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Attitudes of Western, Conventionally Trained Physicians Toward Integrative Medicine in Kenya: A Descriptive Correlational Study

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ATTITUDES OF WESTERN, CONVENTIONALLY TRAINED PHYSICIANS TOWARD INTEGRATIVE MEDICINE IN KENYA: A DESCRIPTIVE CORRELATIONAL STUDY

A thesis submitted in partial fulfillment
of the requirements for the degree of
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By

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WE HEREBY RECOMMEND THAT THE THESIS PREPARED
BY

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BE ACCEPTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN NURSING.

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Abstract

The 2007 policy draft of Kenya's National Coordinating Agency for Population and Development (NCAPD) states that the primary source of health care for more than two-thirds of Kenya's population is traditional medicine (as cited in NCAPD, 2008). The World Health Organization (WHO) (2013) suggests there should be an integration of TM into systems of national health care to increase health care access. Integrative medicine (IM) involves the integration of therapies from both alternative and mainstream medicine (Integrative medicine, 2014). Little is known about the attitudes of Western, conventionally trained physicians toward IM in a non-Western setting. The purposes of this study were to describe the attitudes of Western, conventionally trained physicians toward IM in Kenya and explore the relationship between physician demographic characteristics and attitudes. The theoretical framework for this descriptive correlational study was the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). A convenience sample of 23 Western, conventionally trained physicians from three rural, Christian mission hospitals in Kenya, East Africa, were used. The participants completed a demographic information sheet and the Integrative Medicine Attitude Questionnaire (IMAQ) (Schneider, Meek, & Bell, 2003) electronically via Qualtrics Survey Software. Overall, physician attitudes were positive, and there were no significant correlations between physician attitudes and demographic characteristics. The primary clinical implication of these findings is an increased awareness of the attitudes of Western, conventionally trained physicians toward IM in Kenya. Understanding physician attitudes toward IM is important for furthering the integration of systems of health care as the WHO (2013) suggests.

Keywords: physician attitudes, traditional medicine, complementary and alternative medicine, integrative medicine, Kenya

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Chapter 1: Introduction

Complementary and alternative medicine (CAM) is an umbrella term often used to describe a category of medicine that differs from the knowledge and methods of conventional medicine (CM)—some of these therapies are used to complement mainstream medicine and others are used as an alterative to it (National Center for Complementary and Alternative Medicine [NCCAM], 2014). One example of this is traditional medicine (TM). The World Health Organization (WHO) (2000) describes TM as knowledge and practices rooted in experiences and beliefs indigenous to a culture and used in order to maintain health, as well as treat and prevent disease. The WHO (2002) also reports that more than 80% of the population in Africa utilizes TM as the health care model to address needs. With TM varying from culture to culture, there are multiple methods of treatment used. However, the most widely practiced type of TM is herbal therapy (WHO, 2005). One African country where this proves to be the case is Kenya.

Located on the coast of East Africa, Kenya is home to over 45 million people, consisting of multiple tribes and languages (Central Intelligence Agency [CIA], 2014). Like other countries in Africa, Kenya has a strong TM presence. In the 2007 policy draft of Kenya's National Coordinating Agency for Population and Development (NCAPD), TM is described as being the primary source of health care for more than two-thirds of Kenya's population (as cited in NCAPD, 2008). While there are many explanations for this, one primary reason is access to care. Based on data for Kenya from 2013, the CIA

(2015) estimates there are 0.2 physicians per 1,000 population, and based on 2010 data there are 1.4 hospital beds per 1,000 population. People living in rural areas most commonly experience the strain of limited access to important resources, such as health care. The NCAPD (2008) states that in rural Kenya, medicinal and aromatic plants are made into herbal medicines that are heavily relied upon to treat health problems due to the lack of access to conventional health care services. Because of this, a better understanding of TM and how to address the availability of health care is crucial.

In an effort to improve health care access for the world's most vulnerable, the WHO (2013) suggests there should be an integration of TM into systems of national health care. The branch of medicine that specializes in integrating therapies from both alternative and mainstream medicine is called integrative medicine (IM) (Integrative medicine, 2014). The reasons for advocating this particular approach to health care are manifold. In February of 2013, the WHO Director-General, Dr. Margaret Chan (as cited by the WHO, 2013, p. 16), gave a speech to the International Conference on Traditional Medicine for South-East Asia explaining that TM is the primary—sometimes only—source of health care for many and is seen as care that is affordable and close to home, being widely trusted and culturally acceptable; relating to these factors, Dr. Chan suggests that using TM that is proven to be safe, efficient and of quality can contribute to ensuring the availability of health care for all people. Therefore, the potential influence of TM on access to health care is a topic that deserves more investigation.

Incorporating such diverse and complex forms of health care into currently existing ones is no small task. To facilitate this process, the WHO Traditional Medicine Strategy for 2014-2023 (2013) was assembled and summarized in the following action

plans: developing international standards, policies and guidelines to assist countries in integrating TM; assisting countries to establish their own policies at the national level; establishing the safety and efficiency of TM by supporting its research; mediate TM information and serve as a catalyst for its exchange; and promoting the evidence-based use of TM by advocating its rational use. With an estimated 43.4% of its population below the poverty line in 2012 (CIA, 2015), an unbalanced ratio of physicians and hospital beds to patients, and a large percentage of its population already using TM, Kenya is a country that has great potential to benefit from the WHO Traditional Medicine Strategy (2013).

In Kenya and worldwide, the enormity of the WHO's proposal will require the participation of multiple disciplines at various levels of local and national leadership. One very important group of stakeholders in moving forward with this strategy is physicians. For various reasons, physicians (i.e., missionaries or expatriates) from Western societies have responded to problems of poverty and shortages of medical professionals, traveling to places like Kenya to address these issues. Many health facilities in developing nations, such as Kenya, have affiliations with faith-based organizations (FBOs) originating in Western parts of the world—often having conventionally trained health professionals from those areas staff the facilities. For example, Tenwek Hospital, located in Bomet, Kenya, was founded by missionaries from World Gospel Mission (WGM) in 1937 (Tenwek Hospital, n.d.)—an agency based in Marion, Indiana—and currently has physicians serving there from the United States (WGM, 2014). Kenya's Ministry of Medical Services and Ministry of Public Health and Sanitation's Master Facility List (as cited in Luoma et al., 2010) shows that in February

of 2010, 25% of FBOs were responsible for care in the following kinds of facilities: hospitals, clinics, health centers, and dispensaries. For integration to occur as the WHO suggests in facilities such as these, there needs to be communication and collaboration between all facets of the medical spectrum—most notably, CM and CAM/TM.

Some of the strategies to integrate TM into existing systems of health care identified by the WHO (2013) are to encourage understanding and mutual respect, and strengthen collaboration and education between the disciplines of TM and CM. However, difficulties to the success of these interactions have already been noted. For example, the WHO's Traditional Medicine Strategy for 2002-2005 (2002) states that many CM practitioners have strong reservations or even disbelief toward CAM/TM—usually involving questions regarding the safety and efficacy of these therapies. These hesitations are validated by the risks linked to the use of TM identified in the WHO Traditional Medicine Strategy 2014-2023 (2013): unqualified health practitioners, delayed or misdiagnosis, use of faulty or poor quality products, adverse side effects and interactions with treatment, and subjection to unreliable or deceptive information. With these hesitations and risks in mind, one step toward beginning the process of implementing the WHO's strategy into a Kenyan context is to further explore the thoughts and attitudes of CM physicians toward IM—specifically those who originate from a Western context where CAM/TM is different or not as prevalent. What are the attitudes of Western, conventionally trained physicians toward IM in Kenya? What are the relationships between the demographic characteristics of Western, conventionally trained physicians and physician attitudes toward integrative medicine in Kenya? The purpose of this study was to describe the attitudes of Western, conventionally trained

physicians toward IM in Kenya and the relationship between physician demographic characteristics and attitudes. In doing so, the hope was that the process of creating an integrative health care system that utilizes the benefits of both disciplines to provide greater access to care for all people was furthered.

Review of Literature

To better understand the nature of this phenomenon, the researcher conducted a literature review to establish what is currently known about the topic and analyze what research has already been done. To accomplish this, the researcher reviewed articles from the databases CINHAL Plus with Full Text and MEDLINE, restricting the search to peer reviewed articles in English that were published no later than 2004. As a result, the literature reviews and research studies found were evaluated as they related to the topic of interest.

One critical review by Leach (2004) examined international studies researching the attitudes of the public, nurses, and medical practitioners toward natural medicine—positing the phrase natural medicine to be another form of CAM. In this review, Leach (2004) found the following results: in the Western world, medical practitioners generally had a positive attitude toward natural medicine; female practitioners had more positive attitudes than males; younger physicians had more positive attitudes compared to older physicians; and some practitioners were in favor of only certain forms of CAM, but not others. Studies not included in Leach's (2004) review showed similar findings. For example, multiple studies found the attitudes of physicians toward CAM to generally be positive (Chung et al., 2011; Conrad et al., 2013; Fadlon, Granek-Catarivas, Roziner, & Weingarten, 2008; Furlow, Patel, Sen, & Liu, 2008; Manek et al., 2010; Milden &

Stokols, 2004; Rhode et al., 2008; Schmidt, Jacobs, & Barton, 2002; Telles, Gaur, Sharm, & Balkrishna, 2011; Wahner-Roedler et al., 2006; Wahner-Roedler et al., 2014; Zhang, Peck, Spalding, Xu, & Ragain, 2010). Other studies also found female physicians to have more positive attitudes toward CAM than male physicians (Conrad et al., 2013; Furlow et al., 2008; Manek et al., 2010; Rhode et al., 2008; Risberg et al., 2004; Wahner-Roedler et al., 2006). Similar research found younger physicians to have more positive attitudes toward CAM compared to older physicians, as well (Furlow et al., 2008; Milden & Stokols, 2004; Wahner-Roedler et al., 2006; Wilkinson & Tinley, 2009). Finally, seven other studies found physicians to have positive attitudes toward some types of CAM therapies, but not others (Clark, Will, Moravek, Xu, & Fisseha, 2013; Cohen, Penman, Pirotta, & da Costa, 2005; Faldon et al., 2008; Furlow et al., 2008; Manek et al., 2010; Wahner-Roedler et al., 2006). Regarding Leach's (2004) review, there were several issues with the studies examined. The following points were identified by Leach (2004) as important factors to note when interpreting the results of the studies reviewed: one study was not comprehensive enough in that it only examined (bach flowers, massage, acupuncture, homeopathy, herbal therapy, and hypnotherapy); two studies showed some practitioners believed in the benefit of some types of CAM (i.e., massage, hypnosis) and not others (i.e., homeopathy, aromatherapy); another survey examined systems of alternative therapies instead of single therapies, influencing findings by requiring more knowledge from participants; finally, another survey showed positive results, but only had a 40% response rate and only involved one facility that was closely associated with an alternative medicine office. One final limitation of Leach's (2004) review, suggested by this researcher, was that although he examined a broader range of

attitudes—the public, nurses, and physicians—only ten were specific to physician attitudes and may be seen as affecting the strength of the review findings by not being sufficiently comprehensive.

A more recent literature review by Sewitch, Cepoiu, Rigillo and Sproule (2008) assessed the attitudes of health care professionals toward CAM in the United States and Canada. Compared to Leach's (2004) review, this appraisal was more comprehensive in that it reviewed sixteen studies relating to physician attitudes (Sewitch et al., 2008). Though Sewitch et al. (2008) described the review's overall attempt at summarizing attitudes as inconclusive, the review did reveal the following patterns: physician attitudes tended to be less positive toward CAM than other health care professionals; when there were positive physician attitudes, the referral and use of CAM by physicians was not demonstrated; older physicians were less likely to recommend CAM than younger physicians; and female health professionals had more positive attitudes toward CAM than male professionals. Similar findings were shown in studies outside of those reviewed by Sewitch et al. (2008). Other studies also found inconclusive or conflicting results (O'Beirne, Verhoef, Paluck, & Herbert, 2004; Risberg et al., 2004). For example, an outside study by Wahner-Roedler et al. (2006) found conflicting results in that while 67% of physicians thought there was promise in some CAM treatments, 70% of them also saw CAM as a threat to public health; limitations of this study were that it had a low response rate and only looked at one medical facility. Other studies also found results showing that physicians viewed CAM as a threat to public health (Wilkinson & Tinley, 2009; Zhang et al., 2010). However, one study found that the majority of physicians disagreed with the statement that CAM is a threat to public health (Clark et al., 2013). Two other

studies also found that though physicians had positive attitudes toward CAM, they did not frequently make CAM referrals (Chung et al., 2011; Milden & Stokols, 2004). Referring again to the review by Sewitch et al. (2008), the following limitations were identified in the review: the therapies included in the definitions of CAM were varied; due to the variability in the content of the tools used to assess attitudes, there was difficulty in summarizing attitudes; and the findings were difficult to generalize due to the low response rate in at least half of the articles examined. Finally, only four studies reviewed by this researcher found physicians generally had negative attitudes toward CAM (Argüder, Yilmaz, Ateş, Misirligil, & Bavbek, 2012; Clark et al., 2013; Trimborn et al., 2013; Wilkinson & Tinley, 2009).

Several of the studies on CAM reviewed by the researcher had findings specific to herbal therapies—the primary form of TM in Kenya. Leach's (2004) review found that several studies showed physicians to have a negative attitude toward herbal medicines and did not believe in their efficacy. A study of obstetricians and gynecologists in the United States also found that physicians had negative attitudes toward herbal medicines compared to physicians' more positive attitudes toward other CAM therapies, such as hypnosis and acupuncture (Furlow et al., 2008). However, a study looking at the attitudes of Turkish physicians who manage allergic diseases by Argüder et al. (2012), found herbal medicine to be the most popular form of CAM, likely due to its local availability, cost, and the belief in effectiveness; two disadvantages to the study noted by its researchers was that it was based on self-reporting and had the possibility of response bias.

After examining studies that assessed physician attitudes toward CAM, the researcher analyzed literature that specifically examined physician attitudes toward IM. In addition to IM being a combination of therapies from mainstream and alternative medicine (Integrative medicine, 2014), IM stresses the spiritual, social, psychological, and biological wellness of both the patient and provider, seeking to incorporate the most effective and safe CAM and conventional treatments (Schneider, Meek, & Bell, 2003). This change in paradigm from a solely CM or CAM model to one that integrates both frameworks reveals another aspect of physician attitudes, as revealed in the literature. In addition, the researcher found that the literature was more limited in the amount of articles available on physician attitudes toward IM, compared to articles on physician attitudes toward CAM. As a result, three main studies were examined in the following review.

Jong, van Vliet, Huttenhuis, van der Veer, and van den Heijkant (2012) used a questionnaire to assess the attitudes of 276 Youth Health Care physicians toward integrative pediatrics in the Netherlands and found that overall, the physicians relatively possessed a positive attitude toward integrative pediatrics. The majority of physicians were in favor of the following aspects of IM: provider-client health care relationship, prevention strategies, and a healing environment. However, the study found that most hesitation from physicians was regarding the IM aspect of using CAM. The researchers noted that physicians were more open to the individual practice of CAM than they were to CAM being implemented into their health care organization (i.e., 62% thought CAM would harm their organization's reputation). The study also found an association between a physician's opinion that IM is an important innovation and a physician's

familiarity with IM to be significant ($p<0.001$). The researchers identified the possibility of a response bias and a response rate of 27% as the study's limitations (Jong et al., 2012).

A second study by Bocock, Reeder, Perez, and Trevina (2011) assessed New Zealand doctors' attitudes toward using IM in treating cancer. The researchers used an adapted questionnaire to assess the attitudes of 235 out of 395 participants (response rate of 59%). The study's results showed that 95% of physicians agreed that doctors should address a patient's health of mind, body, spirit, and lifestyle. However, only 60% of physicians were in agreement that providing optimum patient care included an integration of CAM into therapy regimes, and 53% of physicians viewed the role of CAM as only adjunctive treatment. Concerns about integration were evident in that many physicians were concerned about CAM's effect on conventional treatment, as evidenced by 89% of physicians being apprehensive about CAM interfering with medications. The following results were also found in the study: compared to female physicians, male physicians were less likely to agree with the integration of CAM; physicians were not as likely to agree that patient care should include the integration of CAM if they had been practicing for greater than 21 years; and physicians practicing in a community setting were more inclined to agree that the integration of CAM should be used to give the best care to patients. Limitations listed in this study were that the physicians from New Zealand were only from one geographic location and the majority of the study participants were not oncology specialists (Bococok et al., 2011).

In contrast to the previously discussed studies on IM, a qualitative study was conducted by Hsiao, Ryan, Hays, Coulter, Andersen, and Wenger (2006) to assess the

perceptions of IM of various health care providers in California. The goals of this study were to develop an IM conceptual model and work toward the development of a survey tool that measures practitioners' IM orientation. In addition to interviews with physicians, interviews with acupuncturists, physician acupuncturists, and chiropractors that practice IM were conducted to research the key concepts of IM at the level of the provider. Pertaining to conventional physicians, the study found that the physicians who were open to IM were inclined to accept the biomedical paradigm's limitations and were willing to collaborate with CAM practitioners, acknowledging the possible benefits of IM and CAM. In contrast, CAM practitioners were often viewed as quacks by physicians that were close-minded to IM, and the belief that many CAM therapies did not pass the standard of being supported by evidence decreased conventional physicians' trust in IM. In addition, physicians were skeptical of IM due to physicians' lack of knowledge and exposure. Similar to studies previously mentioned, physicians with a more open-mind toward IM were recognized as younger practitioners. The study's limitations, as identified by its researchers, were listed as external validity being limited due to the study sample being from a specific geographic region and that not all forms of IM practitioners were included in the study (i.e., naturopaths, homeopaths) (Hsiao et al., 2006).

Two main points summarized the literature review: generalizing physicians' current attitudes toward CAM and IM was difficult, and the results found in existing literature were conflicting. In addition to these findings, there was also a gap in the amount of studies that examined Western physicians' attitudes toward CAM and IM in a non-Western context. Most studies assessed the attitudes of Western, conventionally trained physicians toward CAM and IM in a Western context. Therefore, little is known

about the attitudes of Western, conventionally trained physicians toward CAM and IM in a non-Western setting, such as Kenya. However, valuable information is still obtained from studies that research conventional physicians native to and working in a Western context by providing understanding of current knowledge on the topic from a broader context. Therefore, the purposes of this study were to: (1) describe the attitudes of Western, conventionally trained physicians toward IM who are currently practicing in Kenya, (2) and explore the relationship between physician attitudes toward IM and physician demographic characteristics. The research questions of this study were as follows:

(1) What are the attitudes of Western, conventionally trained physicians toward IM in Kenya?

(2) What are the relationships between the demographic characteristics of Western, conventionally trained physicians and physician attitudes toward integrative medicine in Kenya?

Chapter 2: Theoretical Framework

The Theory of Reasoned Action

The Theory of Reasoned Action (TRA), developed by Fishbein and Ajzen (1975), served as the theoretical framework for the study (see Figure 1). Using systematic theoretical orientation, Fishbein and Ajzen (1975) developed the TRA to create a framework that integrated and organized research on the concept of attitude—this work resulted from a research program beginning in the 1950s. The TRA is a cognitive theory that has been well used to research decision-making (Gaither, Bagozzi, Ascione, & Kirking, 1997)—it seeks to explain the rationale behind how an individual uses information to create judgments, formulate evaluations, and make decisions (Fishbein & Ajzen, 1975). The theorists' work has been described as an attempt to estimate the difference between behavior and attitude (University of Twente, 2014). The ultimate goal of the theory is to understand and predict behavior, holding to the belief that people first contemplate the implications of a behavior before deciding to participate or not participate in a behavior (Azjen & Fishbein, 1980). The foundation of the TRA is formed by the following concepts and is primarily concerned with the relationships between the concepts: beliefs, attitude, intention, and behavior. An individual's beliefs about the consequences of a behavior lead to one's attitude toward the behavior. One's beliefs about what is expected behavior—normative beliefs—leads to one's motivation to comply with the opinions of others regarding the behavior—subjective norm. An individual's attitude and subjective norm leads to one's intention to perform the behavior,

with one's intention finally leading to the individual's actual performance of the behavior (Fishbein & Azjen, 1975).

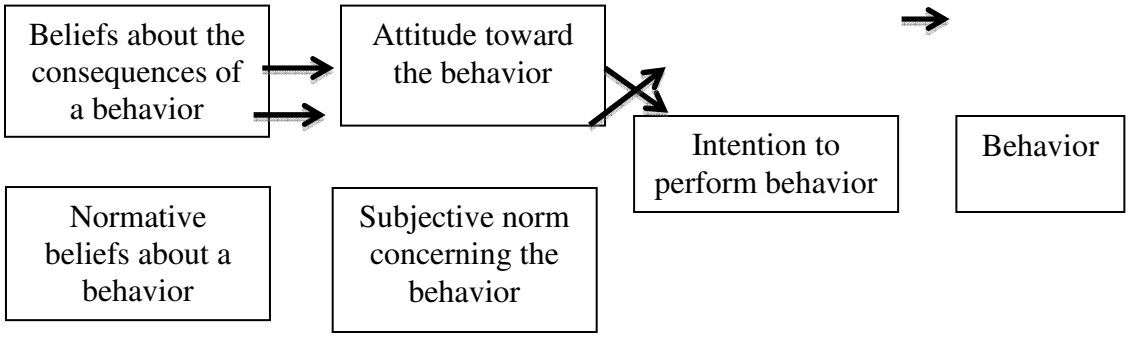

Figure 1. Theory of Reasoned Action (Fishbein & Ajzen, 1975)

Further examining the concepts of the TRA, *beliefs* are formed by the perceived link between an object and another object, concept, or value in a person's world. Next, an *attitude* is formed based on one's being positively or negatively in favor of an object and is a function of one's beliefs and evaluation of the attributes of the object (Fishbein & Ajzen, 1975). *Normative beliefs* are beliefs one has regarding what is believed by others to be expected behavior. One's *subjective norm* consists of beliefs one has about whether or not other groups or individuals think one should perform a behavior—it is a function of normative beliefs. Attitude and subjective norm are determinants of the next concept—intention (Ajzen & Fishbein, 1980). *Intention* is the subjective probability that a person will engage in a behavior (Fishbein & Azjen, 1957). Finally, *behavior* is the observable reaction that a person has regarding a specific target in a particular situation (Ajzen, 2006). In summary, the theory suggests that the more positive an individual's attitude is toward a behavior and belief that others expect them to perform it, the greater the chances are of the individual intending to perform and ultimately engaging in the behavior (Azjen & Fishbein, 1980).

Since its publication in 1975, the TRA has been used in a variety of studies to examine the relationships between beliefs, attitude, intention, and behavior. More specifically, the TRA has been used to assess topics ranging from smoking in Chinese adolescents (Guo et al., 2007) to condom use (Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Jemmott & Jemmott, 1991; Munoz-Silva, Sanchez-Garcia, Nunes, & Martin, 2007). Relevant to this study, the TRA has been used to examine the relationships between physician attitudes, intentions, and behaviors, and will be discussed by examining three studies in the following section.

In the first study, the authors used the TRA in pharmaceutical research to assess physician attributes and behavior toward the use of sources of drug information. Applying the TRA, the study aimed to determine if subjective norms and attitudes mediate the impact of controllable factors in the decision-making process by serving as functions of the ease of use, quality of information about drug efficacy and adverse effects, and availability. The researchers explained the reason for doing this was to create the ability to bridge the gap between feelings, thoughts, and judgments that make up the decision-making process regarding sources and use of drug information. The researchers' method for using this approach had physicians respond to a fictitious scenario where physicians focused on information about a new drug, requiring them to provide input on frequently used sources of drug information. The study results were congruent with the TRA by showing that the ability to generate meaningful antecedents to the use of sources of drug information by physicians is useful to improve the information seeking behavior of physicians (Gaither et al., 1997).

Another study used the TRA to assess physician attitudes and beliefs regarding collaboration with community-based pharmacists. The researchers used the TRA to determine the beliefs that predict the attitudes and intentions of physicians to collaborate with pharmacists. The study also utilized the conceptual definitions of the TRA to develop the physician survey. Results showed physicians to have moderately strong beliefs that medication adherence would be improved by collaboration with pharmacists in the community, as well as showing the intention of physicians to collaborate with pharmacists to be reasonably strong; therefore, the relationship between physician attitudes and intentions toward collaboration were positive and significant. Although the study did not assess subjective norms or set out to prove the TRA, the TRA was successfully used in facilitating the study's goal of developing a model to explain the behavioral intentions of physicians toward pharmacist collaboration (Kucukarslan, Lai, Dong, Al-Bassam, & Kim, 2011).

Finally, a study relevant to the topic of interest by Milden and Stokols (2004) used the TRA to assess the attitudes and practices of CAM by physicians in the United States. Milden and Stokols (2004) used the TRA to form the hypothesis that perceived expectations and professional beliefs (i.e., orthodox medicine protocol, legal liability) influence physician attitudes and behaviors toward CAM. The study's survey was grounded in the TRA by examining the predicted and actual influence of physician normative beliefs on their intended and actual CAM behaviors. Results showed physicians to have mildly positive beliefs and attitudes toward CAM, but a tendency for physicians to avoid the use of CAM in practice even though physicians had more positive attitudes toward it. The study findings were consistent with the TRA in that social norms

can inhibit behaviors that are consistent with one's attitudes. Significance of this was shown ($p<0.007$) in that physician institutional concerns regarding non-traditional medical therapies influence physician desire to use CAM, even though physicians have favorable beliefs, intentions, and attitudes toward CAM (Milden & Stokols, 2004).

As exemplified in the previous studies, the TRA has been used to describe, explain, and predict the relationships between physician beliefs, attitudes, intentions, and behaviors. Therefore, the researcher chose the TRA because it has been shown to reveal the influence of beliefs in forming positive or negative attitudes—specifically physician attitudes—that leads to intention and ultimately behavior. Regarding the topic of this study, the researcher used the TRA to describe the attitudes of Western, conventionally trained physicians toward IM in Kenya. In addition, the researcher chose the TRA because as TM is further integrated into health systems as the WHO (2013) suggests, physician attitudes toward IM will play an integral part in influencing physicians' future use of IM. By using the TRA to describe physician beliefs in forming attitudes toward IM in Kenya, future studies are needed that also use the theory in describing physicians' intentions to use and predicted use of IM.

Definitions of Variables

The key variables of this study were as follows: Western, conventionally trained physicians; IM in Kenya; and attitude. Definitions of each variable are presented below.

Western, conventionally trained physicians. The term "Western" was used to mean the noncommunist countries of America and Europe (Western, 2014). To further clarify the use of this definition in the study, the researcher conceptually defined America as countries specific to the continent of North America. In addition, the researcher chose

to include Australia as a Western country due to its strong European heritage and influence. Therefore, the physicians in this study were of a nationality belonging to a country in Europe or North America or Australia. The term "conventionally trained" implied training in CM. Conventional medicine is the most current established model of Western medicine, also seen as allopathic or orthodox in nature (National Cancer Institute, n.d.). The term "physicians" was defined as any physician that graduated from a college of medicine or osteopathy and held a current license (Physician, 2014). For the purpose of the study, physicians from any conventional specialty were allowed to participate.

Integrative medicine in Kenya. Integrative medicine was defined as the combination of mainstream and alternative medicine therapies (Integrative medicine, 2014). It is important to differentiate between IM, CAM, and TM, as the terms are often used interchangeably when there are actually notable differences between each specific approach. Complementary and alternative medicine was defined as medicine that differs from CM knowledge and methods (NCCAM, 2014). Traditional medicine was defined as the knowledge, skills and practices indigenous to a culture through which health is maintained and disease is prevented (WHO, 2000).

A further description of IM is the emphasis on the spiritual, social, psychological, and biological wellness of both the patient and provider, seeking to incorporate the most effective and safe CAM and conventional treatments (Schneider et al., 2003). An example of IM is the use of acupuncture (a CAM therapy) along with chemotherapy (a CM therapy) (NCCAM, 2014). In addition, CAM and TM were included under the definition of IM in Kenya for this study because these concepts were found in the

Integrative Medicine Attitude Questionnaire (IMAQ) (Schneider et al., 2003)—the measurement tool used for this study. The IMAQ (Schneider et al., 2003) assesses the combination of CM practices with various aspects of CAM and TM practices and beliefs, with specific questions addressing the use of herbal therapies—the common form of TM in Kenya. As the primary form of TM in Kenya, herbal medications are comprised of medicinal and aromatic plants (NCAPD, 2008).

Attitudes. Attitude was defined as an individual being negatively or positively in favor of a subject (Fishbein & Ajzen, 1975). In this study, attitudes of Western, conventionally trained physicians toward IM in Kenya were measured using the IMAQ (Schneider et al., 2003).

Study Variables and the Theory of Reasoned Action

The first study variable—Western, conventionally trained physicians—fit into the beginning of the theory under the category of *beliefs about the consequences of a behavior*. The characteristics of physicians being from a Western culture and trained in CM influence the beliefs about the behavior in this portion of the theory (i.e., Western, CM influences beliefs about what is considered safe, efficient, or appropriate medical therapy). Integrative medicine in Kenya fits throughout the theory as the *behavior*. More specifically, under the category of *beliefs about the consequences of a behavior*, beliefs about the behavior of IM in Kenya were used to evaluate the outcomes of the behavior of using IM in Kenya (i.e., the belief that the use of IM in Kenya was not evidence-based may resulted in the evaluation of using IM in Kenya as unsafe); under the category of *attitudes toward the behavior*, IM in Kenya was viewed as positive or negative by one's attitude. Finally, the variable of attitude fit into the *attitude toward the behavior* portion

of the theory. Here, a positive or negative attitude toward IM in Kenya was described. Combining the study variables and the TRA showed that a positive or negative attitude toward IM in Kenya was influenced by physicians' Western and CM based beliefs, influencing their intention and engagement in the behavior of IM in Kenya (see Figure 2).

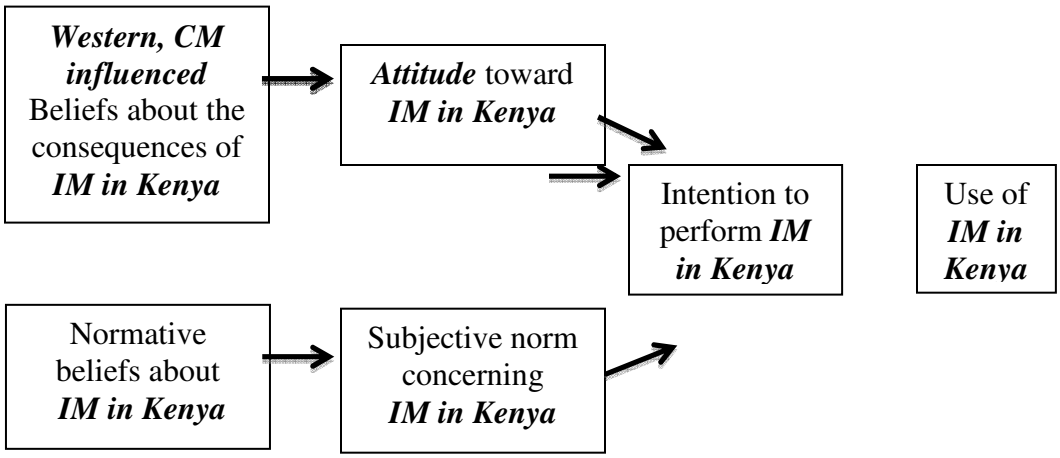

Figure 2. Theory of Reasoned Action with study variables (Fishbein & Ajzen, 1975)

Chapter 3: Methodology

Design

The purpose of this descriptive correlational study was to describe the attitudes of Western, conventionally trained physicians toward IM in Kenya and the relationships between physician demographic characteristics and physician attitudes. The demographic information sheet (see Appendix C: IMAQ—Section One) and IMAQ (Schneider, Meek, & Bell, 2003) (see Appendix D: IMAQ—Section Two) were sent electronically to potential participants at three hospitals via email.

Subjects

Setting. The subjects were recruited from three Christian mission hospitals located in rural Kenya: Africa Inland Church (AIC) Kijabe Hospital, Kapsowar Hospital, and Tenwek Hospital. The hospitals were chosen based on their familiarity to the researcher—the researcher worked at Tenwek Hospital for one year, visited AIC Kijabe Hospital on three occasions, and was familiar with colleagues who had worked at all three facilities. As a result, the researcher was able to contact the hospitals through personal acquaintances and contact information gained from knowledge of hospital websites and associated organizations (i.e., Samaritan's Purse, World Gospel Mission).

The first site was AIC Kijabe Hospital, located in Kijabe, Kenya. Established in 1915, this general hospital was located 60 kilometers north of Kenya's capital, Nairobi, offered a wide range of outpatient and inpatient services from general surgery to neonatal care, primarily serviced people of the Kikuyu and Maasai tribes (Samaritan's Purse, 2014b), and contained 254 beds (L. Albright, personal communication, January 5, 2015). The second site was Kapsowar Hospital, located in northwestern Kenya. Serving as the

primary source of medical care in a remote region of the country, this small, district-level hospital had 126 beds, offered inpatient and outpatient services ranging from maternity to geriatric care, and served people of the Marakwet tribe (Samaritan's Purse, 2014a). The final site was Tenwek Hospital, located in Bomet, Kenya. Tenwek Hospital was one of the largest mission hospitals in Africa, contained 300 beds, and offered inpatient and outpatient services ranging from general surgery to rehabilitation care, and primarily served the Kipsigis tribe—of this tribe, the hospital served 600,000 people living within a radius of 32 kilometers and acted as a referral site for a much more substantial area (Samaritan's Purse, 2014c). Out of the 47 ethnic groups in Kenya (CultureGrams, 2006), each hospital routinely serviced specific tribal populations, as previously mentioned—due to their varying geographical locations—therefore, creating unique environments of care.

Sampling methods. Convenience and network sampling methods were used to recruit participants for the study. Due to the limited number of physicians that were potentially available to participate from the target population, convenience and network sampling methods were used to allow access to all physicians at the three hospitals that met the study's inclusion criteria. Alternative sampling methods (i.e., random sampling) would have limited the number of actual study participants and potentially affected the results being representative of a facility—for example, only three physicians were available at Kapsowar Hospital (B. Rhodes, personal communication, November 9, 2014). More specifically, convenience sampling was used due to the researcher using subjects readily available at the sites of data collection during the time in which the study was conducted. Network sampling was used in order to obtain potential participants that

might not have been initially identified to the researcher—due to the difficulty of reaching the target population—and therefore, attempted to expand the sample size (Burns & Grove, 2009). The researcher asked participants to identify other potential subjects who met the inclusion criteria of this study. Upon receiving the contact information, the electronic questionnaire would be sent via email by the researcher to other potential participants. However, the researcher did not receive any contact information for additional participants and therefore, did not obtain any participants via network sampling.

Sample size. The anticipated number of subjects for this descriptive correlational study was 30. Since the study was based on a descriptive correlational design, the thesis committee recommended that a power analysis was not necessary to determine the sample size but advised a goal of 30 participants was sufficient. However, it is important to note that the study findings are only generalizable to the specific population and setting used in the study as a result of the small sample size. Questionnaires were sent to 39 potential participants, and a total of 23 questionnaires were used, making a response rate of 59%.

Inclusion and exclusion criteria. Participation in the study was based on the following inclusion criteria: (1) ability to read, write, and comprehend English; (2) access and skills to use the Internet and email; (3) European, North American, or Australian nationality, qualifying as being from a Western context; (4) conventional medical training received in Australia or a European or North American country; and (5) practiced medicine in Kenya for a minimum of six consecutive months. The researcher's field experience helped determine a five-month minimum as being sufficient time to

demonstrate a basic knowledge and experience of the Kenyan health care environment. Exclusion criteria consisted of physicians who received formal training or certification in definite forms of CAM or IM (i.e., homeopathy, naturopathy, reflexology, etc.).

Measurement Tool

A demographic information sheet (see Appendix C: IMAQ—Section One) and the Integrative Medicine Attitude Questionnaire (IMAQ) (see Appendix D: IMAQ—Section Two) was used to collect data. The demographic section included the following questions: gender, age, location of country of citizenship, country of citizenship, location of CM training, country of CM training, total years of being licensed to practice CM, total months of practicing CM in Kenya, type of CM training (i.e., medical doctor or doctor of osteopathy), medical specialty, and current practice setting (i.e., inpatient or outpatient, acute care or primary care). At the end of the IMAQ, the researcher provided a section asking for additional comments regarding types of CAM therapies or the integration of such therapies in Kenya.

With permission from one of the IMAQ's developers, Craig D. Schneider (C. Schneider, personal communication, November 12, 2014), the IMAQ served as the primary measurement tool for the study. The IMAQ was developed by Schneider and colleagues (2003) from focus groups at an IM program with a university basis. The instrument was developed to measure the attitudes of medical students and health care providers regarding CAM and IM methods of health care. The questionnaire contains 29-items that assess physician attitudes toward IM and operationally defines them by using a 7-point Likert scale—a rating of 1 meaning "absolutely disagree" and a rating of 7 meaning "absolutely agree"—where each question is added to form a total score

revealing the degree of a participant's attitude toward IM. Thirteen of the questions must be reverse coded due to some questions being positive statements and some questions being negative statements (i.e., a score of 7 is given to participants who "absolutely agree" with a statement that is positive, or "absolutely disagree" with a statement that is negative). The minimum total score is 29 and the maximum total score is 203—though the IMAQ's developers did not identify a norm score, the higher the total score means the more positive or open one's attitude is toward IM (Schneider et al., 2003). This standard of interpretation was also used in a study where the IMAQ was tested in Hong Kong (Chung, Wong, & Griffiths, 2007). The IMAQ's original factor analysis derived two subscale concepts—openness (Cronbach's alpha of 0.91) and relationship (Cronbach's alpha of 0.72). The researchers found the total scale to have a Cronbach's alpha of 0.92 (Schneider et al., 2003). Burns and Grove (2009) explain that the degree of an instrument's reliability or its internal consistency is indicated by Cronbcach's alpha coefficient—a minimum Cronbach's alpha of 0.7 is acceptable (Bland & Altman, 1997). In addition, construct validity was explained by the researchers as being demonstrated through the tool's ability to differentiate between one group that was expected to be more open to IM and a second group that was expected to be less open to IM. Though the researchers suggested a need for more evaluation of the relationship subscale due to its weaker validity, the researchers believed their results supported the overall use of the IMAQ to measure physician attitudes toward CAM/IM (Schneider et al., 2003).

In addition to choosing the IMAQ because it assesses the attitudes of physicians toward IM, the researcher chose the measurement tool due to its previous use in various cultural contexts. A Korean version of the IMAQ was developed and emailed to Korean

primary care physicians; this study found sufficient internal consistency with a Cronbach's alpha of 0.85, but inadequate validity, recommending that the Korean IMAQ needed further modification (Kim, Lee, & Lee, 2011). A second study modified the IMAQ to be specific to Traditional Chinese Medicine in Hong Kong by an expert panel; this study found the overall instrument to have a content validity index of 0.71 and kappa of 0.09, indicating that the IMAQ would need further modification to be appropriately used in Hong Kong (Chung et al., 2007). Another study by Rees et al. (2009) used a modified version of the IMAQ to assess medical students' attitudes toward CAM in the United Kingdom, United States, and New Zealand; the study asserted further validation of the modified IMAQ, but the minimum threshold of the Cronbach's alpha was only met in three coefficients—the study desired a minimum of 0.7 per Bland and Altman (1997). Finally, the IMAQ was used in seven schools in the United States to assess osteopathic medical students' attitudes toward CAM; the IMAQ was combined with the CAM Health Belief Questionnaire and had a Cronbach's alpha of 0.909 (Kanadiya, Klein, & Shubrook, 2012). Due to the variation of these findings resulting from use of the IMAQ (Schneider et al., 2003) in different cultural contexts, the researcher had concerns about the tool being used in a Kenyan context. More specifically, the researcher was concerned that the types of CAM/TM used in Kenya would not be sufficiently represented in the IMAQ (Schneider et al., 2003). For example, herbal medicines are heavily relied upon in rural Kenya (NCAPD, 2008), and out of the 29 IMAQ (Schneider et al., 2003) items, only three items addressed herbal therapies. Although the tool did not offer an exhaustive representation of IM or herbal therapies in Kenya, as there were limited IM

tools that assessed herbal therapies, the author felt the tool was sufficient to serve the purposes of this study and provided guidance for future studies.

Data Collection

Data was collected using a demographic information sheet (see Appendix C: IMAQ—Section One) and the IMAQ (Schneider, Meek, & Bell, 2003) (see Appendix D: IMAQ—Section Two), which were sent electronically via email. The researcher contacted the medical director of each hospital by email (see Appendix A: Study Participant Contact Information Request) to request a list of potential participants or obtain instructions as to other appropriate persons to contact for physician emails—previous contact via email had already been made with the medical directors of each facility regarding information about Institutional Review Boards (IRB)/ethics committees. The email contained the following information about the study: research purpose, method, sample questionnaires, and how the results will be used (see Appendix A: Study Participant Contact Information Request). The researcher also had the hospital medical director or hospital contact send a notification email to physicians to make them aware of the opportunity to participate in the study. Next, an email was sent via Qualtrics Survey Software to physicians identified by the hospital contacts as possible study participants (see Appendix B: Study Participation Instructions). The email contained an introduction that explained the purpose of the study and directions for participation, featuring a link to the online survey site—Qualtrics Survey Software—where the electronic questionnaire was to be completed. The email also contained a statement explaining that participation in the study was voluntary and anonymous, and completion of the questionnaire demonstrated the subject's consent to participate. In addition, the

email also contained a statement asking physicians to provide the researcher with contact information of other potential study participants. Once the contact information would have been received, the researcher would send the email containing information on how to participate in the study to other potential participants. However, the researcher did not receive any contact information for other participants and therefore, no additional emails were sent.

The procedure for data collection occurred over three weeks and participants were invited to complete the questionnaire at the participants' convenience within the timeframe given by the researcher. Although invitations to participate in studies via email are convenient and cost-effective (Hunter, Corcoran, Leeder, & Phelps, 2013), studies using this methodology often have response rates of less than 20% (Kongsved, Basnov, Holm-Christensen, & Hjollund, 2007). In an attempt to improve the study's response rate, the researcher utilized the following methods: a notification email sent by an identifiable hospital contact regarding the study opportunity; an introductory email with a link creating easy access to the survey site; email reminders to non-responders (Hunter et al., 2013); and provided participants with study results. The researcher sent two email reminders during the weeks in which the data was collected to remind physicians to complete the questionnaire—one email 10 days after the initial invitation (see Appendix E: Participant Reminder Email [1]) and one email two days before the survey window closed (see Appendix F: Participant Reminder Email [2]). Any questionnaires completed after the allotted timeframe by the researcher were not included in the study. No incentives to participate in the study were offered; however, participants were sent a letter of appreciation via email for filling out the questionnaire and taking

part in the study (see Appendix G: Participant Thank You Email). Once the study was completed and the findings were presented, participants were sent an email containing the results of the study.

Data Analysis

Data were managed by checking the accuracy of the data and stored in Qualtrics Survey Software. Statistical analysis was performed using the statistical program, SPSS. Data were analyzed using the following descriptive statistics: frequency, percentage, mean, range, and standard deviation. Relationships between the data were also analyzed using Pearson's *r* and Kenall's Tau. A Crohbach's alpha of 0.05 or less was considered statistically significant for all significance testing and all tests were 2 tailed.

Ethical Considerations

Approval for the study was received from Cedarville University's IRB. Permission was then received from the IRB of AIC Kijabe Hospital and the ethics committee of Tenwek Hospital. In addition, Kapsowar Hospital's medical director approved the study due to the hospital not having an IRB or ethics committee (W. Rhodes, personal communication, November 9, 2014).

Participation in the study was voluntary and completion of the demographic sheet and IMAQ were evidence of a physician's informed consent to participate in the study. Study results were kept private and confidential by being stored under password protection in Qualtrics Survey Software and only viewed by the researcher. Study results were kept anonymous, as no identifiable information was collected.

Strength and Weakness of Design

There were two strengths to the study design. The first strength was that the study

utilized a descriptive correlational design. As explained by Burns and Grove (2009), descriptive studies allow for a better understanding of a phenomenon in a setting or population that is not well understood or previously researched. There were currently no studies available that examined the attitudes of Western, conventionally trained physicians toward IM in Kenya. As a result, this study is able to serve as a foundation for future research on this phenomenon—specifically, the use of the IMAQ in Kenya. One final strength of the design was the use Internet survey software—Qualtrics Survey Software. This software allowed for survey results to be immediately available, facilitated the storage and analysis of survey data, and reduced data entry errors.

There were two weaknesses to the study design. The first weakness was the use of a convenience sample. This was a threat to internal validity due to the potential for multiple sample biases (Burns & Grove, 2009). The use of a convenience sample was also a threat to external validity. This was a threat due to the potential for the results to not be generalizable or representative of the target population (Burns & Grove, 2009). One final weakness of the study design was the small sample size. The small sample size was a threat to external validity by limiting the generalizability of the studying findings. As a result, the findings are only applicable to the particular population and setting in which the study was conducted.

Timeline

The timeline for conducting the study spanned across one year. Writing for the first three chapters of the study began in August of 2014 and was completed by November of 2014. The formal thesis proposal presentation to faculty at Cedarville University took place on November 20, 2014. Since the proposal was accepted by the

thesis committee, approval to continue with the study was sought from the IRBs of Cedarville University and AIC Kijabe Hospital, the ethics committee of Tenwek Hospital, and the medical director of Kapsowar Hospital during December of 2014 and January of 2015. Approval to conduct the study was received from Cedarville University, AIC Kijabe Hospital, Kapsowar Hospital, and Tenwek Hospital. After approval was received, the questionnaire was sent out for data collection between the three week period of March 30th and April 19th, 2015. Data analysis and writing of the final thesis chapters occurred from May to August of 2015. The final step of the research process involved presenting the study findings on August 14th, 2015 to faculty at Cedarville University. Once the study findings were presented, participants were sent the study results via email.

Thesis Committee

The researcher asked two doctorally prepared nurses to serve as members of the thesis committee: Dr. Chu-Yu Huang and Dr. Rachel Parrill.

Chapter 4: Results

There is a gap in the literature examining the attitudes of Western, conventionally trained physicians toward integrative medicine in Kenya. The purposes of this study were to describe the attitudes of Western, conventionally trained physicians toward IM in Kenya and the relationship between physician demographic characteristics and attitudes. An electronic questionnaire was sent to 39 participants via Qualtrics Survey Software at three rural, Christian mission hospitals in Kenya, East Africa, in March of 2015. A total of 25 questionnaires were received, but two were thrown out due to one questionnaire having no answers completed and the other participant listing that they had only practiced in Kenya for 0.5 months—this made the sample size 23. However, four participants did not completely answer all demographic characteristics items, and two participants did not completely answer all IMAQ items. The researcher chose to retain these questionnaires in order to make use of the valuable data and comments that were collected and increase the study's sample size. The overall response rate was 59%.

Demographic Characteristics

Demographic characteristics are presented in Table 1. Of the 23 participants, the majority were males (60.9%, n=14) with a mean age of 43.7 years (n=22). The majority of the participants identified themselves as having citizenship in a North American country (87%, n=20)—17 participants identified as being citizens of the United States, two were citizens of Australia, one was a citizen of the United Kingdom, and two participants did not list their country of citizenship. The majority of the participants received training as a medical doctor (MD) (91.3%, n=21) in North America (87%, n=20), had a primary medical specialty of family practice (30.4%, n=7), and worked in

an inpatient/acute care setting (82.6%, n=19). The participants had practiced CM for a mean of 14.9 years (n=23) and practiced CM in Kenya for over four years (mean=58.6 months, n=23).

Attitudes

The responses for each of the IMAQ's 29-items were summed to determine a total score for each participant, which represented the degree of a participant's attitude toward IM (possible scores range between 29 and 203). Out of the 23 participants, the lowest score was 106, and the highest score was 159. The mean score was 134 (n=21, range=53, standard deviation=13.49). Due to the IMAQ's developers not identifying a norm score, the developer suggested to build upon what other studies had done (C. Schneider, personal communication, August 10, 2015). The researcher chose to include another study's method of interpreting the IMAQ's total score, in addition to the tool's original design of a higher score indicating a more positive attitude. Kanadiya et al. (2012) determined a scale score by using the IMAQ's 7-point Likert scale midpoint rating of 4, which was then multiplied by 29 to determine a total midpoint scale score of 116; as a result, Kanadiya et al.'s (2012) study found physician attitudes to be positive ($p<0.001$). Applying this method, the researcher interpreted the physician attitudes to be overall positive due to the mean score of 134 being greater than the midpoint score of 116.

The percentage of responses chosen for each IMAQ item was also calculated (see Table 2). Items five and six of the IMAQ showed the strongest agreement: the majority of physicians (78.2%, n= 18) disagreed with item five, "It is inappropriate for physicians to use intuition ('gut feelings') as a major factor in determining appropriate therapies for patients," and all physicians (100%, n=23) disagreed with item six, "The spiritual beliefs

and practices of physicians play no important role in healing." There were no statistically significant correlations between the IMAQ total scores and demographic characteristics (see Table 3).

Herbal therapies. Items four, 23, and 25 of the IMAQ addressed herbal therapies. Regarding item four, "Physicians should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug," the majority of physician responses were evenly distributed between "neither agree nor disagree" (26.1%, n=6), "somewhat agree" (26.1%, n=6), and "agree" (26.1%, n=6). The majority of physicians (95.7%, n=22) agreed with item 23, "Physicians should be prepared to answer patients' questions regarding the safety, efficacy, and proper usage of commonly used botanical medicines such as Saw Palmetto, St. John's Wort, Valerian, etc." Item 25, "Physicians should avoid recommending botanical medicines based on observations of long-term use in other cultures and systems of healing, because such evidence is not based on large randomized controlled trials," generated the greatest difference in physician responses with 26% (n=6) of physician disagreeing and 65.1% agreeing (n=15) with the item. There were no statistically significant correlations between the IMAQ herbal therapy item scores and demographic characteristics (see Table 4).

Physician Comments

Physicians were given the opportunity to provide additional comments at the end of the questionnaire relating to types of CAM or the integration of such therapies in Kenya (see Table 5). Out of the 23 participants, 17 (73.9%) physicians made comments. The comments were reviewed and then selected based on their recurring themes. The

researcher used a content analysis technique of measuring the frequency of certain words and phrases (Burns & Grove, 2009) to derive common themes present in the physician comments. This technique was similar to a qualitative study by Hsiao et al. (2006) that used physician interviews to identify core statements about physician attitudes toward IM. Out of the 17 comments, four themes were present: harm, delayed treatment, finances, and awareness. Some comments exhibited more than one theme, affecting the total sum of physician comments. The most prominent theme was harm (n=7, 41.2%). The theme of harm (n=7, 41.2%) was frequently described as being related to physicians seeing patients once CAM therapies had been used and resulted in negative outcomes. In addition to the use of the word harm, physicians described negative outcomes in the following ways: "*toxic effects*," "*injury and death*," "*severe toxicity*," death from "*liver failure*," "*fatal*," and "*failed to be successful*." However, two participants mentioned the potential for the sample of patients seen who had used CAM with harmful effects to be biased. Delayed treatment (n=6, 35.3%) was explained as patients first seeking CAM treatments that delayed their utilization of CM, which physicians believed ultimately affected patients' potential for a cure. Physicians described delayed treatment as the following: "*local treatments that don't integrate conventional options until it is too late*," "*when it is too late for a curative approach*," "*she may never return, and if she does it may be too late for curative treatment*," "*medicine that could have saved the patient's life if proper treatment had been sought earlier*," and "*many patients present too late because of an attempt to find alternative[s]...for serious problems*." One physician listed the delay of using CAM as the primary issue—"*The main problem, when there is one, is delaying presentation*." Physicians also commented on how finances (n=6, 35.3%) were

frequently a factor in patients' decisions to utilize CM or CAM and that patient finances were often depleted first on CAM therapies. Physicians described patients' financial conditions when seeking CAM as the following: "*dependence on 'inexpensive*,'" "*left people financially ruined*," "*draining patients' scarce resources*," and "*people will bankrupt themselves*." One physician commented about a patient's decision to choose traditional therapies over a potentially free procedure—"*I was willing to find money to fund an operation to remove it. She has currently declined as she would like to pursue traditional herbal therapies*." The final theme was awareness (n=5, 29.4%); comments referring to this theme dealt with patient awareness of the benefits and consequences of both CAM and CM therapies and the need for more in-depth understanding of CAM therapies in general. More specifically, physicians mentioned challenges with IM knowledge: "*I don't care that randomized controlled studies have been done, but some level of safety needs to be there*," "*when something negative happens in alternative therapies there are not good methods in place to alert of negative effects or outcomes so that informed decision making can happen*," and "*The challenge with IM is some sort of validation of the effectiveness of various modalities in improving patients' health*."

Table 1

Demographic Characteristics

Variables	n	%
Gender		
Male	14	60.9
Female	9	39.1
Age (years)		
30-39	7	30.4
40-49	8	34.8
50-59	6	26.1
60-69	1	4.3
Not listed	1	4.3
Location of country of citizenship		
North America	20	87.0
Europe	1	4.3
Australia	2	8.7
Type of conventional medicine training		
Medical doctor	21	91.3
Doctor of osteopathy	2	8.7
Locational of conventional medicine training		
North America	20	87.0
Europe	1	4.3
Australia	2	8.7
Primary medical specialty		
Family practice	7	30.4
Obstetrics and gynecology	3	13.0
Pediatrics	3	13.0
General surgery	4	17.4
Orthopedics	1	4.3
Other	5	21.7
Total years of being licensed to practice medicine		
1-9	6	26.1
10-19	8	34.8
20-29	9	39.1
Total months of practicing medicine in Kenya		
5-24	7	30.4
25-48	4	17.4
49-72	5	21.7
73-96	1	4.3
97-120	4	17.4
121-144	0	0.0
145-168	1	4.3
169-192	1	4.3
Current practice setting		
Inpatient/acute care	19	82.6
Outpatient/primary care	4	17.4

Table 2

Integrative Medicine Attitude Questionnaire Items

Item	n	%
1.) A patient is healed when the underlying pathological processes are corrected or controlled.*		
Absolutely disagree	0	0.0
Disagree	3	13.0
Somewhat disagree	0	0.0
Neither agree nor disagree	0	0.0
Somewhat agree	12	52.2
Agree	6	26.1
Absolutely agree	1	4.3
No response	1	4.3
2.) The physician's role is primarily to promote the health and healing of the physical body.*		
Absolutely disagree	0	0.0
Disagree	3	13.0
Somewhat disagree	3	13.0
Neither agree nor disagree	1	4.3
Somewhat agree	9	39.1
Agree	5	21.7
Absolutely agree	2	8.7
No response	0	0.0
3.) Patients whose physicians are knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, do better than those whose physicians are only familiar with conventional medicine.		
Absolutely disagree	0	0.0
Disagree	7	30.4
Somewhat disagree	3	13.0
Neither agree nor disagree	4	17.4
Somewhat agree	7	30.4
Agree	1	4.3
Absolutely agree	0	0.0
No response	1	4.3
4.) Physicians should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug.*		
Absolutely disagree	1	4.3
Disagree	0	0.0
Somewhat disagree	3	13.0
Neither agree nor disagree	6	26.1
Somewhat agree	6	26.1

Agree	6	26.1
Absolutely agree	1	4.3
No response	0	0.0
5.) It is appropriate for physicians to use intuition ("gut feelings") as a major factor in determining appropriate therapies for patients.		
Absolutely disagree	1	4.3
Disagree	15	65.2
Somewhat disagree	2	8.7
Neither agree nor disagree	1	4.3
Somewhat agree	2	8.7
Agree	1	4.3
Absolutely agree	0	0.0
No response	1	4.3
6.) The spiritual beliefs and practices of physicians play no important role in healing.*		
Absolutely disagree	7	30.4
Disagree	13	56.5
Somewhat disagree	3	13.0
Neither agree nor disagree	0	0.0
Somewhat agree	0	0.0
Agree	0	0.0
Absolutely agree	0	0.0
No response	0	0.0
7.) The spiritual beliefs and practices of patients play no important role in healing.*		
Absolutely disagree	12	52.5
Disagree	8	34.8
Somewhat disagree	1	4.3
Neither agree nor disagree	0	0.0
Somewhat agree	0	0.0
Agree	0	0.0
Absolutely agree	0	0.0
No response	2	8.7
8.) It is irresponsible for physicians to recommend acupuncture to patients with conditions like chemotherapy-related nausea and vomiting or headache.*		
Absolutely disagree	2	8.7
Disagree	12	52.2
Somewhat disagree	3	13.0
Neither agree nor disagree	5	21.7
Somewhat agree	0	0.0
Agree	0	0.0
Absolutely agree	0	0.0
No response	1	4.3
9.) End of life care should be valued as an opportunity for		

physicians to help patients heal profoundly.		
Absolutely disagree	0	0.0
Disagree	1	4.3
Somewhat disagree	1	4.3
Neither agree nor disagree	0	0.0
Somewhat agree	2	8.7
Agree	9	39.1
Absolutely agree	9	39.1
No response	1	4.3
10.) It is not desirable for a physician to take therapeutic advantage of the placebo effect.*		
Absolutely disagree	2	8.7
Disagree	9	39.1
Somewhat disagree	8	34.8
Neither agree nor disagree	1	4.3
Somewhat agree	0	0.0
Agree	3	13.0
Absolutely agree	0	0.0
No response	0	0.0
11.) Healing is not possible when a disease is incurable.*		
Absolutely disagree	4	17.4
Disagree	9	39.1
Somewhat disagree	5	21.7
Neither agree nor disagree	2	8.7
Somewhat agree	1	4.3
Agree	1	4.3
Absolutely agree	0	0.0
No response	1	4.3
12.) Physicians knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, generate improved patient satisfaction.		
Absolutely disagree	0	0.0
Disagree	3	13.0
Somewhat disagree	2	8.7
Neither agree nor disagree	4	17.4
Somewhat agree	10	43.5
Agree	4	17.4
Absolutely agree	0	0.0
No response	0	0.0
13.) Therapeutic touch has been completely discredited as a healing modality.*		
Absolutely disagree	5	21.7
Disagree	3	13.0
Somewhat disagree	3	13.0

Neither agree nor disagree	9	39.1
Somewhat agree	0	0.0
Agree	1	4.3
Absolutely agree	1	4.3
No response	1	4.3
14.) Physicians who model a balanced lifestyle (i.e. Attending to their own health, social, family and spiritual needs, as well as interests beyond medicine) generate improved patient satisfaction.		
Absolutely disagree	0	0.0
Disagree	1	4.3
Somewhat disagree	1	4.3
Neither agree nor disagree	4	17.4
Somewhat agree	7	30.4
Agree	9	39.1
Absolutely agree	1	4.3
No response	0	0.0
15.) Quality of life measures are of equal importance as disease specific outcomes in research.		
Absolutely disagree	0	0.0
Disagree	1	4.2
Somewhat disagree	2	8.7
Neither agree nor disagree	1	4.3
Somewhat agree	5	21.7
Agree	8	34.8
Absolutely agree	5	21.7
No response	1	4.3
16.) Chiropractic is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain).		
Absolutely disagree	1	4.3
Disagree	5	21.7
Somewhat disagree	4	17.4
Neither agree nor disagree	6	26.2
Somewhat agree	5	21.7
Agree	2	8.7
Absolutely agree	0	0.0
No response	0	0.0
17.) The physician's role is primarily to treat disease, not to address personal change and growth of patients.*		
Absolutely disagree	4	17.4
Disagree	8	34.8
Somewhat disagree	5	21.7
Neither agree nor disagree	0	0.0
Somewhat agree	4	17.4
Agree	1	4.3
Absolutely agree	0	0.0

No response	1	4.3
18.) Massage therapy often makes patients "feel" better temporarily, but does not lead to objective improvement in long-term outcomes for patients.*		
Absolutely disagree	0	0.0
Disagree	2	8.7
Somewhat disagree	7	30.4
Neither agree nor disagree	8	34.8
Somewhat agree	3	13.0
Agree	3	13.0
Absolutely agree	0	0.0
No response	0	0.0
19.) The innate healing capacity of patients often determines the outcome of the case regardless of treatment interventions.		
Absolutely disagree	1	4.3
Disagree	6	26.1
Somewhat disagree	2	8.7
Neither agree nor disagree	4	17.4
Somewhat agree	7	30.4
Agree	1	4.3
Absolutely agree	1	4.3
No response	1	4.3
20.) A strong relationship between patient and physician is an extremely valuable therapeutic intervention that leads to improved outcomes.		
Absolutely disagree	0	0.0
Disagree	0	0.0
Somewhat disagree	1	4.3
Neither agree nor disagree	2	8.7
Somewhat agree	6	26.8
Agree	10	43.5
Absolutely agree	4	17.4
No response	0	0.0
21.) Physicians who strive to understand themselves generate improved patient satisfaction.		
Absolutely disagree	0	0.0
Disagree	0	0.0
Somewhat disagree	2	8.7
Neither agree nor disagree	7	30.4
Somewhat agree	5	21.7
Agree	8	34.8
Absolutely agree	0	0.0
No response	1	4.3
22.) Instilling hope in patients is a physician's duty.		
Absolutely disagree	0	0.0

Disagree	0	0.0
Somewhat disagree	1	4.3
Neither agree nor disagree	3	13.0
Somewhat agree	9	39.1
Agree	7	30.4
Absolutely agree	3	13.0
No response	0	0.0
23.) Physicians should be prepared to answer patients' questions regarding the safety, efficacy, and proper usage of commonly used botanical medicines such as Saw Palmetto, St. John's Wort, Valerian, etc.		
Absolutely disagree	0	0.0
Disagree	0	0.0
Somewhat disagree	0	0.0
Neither agree nor disagree	0	0.0
Somewhat agree	11	47.8
Agree	10	43.5
Absolutely agree	1	4.3
No response	1	4.3
24.) Counseling on nutrition should be a major role of the physician towards the prevention of chronic disease.		
Absolutely disagree	0	0.0
Disagree	0	0.0
Somewhat disagree	0	0.0
Neither agree nor disagree	2	8.7
Somewhat agree	4	17.4
Agree	13	56.5
Absolutely agree	4	17.4
No response	0	0.0
25.) Physicians should avoid recommending botanical medicines based on observations of long-term use in other cultures and systems of healing, because such evidence is not based on large randomized controlled trials.*		
Absolutely disagree	1	4.3
Disagree	2	8.7
Somewhat disagree	3	13.0
Neither agree nor disagree	1	4.3
Somewhat agree	11	47.8
Agree	3	13.0
Absolutely agree	1	4.3
No response	1	4.3
26.) Osteopathic manipulative therapy is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain).		
Absolutely disagree	0	0.0
Disagree	3	13.0

Somewhat disagree	5	21.7
Neither agree nor disagree	9	39.1
Somewhat agree	2	8.7
Agree	4	17.4
Absolutely agree	0	0.0
No response	0	0.0
27.) Information obtained by research methods other than randomized controlled trials has little value to physicians.*		
Absolutely disagree	2	8.7
Disagree	9	39.1
Somewhat disagree	8	34.8
Neither agree nor disagree	1	4.3
Somewhat agree	1	4.3
Agree	1	4.3
Absolutely agree	0	0.0
No response	1	4.3
28.) It is ethical for physicians to recommend therapies to patients that involve the use of subtle energy fields in and around the body for medical purposes (i.e. Reiki, Healing touch, Therapeutic touch, etc.).		
Absolutely disagree	4	17.4
Disagree	8	34.8
Somewhat disagree	4	17.4
Neither agree nor disagree	5	21.7
Somewhat agree	2	8.7
Agree	0	0.0
Absolutely agree	0	0.0
No response	0	0.0
29.) Physicians who strive to understand themselves provide better care than those who do not.		
Absolutely disagree	0	0.0
Disagree	1	4.3
Somewhat disagree	1	4.3
Neither agree nor disagree	6	26.1
Somewhat agree	7	30.4
Agree	8	34.8
Absolutely agree	0	0.0
No response	0	0.0

*These items were negatively worded, and therefore, responses were reverse coded.

Table 3

Demographic characteristics and total IMAQ scores correlations

Demographic characteristics	Correlations
Gender (n=21)	*r*=0.208 *p*=0.364 τ=0.11 *p*=0.562
Actual age (years) (n=20)	*r*=-0.244 *p*=0.3 τ=-0.136 *p*=0.414
Location of country of citizenship (n=21)	*r*=-0.261 *p*=0.253 τ=-0.28 *p*=0.132
Type of conventional medicine training (n=21)	*r*=0.148 *p*=0.523 τ=0.125 *p*=0.509
Locational of conventional medicine training (n=21)	*r*=-0.261 *p*=0.253 τ=-0.28 *p*=0.132
Primary medical specialty (n=21)	*r*=-0.17 *p*=0.462 τ=-0.088 *p*=0.6
Total years of being licensed to practice medicine (n=21)	*r*=-0.089 *p*=0.7 τ=-0.064 *p*=0.693
Total months of practicing medicine in Kenya (n=21)	*r*=-0.107 *p*=0.645 τ=-0.034 *p*=0.832
Current practice setting (n=21)	*r*=-0.046 *p*=0.843 τ=-0.042 *p*=0.832

*Statistically significant at the 0.05 level.

Table 4

Demographic characteristics and IMAQ herbal items correlations

Demographic characteristics	Item 4		Item 23		Item 25	
Gender	*r*=0.258 τ=0.193 n=23	*p*=0.236 *p*=0.315	*r*=-0.221 τ=-0.206 n=22	*p*=0.322 *p*=0.335	*r*=0.298 τ=0.254 n=22	*p*=0.178 *p*=0.201
Actual age (years)	*r*=0.193 τ=0.171 n=22	*p*=0.39 *p*=0.307	*r*=0.276 τ=0.251 n=21	*p*=0.241 *p*=0.177	*r*=-0.153 τ=-0.084 n=21	*p*=0.507 *p*=0.628
Location of country of citizenship	*r*=-0.373 τ=-0.355 n=23	*p*=0.079 *p*=0.061	*r*=0.036 τ=0.091 n=22	*p*=0.875 *p*=0.666	*r*=-0.141 τ=-0.090 n=22	*p*=0.531 *p*=0.645
Type of conventional	*r*=-0.08 τ=-0.065	*p*=0.716 *p*=0.736	*r*=-0.296 τ=-0.304	*p*=0.181 *p*=0.156	*r*=0.098 τ=0.122	*p*=0.665 *p*=0.541

medicine training	n=23		n=22		n=22	
Locational of conventional medicine training	*r*=-0.373 τ=-0.355 n=23	*p*=0.079 *p*=0.061	*r*=0.036 τ=0.091 n=22	*p*=0.875 *p*=0.666	*r*=-0.141 τ=-0.090 n=22	*p*=0.531 *p*=0.645
Primary medical specialty	*r*=-0.134 τ=-0.033 n=23	*p*=0.544 *p*=0.846	*r*=0.023 τ=0.056 n=22	*p*=0.919 *p*=0.768	*r*=-0.324 τ=-0.234 n=22	*p*=0.141 *p*=0.182
Total years of being licensed to practice medicine	*r*=0.111 τ=0.099 n=23	*p*=0.615 *p*=0.547	*r*=0.307 τ=0.298 n=22	*p*=0.164 *p*=0.1	*r*=-0.005 τ=-0.026 n=22	*p*=0.982 *p*=0.879
Total months of practicing medicine in Kenya	*r*=0.106 τ=0.071 n=23	*p*=0.629 *p*=0.662	*r*=0.046 τ=0.075 n=22	*p*=0.838 *p*=0.676	*r*=-0.125 τ=-0.076 n=22	*p*=0.587 *p*=0.649
Current practice setting	*r*=-0.134 τ=-0.192 n=23	*p*=0.544 *p*=0.317	*r*=-0.037 τ=-0.021 n=22	*p*=0.871 *p*=0.923	*r*=-0.255 τ=-0.236 n=22	*p*=0.251 *p*=0.236

*Statistically significant at the 0.05 level.

Table 5

Selected physician comments (n=17)*

Theme	Comment
Harm (n=7, 41.2%)	• "*In Kenya, it is not infrequent for patients to spend significant financial resources on 'alternative' medical therapies only to present to conventional medical practitioners either with toxic effects of the therapy*" • "*There are also many instances I have seen where traditional therapies have caused harm.*" • "*Most of the traditional medicine (herbs) given are not directly toxic here, but we get occasional patients who have severe toxicity of such meds.*" • "*We see many patients, especially children, die from liver failure caused by traditional herbal medicine here*" • "*Some traditional herbal medications used in Kenya can be fatal, especially in children."* • "*We see a fair amount of injury and death due to 'herbs.' Recently, 3 infants died because of an herbal treatment for non-disease.*" • "*I see a lot alternative/'traditional' healing practices, generally after they have failed to be successful.*"
Delayed treatment (n=6, 35.3%)	• "*I don't think there is much 'integrative' medicine but rather a dependence on 'inexpensive,' local treatments that don't integrate conventional options until it is too late.*" • "*I see many instances where unethical use of complementary and alternative therapies has left people financially ruined and resulted in presentation for mainstream therapies when it is now to late for a curative approach.*" • "*I recently saw a 25 year old lady with a lip cancer. It has started to spread, but is still potentially curable. I was willing to find money to fund an operation to remove it. She has currently declined as she would like to pursue traditional herbal therapies. Unfortunately she may never return, and if she does it may be too late for curative treatment.*" • "*The main problem, when there is one, is delaying presentation.*" • "*Too many patients present too late because of an attempt to find alternative, untried therapies, such as herbs, magnetic therapy, old-fashioned witchcraft, burn therapy, etc., for*

	serious problems like cancer." • "*They often delay access to western medicine that could have saved the patient's life if proper treatment had been sought earlier*."
Finances (n=6, 35.3%)	• "*There is a need to be aware of the cost/benefit of all treatment modalities in a economically poor area*." • "*In Kenya, it is not infrequent for patients to spend significant financial resources on 'alternative' medical therapies... I don't think there is much 'integrative' medicine but rather a dependence on 'inexpensive'*" • "*I see many instances where unethical use of complementary and alternative therapies has left people financially ruined"* • *"There are many rogues out there practicing in this area, draining patients' scarce resources*." • "*In Kenya, many people will bankrupt themselves on 'traditional healers' so there is an economic side as well that impacts attitudes toward their use as well*." • "*I was willing to find money to fund an operation to remove it. She has currently declined as she would like to pursue traditional herbal therapies*."
Awareness (n=5, 29.4%)	• "*The full level of many alternative therapies has not been elucidated nor has their full potential for unintended consequences*." • "*Patients need to be fully informed of the objective and subjective benefits of all treatment options*." • "*So no, I don't care that randomized controlled studies have been done, but some level of safety needs to be there*." • "*I do believe though that neither are panaceas and when something negative happens in alternative therapies there are not good methods in place to alert of negative effects or outcomes so that informed decision making can happen*." • "*The challenge with IM is some sort of validation of the effectiveness of various modalities in improving patients' health. Quality of life measures are difficult to standardize, especially across cultures. We have a hard enough time getting good data, even in a westernized hospital, to see where we stand against benchmarks. I will lean towards allopathic medicine because I have been trained in how to evaluate its value for my patients*."

*Some comments exhibited more than one theme, therefore, sum totals may not add up.

Chapter 5: Summary

Comparison with Current Literature

In general, the study shows physicians to have positive attitudes toward IM; this is consistent with other literature on IM (Jong et al., 2012). This is also consistent with studies that found physician attitudes to be generally positive when assessing physician attitudes solely toward CAM (Chung et al., 2011; Conrad et al., 2013; Fadlon et al., 2008; Furlow et al., 2008; Manek et al., 2010; Milden & Stokols, 2004; Rhode et al., 2008; Schmidt et al., 2002; Telles et al., 2011; Wahner-Roedler et al., 2006; Wahner-Roedler et al., 2014). A study by Zhang et al. (2010) used similar research methods by using a questionnaire to examine CAM attitudes of a convenience sample of primary care providers (82% were physicians) in West Texas. Similar results were also found with this study. In addition to participants having generally positive attitudes, the study revealed no significant relationship between demographic characteristics and provider attitudes, and the majority of participants (n=69, 59.4%) believed that the spiritual beliefs of physicians is important to healing (Zhang et al., 2010). There are also notable differences when compared to this study. Regarding sample characteristics, Zhang et al.'s (2010) study differed in that the majority of its participants were female and younger than age 36; results differed in that 66.7% (n=69) of participants rated prospective randomized controlled trials as having a high impact on attitudes toward CAM.

This study does not reveal a significant relationship between demographic characteristics and physician attitudes toward IM. Concerning age, this finding is consistent with two IM studies (Bocock et al., 2011; Jong et al., 2012), and one IM study regarding work experience (Jong et al., 2012); some CAM studies also found no

significance between attitudes and demographic characteristics (i.e., age, gender, ethnicity, religion) (Rhode et al., 2008; Risberg et al., 2004; Schmidt et al., 2002; Zhang et al., 2010). However, the lack of significance regarding gender, length of practice, and practice setting is inconsistent with one IM study (Bocock et al., 2011). Multiple studies on physician attitudes toward CAM found significance between physician attitudes and gender (Conrad et al., 2013; Furlow et al., 2008; Manek et al., 2010; Rhode et al., 2008; Risberg et al., 2004) and age (Furlow et al., 2008; Milden & Stokols, 2004; Wilkinson & Tinley, 2009). For example, a study by Wahner-Roedler et al. (2006) at the Mayo Clinic in Rochester, MN, assessed physician attitudes toward CAM and found age and gender to be significantly linked to physician attitudes; however, the study found similar results to this study in that most physicians were open to CAM and the majority (n=233, 52%) agreed that the spiritual beliefs of physician were important to healing. The lack of significance found in this study is potentially associated with the study's small sample size and the sample being from Christian-mission hospitals—this is discussed later in the discussion of the study's limitations.

In this study, the majority of physicians (78.2%, n=18) disagree with item 5, "It is appropriate for physicians to use intuition ('gut feelings') as a major factor in determining appropriate therapies for patients." This finding is similar to a study that used the IMAQ to find osteopathic medical students to have positive attitudes toward CAM, but generally disagree with the use of intuition to guide therapy by giving a mean rating of 3.17 for item 5 (Kanadiya et al., 2012). In contrast to intuition, physician scores and comments reveal an emphasis on needing some form of reliable data regarding CAM. As one participant expressed, "*I don't care that randomized controlled studies have been*

done, but some level of safety needs to be there." In addition, 39.1% (n=9) of physicians "disagree" with item 27, "Information obtained by research methods other than randomized controlled trials has little value to physicians." Another participant also commented on data quality:

> *The challenge with IM is some sort of validation of the effectiveness of various modalities in improving patients' health. Quality of life measures are difficult to standardize, especially across cultures. We have a hard enough time getting good data, even in a westernized hospital, to see where we stand against benchmarks. I will lean towards allopathic medicine because I have been trained in how to evaluate its value for my patients*.

A qualitative study by Hsiao et al. (2006) also found physicians to believe that scientific evidence should be the basis of practice and that the majority of CAM was not supported by evidence-based standards. Confirming the sentiments of both studies, the WHO (2002) explains that there is a growing demand for evidence regarding CAM's efficacy, safety, and quality, but that the current scientific literature on CAM reveals the use of methodologies that are comparable to ones used to substantiate modern surgical treatments—patient series and individual case reports that have no comparison or control groups. This also supports the study's finding of the themes "harm" and "awareness" as being concerns expressed in participant comments; Hsiao et al.'s (2006) qualitative study also found similar themes, and other studies found similar themes with physicians viewing CAM as a threat to public health (Wahner-Roedler et al., 2006; Wilkinson & Tinley, 2009; Zhang et al., 2010) and physician knowledge of CAM (Chung et al., 2011;

Milden & Stokols, 2004; Sewitch et al., 2008; Wahner-Roedler et al., 2006; Wilkinson & Tinley, 2009).

Given that the study was conducted at three Christian-mission hospitals, it is not surprising that physicians disagreed with the IMAQ item that a physician's spiritual beliefs play no role in healing. One participant's comment provides particular insight into this finding:

> *I can't tell if this survey considers prayer an alternative medical practice, but it is very important to patients and providers in Kenya. Westerners dichotomize and Africans tend to have an integrated holistic view of people and healing, which is refreshing and helpful*.

However, there is no datum to show that all physicians are of the same faith or identified with the faith of the hospital, as no data were collected regarding participants' personal professions of faith. A study assessing oncologists' attitudes toward CAM in Norway found no significance between religion and attitude (Risberg et al., 2004). One study specifically examined the relationship between faith and clinicians' integration of CAM and found that religiosity did not strongly influence physicians' willingness to integrate CAM, but physicians who were more spiritual were more likely to integrate CAM therapies (Curlin, Rasinski, Kaptchuk, Emanuel, Miller, & Tilburt, 2009).

It was also likely to be expected that the theme of "finances" was evident in physician comments, as the hospitals were all mission-based and located in low-healthcare-resource settings.

Herbal therapies. Physician responses are varied regarding herbal therapies—the primary form of TM in Kenya. The majority of physicians agree that until herbs have

been tested, patients should be advised against them, as well as that physicians should be ready to answer for the safety and efficacy of herbs. These findings are supported by the WHO's (2013) list of risks associated with the use of traditional therapies, as well as the WHO's (2002) statement that CM practitioners are hesitant toward CAM due to its safety and efficacy. Less agreement between physicians is found in the item addressing botanical therapies long-used in other cultures which are not supported by randomized controlled trials should not be recommended by physicians. Although herbal medicines have been used in East Africa for many years and knowledge regarding them is passed down orally through generations (NCAPD, 2008), the process of data collection and testing traditional herbal medicines will not be easily solved for physicians. For example, the knowledge of the adverse effects of herbs is primarily derived from clinical trials and case reports, with only a few systematic studies reviewing herbal safety (Saper, 2014). Given this lack of information and physician concerns of "harm" and "delayed treatment" expressed in physician comments, specifically related to patient use of herbs, these findings were not surprising. For example, one participant explained, "*Some traditional herbal medications used in Kenya can be fatal, especially in children. They often delay access to western medicine that could have saved the patient's life if proper treatment had been sought earlier*." Another participant voiced similar concerns stating, "*We see a fair amount of injury and death due to 'herbs.' Recently, three infants died because of an herbal treatment for non-disease*."

Theory of Reasoned Action. Guided by the TRA, the study examines the attitudes of Western, conventionally trained physicians toward IM in Kenya. The study findings fit into the TRA by providing a description of physicians' positive attitudes

toward IM, as influenced physicians' Western and CM beliefs. The TRA suggests that attitude leads to intention and behavior (Fishbein & Azjen, 1975), and based on the TRA, the positive attitudes of physicians potentially indicate physicians having positive intentions and behaviors toward the use of IM. However, it is beyond the scope of this study to assess how physician attitudes affect physician intentions and behaviors toward IM. Future studies are recommended to further explore this relationship.

Clinical Implications

The results of this study have two primary clinical implications. The first implication is the raising of awareness about the attitudes of Western, conventionally trained physicians toward IM in Kenya. This awareness contributes to the WHO's (2013) goal of encouraging respect and understanding between TM and CM practitioners, strengthening efforts towards integrating TM into current health care systems. A study by Hsiao et al. (2006) found that physicians who were open-minded toward IM, acknowledging the benefits of CAM and IM, were wiling to work with CAM practitioners; in addition, the study found acupuncturists and chiropractors that were open-minded toward IM to be willing to accept the role of CM in treatment of acute health issues (i.e., trauma, infections, myocardial infarction). Given these findings, the fact that the study's results show physicians to have positive attitudes toward IM leads the way in exploring whether conventional practitioners would potentially accept the role of CAM practitioners in an integrated Kenyan health care system. Openness has been found to be one of the key factors in successfully integrating CM and CAM therapies (Hsiao et al., 2006).

The second implication of the study's findings is providing information increase patient awareness of physicians' attitudes toward IM that will potentially affect patient and provider discussions on patient use of CAM. For example, one study (Shelley, Sussman, Williams, Segal, & Crabtree, 2009) found that a patient's willingness to discuss CAM use was influenced by a patient's perception of how the physician would react to the use of CAM. Another study (Ben-Arye, Frenkel, Klein, & Scharf, 2008) found primary care physicians to believe patients expected physicians to simply act as passive listeners to patients' use of CAM, however, patients believed physicians should be more active in using CAM therapies. Sewitch et al.'s (2008) review showed that physicians, nurses, and social workers believed patients were more likely to discuss their use of CAM with nurses than other healthcare professionals. This finding supports the importance of nurses acting as patient advocates. Ehlers (2000) explains that nurses with knowledge of patients' cultural practices are in a place where they can communicate with other healthcare team members to make sure that a patient's cultural expectations are considered and met when carried out in a primarily Western based healthcare model. In other words, the results provide nurses with information to bridge the gap of communication between patients and physicians, supporting patient discussion of their use of CAM use with their physicians. Fostering this discussion creates more opportunities for the integration of TM into patients' personal healthcare experiences and contributes to building a more accessible and culturally relevant health care system in Kenya.

Contributions and Strengths

There are several contributions and strengths of this descriptive correlational

study. To the researcher's knowledge, this is the first study to examine this professional population working in such a unique environment, especially focusing on the topic of IM. While the majority of studies focus on physician attitudes solely toward CAM, this study focuses specifically on the concept of IM. Therefore, the study addresses the gap in the literature by providing a description of the attitudes of Western, conventionally trained physicians toward IM in Kenya.

Supporting these contributions is the strength of the study's high response rate (59%, n=23). Another strength is the use of Qualtrics Survey Software in facilitating the obtainment of immediate survey results, analysis and storage of survey data, and a reduction in survey data entry error. In addition, the study provides unique knowledge and insight that is useful to the WHO's (2013) efforts to form national health care systems that better integrate safe and effective TM practices. For example, the WHO (2013) lists promoting understanding and education between the disciplines of TM and CM as strategies to integrate TM into current systems of health care; this study contributes to these efforts by furthering the dialogue on IM.

One final strength is the study's high response rate. Although studies using email surveys often have response rates of less than 20% (Kongsved, Basnov, Holm-Christensen, & Hjollund, 2007), this study resulted in a response rate of 59%. The researcher implemented several methods to improve the study's response rate: the hospital contacts sent a notification email about the opportunity to participate in the study; an introductory email with a link creating easy access to the survey site was sent to potential participants; email reminders were sent to non-responders; and participants were provided with study results.

Limitations

There are several limitations related to the study's internal and external validity. The first limitation is the use of a convenience sample, which is a threat to the study's internal validity by creating the potential for sample biases. The use of a convenience sample is also a threat to the study's external validity due to the potential for the results to not be representative of the target population (i.e., Western, conventionally trained physicians not working at faith-based facilities). A small sample size and participants being from Christian-mission hospitals are other limitations of the study and threats to internal and external validity. These limitations affect the generalizability of the study findings by restricting the findings to the particular setting and population in which the study was performed. The small sample size and participants from Christian-mission hospitals may have also been limitations to the study's ability to detect significant correlations between physician demographic characteristics and IMAQ items. One final limitation of the study is the potential for some CAM items mentioned in measurement tool to not be relevant to the Kenyan context.

Recommendations

There are several recommendations that would serve to further the understanding of this topic. The first recommendation would be to develop and validate a version of the IMAQ that is specific to the Kenyan context, as well as developing a version that is relevant across a broader cultural context. Reasoning for this is exemplified in a participant's comment: "*In Kenya the 'complementary and alternative therapies' that are available and used by most Kenyans do not consist of the examples provided ('Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.'). Similarly, there is minimal chiropractic,*

therapeutic touch, etc." Another participant suggested that the questionnaire provide an option stating, "'*no experience*.'" One other recommendation for the IMAQ would be to establish a norm score that provides a standard by which to judge a score as definitely positive or negative. To further explore Fishbein and Ajzen's (1975) TRA, studies that explore how physician attitudes affect physician intentions and behaviors toward IM are recommended. Other future research suggestions include examining how physicians' personal faith affects attitudes toward IM and how the attitudes of Kenyan CM physicians toward IM are different from Western CM physicians. Based on physician responses and comments, one final recommendation would be for more research and sharing of knowledge on the benefits and effects of CAM.

Conclusion

Over 80% of people in Africa utilize TM to address their health care needs (WHO, 2002), with herbal therapies serving as the predominant means of TM therapy (WHO, 2005). In Kenya, the strong presence of traditional herbal therapies is a result of the lack of access to conventional health care services (NCAPD, 2008). To improve health care access, the WHO (2013) suggests there to be an integration of TM into national health care systems—this integration involves the merging of both CAM and CM systems. An important part of this integration involves understanding and education between CAM and CM practitioners (WHO, 2013). Currently, there is no research available on physician attitudes toward IM in Kenya. This study seeks to contribute to the process of integration by describing the attitudes of Western, conventionally trained physicians toward IM in Kenya and the relationship between physician attitudes and demographic characteristics. Overall, physician attitudes are generally positive toward

IM in Kenya, with no significant correlations between physician attitudes and demographic characteristics. The primary clinical implication of these findings is an increase in knowledge and awareness of the attitudes of Western, conventionally trained physicians toward IM in Kenya. The knowledge gained from this study will serve to inform future research on IM in Kenya.

References

Albarracín, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: a meta-analysis. *Psychological Bulletin*, *127*(1), 142-161.

Argüder, E., Yilmaz, I., Ateş, C., Misirligil, Z., & Bavbek, S. (2012). Self-reported knowledge and approaches toward complementary and alternative medicine among physicians dealing with allergic diseases. *The American Journal Of Chinese Medicine*, *40*(4), 671-683. doi:10.1142/S0192415X12500504

Ajzen, I. (2006). Icek Ajzen: TPB diagram, Behavior. *Icek Ajzen*. Retrieved from http://people.umass.edu/ajzen/beh.html

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.

Ben-Arye, E., Frenkel, M., Klein, A., & Scharf, M. (2008). Attitudes toward integration of complementary and alternative medicine in primary care: perspectives of patients, physicians and complementary practitioners. *Patient Education & Counseling*, *70*(3), 395-402.

Bland, J., & Altman, D. (1997). Cronbach's alpha. *British Medical Journal, 314*, 572.

Bocock, C., Reeder, A., Perez, D., & Trevena, J. (2011). Beliefs of New Zealand doctors about integrative medicine for cancer treatment. *Integrative Cancer Therapies*, *10*(3), 280-288. doi:10.1177/1534735411403476

Burns, N., & Grove, S. K. (2009). *The practice of nursing research: Appraisal, synthesis, and generation of evidence* (6th ed.). St. Louis, MO: Saunders Elsevier.

Central Intelligence Agency. (2015). The World Factbook: Kenya. *Central Intelligence*

Agency. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html

Chan, M. (2013, February 12-14). Speech presented at the International Conference on Traditional Medicine for South-East Asian Countries, New Delhi, India.

Chung, V., Hillier, S., Lau, C., Wong, S., Yeoh, E., & Griffiths, S. (2011). Referral to and attitude towards traditional Chinese medicine amongst western medical doctors in postcolonial Hong Kong. *Social Science & Medicine*, *72*(2), 247-255. doi:10.1016/j.socscimed.2010.10.021

Chung, V., Wong, E., & Griffiths, S. (2007). Content validity of the Integrative Medicine Attitude Questionnaire: perspectives of a Hong Kong Chinese expert panel. *Journal Of Alternative & Complementary Medicine*, *13*(5), 563-569. doi:10.1089/acm.2007.6222

Clark, N., Will, M., Moravek, M., Xu, X., & Fisseha, S. (2013). Physician and patient use of and attitudes toward complementary and alternative medicine in the treatment of infertility. *International Journal Of Gynaecology And Obstetrics: The Official Organ Of The International Federation Of Gynaecology And Obstetrics*, *122*(3), 253-257. doi:10.1016/j.ijgo.2013.03.034

Cohen, M., Penman, S., Pirotta, M., & da Costa, C. (2005). The integration of complementary therapies in Australian general practice: results of a national survey. *Journal Of Alternative & Complementary Medicine*, *11*(6), 995-1004. doi:10.1089/acm.2005.11.995

Conrad, C., Muenstedt, K., Micke, O., Prott, F., Gronau, T., Muecke, R., & Huebner, J. (2013). Survey of Members of the German Society for Palliative Medicine

Regarding Their Attitudes Toward Complementary and Alternative Medicine for Cancer Patients. *Journal Of Palliative Medicine*, *16*(8), 822-824. doi:10.1089/jpm.2013.0084

CultureGrams. (2006). Republic of Kenya. *CultureGrams World Edition 2006*. Ann Arbor, MI: ProQuest Information and Learning Company.

Curlin, F., Rasinski, K., Kaptchuk, T., Emanuel, E., Miller, F., & Tilburt, J. (2009). Religion, clinicians, and the integration of complementary and alternative medicines. *Journal Of Alternative & Complementary Medicine*, *15*(9), 987-994. doi:10.1089/acm.2008.0512

Fadlon, J., Granek-Catarivas, M., Roziner, I., & Weingarten, M. (2008). Familiarity breeds discontent: Senior hospital doctors' attitudes towards complementary/alternative medicine. *Complementary Therapies in Medicine, 16*(4), 212-219.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Furlow, M., Patel, D., Sen, A., & Liu, J. (2008). Physician and patient attitudes towards complementary and alternative medicine in obstetrics and gynecology. *BMC Complementary & Alternative Medicine, 8*(35), 1-8. *doi:10.1186/1472-6882-8-35*

Gaither, C., Bagozzi, R., Ascione, F., & Kirking, D. (1997). The determinants of physician attitudes and subjective norms toward drug information sources: modification and test of the theory of reasoned action. *Pharmaceutical Research*, *14*(10), 1298-1308.

Guo, Q., Johnson, C. A., Unger, J. B., Lee, L., Xie, B., Chou, C., & ... Pentz, M. (2007).

Utility of the theory of reasoned action and theory of planned behavior for predicting Chinese adolescent smoking. *Addictive Behaviors*, *32*(5), 1066-1081.

Hsiao, A., Ryan, G., Hays, R., Coulter, I., Andersen, R., & Wenger, N. (2006). Variations in provider conceptions of integrative medicine. *Social Science & Medicine*, *62*(12), 2973-2987.

Hunter, J., Corcoran, K., Leeder, S., & Phelps, K. (2013). Is it time to abandon paper? The use of emails and the Internet for health services research - a cost-effectiveness and qualitative study. *Journal Of Evaluation In Clinical Practice*, *19*(5), 855-861. doi:10.1111/j.1365-2753.2012.01864.x

Integrative medicine. (2014). In *Merriam-Webster Dictionary online*. Retrieved from http://www.merriam-webster.com/medical/integrative%20medicine

Jemmott, L. S., & Jemmott, J. 3. (1991). Applying the theory of reasoned action to AIDS risk behavior: condom use among black women. *Nursing Research*, *40*(4), 228-234.

Jong, M. C., van Vliet, M., Huttenhuis, S., van der Veer, D., & van den Heijkant, S. (2012). Attitudes toward integrative paediatrics: a national survey among youth health are physicians in the Netherlands. *BMC Complementary & Alternative Medicine*, *12*(1), 4-11. doi:10.1186/1472-6882-12-4

Kanadiya, M., Klein, G., & Shubrook, J. (2012). Use of and attitudes toward complementary and alternative medicine among osteopathic medical students. *The Journal Of The American Osteopathic Association*, *112*(7), 437-446.

Kim, J., Lee, J., & Lee, D. (2011). Validation of the Korean Integrative Medicine Attitude Questionnaire (IMAQ). *Korean Journal Of Family Medicine*, *32*(3), 197-

204. doi:10.4082/kjfm.2011.32.3.197

Kongsved, S. M., Basnov, M., Holm-Christensen, K., & Hjollund, N. H. (2007). Response rate and completeness of questionnaires: a randomized study of Internet versus paper-and-pencil versions. *Journal Of Medical Internet Research*, *9*(3), e25.

Kucukarslan, S., Lai, S., Dong, Y., Al-Bassam, N., & Kim, K. (2011). Physician beliefs and attitudes toward collaboration with community pharmacists. *Research In Social & Administrative Pharmacy: RSAP*, *7*(3), 224-232. doi:10.1016/j.sapharm.2010.07.003

Leach, M. (2004). Public, nurse and medical practitioner attitude and practice of natural medicine. *Complementary Therapies In Nursing & Midwifery*, *10*(1), 13-21.

Luoma, Marc, Doherty, J., Muchiri, S., Barasa, T., Holfer, K.,…Maundu, J. (2010). *Kenya Health Systems Assessment*. Retrieved from https://www.hfgproject.org/wp-content/uploads/2015/02/Kenya-Health-Systems-Assessment-2010.pdf

Manek, N., Crowson, C., Ottenberg, A., Curlin, F., Kaptchuk, T., & Tilburt, J. (2010). What rheumatologists in the United States think of complementary and alternative medicine: Results of a national survey. *BMC Complementary & Alternative Medicine, 10.* doi:10.1186/1472-6882-10-5

Milden, S., & Stokols, D. (2004). Physicians' attitudes and practices regarding complementary and alternative medicine. *Behavioral Medicine (Washington, D.C.)*, *30*(2), 73-82.

Ministry of Medical Services and Ministry of Public Health and Sanitation (2010). *Master Facility List February 2010*. Retrieved from

http://www.kenyahealthfacilities.net/

Muñoz-Silva, A., Sánchez-García, M., Nunes, C., & Martins, A. (2007). Gender differences in condom use prediction with Theory of Reasoned Action and Planned Behaviour: the role of self-efficacy and control. *AIDS Care*, *19*(9), 1177-1181.

National Cancer Institute. (n.d.) NCI Dictionary of Cancer Terms: Conventional medicine. *National Caner Institute at the National Institutes of Health*. Retrieved from http://www.cancer.gov/dictionary?cdrid=449752

National Center for Complementary and Alternative Medicine. (2014). Complementary, alternative, or integrative health: What's in a name? *National Center for Complementary and Alternative Medicine*. Retrieved from http://nccam.nih.gov/health/whatiscam

National Coordinating Agency for Population and Development. (2007). Draft policy on traditional medicine and medicinal plants. *National Coordinating Agency for Population and Development*. Nairobi.

National Coordinating Agency for Population and Development. (2008). Seeking solutions for traditional herbal medicine: Kenya develops a national policy. *National Coordinating Agency for Population and Development Policy Brief, 1*. Retrieved from http://ncpd-ke.org/ncpdweb/policy-briefs%20?page=2

O'Beirne, M., Verhoef, M., Paluck, E., & Herbert, C. (2004). Complementary therapy use by cancer patients. Physicians' perceptions, attitudes, and ideas. *Canadian Family Physician Médecin De Famille Canadien*, *50*882-888.

Physician. (2014). In *Merriam-Webster Dictionary online*. Retrieved from

http://www.merriam-webster.com/dictionary/physician

Rees, C., Wearn, A., Dennis, I., Amri, H., & Greenfield, S. (2009). Medical students' attitudes to complementary and alternative medicine: further validation of the IMAQ and findings from an international longitudinal study. *Medical Teacher*, *31*(2), 125-132. doi:10.1080/01421590802139724

Rhode, J., Patel, D., Sen, A., Schimp, V., Johnston, C., & Liu, J. (2008). Perception and use of complementary and alternative medicine among gynecologic oncology care providers. *International Journal Of Gynaecology And Obstetrics: The Official Organ Of The International Federation Of Gynaecology And Obstetrics*, *103*(2), 111-115. doi:10.1016/j.ijgo.2008.06.001

Risberg, T., Kolstad, A., Bremnes, Y., Holte, H., Wist, E., Mella, O.,…Cassileth, B. R. (2004). Knowledge of and attitudes toward complementary and alternative therapies; a national multicentre study of oncology professionals in Norway. *European Journal Of Cancer (Oxford, England: 1990)*, *40*(4), 529-535.

Samaritan's Purse. (2014a). Kapsowar Hospital, Kenya. *Samaritan's Purse: International Relief, World Medical Mission*. Retrieved from http://www.samaritanspurse.org/medical/mission-hospitals-kapsowar-hospital-kenya/

Samaritan's Purse. (2014b). Kijabe Hospital, Kijabe, Kenya. *Samaritan's Purse: International Relief, World Medical Mission*. Retrieved from http://www.samaritanspurse.org/medical/mission-hospitals-kijabe-hospital-kijabe-kenya/

Samaritan's Purse. (2014c). Tenwek Hospital, Bomet, Kenya. *Samaritan's Purse: International Relief, World Medical Mission*. Retrieved from http://www.samaritanspurse.org/medical/mission-hospitals-tenwek-hospital-bomet-kenya/

Saper, R. (2014). Herbal medicine. In J. Elmore (Ed.), *UpToDate*. Retrieved from http://0-www.uptodate.com.library.cedarville.edu/contents/overview-of-herbal-medicine-and-dietary-supplements?source=machineLearning&search=herbal+medicine&selectedTitle=1%7E150&sectionRank=2&anchor=H24#references

Schmidt, K., Jacobs, P., & Barton, A. (2002). Cross-cultural differences in GPs' attitudes towards complementary and alternative medicine: a survey comparing regions of the UK and Germany. *Complementary Therapies In Medicine*, *10*(3), 141-147.

Schneider, C., Meek, P., & Bell, I. (2003). Development and validation of IMAQ: Integrative Medicine Attitude Questionnaire. *BMC Medical Education*, *3(*5), 1-7. doi: 10.1186/1472-6920-3-5

Sewitch, M., Cepoiu, M., Rigillo, N., & Sproule, D. (2008). A literature review of health care professional attitudes toward complementary and alternative medicine. *Complementary Health Practice Review*, *13*(3), 139-154.

Shelley, B. M., Sussman, A. L., Williams, R. L., Segal, A. R., & Crabtree, B. F. (2009). 'They don't ask me so I don't tell them': Patient-clinician communication about traditional, complementary, and alternative medicine. *Annals Of Family Medicine*, *7*(2), 139-147. doi:10.1370/afm.947

Telles, S., Gaur, V., Sharma, S., & Balkrishna, A. (2011). Attitude of Conventional and CAM Physicians Toward CAM in India. *Journal Of Alternative &*

Complementary Medicine, 17(11), 1069-1073. doi:10.1089/acm.2010.0407

Tenwek Hospital. (n.d.). About us. *Tenwek Hospital*. Retrieved from http://www.tenwekhospital.org/about-us

Trimborn, A., Senf, B., Muenstedt, K., Buentzel, J., Micke, O., Muecke, R.,…Huebner, J. (2013). Attitude of employees of a university clinic to complementary and alternative medicine in oncology. *Annals Of Oncology: Official Journal Of The European Society For Medical Oncology / ESMO*, *24*(10), 2641-2645. doi:10.1093/annonc/mdt299

University of Twente. (2014). Theory of planned behavior/reasoned action. University of Twente. Retrieved from http://www.utwente.nl/cw/theorieenoverzicht/theory%20clusters/health%20communication/theory_planned_behavior/

Wahner-Roedler, D. L., Vincent, A., Elkin, P. L., Loehrer, L. L., & Bauer, B. A. (2006). Physician attitudes toward complementary and alternative medicine and their knowledge of specific therapies: A survey at an academic medical center. *Evidence-Based Complementary and Alternative Medicine, 3*(4), 495-501. doi: 10.1093/ecam/nel036

Wahner-Roedler, D. L., Lee, M. C., Chon, T. Y., Cha, S. S., Loehrer, L. L., & Bauer, B. A. (2014). Physicians' attitudes toward complementary and alternative medicine and their knowledge of specific therapies: 8-Year follow-up at an academic medical center. *Complementary Therapies In Clinical Practice*, *20*(1), 54-60. doi:10.1016/j.ctcp.2013.09.003

Western. (2014). In *Merriam-Webster Dictionary online*. Retrieved from http://www.merriam-webster.com/dictionary/western

Wilkinson, J., & Tinley, P. (2009). Knowledge, beliefs, and use of complementary and alternative medicine by Australian podiatric physicians. *Journal Of The American Podiatric Medical Association*, *99*(2), 121-128.

World Gospel Mission. (2014). Tenwek Hospital in Kenya. *WGM: Discover missions*. Retrieved from http://www.wgm.org/tenwek

World Health Organization. (2000). General guidelines for methodologies on research and evaluation of traditional medicine. *World Health Organization*. Retrieved from http://whqlibdoc.who.int/hq/2000/WHO_EDM_TRM_2000.1.pdf?ua=1

World Health Organization. (2002). WHO traditional medicine strategy 2002-2005. World Health Organization. Retrieved from http://www.wpro.who.int/ health_technology/book_who_traditional_medicine_strategy_2002_2005.pdf

World Health Organization. (2005). National policy on traditional medicine and regulation of herbal medicine: Report of a WHO global survey. World Health Organization. Retrieved from http://apps.who.int/medicinedocs /pdf/s7916e/s7916e.pdf

World Health Organization. (2013). WHO Traditional Medicine Strategy. World Health Organization. Retrieved from http://apps.who.int/iris/bitstream/10665/92455 /1/9789241506090_eng.pdf

Zhang, Y., Peck, K., Spalding, M., Xu, T., & Ragain, M. (2010). A study to examine the attitudes, knowledge, and utilization of CAM by primary care professional in West Texas. *Complementary Therapies In Medicine, 18*(6), 227-232. doi:10.1016/j.ctim.2010.09.009

APPENDICES

Appendix A

Study Participant Contact Information Request

February-March 2015

To whom it may concern:

My name is Heather Hall and I am a registered nurse currently working on my master's research project entitled, "Attitudes of Western, Conventionally Trained Physicians Toward Integrative Medicine in Kenya: A Descriptive Correlational Study."

The purpose of this study is to describe the attitudes of Western, conventionally trained physicians toward integrative medicine (IM) in Kenya and the relationship between physician demographic characteristics and attitudes. The study will be conducted by sending potential physician participants an email that explains the purpose and directions for participating in the study, as well as a link to the online survey software where a demographic information sheet and questionnaire are to be completed (copies of these documents are attached to this email). Participation is voluntary and all information will be kept anonymous, private, and confidential, only being used for the purposes of this study. The results from the study will be used for the research purposes of describing the attitudes of Western, conventionally trained physicians toward IM in Kenya. Once the study results have been determined, participants will receive an email with the study findings.

Approval for this study has been obtain from _____.

My purpose in contacting you is to request the email addresses of Western (North American or European) physicians practicing at your facility. Physicians will only be contacted for the purposes of this study. Please provide the physicians' email addresses by replying to this email.

Thank you for your time and assistance,

Heather Hall, RN, BSN

Appendix B

Study Participation Instructions

Consent Form

Researcher—Heather Hall
Contact Information: hlhall@cedarville.edu
March 30, 2015

Dear doctors,

The purpose of this study is to learn about the attitudes of doctors from Western cultures, trained in mainstream medicine, toward integrative medicine (IM) in Kenya. The results will increase the knowledge of doctors' attitudes toward IM in Kenya.

Doctors are invited to complete an information sheet and the 29-question Integrative Medicine Attitude Questionnaire (IMAQ) (Schneider, Meek, & Bell, 2003). The survey is given through Qualtrics Survey Software and is found using the Internet link below. The survey will take about **15 minutes** to complete. **Please complete the survey by April 19th, 2015.**

Completing the survey will show that the doctor agrees to be in the study. No information will be collected that would reveal the doctors. There is no risk for harm that the doctor should face by doing the study. The doctor has the right to refuse to take part in and pull our of the study at any point in time, with no penalty. The results will be kept in a safe location that is protected by a password and will only seen by the researcher. The results will only be used for the purpose of the study.

When the study is completed, the results will be sent to each doctor by email.

Your assistance is very valuable. Thank you for your time and attention.

Heather Hall, RN, BSN

Follow this link to the Survey:
${l://SurveyLink?d=Take the Survey}
Or copy and paste the URL below into your internet browser:
${l://SurveyURL}
Follow the link to opt out of future emails: ${l://OptOutLink?d=Click here to unsubscribe}

Appendix C

Integrative Medicine Attitude Questionnaire

Directions: The purpose of this study is to describe the attitudes of Western, conventionally trained physicians toward integrative medicine in Kenya and the relationship between physician demographic characteristics and physician attitudes. *Integrative medicine will be defined as an emphasis on the spiritual, social, psychological, and biological wellness of both the patient and provider, seeking to incorporate the most effective and safe complementary and alternative medicine therapies with conventional therapies (Schneider, Meek, & Bell, 2003*). There are two sections to the survey: demographic information and the Integrative Medicine Attitude Questionnaire (Schneider et al., 2003). Please answer each question with the most appropriate response.

Section One: Demographic Information

1.) Gender:

a. male

b. female

2.) Actual age in years: _____

3.) Location of country of citizenship:

a. Europe

b. North American

c. Australia

4.) List your country of citizenship:

_____

5.) Location of conventional medicine training:

a. Europe

b. North American

c. Australia

6.) List the country of your conventional medicine training:
_____

7.) Total **years** of being licensed to practice conventional medicine:
_____

8.) Total **months** of practicing conventional medicine in Kenya:
_____

9.) Type of conventional medicine training:

a. Medical Doctor

b. Doctor of Osteopathy

10.) Primary medical specialty:

a. Family Practice

b. Obstetrics and Gynecology

c. Pediatrics

d. General Surgery

e. Orthopedics

f. Internal Medicine

g. Other: _____

11.) Current practice setting:

a. Inpatient/Acute Care

b. Outpatient/Primary Care

Appendix D

Section Two: Integrative Medicine Attitude Questionnaire (IMAQ)

Directions: Please answer all questions to the best of your ability using the rating scale below.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

Question:	Rating:
1.) A patient is healed when the underlying pathological processes are corrected or controlled.	_____
2.) The physician's role is primarily to promote the health and healing of the physical body.	_____
3.) Patients whose physicians are knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, do better than those whose physicians are only familiar with conventional medicine.	_____
4.) Physicians should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug.	_____
5.) It is appropriate for physicians to use intuition ("gut feelings") as a major factor in determining appropriate therapies for patients.	_____
6.) The spiritual beliefs and practices of physicians play no important role in healing.	_____
7.) The spiritual beliefs and practices of patients play no important role in healing.	_____
8.) It is irresponsible for physicians to recommend acupuncture to patients with conditions like chemotherapy-related nausea and vomiting or headache.	_____

9.) End of life care should be valued as an opportunity for physicians to help patients heal profoundly. _____

10.) It is not desirable for a physician to take therapeutic advantage of the placebo effect. _____

11.) Healing is not possible when a disease is incurable. _____

12.) Physicians knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, generate improved patient satisfaction. _____

13.) Therapeutic touch has been completely discredited as a healing modality. _____

14.) Physicians who model a balanced lifestyle (i.e. Attending to their own health, social, family and spiritual needs, as well as interests beyond medicine) generate improved patient satisfaction. _____

15.) Quality of life measures are of equal importance as disease specific outcomes in research. _____

16.) Chiropractic is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain). _____

17.) The physician's role is primarily to treat disease, not to address personal change and growth of patients. _____

18.) Massage therapy often makes patients "feel" better temporarily, but does not lead to objective improvement in long-term outcomes for patients. _____

19.) The innate healing capacity of patients often determines the outcome of the case regardless of treatment interventions. _____

20.) A strong relationship between patient and physician is an extremely valuable therapeutic intervention that leads to improved outcomes. _____

21.) Physicians who strive to understand themselves generate improved _____

patient satisfaction.

22.) Instilling hope in patients is a physician's duty. _____

23.) Physicians should be prepared to answer patients' questions regarding the safety, efficacy, and proper usage of commonly used botanical medicines such as Saw Palmetto, St. John's Wort, Valerian, etc. _____

24.) Counseling on nutrition should be a major role of the physician towards the prevention of chronic disease. _____

25.) Physicians should avoid recommending botanical medicines based on observations of long-term use in other cultures and systems of healing, because such evidence is not based on large randomized controlled trials. _____

26.) Osteopathic manipulative therapy is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain). _____

27.) Information obtained by research methods other than randomized controlled trials has little value to physicians. _____

28.) It is ethical for physicians to recommend therapies to patients that involve the use of subtle energy fields in and around the body for medical purposes (i.e. Reiki, Healing touch, Therapeutic touch, etc.). _____

29.) Physicians who strive to understand themselves provide better care than those who do not. _____

Comments: Please provide any additional comments, specifically relating to types of complementary and alternative therapies or the integration of such therapies in Kenya.

Appendix E

Participant Reminder Email (1)

Researcher—Heather Hall
Contact Information: hlhall@cedarville.edu
April 9, 2015

Dear doctors,

This is a friendly reminder inviting you to participate in a study to learn about the attitudes of doctors from Western cultures, trained in mainstream medicine, toward integrative medicine (IM) in Kenya. The results will increase the knowledge of doctors' attitudes toward IM in Kenya.

Doctors are invited to complete an information sheet and the 29-question Integrative Medicine Attitude Questionnaire (IMAQ) (Schneider, Meek, & Bell, 2003). The survey is given through Qualtrics Survey Software and is found using the Internet link below. The survey will take about **15 minutes** to complete. **Please complete the survey by April 19th, 2015.**

Your assistance is very valuable. Thank you for your time and attention.

Heather Hall, RN, BSN

Follow this link to the Survey:
${l://SurveyLink?d=Take the Survey}
Or copy and paste the URL below into your internet browser:
${l://SurveyURL}
Follow the link to opt out of future emails: ${l://OptOutLink?d=Click here to unsubscribe}

Appendix F

Participant Reminder Email (2)

Researcher—Heather Hall
Contact Information: hlhall@cedarville.edu
April 17, 2015

Dear doctors,

This is a final friendly reminder inviting you to participate in a study to learn about the attitudes of doctors from Western cultures, trained in mainstream medicine, toward integrative medicine (IM) in Kenya. The results will increase the knowledge of doctors' attitudes toward IM in Kenya.

Doctors are invited to complete an information sheet and the 29-question Integrative Medicine Attitude Questionnaire (IMAQ) (Schneider, Meek, & Bell, 2003). The survey is given through Qualtrics Survey Software and is found using the Internet link below. The survey will take about **15 minutes** to complete. **Please complete the survey by April 19th, 2015.**

Your assistance is very valuable. Thank you for your time and attention.

Heather Hall, RN, BSN

Follow this link to the Survey:
${l://SurveyLink?d=Take the Survey}
Or copy and paste the URL below into your internet browser:
${l://SurveyURL}
Follow the link to opt out of future emails: ${l://OptOutLink?d=Click here to unsubscribe}

Appendix G

Participant Thank You Email

Researcher—Heather Hall
Contact Information: hlhall@cedarville.edu
March-April, 2015

Dear doctors,

Thank you very much for completing the survey and being willing to increase the knowledge of doctors' attitudes toward integrative medicine in Kenya. You will later receive an email with the results of survey once the study is completed.

Again, your time and attention are greatly appreciated!

Heather Hall, RN, BSN