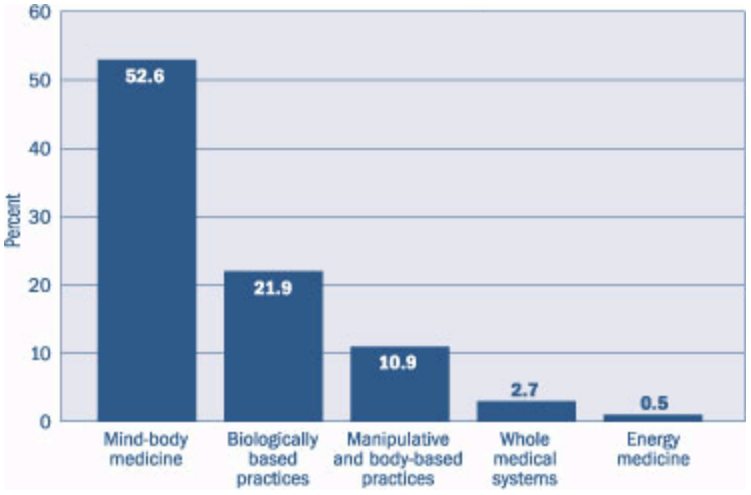

Figure 3. CAM use by domain and whole medical systems.

Note. From Department of Health and Human Services, Center for Complementary and Alternative Medicine, 2008.

Prayer was the most used therapy and included approximately 60% of the U.S. population, which made this the most common CAM therapy used (Figure 4). When prayer was excluded for self or others, the most common therapies were natural products (19%), deep breathing (11.6%), meditation (7.6%), chiropractic (5%), and diets (3.5%). Additionally, most people used CAM along with CM rather than in place of CM and only about 12% of the survey respondents sought care from a licensed CAM practitioner (DHHS, 2008).

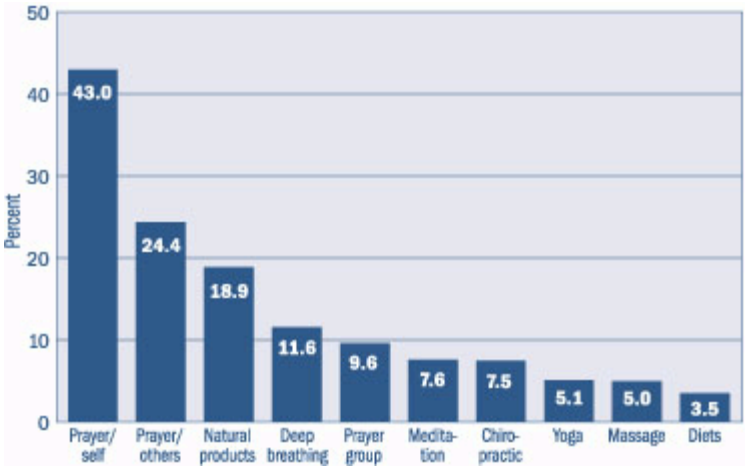

Figure 4. Most common CAM therapies.

Note. From Department of Health and Human Services, Center for Complementary and Alternative Medicine, 2008.

As indicated in Figure 5, Barnes et al. (2004) found the most commonly used natural products were herbs that include echinacea (40.3%), ginseng (24.1%), ginkgo biloba (21.1%), St. John's wort (12%), peppermint (11.8%), and ginger (10.5%). The other most common non-herb natural products were glucosamine (14.9%), fish oil (11.7%), and soy supplements (9.4%).

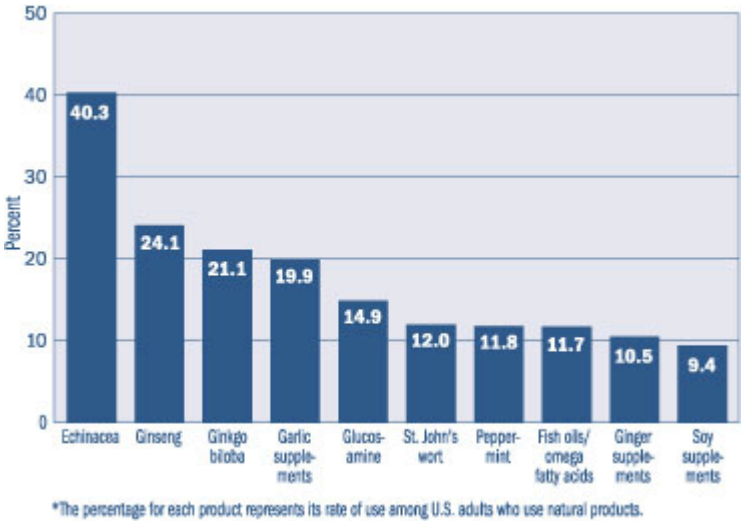

Figure 5. Top 10 natural products.

Note. From Department of Health and Human Services, Center for Complementary and Alternative Medicine, 2008.

According to Barnes et al. (2004), Americans generally used CAM for back, neck, head, joint aches, or other painful conditions; colds; anxiety or depression; gastrointestinal disorders; or sleeping problems (Figure 6). CAM was used most often to treat or prevent musculoskeletal conditions or other conditions involving chronic or recurring pain. Health conditions that promoted CAM use included back pain (16.8%), head cold (9.5%), neck pain (6.6%), joint pain and arthritis both at (4.9%), anxiety/depression (4.5%), stomach upset (3.7%), headache (3.1%), recurring pain (2.4%), and insomnia (2.2%).

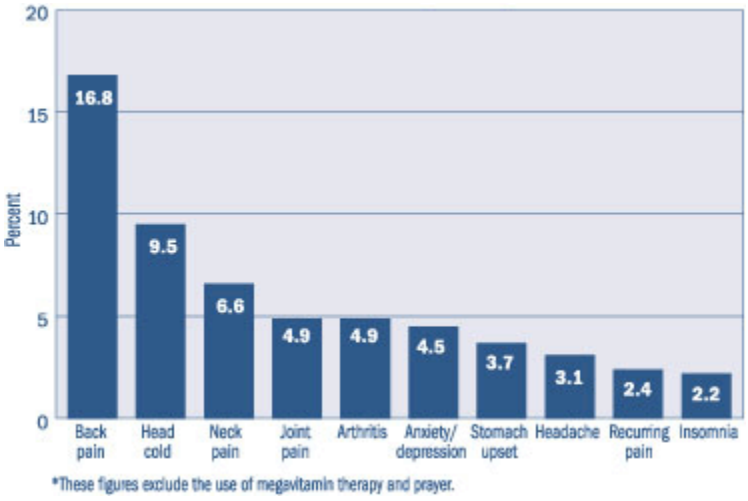

Figure 6. Disease or condition for which CAM is most frequently used.

Note. From Department of Health and Human Services, Center for Complementary and Alternative Medicine, 2008.

Barnes et al. (2004) cited five reasons why CAM was used: CAM would improve health when combined with conventional medical treatments (55%), CAM would be interesting to try (50%), conventional medical treatments would not help (28%), a conventional medical professional suggested trying CAM (26%), and conventional medical treatments are too expensive (13%).

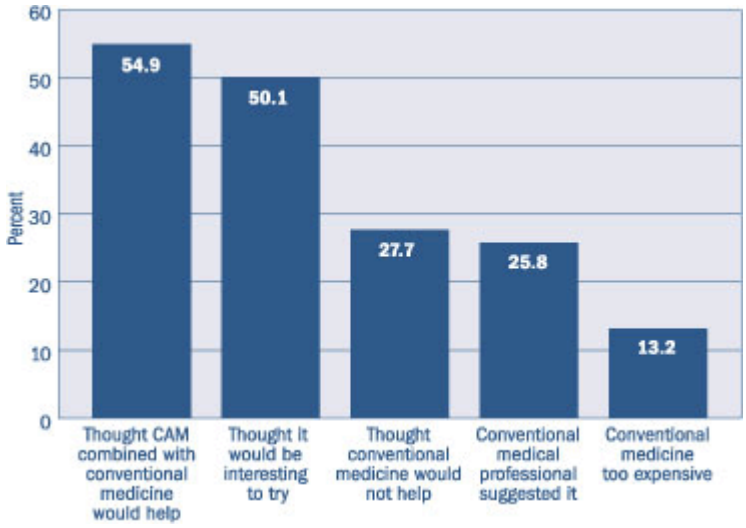

Figure 7. Reasons people use CAM.

Note. From Department of Health and Human Services, Center for Complementary and Alternative Medicine, 2008.

The national health survey did not include questions about spending on health care, but the report's authors cited figures from national surveys conducted in 1997. Those surveys found that the U.S. public spent an estimated $36 billion to $47 billion on CAM therapies in 1997. Of this amount, between $12 billion and $20 billion was paid out-of-pocket for products and the services of professional CAM health care providers. These fees represented more than the public paid out-of-pocket for all hospitalizations in 1997 and about half of what was paid for all out-of-pocket physician services. Additionally, $5 billion of out-of-pocket spending was on herbal products and 3.3 billion for megavitamins (Eisenberg et al., 1998, p. 1573).

Eisenberg et al. (2001) reported the results from a 1997 survey of 831 adults that used holistic therapies and found that 79% of the participants perceived that combining CM and nonwestern medicine was better than using one alone, 70% typically saw a

medical doctor before or concurrent with their visits to a CAM provider, 15% typically saw a CAM provider before seeing a medical doctor, and 63% to 72% did not disclose at least one type of CAM therapy to the doctor. The respondent's reasons for nondisclosure included not important for the doctor to know (61%), the doctor never asked (60%), it was none of the doctor's business (31%), the doctor would not understand (20%), the doctor would disapprove of or discourage CAM use (14%), and 2% were concerned the doctor might not continue as their provider (p. 344).

In 2006, the American Association of Retired Persons (AARP) and the National Center for Complementary and Alternative Medicine (2007) surveyed 1559 individuals age 50 and older regarding CAM use. The results showed that 42% used supplements or herbal products and 69% did not discuss this activity with their physicians. Their reasons for nondisclosure included the doctor never asked (42%), they did not know they should (30%), there was not enough time (19%), and 12% states the doctor would have been dismissive or told them to stop (p. 7). Those 64 or younger used CAM more than those over 64 (69.5%) and (54%), respectively. Respondents with higher education and income were more likely to use these therapies.

Astin (1998) presented the results from a national survey with 1035 adults. The finding revealed that 54% were satisfied with their conventional practitioner and 39% in this group used CAM, 40% had a high dissatisfaction and only 9% used CAM, and 46% of those having a holistic philosophy of health used CAM (p. 1551). In 2001, Chao, Wade, Kronenberg, Kalmuss, and Cushman (2006) administered a national survey that was conducted in four languages with 1595 females. The results showed that:

1. Using these remedies and treatments is consistent with their beliefs (51.1%).
2. More than half wanted a natural approach to treatment (54.7%).
3. Some could not afford CM treatment (14.2%).
4. About one-fourth (23.3%) tried CM treatment and it did not work.
5. About one-third (29.6%) tried a CM treatment and experienced undesirable side effects (p. 719).

A study in rural Michigan of people who self-treat for pain revealed that "20% of the participants did not disclose to the doctor their CAM use, 66% were taking prescription medications, 75% over-the-counter medications, 20% herbal supplements and 35% nonpharmacological treatments" (Vallerand, Fouladbakhsh, & Templin, 2004, p. 166). In another study, Kemper and O'Connor (2004) surveyed 745 pediatricians and found that patients or parents asked them about CAM (87%), 66% believed CAM therapies could enhance recovery or relieve symptoms, there was a concern about side effects (75%), and only 20% routinely asked patient or parents about their CAM use. Fewer than 5% felt knowledgeable about individual therapies, and 80% wanted more information (p. 482).

Patient's Attitudes About CAM

Coulehan (1999), a practicing physician, stated that when patients feel the doctor is interested and willing to listen, they will discuss the CAM therapies they are using. From his openness to listen to patients, he found they seek nonallopathic treatments because they are looking for something that they believe will work (p. 1468).

Additionally, he explained that most patients' dissatisfaction is developed from the practitioner's interaction style and the quality of the interaction.

A survey in the Nashville metropolitan area of 386 respondents found that females believed their doctor would be supportive of CAM use (35%) compared to males(22%), less than 50% of the users stated their doctors would be supportive; about 25% of nonusers felt their doctors would be supportive (Harmon & Ward, 2007, p. 9). CAM users believed their family and friends would be supportive (71%) and (72%) respectively compared to nonusers both at (49%).

Singh et al. (2007) conducted a national survey with 609 menopausal females between the ages of 35-64, regarding important qualities for successful communication with healthcare professionals. The results showed that 59% of the females believed having enough time to discuss their concerns, 35% said the doctor understanding their problem, 31% identified providing useful information, 20% discussing symptoms carefully, 18% helping make decisions, 15% not interrupting, and 11% felt making the patient feel their experience is normal. The most important issues for effective communication with their doctor were openness (31%), trusting doctor's advice (29%), being honest about experiences (20%), and 17% stated making a list of their goals and concerns (p. 27). Additionally, 40% felt comfortable choosing over-the-counter or herbal remedies, 20% reported being confused, and 40% felt uncomfortable. Only 19% discussed using these products with their doctor and the 31% that did discuss using these products only discussed them infrequently. The discussion by 40% of the respondents was about how products worked and about 25% reported other topics such as safety, side

effects, what she is taking, doctor's lack of knowledge, and general conversation about herbal remedies (Singh, p. 27).

In Sweden, a survey was conducted with patients receiving either neural therapy (NT) or conventional medicine (Mermod, Fischer, Staub, & Busato, 2008). The researchers found that the satisfaction level was higher for the NT group regarding fulfillment of expectations, and treatment satisfaction. Positive side effects and less negative effects were reported by more NT patients compare to CM patients. The NT group showed a higher level of satisfaction than the COM patients in areas such as relationship and communication, medical care, information and support, continuity and cooperation, facilities availability, and accessibility.

Student's Attitudes About CAM

Texas A&M students completed a web-based survey in the fall 2004 regarding use, belief, and attitudes toward CAM. The following statements were discussed:

1. I think most alternative therapists are quacks.
2. I think most alternative therapies do not work.
3. I would never use therapies of an alternative therapist.
4. I would recommend alternative medicine to any one of my friends who might get ill.
5. I trust most alternative therapists (Versnik & Dorman, 2008).

Overall, about 50% of the students replied to Questions 1, 2, 4, and 5 as unsure, and 41% responded to number 3 with unsure. About 30% disagreed with Questions 3-5 and 20% agreed. *Strongly agree*, *agree*, and *strongly disagree* were fairly evenly

opposite on most of the questions. Overall, 95% reported using CAM at least once (Versnik & Dorman, 2008, p. 85). Seventy percent knew at least one family member or friend who used CAM.

Another study was conducted about CAM attitudes with pharmacy students (Evans & Evans, 2006). All third-year pharmacy students received a survey on the first and last days of a complementary and alternative medicine course. Fifty-five students completed both the preintervention and postintervention survey instrument. After the course, the following attitudes and perceptions about CAM increased:

1. A pharmacist should be aware of alternative approaches in health care.
2. Knowledge about alternative medicine will be required in my future practice.
3. I believe pharmacists have a responsibility to advise patients on alternative medicine.
4. Knowledge about alternative medicine is not important to my future practice.
5. Alternative medicine is an important aspect of my family's health care.
6. I believe in nontraditional approaches to health care. (p. 4)

After the course the following attitudes and perceptions about CAM decreased:

1. I am personally interested in alternative medicine.
2. I believe alternative medicine can make significant contributions to health care outcomes.
3. I believe that there are limitations to conventional approaches in health care.
4. I believe that patients should have the right to choose between conventional and alternative approaches in health care.

5. I lead a healthy life style.

6. I am willing to explore new and different approaches in health care. (p. 4)

Overall, the majority of students changed their attitude and perception about CAM after taking the required CAM course. To allow the students to form their own opinions, the instructor provided unbiased information. Ninety percent of the students agreed and 93% strongly agreed that they had developed the ability to discuss CAM practices and evaluate information on herbal and natural products. This was important because of the increase in natural product usage among Americans (Evans & Evans, 2006).

Ayurveda originated in India as a whole body system for preventing and treating disease by integrating body, mind, and spirit through herbal therapies, massage, and yoga (DHHS, 2007). Shafiq, Gupra, Kumari, and Pandhi, 2003 administered a survey to 521 patients at the Hypertension Clinic at the Postgraduate Institute of Medical Education and Research in India. The results showed that overall 63.9% of the patients used CAM, 56.7% used ayurveda, and 14.4% used herbal medicine. Fifty-nine percent of the participants stated the most common reason for using CAM was fear of adverse reactions of CM. Only 5.4% confided in their doctors about their CAM use (p. 294).

Tandon, Prabhakar, and Pandhi (2002) interviewed 1000 patients at a neurology outpatient department in India to establish their CAM use. Overall, 32% of the patients had used CAM, 43% used ayurvedic medicine, 38% used a combination ayurvedic and other therapies, and only 12.5% used homeopathy (p. 457). The highest users were the

rural population (67%). Most patients (57%) sought CAM providers first before seeking the services of a medical doctor (p. 457).

Zaman, Agarwai, and & Handa (2007) surveyed 102 rheumatoid arthritis patients in northern India about their use and prevalence of CAM. The results showed that 82% had tried CAM (p. 236). Ayurvedic medicine was the most commonly used CAM (28%), followed by homeopathy (20%) and yoga (17%). Sixty nine percent cited pain as the main reason for using CAM, 78% stated these therapies were started on the advice of friends and relatives, and 87% did not reveal CAM use to their physicians (p. 236).

He, Volinn, Zhao, and Li (2008) surveyed Chinese patients seeking acupuncture treatments to observe the effect. The findings from the 45 participants showed that 26.7% were recommended for acupuncture, 22.2% believed in Chinese medicine, 13.3% were concerned about the reputation of the hospital, and 11.1% were concerned about public praise of doctors. Pain and restlessness scores were also calculated. The reputation of the doctor and hospital and public praise were important factors for requesting acupuncture (He et al.).

CAM Use in Other Countries

Other countries have been using CAM for centuries and have incorporated these modalities with CM advances and allopathic medical practices. During 2003-2004 in Scotland, Ross, Simpson, and McLay (2006) analyzed computerized prescribing data to determine how often homeopathic and herbal remedies were prescribed. The information from 232 general practices and 1.9 million children and adults showed that 46% of practices prescribed homeopathic and 32% herbal remedies (p. 647). During the study

year, 17 different herbal remedies and 193 homeopathic remedies were prescribed. Children under the age of 1 year were prescribed the treatments at 9.5 per 1000 patients (p. 649).

Hanssen et al. (2005) conducted a national survey of CAM use in three Scandinavian counties that included 1000 participants from Norway, 16,690 in Denmark and 1001 in Sweden. CAM use prevalence was 34% in Norway, 45% in Denmark, and 49% in Sweden. This was an increase during 1989 to 1994 of 7% for Norway, 12% for Denmark, and 27% for Sweden (p. 57). The highest use was by females, followed by those with higher education and those in poorer health. Most common therapies included homeopathic, reflexology, and massage followed by natural remedies, chiropractic, and acupuncture (Hanssen et al.).

Australian researchers investigated CAM use in 2005 with a sample of 1067 adults practitioner (Xue, Zhang, Lin, Da Costa, & Story, 2007, p. 643). The results indicated that 68.9% of the participants in the past 12 months used at least one of the 17 forms of CAM, and 44.1% visited a CAM. Respondents also visited CAM practitioners about as often as medical practitioners. Another Australian study with general practitioners (GPs) reported that 54% of the participants surveyed thought that patient demand for CAM had increased. In the past 4 months, 40% reported using some type of supplements in their practice and 75% would refer their patients to a CAM practitioner (Cohen, Penman, Pirotta, & Costa, 2005, pp. 997; 999).

In Ontario and Alberta, Canada, a survey was conducted with 200 GPs to investigate their opinions and behavior about alternative medicine. The results revealed

that 56% believe CAM could benefit CM, 54% referred patients to alternative practitioners, and 16% practiced some form of alternative medicine (Verhoef & Sutjerland, 1995, p. 1005). Another study in Quebec with 121 GPs about their referral practice and perceived usefulness of CAM found that 59% reported referring patients to physicians who practice CAM and 68% to nonmedical practitioners, and 83% believed at least one service was useful (Goldszmidt, Levitt, Duarte-Franco, & Kaczorowski, 1995, p. 29).

Many European countries have had a high usage of CAM for several years. In Scotland, 87 GP trainees completed a survey regarding their attitudes about CAM. Eighty-eight percent believed some therapies were useful, and 81% wished to have additional training in at least one method. Over 21% were using some form to treat patients and 31% referred patients for treatments (Reilly, 1983, p. 338). A large scale survey of 870 GPs was conducted in England to describe access to complementary medicine via general practice (Thomas, Coleman, & Nicholl, 2003, p. 575). The results found that 26.8% made referrals and 49.9% provided access to some types of complementary therapy for their patients with 29.5% of treatments performed by a member of the health care team. The nonresponders were assumed not to provide these services (p. 575).

Avon County, England, was another study area where 145 GPs completed surveys about their training, attitudes toward, and use of CAM. Thirty-eight percent had received some training, 15% wished to receive training, 59% thought the techniques being assessed were useful, and 76% had referred patients for this type of treatment (Wharton

& Lewith, 1986, p. 1498). Another study in Devon and Cornwall Counties of England surveyed 461 GPs about their attitudes about complementary medicine. Sixty-eight percent had been involved in complementary medicine in some way during the past week, 16% used at least one mode of complementary medicine, and 55% had endorsed or recommended treatment (White, Resch, & Ernst, 1997, p. 302).

Kassel, Germany, was the site of a structured interview conducted at general practice clinics with 310 patients and 40 GPs to determine the doctors' use of CAM and patients' expectations of the doctor and these therapies. At least occasionally 95% of the doctors used the most common types of CAM in their practice that include herbal medicine, neural therapy, and homeopathic. Eighty-five percent of the doctors used alternative treatments supplementary to mainstream medicine. Prior success was the reason 84% of the doctors used CAM in their practice, and 59% used these treatments because of rare adverse reactions. Overall, 64% of the patients were satisfied with their doctor. Sixty-one percent that preferred CAM were satisfied with their doctor compared to 68% that did not prefer but accepted these therapies (Himmel, Schulte, & Kochen, 1993, p. 232-233).

In urban Shanghai, China, 5046 patients completed a survey about CAM use and perceived benefits (Chen et al., 2008). At the time of the study, 97.2% of the participants reported previously or currently using at least one form of CAM. Supplements were the most common used therapy (77.2%), traditional Chinese medicine (TCM), which includes herbs and acupuncture, was used by 76.9% of the participants. Chinese herbal

medicine was the dominate type of TCM used by 76.8% of the patients (Chen et al., 2008, p. 1051).

Lee et al. (2008) conducted a study in Korean with 153 patients to measure CAM use. Overall, 82% reported using CAM, 69% stated pain was the major reason for use, 48% expected to receive CAM information from the doctor, 49% had used these therapies for less than 12 months, and 28% had used CAM for more than 36% months. Most patients (72%) did not discuss their CAM use with the doctor, 64% would like to try a new type of CAM, 49% thought these therapies were effective, and only 15% reported adverse effects (pp. 30-31). These treatments were grouped into six categories. The following list shows the patients use by classification:

- 84 % Oriental medicine (herbs and acupuncture)
- 70.4% plant and animal derived over-the-counter products
- 13.6% manual therapies
- 11.2% self prescribed folk medicine
- 1.6% bioelectromagnetic therapies. (p. 31)

Herbs, Botanicals, and Other Dietary Supplements

Herbal remedies have become increasingly more popular in the U.S. In many developing countries, the people depend on these medicinal plants as part of their traditional medical systems. In some countries, as much as 80% of the medical treatments are from herbs (Bodeker & Kronenberg, 2002, p. 1582). European country pharmacies have $7 billion in annual sales of these products. U.S. sales increased from $200 million in 1988 to $3.3 billion in 1997 (Eisenberg et al., 1998, p. 1574; Mahady,

2001, p. 1120S). According to Eisenberg et al., in 1990, one or more herbal products were used in the U.S. by 2.5% of the population and increased to 12% by 1997 (p. 1574). The general concept in marketing indicates that these manufactured goods are natural and safe. Nonetheless, scientific research has shown in some cases this is incorrect (p. 1121S).

Combining some herbs and medicines can create side effects and distort laboratory tests (Holmes, Kaiser, Jackson, & McPherson, 2010). Laboratory results can be altered by elevating or lower concentrations or drug levels. This could create confusion and cause the physician to increase or decrease a prescription drug. It has been proven that various drug manufacturers experience different effects with specific drugs (Holmes et al. 2010).

Types of potential effects of herbs include acting as a laxative, hypoglycemic or hyperglycemic properties, monoamine oxidase inhibitors, sedating properties, cardiac glycoside properties, diuretic properties, hypertensive properties, increase risk of bleeding or clotting, and hepatic toxicity (Natural Standard: The authority on integrative medicine, n.d.). Furthermore, a supplement might not contain the correct ingredient as listed. Some may contain lower or higher amounts of the marker components (Harkey, Henderson, Gershwin, Stern, & Hackman, 2001). For example, Gilroy, Steiner, Byers, Shapiro, and Georgian (2003) found that 10% of a preparation of echinacea studied contained no measurable element of this herb, and only a little over half contained the contents specified on the label.

Federal Regulations

Although the U.S. FDA regulates supplements, FDA uses the food guidelines rather than drug requirements, which are less strict. Unlike drug manufacturers, manufacturers of supplements do not have to provide research evidence of safety, effectiveness, or quality. The FDA does not analyze the supplements' contents. Manufacturers can state that the product addresses a nutrient deficiency, supports health, or reduces the risk of developing a health problem (DHHS, 2009). The only requirements for manufacturer's of supplements are the FDA's Good Manufacturing Practices (GMPs) for foods. GMPs ensure that dietary supplements are processed consistently and meet quality standards (DHHS, 2009).

The increase in herbal use has not gone unnoticed by the federal government. This increase caused concern for the safety and protection of consumers and prompted the FDA to develop guidelines for manufacturing and advertising supplements that would require manufacturers to avoid contaminating their products with other herbs, pesticides, heavy metals, or prescription drugs. The guidelines also require supplement labels to be accurate. The federal government also regulates supplement advertising through the Federal Trade Commission (FTC). The FTC and requires that all information about supplements be truthful and not mislead consumers (DHHS, 2009).

Many supplements and prescription drugs come from natural sources that are useful and safe; nonetheless, natural does not always imply safe or without harmful side effects. For example, mushrooms are natural but some are not safe to consume. Supplements that pose a risk to consumers that could damage health, that are

contaminated, or interact dangerously with prescription medicines are accompanies by warnings. When the FDA finds a marketed supplement is unsafe, they can issue a warning to the manufacturer or required the product to be removed from the marketplace (USFDA, Center for Food Safety and Applied Nutrition, 2009).

Concurrent Use of Herbs and Medicine

The number of people using drugs along with herbal remedies has substantially increased in recent years. Herb usage increased 380% while high-dose vitamin usage increased 130% from 1990 to 1997. Eisenberg et al. (1998) found that almost 20% were taking prescription medicine along with herbal remedies, high-dose vitamins, or both. Approximately 15 million adults have the potential for a drug and herb or high-dose vitamin adverse interaction. Within those at risk, are nearly 15 million senior citizens (p. 1574).

Bush et al. (2007) conducted a study about herb-drug adverse interactions with 122 participants who used herbal remedies and prescription medicines concomitantly. Results showed that 40% of the users had a potential for an adverse herb-drug interaction, 7% showed an adverse herb-drug interaction, and zero percent showed any serious adverse interaction (p. 30).

In addition to herbal preparations, some vitamins, minerals, other elements, and amino acids have been found to potentially cause adverse reactions. For example, large doses of vitamin A could cause severe liver injury, bone and cartilage pathologies, elevated intracranial pressure, and birth defects in infants whose mothers consumed vitamin A during pregnancy. Vitamin B6 reactions include neurologic toxicity. Niacin

adverse effects include gastrointestinal distress, liver damage, muscle disease, injury to the eyes, or increased bleeding problems. Selenium may cause tissue damage. Germanium's negative consequences could include kidney injury, acute renal failure, nerve damage, or pulmonary toxicity. Phenylalanine could cause scleroderma or scleroderma-like illnesses. Lobelia may affect the autonomic nervous system stimulation or depression, bronchial dilation, respiratory depression, increased respiratory rate, or rapid heart rate (FDA, 2002).

Assessing Dietary Supplement Safety

Currently there is no systematic assessment of the safety of dietary supplements. These products regularly come into the marketplace without going through a safety review by the federal government. Very few published studies regarding the safety and affect of these products are available. There is no required methodical collection and examination of adverse reaction documents for dietary supplements as there is for prescription drugs. The concern about these products prompted the FDA to initiate the collection and evaluation of existing studies and case reports on dietary supplements safety problems (The Office of Dietary Supplements, 2003).

Although there are problems with some supplements, The Office of Dietary Supplements at the National Institutes of Health (2003) published an annual report that highlighted significant advances in dietary research and discussed the many benefits of alternative therapies. A comprehensive literature search was conducted to identify original research. These papers were evaluated and scored by internationally recognized scientists. Once the information was approved, the data were disseminated. The

Recommended Daily Allowances (RDA) information is also provided every 5 years the Dietary Guidelines for Americans are updated (The Office of Dietary Supplements).

NCCAM prepared a fact sheet for consumers regarding herbal supplements (DHHS, 2009). NCCAM emphasized that some herbs may cause problems and compromise a person's health. Herbs work the same way as drugs and should be used with caution, especially for children and pregnant or nursing females. Many times the active ingredient in an herb is not known. NCCAM is in the process of identifying these ingredients and how they affect the body. Analysis of products found that the listed elements are not always what are in the bottle, and some herbal supplements are contaminated with metals, prescription drugs, or other substances (DHHS).

With the increase in the popularity of dietary supplements, physicians need to ask their patients questions about vitamin and herbal use along with other medical history. Although these preparations are available without a prescription, guidance is necessary because of a potential drug interaction that could cause an adverse effect. The main concern is the patient's safety and the physician being able to function within the patient's preferred paradigm (Eisenberg, 2001).

Physicians

Massad (2003) found that each year more controversy arises about medical research and medical opinion. For example, the mammogram controversy caused females to question this screening procedure for necessity and safety. Although patients have increased their CAM use, discrepancies exist between doctor and patient regarding these

modalities. In 2004, 233 Mayo Clinic internists completed a survey about their attitudes about CAM and found:

- 75% never referred a patient to a CAM practitioner.
- 44% would refer a patient to a CAM practitioner if available at the Mayo Clinic.
- 25% discussed benefits and drawbacks of CAM.
- 63% reported that patients initiate CAM discussions.
- 57% believed incorporating CAM would have a positive impact on patients.
- 8% believed incorporating CAM would have a negative impact on patients. (Wahner-Roedler et al., 2006, p. 497)

The results of the study also indicated that physicians older than 45 were less favorable about CAM referrals than their younger counterparts. Forty-seven percent of the physicians were familiar with biofeedback treatment, massage (41%), followed by chiropractic and relaxation (38%). The most familiar herbs included St. Johns wort, saw palmetto, and garlic (Wahner-Roedler et al., 2006, p. 497). Of the 13 treatments, physicians on average felt knowledgeable about only three and only two of the 10 herbs. Fifty two percent and 10%, respectively, indicated it was difficult or very difficult "to find reliable information at the Mayo Clinic regarding CAM treatments, and only 4% said it was easy or very easy" (Wahner-Roedler et al., 2006, pp. 497-498). Forty-one percent believe the physician impacted the patient's clinical outcome. While 67% thought some CAM therapies are helpful, 70% stated that the current practices of CAM therapies in the U.S. posed a public health threat (p. 498). A study in 2003 of 150 primary care

physicians was conducted to measure these doctors' perceptions and attitudes regarding their patient's use of CAM (Giveon, Liberman, Klang, & Kahan, 2003, p. 254):

- 86% estimated that 15% of their patients were CAM users.
- 58% always or often asked their patients about CAM use.
- 50% estimated that 10% of their patients reported the use of CAM.
- 60% estimated that 10% of their patients reported use of herbal remedies.
- 51% believed that herbal remedies have no or only mild side effects.
- 70% claimed that they had little or no knowledge about herbal remedies.
- 24% never referred patients for complementary medicine.
- 69% occasionally referred patients for complementary medicine.
- 25% had some training in complementary medicine.
- 31% practiced some kind of complementary medicine. (p. 254)

In another study with 648 pediatricians in 2004, and a response rate of 18%, Sawni and Thomas (2007) assessed these physicians' attitudes toward practice, experience, knowledge, and referral patters of CAM:

- 96% believed their patients were using CAM.
- 70% reported that CAM discussion was initiated by family.
- 37% asked about CAM use as part of routine medical history.
- 84% believed more continuing medical education courses should be offered on CAM.
- 71% would consider referring patients to CAM practitioners. (p. 1)

Although the response rate was 18%, Sawni and Thomas' (2007) study showed physicians have a positive attitude toward CAM, believe asking about CAM is important, would consider referring a patient to a CAM practitioner, and want more education in this area. The low response rate could cause a concern with validity. Pediatricians that were less favorable toward CAM could have been the non-responders, therefore skewing the results and causing a response bias. Nonetheless, some doctors that responded supported CAM to some degree. Even though the physician response to this survey was about 18%, this data provided a snapshot of their beliefs and behaviors (Sawni & Thomas, 2007, p. 1). The nonresponders could have been either too busy or did not support CAM. In the latter case, this information may be less valid. Although there were variations in how different physicians view CAM, some had adverse feelings toward CAM and limited education in this domain. Nonetheless, some patients are insisting on a discussion of alternative approaches with their physicians.

Surveys at Chiropractic Clinics

A survey was conducted in 2004 at The National University of Health Sciences in Lombard, Illinois with chiropractic patients from urban and suburban areas and university-affiliated patients regarding chiropractic patients' perception of disorders chiropractors can treat (Cambron, Cramer, & Winterstein, 2007). Suburban, urban, and university patients agreed that the chiropractor can treat musculoskeletal conditions (88%, 89.2%, and 94.9%, respectively); ear, eye, nose, and throat conditions (39.1%, 56.6% and 74.2%, respectively; conditions of major organs (30.3%, 56%, and 66%,

respectively; other conditions (40.5%, 60.6%, and 65.2%, respectively; and provide general medical exams [71%, 84%, and 85%, respectively] (Cambron et al., p. 13).

The above survey design was similar to the one used in this study. The front desk personnel asked patients if they would complete the survey, and each participant completed the survey once (Cambron et al., 2007). Participants were informed that completing the instrument was voluntary, anonymous, and would not affect any future chiropractic care at that clinic. The original study population was urban and suburban patients. University-affiliated patients were not the intended targeted group; nonetheless, they were included in these data collections, which provided an interesting comparison. This information is important for this research and stipulated that only patients participate in the study.

In 2000, Gemmell and & Hayes (2001) surveyed patients at 100 chiropractic clinics in Oklahoma about satisfaction of care received. *Excellent* and *very good* ratings were given for length of time to get an appointment 84.9% and 12%, respectively; convenience of the office (57.7% and 24.2%, respectively); length of wait at the office (75.7% and 16.7%, respectively); and time spent with the provider (74.3% and 21.2%, respectively). Overall satisfaction was 83.3% and 16.7%. The results are provided in Table 2.

Table 2

Chiropractic Patient Satisfaction

Survey questions	% Excellent	% Very good	% Good	% Fair
General health rating	19.8	51.1	22.7	<5.0
Length of time to get an appointment	84.9	12.0	n/a	n/a
Convenience of the office	57.7	24.2	13.6	4.5
Access to the office by telephone	77.3	18.2	n/a	n/a
Length of wait at the office	75.7	16.7	7.6	n/a
Time spent with the provider	74.3	21.2	4.5	n/a
Explanation of what was done	72.8	22.7	1.5	n/a
Technical skills of the chiropractor	83.3	15.2	1.5	n/a
Personal manner of the provider	92.4	7.6	n/a	n/a
Overall patient satisfaction	83.3	16.7	n/a	n/a

Note. Adapted from "Patient satisfaction with chiropractic physicians in an independent physicians' association," by H. A. Gemmell, and B. M. Hayes, 2001, *Journal of Manipulative and Physiological Therapeutics*, 24, p. 558.

After sending out three mailings, the response rate was only 44%. The authors did not specify whether rural, urban, or suburban areas were targeted, which could explain why the response rate was so low. Additionally, only patients that had their insurance claim filed electronically were contacted (Gemmell & Hayes, 2001).

Research Methodology

The research method is determined by what type of information will be collected (Creswell, 2003). Social research aims to understand classes, groups, or types of individuals, addressing specific research questions by focusing on a particular topic (Babbie, 2007, p. 14). For this study, a cross-sectional survey design was chosen.

In a cross-sectional survey design the researcher aims to explain a situation, problem, issue, or attitude by presenting a questionnaire to a number of individuals from a population that represents the whole group and takes place at a single point in time (Rindfleisch, Malter, Ganesan, & Moorman, 2008). A cross-sectional survey design is the most common method used for empirical research in social science. Surveys are appealing because of limited budgets and time (Rindfleisch et al.).

The quantitative approach is useful for nonexperimental research, a predetermined instrument of questions, and statistical analysis (Creswell, 2003). A survey design can study a sample population's trends, attitudes, or opinions and provide a quantitative or numeric description of a population (Creswell). Babbie (2007) stated that self-administered questionnaires can reach a larger group, are less expensive, and can be done more quickly than face-to-face interviews where respondents may be reluctant to report certain behaviors. Advantages include: more complete surveys can be conducted, questions can be altered to accommodate responses, additional observations can be recorded, and more details can be covered (Babbie).

The qualitative method employs open-ended interviewing or observation with a small group of participants (Creswell, 2003). This process allows the researcher to

change and refine the questions during the interview, and the theory emerges through the data collection. The data are interpreted by the researcher to develop themes and meaning by filtering the data from a personal perspective at a specific moment in time. In qualitative research researchers brings their personal selves, biases, and values to the study (Creswell), and therefore this method was not used. A search of the literature revealed that there is little data about CAM use and its relationship to HBM constructs. In the present quantitative descriptive study, surveys were used to investigate if there is a relationship between the patient's need to discuss CAM use and the HBM constructs.

Summary

For various reasons, Americans are increasing their use of these non-Western medical treatments. The U.S. public now spends more on CAM than on CM. In 1997, Americans spent between $36 billion and $47 billion on CAM therapies (Eisenberg et al., 1998). Of this amount, between $12 billion and $20 billion was paid out-of-pocket (p. 1573). As patients seek relief from the health problems that CM is perceived to be unable to cure, many are requesting to make their own medical treatment choices. Practicing medicine from a humanistic patient-centered approach has become common; however, CM training has not prepared the mainstream professional healers for methodological and philosophical conversations with their patients (Barnes et al., 2004).

One concern is how some alternative medical approaches interact with certain traditional medical practices. Individuals can respond differently to treatments. All remedies, whether conventional or CAM, can have risk. Specifically, there is the potential for a negative reaction. Some botanical, herbal, and other dietary supplements

may interfere with conventional medical management through metabolic interactions. When these over-the-counter products are combined with prescription and nonprescription medicine, there is the potential for negative or dangerous effects (Eisenberg et al., 1998).

The HBM's constructs are useful in this study design because they provide a framework for the correlation of perceptions. Reviewing the literature showed that there is a gap in the current research regarding the feelings and beliefs of the patient about omitting a discussion of CAM between the physician and patient. The health care provider having a complete picture of what patients are doing to manage their health helps patients stay in control. Some CAM methods can affect CM in a negative manner. The doctor-patient discussion about CAM use can help ensure safe and coordinated care. When the physician is fully informed about the patient's CAM use, the doctor-patient health care partnership is more viable.

Psychological components may affect and influence the patient's satisfaction from the office visit. The attitudes and beliefs of the patient about not discussing CAM usage with their doctor are underrepresented. There is sufficient evidence to affirm this research may be valuable. Patient's satisfaction and medical outcomes could be affected if the patient and doctor become aware of this issue. Researching and identifying the relationship among attitudes and beliefs of patients may promote behavior change to occur.

Although there has been some research into the frequency and utility of CAM discussions between patients and physicians, research into why some patients and

physicians have these conversations and why others do not has not been conducted. The current study addresses this gap in the literature by examining the relationships between the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action and the frequency with which clients and physicians have discussions about CAM therapies. The current study added to the existing knowledge base regarding CAM use and CAM therapies by examining these relationships. Chapter 3 describes the research design that was used to investigate if there is a relationship between the independent and dependent variables.

Chapter 3: Research Methodology

Introduction

The purpose of this study was to determine whether CAM-using patients have an interest in discussing CAM treatments with their CM doctor. This chapter's purpose is to describe the methodology of this study. Included is a discussion describing the research design and plan, setting and sample, instrumentation and materials, study variables, research questions, hypotheses, instruments and measurements, pilot testing, and participant protection.

Research Design

The purpose of this study was to determine whether CAM-using patients have an interest in discussing CAM treatments with their CM doctor for comprehensive care as described by the HBM constructs**.** A cross-sectional, quantitative design was used, and data were collected using a self-administered survey instrument. The cross-sectional design is used to get a snapshot of the participants' behavior and beliefs (Babbie, 2007). The questionnaire consisted of 20 closed-ended questions and one multiple choice question, and was delivered to the two participating chiropractic clinics in a set of 15 surveys, with the goal of receiving a minimum of 165 completed, usable surveys from both facilities combined.

The quantitative method is an appropriate approach to examine the correlation between lack of CAM usage dialog and patient's feelings about this omission (Creswell, 2003). The dependent variable was CAM discussions with the physician, and the independent variables were perceived susceptibility, perceived seriousness, and perceived

benefits of using CAM. This research design is used for a numeric description of attitudes, opinions, or trends of a specific population. A survey is preferred for this study because of economics, rapid turnaround, and ability to reach a larger population. A quantitative approach allows the researcher to gather data in numeric form and develop specific variables, hypotheses, and questions while the qualitative method involves in-depth interviews, observation of settings, and a smaller population (Creswell). Although qualitative research provides a deeper understanding of an issue, quantitative research is an effective application to collect data about beliefs and attitudes. Examining beliefs and attitudes within the framework of the HBM's concepts of perceived susceptibility, perceived seriousness, and perceived benefits of taking action will help with understanding the attitudes and feelings that result from specific behaviors of CAM users.

The research was conducted at two chiropractic offices in the midwestern United States. A survey (Appendix B) was distributed to participants. The survey was short, simple, and easy to understand and addressed the following question: To what extent do CAM-using patients have a specific need to discuss CAM treatments with their CM doctor as described by the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action?

The survey was pilot tested and test-retested at one of the chiropractic clinics. The procedures used for the pilot test and the results are presented below. Feedback was sought regarding clarity of the questions. The goal was to distribute the questionnaire to 165 people without attempting to control patient demographics. Survey results are exhibited in descriptive data form and presented as percentages. Further statistical

analyses were performed with the survey data. The demographic data collected included age, gender, race, marital status, and education level.

Setting and Sample

The study population included adults 18 or older who have used at least one form of CAM. The setting for the study was two chiropractic clinics. These clinics were selected specifically because of the wide range of treatments and services offered. The clinics offer other therapies in conjunction with the traditional spinal adjustment, such as vitamins, herbs, homeopathy, colonics, foot-detoxifying baths, and several others. Conducting the survey at chiropractic clinics ensured that the participants have used a minimum of one CAM treatment, although potentially several might have been used. An important aspect of this research is that some of the participants use CAM therapies other than just purchasing vitamins from a local grocery or drug store. One of the goals for researching this group is to fill the gap in the existing research about the use of CAM therapies in the United States.

Using the procedures outlined by Triola (2004), the required sample size for this study was computed. Based on an alpha level (margin of error) of .05, a *z* value of 1.282 (critical value used in a normal sample distribution to find the statistical power calculation), and a medium effect size estimate of .25 (given population value that will provide the largest sample size), these calculations indicated that 165 participants would be required for this study as shown in the following formula.

$$N = \frac{(1.282)^2 \times 0.25}{(.05)^2} = 165 \qquad (1)$$

Instrumentation and Materials

The survey tool was in paper form only. The participants completed the survey and mailed their responses in a self-addressed stamped envelope to the researcher. The closed-ended questions consisted of Likert-scaled multiple choice questions, and one multiple choice question allowed participants to select more than one answer. The majority of the questions included the following choices: *strongly agree*, *agree, neutral, disagree,* and *strongly disagree*. Questions asked patients about discussing CAM with their doctors, whether they believe a discussion is important, and if there is no dialog about these modalities, their beliefs about the quality of care received.

Variables, Research Questions, and Hypotheses

The dependent variable was CAM patients' interest in discussing CAM. The independent variables were the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits. Perceived susceptibility is the assessment and acceptance of risk for developing an illness. The person perceives the degree of potential seriousness of the situation through emotional arousal, difficulties that have been or may be created, or both. The decision to perform a behavior is then governed by the perceived benefit of taking action (Rosenstock, 1966).

The research problem of this study pertained to participants' use of CAM treatments and the doctor-patient discussion regarding CAM use. This investigation was guided by the following overarching research question: To what extent do CAM-using patients have an interest in discussing CAM treatments with their CM doctor as described by the HBM constructs of perceived susceptibility, perceived seriousness, and perceived

benefits of taking action? Three subquestions were addressed. The first subquestion is: To what extent do participants believe comprehensive care is compromised by not discussing CAM? The null and alternative hypotheses for this subquestion are:

H_{01}: CAM-using patients do not believe comprehensive care is compromised by not discussing CAM.

H_{A1}: CAM-using patients do believe comprehensive care is compromised by not discussing CAM.

The second subquestion is: To what extent do participants believe that not discussing CAM is a serious issue that could affect their medical care? The null and alternative hypotheses for this subquestion are:

H_{02}: CAM-using patients do not believe discussing CAM is a serious issue.

H_{A2}: CAM-using patients do believe discussing CAM is a serious issue.

The third and final subquestion is: To what extent do participants believe discussing CAM will benefit the medical care they receive? The null and alternative hypotheses for this subquestion are:

H_{03}: CAM-using patients do not believe discussing CAM will benefit the medical care they receive.

H_{A3}: CAM-using patients do believe discussing CAM will benefit the medical care they receive.

Table 3 shows the nature and type of the independent and dependent variables.

Table 3

Nature and Type of the Dependent and Independent Variables

Variable	Type	Measurement	
Interest in discussing CAM (dependent variable)	Ordinal	5-point Likert scale	*Never, rarely, sometimes, often*, and *always*
Perceived susceptibility (independent variable)	Interval	Sum of four Likert-scale items	*Strongly disagree, disagree, neutral, agree*, and *strongly agree*
Perceived seriousness (independent variable)	Interval	Sum of four Likert-scale items	*Strongly disagree, disagree, neutral, agree*, and *strongly agree*
Perceived benefits (independent variable)	Interval	Sum of four Likert-scale items	*Strongly disagree, disagree, neutral, agree*, and *strongly agree*

Data Type

Respondents were asked to rate their beliefs and feelings about CAM discussions and frequency of this behavior using the 5-point Likert scale. The goal of the ordinal data collection was to understand the participant's opinions and beliefs. The confidential survey tool was in paper form and the questions consisted of multiple choice options in Likert style. The ordinal variables of level of education, income, and age and the nominal variables of gender, and race were also assessed. The consent form informed the participants that the study was voluntary and they could stop taking the survey at any time. A consent statement was included in the introduction. The first question asked participants if they read the statement and agree to participate. A list of CAM therapies and definition of terms (Appendix D) was also provided.

There was a pilot test of the questionnaire at one of the chiropractic clinics to help eliminate confusing or ambiguous questions, the results of which are discussed below. Thirty participants from the pilot test also completed the survey twice. The study population included adults of different demographic backgrounds. The purpose of having such a wide range of participants was to gain an understanding about CAM usage from all adult Americans in this region of the country. The research questionnaire was self-administered for anonymity and ease for both the participant and researcher.

Validity and Reliability

Babbie (2007) noted that "Validity describes a measure that accurately reflects the concept it is intended to measure" (p. G12). To ensure reliability, the survey instrument was pilot tested and test-retested at one of the chiropractic clinics and analyzed using Cronbach's alpha. Reliability is the consistency of the "measuring method that suggests that the same data would be collected each time the observation of the same phenomenon is repeated" (Babbie, p. G9). Quantitative research ensures that the data collection is more reliable because the information gathered is analyzed using statistical software rather than the researcher first interpreting what was seen or heard.

Measurements can be examined for face and content validity. In face validity the quality of the data is examined to determine if it is a reasonable measure of the variable. Content validity refers to how much a measure represents the range of meanings within a concept (Babbie, 2007). Face and content validity were explored by six experts, including two subject experts, two HBM experts, and two instructors. The two instructors were on the researcher's committee, the two HBM experts were

knowledgeable and experienced with survey research using this model, and the two subject experts were local CAM providers. The two instructors and the HBM experts were given the purpose, research question, variables, hypothesis, and survey questions. Local experts were given a description of the study and the survey questions. All experts were asked to focus on clarity, depth, and range of the questions. Comments were evaluated and changes were made to the instrument. Statistical analysis of the instrument was also conducted on the pilot test data that include Cronbach's alpha for reliability.

Target Population

The research population for the CAM users included all adults 18 years old and over of both genders and all racial or ethnic groups. The locations of the chiropractic facilities where the data were collected are in different areas of the midwestern United States. Locations included urban and suburban sections but not rural areas. Demographic variables for this research include age, sex, education, income level, and marital status.

Instrument and Measurements

The instrument was a structured, self-administered, researcher-designed questionnaire consisting of 20 questions and is based on the review of the literature. Information the survey obtained included:

- Demographic characteristics
- Types of CAM used
- Whether they discuss their CAM use with the physician
- Whether they believe a CAM discussion affect the medical care they receive.

The self-reporting survey included 20 questions and took about 10-15 minutes to complete. Participants were recruited from two busy chiropractic clinics. The participants took a survey home, completed it, and mailed it in a self-addressed stamped envelope to the researcher. Total collection of the surveys was completed in about 4 weeks.

The dependent variable was patients' interest in discussing CAM use with their physicians. The use of CAM therapies was measured with a 5-point Likert scale ranging from never to always. The Perceived Susceptibility score was computed as the sum of four Likert-scale survey items (Items 9, 10, 11, and 12). The Perceived Seriousness score was computed as the sum of the responses on Items 13, 14, 15, and 16. Finally, the Perceived Benefits scale was computed as the sum of responses to Items 17, 18, 19, and 20. In addition, the survey contained items to assess age, gender, race, marital status, and education level.

Data Collection

The objective of this study was to determine if CAM-using patients have an interest in discussing CAM therapies with their conventional medical doctor. The preliminary step for the data collection was to find clinics where the survey could be conducted. In 2008, the researcher contacted two chiropractic clinics and requested permission to conduct the survey at their facility. After the proposal oral was completed, a letter detailing the research, copy of the questionnaire, and letter of cooperation were sent. When approval was received from the Walden University Institutional Review

Board (IRB), number 12-03-10-0300727, the survey was printed, placed in an envelope, and taken to the clinics.

A cover letter explaining the research and purpose, definition of terms, listing of CAM therapies, and a consent form were included with the instrument. To maintain anonymity and confidentiality, the consent form has no signature line. Following these pages was the survey consisting of 20 questions. Item 1 of the survey asked if the participants read the consent form and if they agreed to complete the survey. Answering yes to Question 1 of the survey indicated their consent to participate in this study. Items 2-6 collect demographic information and Items 7-20 obtain ordinal data.

The receptionists informed the current patients who arrived at the practice during the collection time a study was being conducted and directed them to a table on which the surveys had been placed. No one was monitoring the table. The participants were asked to select one item on the 5-point Likert scale (1 = *strongly agree*, 5 = *strongly disagree*) of the survey that came closest to their own feelings or opinions. When finished, the patients were instructed to mail the questionnaire in a self-addressed stamped envelope to the researcher. Data collection took no more than 5 weeks. After all the surveys were collected, they were numbered to ensure enough had been completed.

Data Analysis

A codebook was used to document and describe the data collected from patients at two chiropractic clinics (Appendix C). Categories were identified that reflect the research questions and coded ordinal data of the survey questions. Nominal data such as age, gender, and race were coded from 1-7, depending on how many categories were

present. The data were analyzed with the Statistical Package for Social Sciences (SPSS 18) using Cronbach's alpha, descriptive statistics, and multiple regression.

Cronbach's alpha is used to determine the reliability of the selected instrument by estimating how well the items that reflect the same construct yield similar results, provides a coefficient of consistency, measures how well a set of variables performs for a given construct, and will generally increase when the correlations between the items increase. During a statistical analysis, the multiple regression method is calculated to determine if there is a relationship between the variables (Cohen, Cohen, West, & Aiken, 2003). This method will allow for investigation of the impact of one dependent variable on multiple independent variables. The analysis also shows if there is a relationship between the variables. Descriptive statistics describes the basic characteristics of a sample by summarizing the data.

Cronbach's alpha was used for the pilot test data to determine reliability of the survey instrument. Multiple regression analysis was performed to investigate the relationship between the dependent and independent continuous variables. Descriptive analysis was executed for age, gender, race, marital status, and education level. Frequency tables were constructed to display this data. The independent variables—the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action—were scored from the survey questions as follows:

- Perceived susceptibility was analyzed utilizing frequencies, percentages, mean and standard deviation for Survey Questions 9, 10, 11, and 12.

- Perceived seriousness was analyzed utilizing frequencies, percentages, mean and standard deviation for Survey Questions 13, 14, 15, and 16.
- Perceived benefits of taking action was answered utilizing frequencies, percentages, mean and standard deviation for Survey Questions 17, 18, 19, and 20.

Statistical Method

For 4 to 5 consecutive weeks in 2011, surveys were distributed to all adults 18 years old or older at two chiropractic clinics. Survey data were entered into the computer manually from the paper copies. Data were analyzed using SPSS (Version 18.0). Surveys with missing data were not included in the data analysis. Descriptive statistical analyses were performed for the demographic characteristics of the participants. Means, standard deviations, and internal consistency reliability coefficients were computed for the composite independent variable scores, and

To test the three null hypotheses of this study, a multiple regression analysis was performed. In this analysis, the three independent variables (perceived susceptibility, perceived seriousness, and perceived benefits) were used as predictors of the dependent variable, the frequency of CAM discussions. All three independent variables were entered simultaneously into the regression equation. Multiple regression was used in this case because there was a single dependent variable and three interval-level independent variables. Multiple regression allows for the estimation of the unique relationships between each of the independent variables and the dependent variable while controlling for the other independent variables.

Pilot Testing

Prior to implementing this study, the survey was pilot tested and test-retested at one of the chiropractic clinics to assess reliability of the study questions. Once approval was received from the Walden University IRB, the survey was printed, placed in an envelope, and taken to the clinic. The minimum required for factorial analysis is 5 to 10 (Babbie, 2007) and there are 14 questions, therefore 70 participants were required for the pilot study. Seventy volunteer reviewers received the cover letter with an overview of the study, definition of terms, the survey, a consent form, and instructed how to take the survey and provide comments about the survey. The receptionist informed the patients a pilot study was being conducted and directed them to table where the survey envelope was located. When the patients were finished with the survey, they were instructed to mail it in a self addressed envelope to the researcher. After the surveys were collected, Cronbach's alpha was performed on the data to determine reliability. In addition to the statistical analysis, feedback from the volunteers was used to improve the survey instrument. The plan for the pilot study was to revise any ambiguous or confusing questions, but none of the pilot study participants indicated that any of the questions required revision. Test-retest of the study instrument was then completed at an interval of 1 to 2 weeks by 30 participants from the pilot test.

Pilot Test and Test-Retest Results

A pilot test is a preliminary study conducted to detect measurement errors and to improve clarity of the questions (Larkey & Knight, 2002). The test-retest is then performed to determine if the participants score is consistent and stable when measured

after the pilot test. Prior to the pilot study, six experts reviewed the survey instrument for validity. The questions were revised from their comments. To determine reliability of the survey instrument, a pilot study was conducted. For the pilot test, the sample size of 70 was identified and the questionnaire was distributed to incoming patients at one of the chiropractor's office. The questionnaire consisted of 20 questions. The first 6 asked for demographic data. The 5-point Likert scale (1 = *strongly agree*, 5 = *strongly disagree*) was used to answer the questions for the independent variables. Participants were requested to select the answer that came closest to their own feelings or opinions, provide comments regarding clarity of the questions, and submit their mailing address if willing to participate in the test-retest portion.

A total of 75 chiropractic patients from the host clinic participated in the pilot study. Perceived susceptibility, perceived seriousness, and benefit of taking actions were calculated as a summative score on 4 items each using a 5-point Likert scale that include *strongly agree* (1), *agree* (2), *neutral* (3), *disagree* (4), and *strongly disagree* (5). To determine reliability, Cronbach's alpha was calculated from the data by analyzing the items to see if what was measured was what was intended to be measured. Cronbach's alpha (n = 75) was between .723 to .826. Creswell (2003) stated that an alpha value of 0.7 is regarded as satisfactory.

The instrument was completed twice (n = 30) at an interval of 1 to 2 weeks. Participants were asked to complete the test-retest questionnaire and mail to the researcher in an enclosed envelope. Pearson' correlation was performed on the test-retest data with a range from r = .728 to r = .799. According to Larkey and Knight (2002), an

alpha of .70 is a good representation of the instruments reliability. Thus, the pilot and test-retest showed reliability and the survey instrument was determined to be satisfactory.

Participant Protection

Potential participants were informed of the purpose to collect data about their CAM health care behavior and physician discussions about these activities. Participants completed the research survey anonymously and voluntarily. Minimal risk was associated with this task. Participants were given a consent form along with the survey. A cover letter explaining the research accompanied the instrument, along with definitions of CAM, doctor, physician, and a list of CAM therapies. Anonymity and confidentiality was assured by not collecting any personal information. For the pilot study, mailing addresses were collected for the 30 participants in the test-retest portion. Once this part was completed the addresses were shredded. The surveys will be kept for 5 years in a safe. Approval for this survey was obtained from the Walden University IRB.

Summary

This chapter described the methodology and explained why quantitative research and the cross-sectional design are appropriate for this study. A survey instrument provides the data to understand the attitudes of CAM-using participants in the midwestern United States and their interest in discussing CAM treatments with their physician. Participants were recruited from two chiropractic clinics. The independent variables included constructs from the HBM—perceived susceptibility, perceived seriousness, and perceived benefits—and the dependent variable was CAM-using

patients' interest in discussing CAM. Validity and reliability were explored prior to implementing the survey. In chapter 4 the results of the data analysis are discussed.

Chapter 4: Results

Introduction

The purpose of this study was to determine whether CAM-using patients have an interest in discussing CAM treatments with their CM doctor for comprehensive care as described by the HBM constructs. One research question and three subquestions were answered. The research question was to what extent do CAM-using patients have an interest in discussing CAM treatments with their CM doctor as described by the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action? The three subquestions were

1. To what extent do participants believe comprehensive care is compromised by not discussing CAM?

2. To what extent do participants believe that not discussing CAM is a serious issue that could affect their medical care?

3. To what extent do participants believe discussing CAM will benefit the medical care they receive?

The purpose of the current chapter is to present the results from the statistical analyses performed to address the research question and subquestions from this study. Initially, descriptive statistics are provided for the demographic and background variables from this study as well as the independent and dependent variables. Then, the results for each null hypothesis tests are discussed. The results from the null hypothesis tests are derived from a multiple regression analysis. The chapter ends with a summary of the key findings from this study.

Data Analysis

Descriptive Statistics

Descriptive statistics for the demographic characteristics of the participants are shown in Table 5. The most common age groups were between 50 and 59 years old (35.5%) and 60 years old or older (32.3%), and most of the participants (79.0%) were female and White (89.2%). The most common marital status was married or living with a partner (65.3%), followed by divorced or separated (19.8%), single (9.0%), and widowed (6.0%). The most common levels of educational attainment was a bachelor's degree (38.3%), some college or an associate's degree (27.5%), and a high school degree or general educations development (17.4%). Table 5 shows descriptive statistics for the dependent variable and independent variables of this study, while Table 6 shows the reliability coefficients (Cronbach's alpha) for the three independent variables. Each of these coefficients was greater than .90, indicating high reliability for the composite scores. The conventional cutoff for adequate reliability is .70, indicating that the three composite scores in this study produced more than adequate levels of reliability.

The general research question of this study was: To what extent do CAM-using patients have an interest in discussing CAM treatments with their CM doctor as described by the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action? Descriptive statistical analyses were used to address this question.

Table 4

Descriptive Statistics for the Demographic Data (N = 167)

Variable	Number	Percentage
Age		
18-29	15	9.0
30-39	12	7.2
40-49	27	16.2
50-59	59	35.3
60+	54	32.3
Gender		
Female	132	79.0
Male	35	21.0
Race		
White	149	89.2
African American	15	9.0
Hispanic	1	.6
Asian	2	1.2
Pacific Islander	0	0.0
Other	0	0.0
Prefer not to answer	0	0.0
Marital status		
Married/ living with partner	109	65.3
Divorced/ separated	33	19.8
Single	15	9.0
Widowed	10	6.0
Education level		
Less than high school degree	0	0.0
High school degree/ GED	29	17.4
Some college/ Associates degree	46	27.5
Bachelor degree	64	38.3
Advanced degree	28	16.8

Table 5

Descriptive Statistics for the Dependent and Independent Variables (N = 167)

Variable	Items	Min.	Max.	*M*	*SD*
Interest in discussing CAM	1	1.00	5.00	3.78	1.08
Perceived Susceptibility	4	4.00	20.00	13.04	3.89
Perceived Seriousness	4	5.00	20.00	13.00	4.23
Perceived Benefits	4	4.00	20.00	13.02	4.20

Table 6

Reliability Coefficients for Independent Variables (N = 167)

Variable	α
Perceived Susceptibility	.92
Perceived Seriousness	.93
Perceived Benefits	.94

H_{A1}: CAM-using patients have an interest in discussing CAM treatments with their CM doctor as described by the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action.

To examine this research question, the responses related to discussions of CAM treatments with CM doctors were examined. Table 7 summarizes the participants' responses regarding the frequency with which they discuss CAM therapies with their physician. The most common responses were that CAM was discussed with their physician often (33.5%) or always (29.3%), followed by sometimes (28.1%). Very few participants stated that they discussed CAM therapies with their physician rarely (3.6%) or never (5.4%).

Table 7

Descriptive Statistics for Discussing CAM with Physician (N = 167)

Frequency of discussing CAM therapies with physician	Number	Percentage
Never	9	5.4
Rarely	6	3.6
Sometimes	47	28.1
Often	56	33.5
Always	49	29.3

Examination of Regression Assumptions

Multiple linear regression analysis was employed to test the next three null hypotheses of this study. Certain assumptions are required for the validity of multiple regression analysis (Long, 2008). Prior to performing the regression analysis, the assumptions of this statistical method were examined. The first assumption was that the values of the independent variables were fixed. The independent variables were scores

on the Perceived Susceptibility, Perceived Seriousness, and Perceived Benefits scales. The assumption of fixed values for the independent variables means that if this study were to be conducted again, the same values for the independent variables would be found. In true experimental studies, fixed values for the independent variables can be ensured by experimental manipulation (Long, 2008). However, in nonexperimental studies like the current study, this assumption depends on the extent to which a future study would produce the same values for the independent variables. Thus, if a future study found different values for scores on these three scales (e.g., scores had different means or different standard deviations than were found in the current study), then different results would be expected .

The second assumption was that the independent variables were measured with the least amount of error. The reliability coefficients for the three independent variables (shown in Table 6) ranged from .92 to .94, indicating that this assumption was met. The third assumption was the dependent variable (discussing CAM) was normally distributed. Figure 8 shows the histogram of physician discussions regarding CAM scores. As can be seen, this histogram is somewhat positively skewed. The values of skewness and kurtosis for this distribution were .78 and .29, respectively. These values indicate a small violation of the assumption of normality for the dependent variable, with values between -1 and +1 typically considered indicative of approximate normality. Therefore, the results from the inferential analyses presented in the next section are statistically valid.

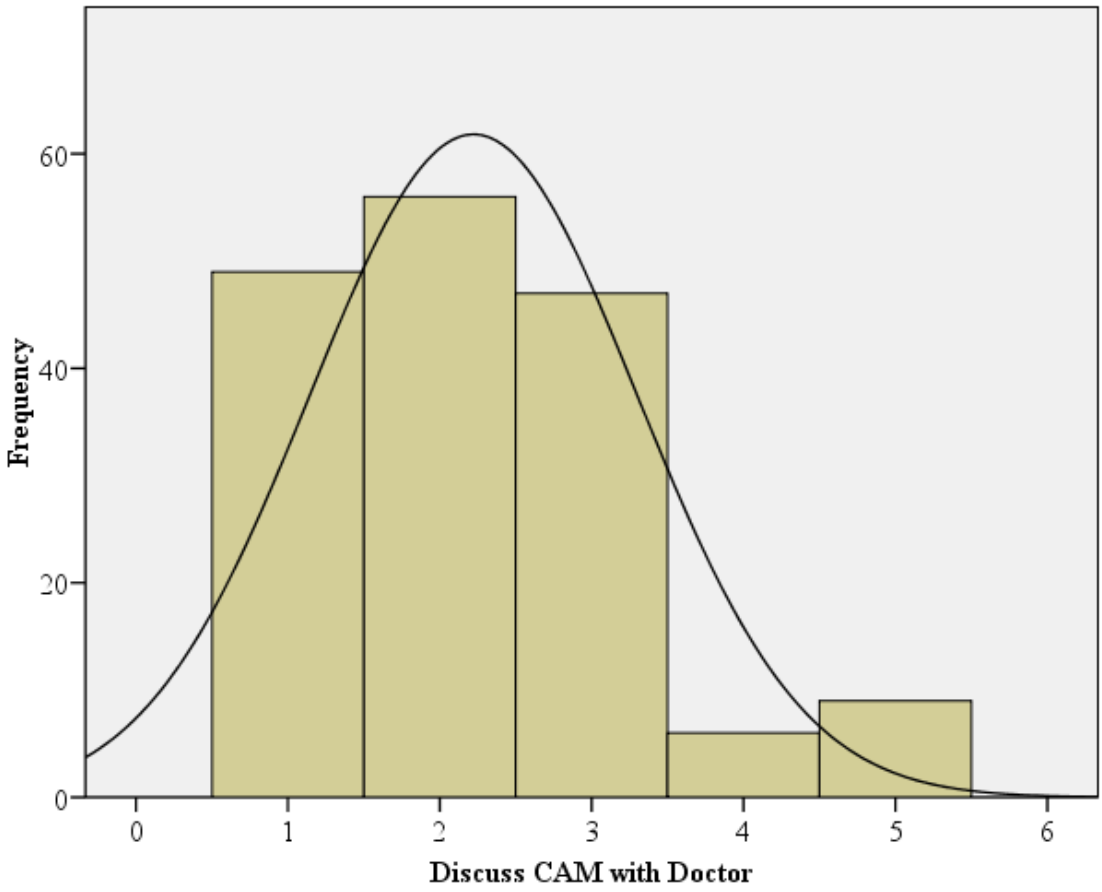

Figure 8. Histogram of dependent variable scores.

The fourth assumption of linear regression is that variances of subpopulations of the dependent variable are equal (i.e., the assumption of homoskedasticity). Figure 9 presents a scatterplot of standardized predicted scores (x-axis) with standardized residuals (y-axis). As can be seen, the variance of the residuals is approximately the same for differing values of the predicted scores, indicating that the assumption of homoskedasticity was met.

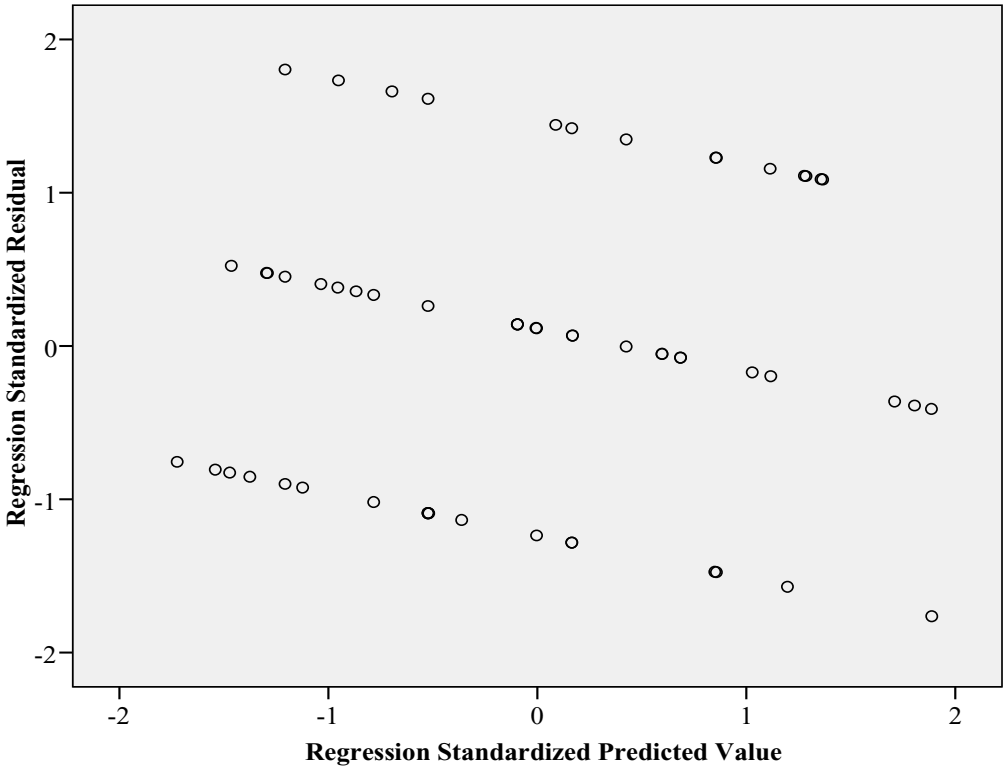

Figure 9. Scatterplot of standardized predicted scores and standardized residuals.

The fifth assumption of linear regression is that the means of subpopulations of the dependent variable lie on the same straight line (i.e., the assumption of linearity). Figures 10, 11, and 12 show scatterplots of the independent variables and the dependent variable in this study. Although the scatterplots show weak relationships between the independent and dependent variables (as will be discussed below), there is no evidence of nonlinearity.

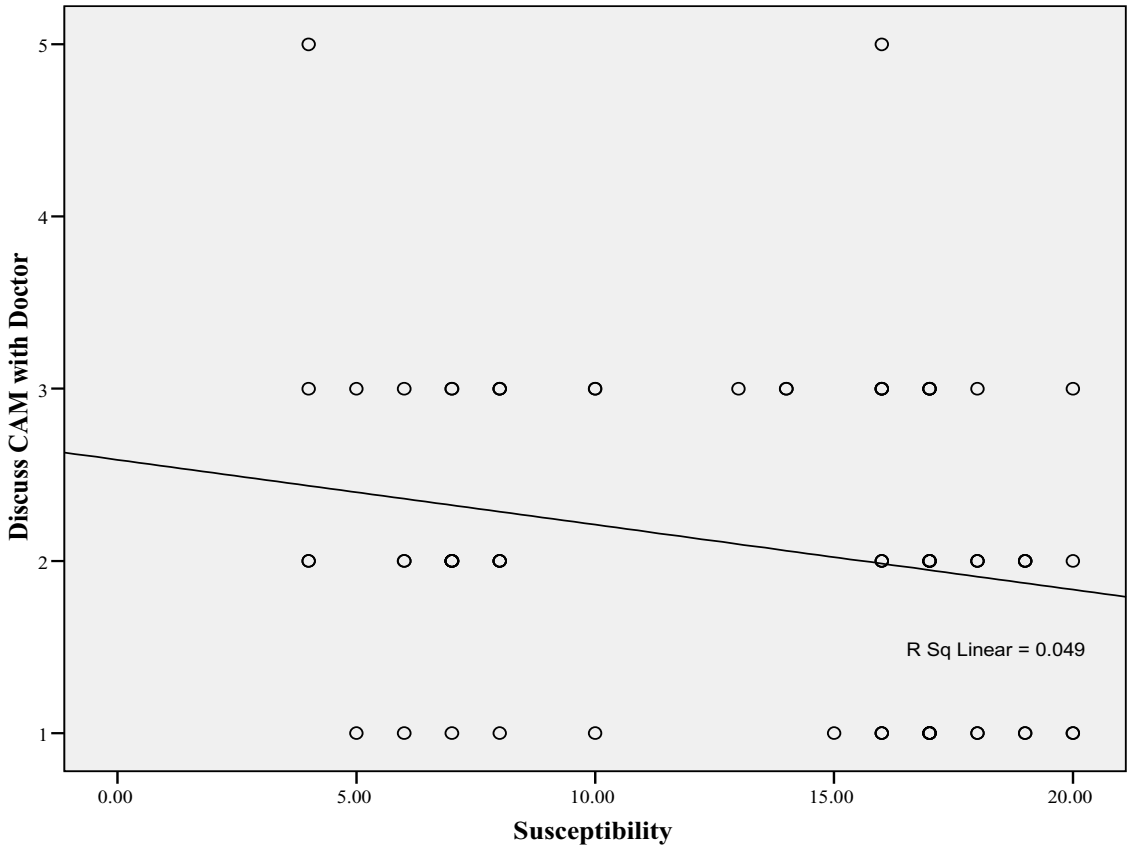

Figure 10. Scatterplot of Perceived Susceptibility and physician discussions regarding CAM scores.

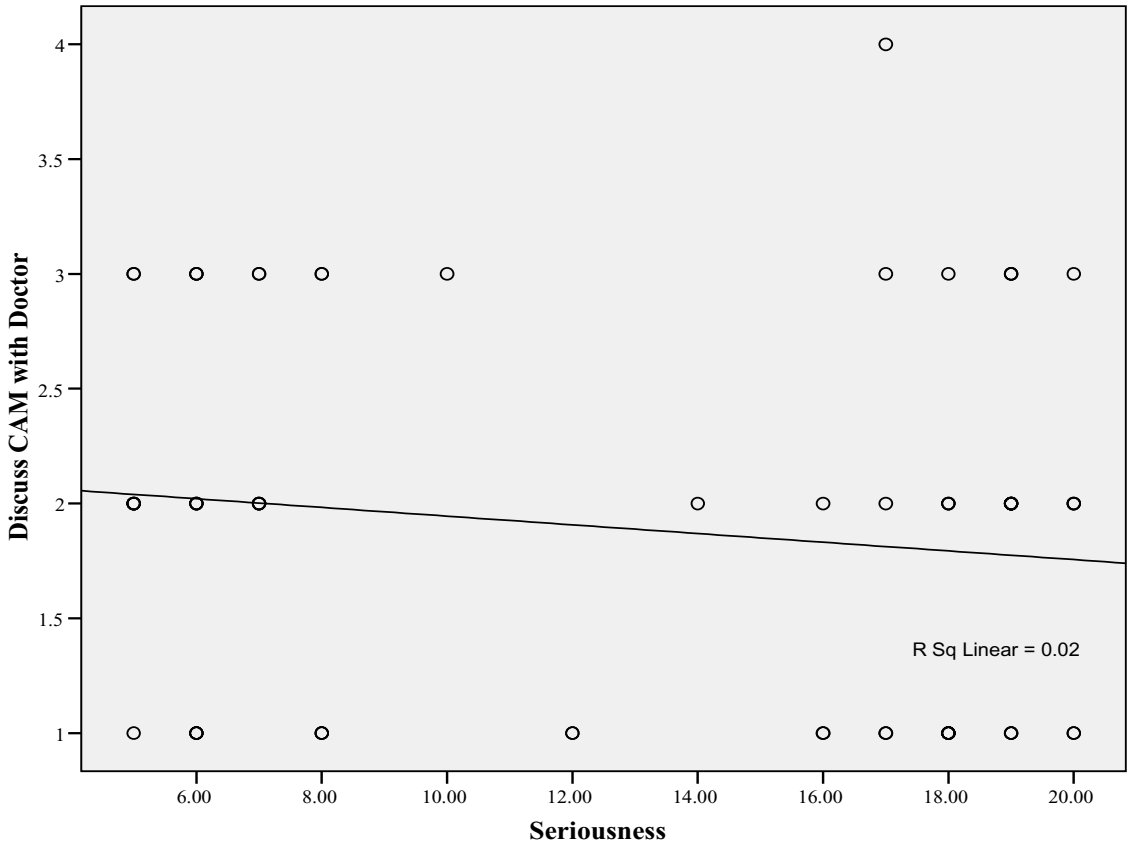

Figure 11. Scatterplot of Perceived Seriousness and physician discussions regarding CAM scores.

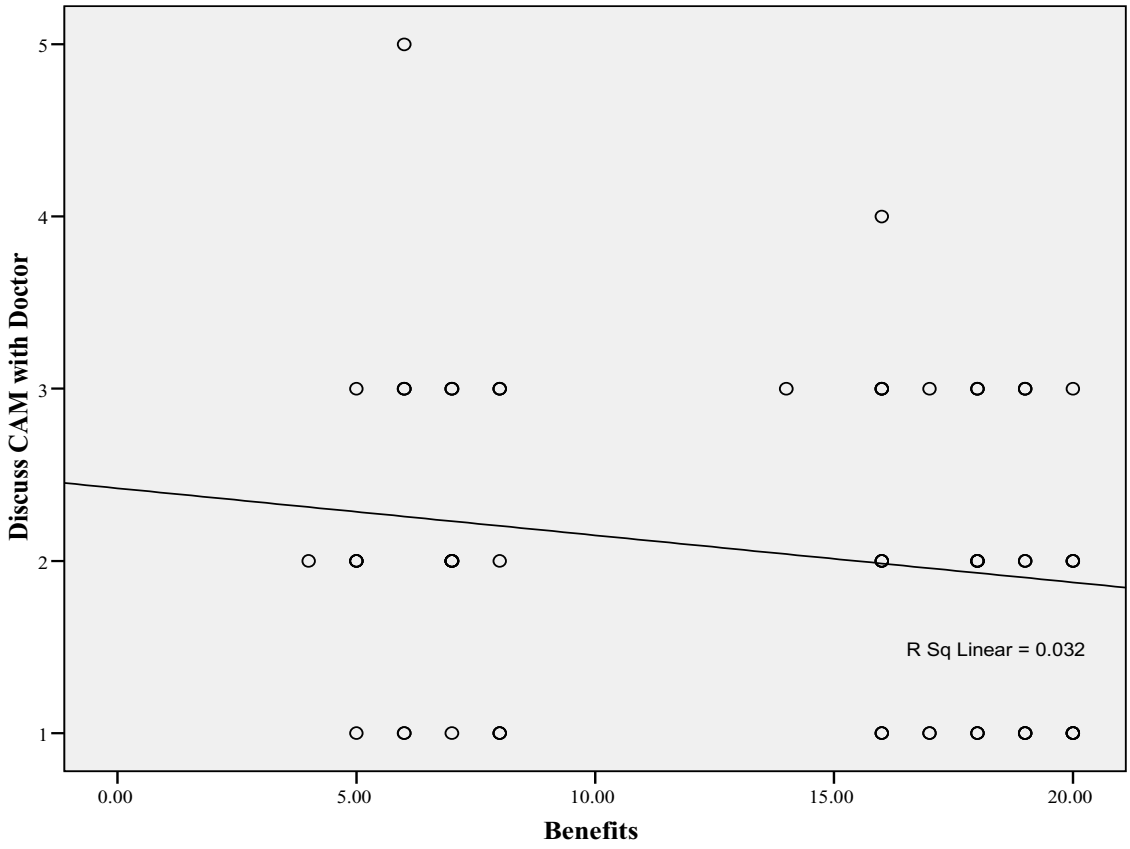

Figure 12. Scatterplot of Perceived Benefits and physician discussions regarding CAM scores.

The final regression assumption is that the values of the dependent variable were statistically independent. Because of the method of data collection (i.e., that each subject participated only once in this study), this assumption was met because one individual's scores on the dependent variable were unrelated to other individuals' scores on the dependent variable. Based on the analysis of the regression assumptions, moderate nonnormality for the distribution of dependent variable scores and random (rather than

fixed) values for the independent variables indicate that some caution is required in interpreting the results of the regression analyses presented in the next section.

Subquestion 1

The first subquestion was: To what extent do participants believe comprehensive care is compromised by not discussing CAM? The null and alternative hypotheses for this research question were:

H_{01}: CAM-using patients do not believe comprehensive care is compromised by not discussing CAM.

H_{A1}: CAM-using patients do believe comprehensive care is compromised by not discussing CAM.

This null hypothesis was tested by examining the regression coefficient for predicting physician discussions regarding CAM from perceived susceptibility. Table 8 shows the results from this regression analysis. From this analysis, it can be seen that perceived susceptibility was not predictive of a CAM discussion, $\beta = .11$, $p = .629$. Therefore, the second null hypothesis from this study was not rejected, and it was concluded that perceived susceptibility is not related to discussing CAM with one's physician.

Subquestion 2

The second subquestion was: To what extent do participants believe that not discussing CAM is a serious issue that could affect their medical care? The null and alternative hypotheses for this research question were:

H_{02}: CAM-using patients do not believe discussing CAM is a serious issue.

H_{A2}: CAM-using patients do believe discussing CAM is a serious issue.

The regression coefficient for perceived seriousness as a predictor of physician discussions regarding CAM, shown in Table 8, was not statistically significant, $\beta = -.19$, $p = .405$. This indicated that perceived seriousness was not predictive of a CAM discussion, and, therefore, the third null hypothesis from this study was not rejected.

Subquestion 3

The third subquestion from this study was: To what extent do participants believe discussing CAM will benefit the medical care they receive? The null and alternative hypotheses were

H_{03}: CAM-using patients do not believe discussing CAM will benefit the medical care they receive.

H_{A3}: CAM-using patients do believe discussing CAM will benefit the medical care they receive.

The results from the regression analysis presented in Table 8 indicated that the perceived benefits of taking action was not predictive of a CAM discussion, $\beta = .22$, $p = .296$. This indicated that the perceived benefits of taking action was not related to having

discussions with one's physician regarding CAM, and, therefore, the fourth null hypothesis from this study was not rejected.

Table 8

Results From the Multiple Regression Analysis With Perceived Susceptibility, Perceived Seriousness, and Perceived Benefits as Predictors of Discussion of CAM (N = 167)

Variable	*B*	*SEB*	B	*t*	*p*
Constant	3.27	.29		11.21	<.001
Perceived Susceptibility	.03	.06	.11	.48	.629
Perceived Seriousness	-.05	.06	-.19	-.83	.405
Perceived Benefits	.06	.05	.22	1.05	.296

Note. Model R^2 = .03, Adjusted R^2 = .01, $F(3, 163) = 1.47$, $p = .226$.

Summary

This chapter included the results from the statistical analysis of the data from the research that was collected from the survey. The responses were analyzed using multiple regression to test the hypotheses and address the research questions. Results showed that participants have an interest in discussin CAM and the variable were not significant preditors of CAM discussions. The key findings from this study were that

1. The participants were interested in discussing CAM with their physicians, with the majority of the participants stating that they discussed CAM either often (33.5%) or always (29.3%).

2. Perceived susceptibility was not predictive of a CAM discussion.

3. Perceived seriousness was not predictive of a CAM discussion.

4. Perceived benefits of taking action was not predictive of a CAM discussion.

The next chapter contains a discussion of the results and recommendations for medical practice and future research in this area.

Chapter 5: Discussion and Recommendations

Introduction

The purpose of this study was to explore whether CAM-using patients have an interest in discussing CAM treatments as part of their comprehensive care with their CM doctor as described by the HBM constructs. CAM use continues to increase and many CAM users do not discuss this activity with their physician (Barnes et al., 2004). HBM is used to study health behavior (Rosenstock, 1966). The null hypothesis proposed that there would not be a relationship between patients' interests in discussing CAM therapies used with their CM doctor for comprehensive care.

The research question was,:To what extent do CAM-using patients have an interest in discussing CAM treatments with their CM doctor as described by the HBM constructs of perceived susceptibility, perceived seriousness, and perceived benefits of taking action? The three subquestions were:

1. To what extent do participants believe comprehensive care is compromised by not discussing CAM?

2. To what extent do participants believe that not discussing CAM is a serious issue that could affect their medical care?

3. To what extent do participants believe discussing CAM will benefit the medical care they receive?

The purpose of communicating is not merely to engage in dialogue, but to impart essential information in such a way that the person understands. Studying doctor-patient communication and satisfaction is not a new field. As far back as 1968, Korsch et al. reported doctor-patient communication gaps. Approximately 25% of the patients in their study reported that they would have liked to ask the doctor more questions (p. 864).

Prior studies on CAM have focused on the types of CAM used, the purpose for their use, the effect of a specific therapy on a specific disease, and disclosure rates. Some of these studies included a few questions pertinent to this research. Patients in one study discussed CAM because they believed it would make a difference in their medical care (Barracco et al., 2005, p. 38). Sibinga, Ottolini, Duggan, and Wilson (2004) surveyed parents regarding CAM discussion with their child's pediatricians. The results showed that overall 53% of parents expressed the desire to discuss CAM with their pediatricians; this number increased to 75% for those who used CAM themselves and 81% among those who used CAM for their child (Sibinga, Ottolini, Duggan, & Wilson, 2004, p. 369).

In another study, 50% of the participants told their doctor about the CAM they were using (Adler, Wrubel, Hughes, & Beinfield, 2009, p. 6). For those participants who did not disclose this information, they explained that it had not come up, the physician had not asked, or their CAM use was personal and not related to their CM care (Adler, Wrubel, Hughes, & Beinfield, 2009). Another study with CAM users who discussed CAM with their doctor found that 65% of the participants rated the office as excellent or very good (Ahn et al., 2006, p. 651). In the Ahn et al. (2006) study, 36% of the

respondents who did not discuss CAM rated the visit as excellent or good. Themes in one study were that the participants wanted the opportunity to discuss CAM use, wanted their doctor to be open and listen, and wanted their questions invited (McCaffrey, Puch, & O'Connor, 2007). Robert et al. (2005) reported that 43% of the participants sometimes bring up CAM and of these 87% stated they are willing to discuss it (p. 53).

Shelley, Sussman, Williams, Segal, and Crabtree (2009) stated that patients were generally receptive about increasing CAM discussions but preferred the physician to initiate the conversation on the topic. Patients also did not need the clinician to be an expert. Frenkel, Arye, Carlson, and Sierpina (2008) found that 77% of participants were interested in adding CAM over the next year and preferred the physician to be involved to create a safety zone. Another study found that 62.7% of non-CAM users were willing to try CAM (Duncan et al., 2007, pp. 109-110). Of the CAM users only 36.8% discussed the supplements they were using with their physician (pp.109-110).

Patients want the doctor to listen to them and to be heard (Julliard et al., 2008). The results from previous research suggested that patients do have a desire to discuss CAM with their physician. To the researcher's knowledge, the present study was the first to extensively examine the patient's interest in discussing CAM with their physician.

Discussion of the Research Findings

This project was undertaken to support behavior change, increase awareness of patient's interest in discussing CAM, increase the limited knowledge about CAM discussions, and spark an interest in further research. Stakeholders who would benefit from this study include patients, researchers, public health professionals, health care

providers, and American medical organizations. The results of the current study showed that patients want to discuss CAM but the variables (i.e., perceived seriousness, perceived susceptibility, and benefits of taking action) were not significant predictors of CAM discussions.

The first key finding from this study was that the participants showed substantial interest in discussing CAM with their physicians. This finding was derived from the fact that most of the participants stating that they discussed CAM either often or always (62.8%). An additional 28.1% discussed CAM with their physician sometimes, as shown in Table 6. In total, 90.0% of the participants in this study stated that they sometimes, often, or always discussed CAM therapies with their CM physician, which is consistent with the 87% of patients who were willing to discuss CAM in the Robert et al. (2005) study. Only 5.4% of the participants in the current study stated that they never discussed CAM with their physician, and only 3.6% stated that they rarely discussed CAM with their physician. Therefore, the answer to the first research question of this study is that CAM-using patients had a substantial interest in discussing CAM treatments with their CM doctors.

CAM therapies are a relatively new treatment option in the United States (DHHS, 2007, 2009), and their use is on the rise (Barnes et al., 2004; Eisenberg et al., 1998). Often CAM therapies lie outside the primary care physician's area of expertise, yet they are growing in popularity (Starr, 2002). It is important that patients communicate with their medical treatment providers regarding all forms of treatment and therapy they are undergoing. The goal of the current study was to explore patients' perceptions of

discussing CAM therapies with their primary care physician. The finding that the participants in this study were willing and able to discuss CAM therapies with their CM physician is important because the finding indicates that primary care physicians are typically informed regarding their patients' use of CAM therapies.

There can be unsafe interactions between CAM therapies and CM (Eisenberg et al., 2001), and it is therefore crucial that all treatment providers are kept informed of all treatments undergone by a patient. The primary care physician, consequently, must take some responsibility for overseeing the entirety of a patient's therapeutic care, which can be difficult given that past studies have shown that some patients do not discuss CAM therapies with their CM doctors (Eisenberg, et al., 2001). However, the results from the current study indicated that the vast majority of patents do discuss their CAM therapies with their CM doctor. These results indicate that along with the increasing use of CAM therapies, there appears to be an increase in the extent to which patients feel comfortable discussing these therapies with their CM physician. As noted in chapter 1, discussing CAM therapies may lead to increased patient satisfaction with their medical care as well as expanded coverage of CAM therapies and issues in medical school and in medical continuing education programs.

The second key finding from this study was that none of the independent variables (perceived susceptibility, perceived seriousness, or perceived benefits of taking action) were predictive of discussing CAM with a physician. The level of interest in discussing CAM with their CM physician was similar, regardless of the extent to which an individual felt that the quality of their care could be compromised by discussing CAM

(perceived susceptibility), that not discussing CAM was a serious issue that could affect their medical care (perceived seriousness), or that discussing CAM would provide benefits in their medical care (perceived benefits).

The researcher anticipated that participants with higher scores on the measures of perceived susceptibility, perceived seriousness, and perceived benefits would be more likely to have an interest in discussing CAM with their CM physician, but these hypotheses were not supported in the proposed study. Although the finding in the current study that patients, by and large, were willing and open to discussing CAM with their CM physician, it is still important for researchers to provide information that can increase this willingness. Based on the results from this study, perceived susceptibility, perceived seriousness, and perceived benefits do not provide a basis for understanding a patient's willingness to discuss CAM with their CM physician. Therefore, other variables that could be used to predict one's willingness to discuss CAM with CM physicians should be explored, as discussed below.

Limitations

This research took place at two chiropractic clinics where various CAM therapies are used by the patients and are important components of their chosen health care. This population was identified because of their high and diverse CAM use. The researcher attempted to broaden the sample by using two sites, but this did not help provide varying demographics. Several limitations were identified that could limit the generalizability of the findings. Overall, the limitations involve gender, age, education, and non-participation data. There was a low rate of participation by males, participants younger

than 40, and those with less than a high school degree, and no data were collected regarding nonparticipation. Studying this specific population of participants from chiropractic clinics may prevent the results from being generalized to the rest of the country.

The first limitation involved the demographic characteristics of the participants. Most of the participants in this study were females (79.0%), and very few responses were received from the age groups 18 to 29 (9.0%) and 30 to 39 (7.22%). This sample was more educated than the general population in the United States, and there were no responses from those having less than a high school degree. Additionally, diversity of the sample was lacking in the area of gender, lower education, and younger than 40 years old. The number of responses from those with some college and higher was sufficient.

The second limitation was that no information was collected regarding nonparticipants in this study (i.e., those who were invited to participate but chose not to). Not recording the participation rate omitted some potentially valuable information. Additionally, this sample may not have represented persons who used fewer CAM therapies, viewed CAM treatments as less important to their health care, or did not visit a chiropractor.

A third limitation was that a principal component analysis (PCA) was not performed on the survey items from the Perceived Susceptibility, Perceived Seriousness, and Perceived Benefits scales, despite the fact that this scale was a newly designed set of items. PCA has been used for exploratory data analysis with a mathematical procedure for making predictive models that explain variances in the data. If the PCA had been

performed, possible principal components comprising values of uncorrelated variables could have been determined (Cohen et al., 2003).

Possibly including the other HBM constructs of barriers to taking action, cues to action, and self-efficacy in addition to perceived susceptibility, perceived seriousness, and perceived benefits of taking action would have provided results that were predictive of discussing CAM. Additional analysis of the subquestions and survey questions might have improved the results and shown that the HMB constructs would have been related to a CAM discussion.

Implications for Social Change

The consistent rise in CAM use continues to be a concern for medical care professionals. To provide the best service, doctors need to be informed about CAM therapies their patients are using (Pucci, Cartechini, Taus, & Giuliani, 2004). In addition, being knowledgeable about these treatments will help their patients make informed decisions. The most important factor here is patient care, and conventional medical personnel need to be open and informed regarding their patients' activities. Therefore, with this behavior change, CM professionals need to understand these therapies so that they can provide more comprehensive medical care.

In the past, sick individuals in America were limited to seeing a medical doctor and receiving drugs or surgeries to cure ailments (Turnock, 2004), but they have greater choices now including CAM therapies (DHHS, 2007). If physicians do not discuss these options with patients, either because the patient is not interested in discussing CAM therapies or because the physician is not knowledgeable about them, then medical choice

is reduced. To expand patient medical choice, the current study was conducted, and the results of this study increased knowledge about patients' interest in discussing CAM. The results can provide public health professionals, clinicians, and other community health leaders with an incentive to identify the factors that can affect and can promote CAM discussions. This study can have a positive impact on social change by motivating the stakeholders' pursuit of promoting CAM discussions.

If these findings are expanded through additional research they could be used to make predictions across many demographic areas, and this may increase CAM discussions. Understanding these behavior patterns may provide for better educational and promotional programs by facilitating education programs based on ethnicity, age, gender, and education. Increasing these discussions can be accomplished by participating in strategic programs and initiatives. These programs could also be designed to take into account ethnic and gender variations. The adoption of CAM discussions can reduce dissatisfaction from office a visit which creates a more contented patient.

Past research had indicated that some patients do not discuss with their doctors what CAMs they are using (Eisenberg et al., 2001). The results from the current study call for a reexamination of this issue because the individuals in this study were willing and interested in discussing CAM therapies with their physicians. This is an indicator of the social change that has occurred since the Eisenberg et al. (2001) study. The researcher hopes that the results from this study will further the willingness of patients to discuss CAM therapies with their physicians and that physicians will similarly become more willing to have these discussions with their patients.

Public health professionals could serve many communities by developing promotional campagnes and educational material about the importance of discussing CAM and to encourage these discussions to protect and improve societies health. This intervention can focus on improving health and the quality of life for people at the local and national level. Public health's role in this initiative is important because of access to large populations to reach society at the local and national level. Coordinating systems and focusing on the health behavior of discussing CAM can reach the general public and medical proffessionals in many geographic areas.

These findings can guide positive social change by stimulating doctors to be more aware of their behaviors and the patient's interests. Public health professionals and American medical organizations also can be motivated to develop programs and initiatives aimed at increasing CAM discussions. The emphasis of this was that CAM discussions are an important part of the CM office visit. To achieve social change, additional studies should be conducted that emphasize some of the less-represented variables and incorporate other variables to obtain more diverse data. Diversity of the sample could be expanded in areas such as gender, lower education, and those younger than 40 years old.

Recommendations for Action

There is limited documentation on patients' interest in discussing CAM with their physician. The results from this study added important information to the existing knowledge base in this area and provided valuable information for launching advance

future research and the development of education and promotional campaigns to encourage CAM discussions.

From these findings, steps have been identified that can be taken to address this communication gap. Recommendations based on these findings include expanding the demographics of the study population and further examining beliefs about CAM discussions for the patient and the doctor and include other variables such as overcoming barriers, cues to action, and self-efficacy as predictors of CAM discussions beyond perceived seriousness, perceived susceptibility, and benefits of taking action. The results of this research indicated that perceived seriousness, perceived susceptibility, and benefits of taking action were not significant predictors of CAM discussions. In addition, the connection between CAM discussions and HBM should be explored for other ethnic groups, males, patients under 30 years of age or patients with less than a high school degree.

The stakeholders may benefit from this study by understanding the need of the patient to discuss CAM. Placing CAM materials in the waiting room may help open the lines of communication. According to Shelley et al. (2009), if physicians initiate this discussion, they do not need to be experts in CAM therapies, they only have to show an interest. Health care providers could more routinely incorporate this activity into the office visit. Public health professionals and American medical organizations could develop educational materials and promotional campaigns.

As health care professionals continue addressing the increased use of CAM, they need to understand patients' interests in discussing CAM. Teaching the importance of

CAM discussion could be integrated into continuing medical education and medical school curriculum for advancing this generation of doctors and the next to help and serve and meet patients' needs and perspectives. Researchers and practitioners will be able to gain from the useful information presented here and from future research. Patients would benefit from receiving more comprehensive care from physicians changing their behavior. Educating health care professionals and the public about modifiable behavior will assist in understanding the CAM discussions. The results from this research should be published for the scientific community and public viewing. This information should be accessible for use as comparison for future research and a guide for campaign promotions and educational tools.

Recommendations for Future Study

The increase in CAM use demands additional research to identify effective CAM discussion interventions. A more comprehensive process may be required to fully examine this issue and reach a more diverse sample. To strengthen the findings of this study project, more extensive research and supplementary studies that support the conclusions of this research would benefit the stakeholders. Future researchers should also explore a more balanced demographic population. This research could include a wider geographic area and with a broader ethnic and gender group. Reaching a larger more diverse population from several states in different regions of the country would provide more information and contacting patients at a CM doctor's office may reduce recall bias and produce different results.

A recommendation of this study is that researchers build on the results of this study and expand the sample to include other ethnic groups, more males, those without a high school degree, and people under 30 years old. Future researchers should also include questions about how to overcome barriers and cues to action for the physician and patient. Although the analysis of the research questions in the current study provided data to examine discussions, they did not provide an opportunity to explore the reasons for nondiscussion nor to identify factors that lead to discussions. Other areas to investigate include participants that use less CAM, nonchiropractic patients, and whether patients who see multiple physicians discuss CAM with all of them.

Further research should also include methodologies such as focus groups to explore other factors that might affect a patient's willingness to discuss CAM with their CM physician. Including focus groups and cognitive interviewing would provide researchers with additional data for developing and understanding this topic more thoroughly. The results from these interviews would be helpful when designing new survey questions and to modify the questions used in this research. By using qualitative research, researchers would identify other factors that affect CAM discussions and provide a more in-depth understanding of the perceptions from the patient's point of view.

As noted above, perceived susceptibility, perceived seriousness, and perceived benefits were not related to the extent to which patients have discussions about CAM therapies with their CM physician. Two recommendations for future research are based on this finding. First, it is recommended that future studies focus on examining the items

used to construct the independent variables in this study with a principal component analysis to determine any underlying variance of the data. If such analyses indicate that the items do not produce the three expected components, future researchers should work toward developing better measures of perceived susceptibility, perceived seriousness, and perceived benefits.

In addition, the lack of statistically significant findings resulted in the recommendation that additional variables should be examined for their ability to explain patient interest in discussing CAM to facilitate openness with the CM physician. Variables such as psychological factors (e.g., personality traits), barriers to discussing CAM, cues to action, and self-efficacy could be examined for their ability to predict discussion of CAM therapies so that those individuals who remain hesitant or unwilling to discuss CAM with their primary care physicians could be identified. Therefore, further research, particularly on the effect of the patient's satisfaction from the office visit, if nondiscussion affects the doctor-patient relationship, and the relationship between the desired expectation and actual results from medical care, is recommended.

Concluding Statement

The American health care consumer's paradigm is changing from a complete reliance on Western medicine to an amalgam of treatments to restore or maintain health. To ensure harmony, people are looking at the environment and a variety of techniques for a holistic approach and rejecting some forms of mainstream medicine. Conventional medicine is viewed as limited by many people, even though the doctors are sincere and concerned caretakers (Geffen, 2004).

CAM therapies tend to involve viewing an individual in holistic terms and rejecting the duality of body-mind, which is replaced with the unity of the mental and physical components. These incompatibilities diminish the harmony between these entities. Traditional medical professionals are from a different school of thought and do not always necessarily endorse or agree with unconventional treatments. The rights and beliefs of the patient influence the factors about choice and need to be accepted and acknowledged by the physician (Geffen, 2004).

Understanding CAM use and the results of CAM therapies has been a much-studied topic by many researchers in recent years. Dissatisfaction from the office visit can disrupt harmony for many (Saxe et al., 2009). Researchers, health care providers, and patients must add more information. The findings from this study increased the knowledge in this area, which provides an opportunity to improve health care in the United States.

In this study an important area of patients' needs from office visits was identified. However, there is a need to identify how to overcome barriers and cues to action for a CAM discussion for both the doctor and patient and to study a more diverse sample base. Utilization of these recommendations would benefit both the patient and doctor. The benefits include increased patient satisfaction, improved medical care, and increased research. This study, along with other future prospective research, may provoke an interest in the need to address the concerns of CAM-using patients' desire to discuss CAM therapies with their physician.

Despite the technological advances in modern medicine, Americans have become interested in holistic treatments that remain outside of mainstream medicine. This trend is likely to continue. In recent years the weaving of CM and CAM has become an established health care practice. In the absence of a CAM discussion, potential harm may come to patients. The health care revolution has produced an exciting opportunity for CAM providers to be leaders and champions in this paradigm shift.

Physicians must continue to adapt and work with their patients to ensure that the office visit meets their needs. For some practitioners, changing patterns may be difficult, but addressing this issue through awareness gives doctors the opportunity to improve their patients experience from the office visit. In this study new, important factors were identified about discussing CAM and provided a good starting point and foundation for directing additional research and promotional programs. The results from this study are intended to be used by health care providers, researchers, patients, American medical organizations, and public health professionals.

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Appendix A: CAM Therapies Included in the 2002 Survey

Acupuncture*
Ayurveda*
Biofeedback*
Chelation therapy*
Chiropractic care*
Deep breathing exercises
Diet-based therapies
    Vegetarian diet
    Macrobiotic diet
    Atkins diet
    Pritikin diet
    Ornish diet
    Zone diet
Energy healing therapy*
Folk medicine*
Guided imagery
Homeopathic treatment
Hypnosis*
Massage*
Meditation
Megavitamin therapy
Natural products
    (nonvitamin and nonmineral, such as herbs and other products from plants, enzymes, etc.)
Naturopathy*
Prayer for health reasons
    Prayed for own health
    Others ever prayed for your health
    Participate in prayer group
    Healing ritual for self
Progressive relaxation
Qi gong
Reiki*
Tai chi
Yoga

* Indicates a practitioner-based therapy.

Department of Health and Human Services, Center for Complementary and Alternative Medicine. (2008).

Appendix B: List of Survey Questions

1. I have read the consent form and agree to participate in this survey.

Yes: No

2. Select your age group.

18-29; 30-39; 40-49; 50-59; 60+

3. What is your gender?

Female; Male

4. What is your race?

Caucasian; African American; Hispanic; Asian; Pacific Islander; Other; Prefer not to answer

5. What is marital status?

Married/ living with partner; Divorced/ separated; Single; Widowed;

6. What is your education level?

Less than high school degree; High school degree or GED; Some college or Associate's degree; Bachelor degree; Advanced degree

7. What type of CAM do you use? (Select all that apply)
Herbs; Vitamins, Homeopath, Chiropractic, Massage; Other

8. I discuss with my physician what CAM therapies I use.

Always; Often; Sometimes; Rarely; Never

9. Comprehensive care could be affected when there is not a CAM discussion.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

10. I am at-risk for reduced medical care when CAM is not discussed with my doctor.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

11. I may experience negative feelings after the doctor visit when CAM is not discussed.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

12. My comprehensive care is threatened when CAM is not discussed.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

13. I believe discussing CAM therapies with my doctor is important for comprehensive care.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

14. An open dialog with my physician about my CAM use is important to me.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

15. Not discussing CAM with my doctor is a serious issue.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

16. Not discussing CAM with my physician may cause reduced medical care.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

17. When CAM therapies are discussed with the doctor, my needs from the office visit are satisfied.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

18. Discussing CAM therapies with my doctor will improve the medical care I receive.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

19. I need to discuss CAM therapies with my doctor to receive the benefit of comprehensive care.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

20. Discussing CAM use with my doctor makes me feel I receive comprehensive care during the office visit.

Strongly agree; Agree; Neutral; Disagree; Strongly disagree

(Note: For the pilot study after the last question the following was stated):

If you are willing to participate in step 2 (retake the survey in a week), please provide your mailing address on the next page.

Note: Your name and address will be shredded after this step is completed.

Appendix C: Questionnaire Code Book

5-Point Likert Scale Questions:

1 = Strongly agree
2 = Agree
3 = Neutral
4 = Disagree
5 = Strongly disagree

Age:

1 = 18 – 29
2 = 30 – 39
3 = 40 – 49
4 = 50 – 59
5 = 60+

Gender:

1 = Female
2 = Male

Race:

1 =Caucasian
2 = African American
3 = Hispanic
4 = Asian
5 = Pacific Islander
6 = Other
7 = Prefer not to answer

Marital status:

1 = Married/ living with partner
2 = Divorced/ separated
3 = Single
4 = Widowed

Education Level:

1 = Less than high school degree

2 = High school degree or GED
3 = Some college or Associates degree
4 = Bachelor degree
5 = Advanced degree

Appendix D: Definition of Survey Terms

CAM - Complementary and Alternative medicine
Doctor – MD or DO
Physician – MD or DO

CAM Therapies:
Acupuncture
Biofeedback
Chelation
Chiropractic care
Deep breathing
Energy healing
Herbs
Homeopathic
Hypnosis
Massage
Meditation
Relaxation
Reiki
Vitamin therapy
Yoga

Department of Health and Human Services, Center for Complementary and Alternative Medicine. (2008).

Curriculum Vitae

Deborah A. McNinch

Education: Ph.D. in Public Health November 2011
Walden University, Minneapolis, Minnesota.

MS in Public Health, May 2007
Walden University, Minneapolis, Minnesota.

BS in Business Administration, December 1998
Langston University at OSU/Tulsa, Tulsa, Oklahoma

Certificates: College of Natural Health, Doctor of Naturopathy (N.D.), October 1999.

Experience:

1/03 - present Business Owner
Health & Healing Consultant, Broken Arrow, OK

Test, evaluate, and recommend dietary changes and supplements
Motivational consultation to educate and promote healthy choices

1/02 - 7/04 Chemistry Lab Assistant
Tulsa Community College, Tulsa, OK

Prepare chemicals for experiments and arrange the labs
Relocate and organize the lab's equipment and glassware
Research and develop various reports, lists, and databases

7/85 - 11/94 ENRON Corp, Omaha, NE & Houston, TX

11/88 - 11/94 Regulatory Analyst
Determined specific reporting requirements for orders issued by the Federal Energy Regulatory Commission and other governmental agencies
Organized information to fulfill reporting obligations to government agencies

2/87-11/88 Contract Specialist
Administration and maintenance of gas transportation agreements
Coordinated distribution of gas transportation rates used by Transportation & Exchange, Gas Accounting, Regulatory Affairs and Marketing departments

7/85 - 2/87 Transportation Specialist
Calculation of transportation gas routes between sources and markets
Analyzed and interpreted contracts for information needed in data base
Co-developed computer filing and reporting system for contracts

8/84 - 6/85 Associate Programmer
First Data Resources, Omaha, NE

Maintained a 50,000 line program and wrote new programs in COBOL

Skills: Experienced with Windows, Word, Excel, and Power Point. Able to work independently, prioritize tasks, meet deadlines, with excellent organizational skills.