Impact of Intrinsic and Extrinsic Factors on Nurses' Use of Hospital-Endorsed Complementary and Alternative Medicine Treatments

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Dedications

This work is dedicated, posthumously, to my parents and brother Jerry. Mom, you always wanted a doctor in the family, you now have one!

To my brother Frank, thank you for 'encouraging' me to take the college track in high school instead of home economics; you set the tone for the value of an education!

To my sons, Christopher and Brian, you have demonstrated unconditional love and support of me for which I am deeply grateful! To your wives, Bridget and Kate, thank you for your encouragement and care.

To my remaining family and friends, your understanding and backing of my quest is greatly appreciated.

To my six grandchildren, Cole, Annaliese, John, Siobhan, Finn, and Maura, this project is dedicated to you, with all of its passion. My gift to you is the appreciation of following your dreams and it is never too late to achieve your goals. The value of education is immeasurable and my vision for you is success, health, and happiness.

And to my husband Don, your belief in me has been my sustaining drive to realize my goal. You have been there for me during this entire process. You are the best! Your constant encouragement has uplifted me through the last few years. Thank you for your nourishment on this journey!

"You do not need to know precisely what is happening, or exactly where it is all going. What you need is to recognize the possibilities and challenges offered by the present moment, and to embrace them with courage, faith and hope." Thomas Merton

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Abstract

This mixed method, exploratory, sequential study investigated a convenience sample of nurses (n=142) educated in hospital-endorsed (Reiki and/or aromatherapy/guided imagery) complementary alternative medicine (CAM) modalities. Many hospitals, in response to consumer requests, have integrated CAM as services offered for patients. However, while many nurses are educated in CAM at the study site, the application of a CAM modality is not always integrated as part of the standard care of the patient, despite hospital policies and competencies to support the practice. The purpose of the study is to explore and describe the intrinsic personal factors (socio-demographics and nurses' attitudes and beliefs) and nurses' perception of patient receptivity to CAM, extrinsic situational factors (workload and peer support) and patient factors that influence nurses' continued use of hospital-endorsed CAM in a mid-Atlantic suburban hospital. Phase one of the study was two qualitative focus groups (n = 10) and the results of the focus group were used to inform the development of a survey, which was then pilot tested (n =3) using cognitive interviewing. Phase two of the study was the administration of the survey (n = 132). There was an 81.8% response rate for the surveys. Qualitative data was analyzed using grounded principles. There were four themes that emerged. Survey data was analyzed using a negative binomial regression model. Results showed that the continuation of CAM practices for patients was dependent upon the intrinsic variable, nurses' use of CAM for self-care. The extrinsic variables for peer support (have you received a treatment from a peer and/or have you give a treatment to a peer) were significant for nurses' use of CAM for self-care. The study offers practical steps for implications for nursing practice, education, and research.

Keywords: Complementary alternative medicine (CAM) and nurses, nurses' use and CAM, holistic care, nurses' attitudes and/or beliefs, barriers and CAM, health belief, nurses' decision-making, and pain medication/attitudes of nurses.

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CHAPTER 1: INTRODUCTION and OVERVIEW

1.1 Introduction and Specific Aims

Selected complementary alternative medicine (CAM) treatments are becoming more common during acute hospitalization as a function of patient demand and a means of reducing anxiety and improving patient satisfaction with their hospital stay (Shorofi & Arbon, 2010). To provide these services, many hospitals have either offered in-service education or required/recognized external certifications about CAM to ensure the competent delivery of the selected treatment. Among the professions providing these treatments are nurses. Qualified nurses can independently prescribe and deliver hospital-endorsed treatment to address the clinical needs of their patients, yet verbal communication indicate that there is a subpopulation of educated and qualified nurses who do not provide these treatments to their patients despite having the skills to deliver them and the likely patient benefit (Integrative Council members, personal communication, June 13, 2012). The integration of CAM treatment into hospital nursing care is relatively new, and there is a significant gap in our knowledge about what leads a portion of practitioners not to provide a potentially beneficial treatment or provide it at lesser or greater frequencies. It is not known if there is a correlation between personal factors and nurses' use of CAM. Also unknown is nurses' perceptions of patient acceptance or situational factors associated with continued use of CAM.

The overarching goal of this study is the elucidation of factors associated with nurse practice patterns of hospital-endorsed CAM treatments for patient care. The objective of this research project is to explore and describe factors that promote nurses use of CAM to meet patient needs and practice patterns of application of CAM.

The mixed-method study tested the hypothesis that the use and frequency of CAM treatments as part of independent nursing practice is associated with intrinsic nurse factors, situational factors, and professional assessment of a patient's receptivity to receive a hospital-endorsed CAM treatment. The targeted population is nurses who are educated in hospital-endorsed CAM, governed and supported by their nursing license, hospital policies, and competencies.

To address the study goals and hypotheses the following specific aims were examined.

Specific aim 1) Define the critical components of intrinsic and extrinsic factors that impact CAM practices. There were two focus groups of five to ten nurses practicing and educated in hospital-endorsed CAM program from a suburban hospital setting. The focus groups provided information and themes related to intrinsic (personal and patient related) and extrinsic (situational) factors that supported or were barriers to the prescription and delivery of CAM.

Specific aim 2) Characterize the relationship between intrinsic and extrinsic factors and the continuing use of CAM in nursing practice. The populations of nurses previously educated to provide hospital-endorsed CAM treatments were recruited to complete the survey, which was then analyzed.

1.2 Background

The theoretical core of nursing practice is caring and healing; nurses can therefore bridge the gap between traditional biomedical practices and the holistic philosophies using complementary and alternative medicine (CAM) (Avino, 2011). Some have speculated that CAM plays a leading role in twenty-first century healthcare (Shorofi &

Arbon, 2010). The growing use of CAM by consumers and healthcare workers, specifically nurses, has contributed to an increase in the integration of complementary treatments into mainstream healthcare hospital care (Shorofi & Arbon, 2010).

Hospitals, in today's environment, are businesses that compete for consumers. Increasingly, hospitals are hoping to gain consumers' interest in, and willingness to spend money on CAM treatments (Fenwick & Hutcheson, 2011). Some key reasons for offering CAM therapies are patient demand and reflecting organizational mission (Ananth, 2012). According to the World Health Organization (WHO), CAM is a growing health system, which has economic importance worldwide (World Health Organization, 2002).

In the United States, approximately 38 percent of adults (about four in ten) and 12 percent of children (about one in nine) are using some form of CAM (World Health Organization, 2002, para. 3). In 2010, a survey of hospitals' integration of CAM practices was mailed to 5,858 hospitals. Based on 714 responses, a response rate of 12 percent, 42 percent of the hospitals offered at least one CAM treatment. This represents a significant increase from a survey five years earlier when 27 percent of hospitals offered CAM treatments (Ananth, 2012). Although the poor response rate is a limitation of this estimate, hospitals realize the opportunity to attract patients and perhaps make money through out-of-pocket payments for CAM treatments. The most recent report from the National Center for Health Statistics reported $33.9 billion spent on CAM treatments in 2007.

The majority of current research investigates CAM from the patient perspective and does not address the factors that impact professional practice. Surveys typically

explore the type of CAM, how often used, and the demographics of the users. The attitudes and opinions of nurses towards CAM can influence their response to patients' enquiries regarding CAM (Shorofi & Arbon, 2010).

A patient population utilizing CAM treatments is cancer patients, as many of these patients utilize CAM to alleviate the side effects of radiation and chemotherapy (Arthur, Belliard, Hardin, Knecht, Chen & Montgomery, 2012). Another patient population that demonstrates a higher use of CAM is patients experiencing pain. Pain can be related to surgery (Shorofi, 2011) or chronic pain (NCCAM, n.d.). In the 2007 National Health Interview Survey, back pain was the most common condition cited as a reason for using CAM, followed by neck pain, joint pain/stiffness, and arthritis (Barnes, Bloom & Nahin, 2008).

Researchers and policy-makers seek to understand the cause of the growing popularity of CAM (Shorofi & Arbon, 2010). Research is emerging that indicates that the use of CAM may be a possible avenue for changing health behaviors (Williams-Piehota, Sirois, Bann, Isenberg, & Walsh, 2011). Nurses are uniquely positioned to answer questions regarding the efficacy of CAM and make recommendations. According to Williams-Piehota et al. (2011), the "role of CAM utilization for health behavior change is in its infancy" (p. 30). Further research is needed to determine what motivates people to maintain optimal health and how CAM treatments can be utilized to create motivation for health behavior change. One may presume that if the nurse offers, encourages the use of, educates patients in, and uses CAM as a treatment, then patients have a greater likelihood of benefiting from its health-promoting potential. Therefore, if this hypothesis is

supported then nurses who systematically apply CAM are the instrumental link to better patient outcomes that can be attributed to CAM.

The literature suggests that patients using CAM have a desire for a healthy lifestyle. Patients reported that their relationship with their CAM providers changed their perceptions of health and the patients took a greater responsibility for their health (Long, 2009). In a survey of patients using CAM (n = 216), respondents reported that sustained improvement for their presenting problem required self-care (77%) and making a health behavior change as a result of seeking treatment from a CAM provider (73%) (Williams-Piehota, et al., 2011).

Despite the evidence that the use of CAM may improve health behaviors (Williams-Piehota, et al., 2011) and the unique position of nurses, a recent evaluation of nursing practice patterns reveals significant heterogeneity in how often the independent nurse prescription of hospital-endorsed CAM interventions are given to patients. There is a dearth of knowledge about nurse characteristics, environmental influences, and their relationship to patient characteristics that influence the application of CAM treatments. Peer support (Kristiniak, 2011; Meghani et al., 2003) and workload (Antigoni & Dimitrios, 2009) are environmental influences reported in the peer-reviewed literature.

1.3 Problem Statement

An essential gap is our knowledge of the factors that contribute to the nurses' integration of CAM into patient care. The literature supports the positive effects of CAM. However, some nurses, who are educated and supported by their hospital, are not engaged in using CAM with their patients. Based on the review of the literature, it is postulated that continuation of CAM practice could be dependent on many specific

factors, both intrinsic and extrinsic. There may be personal factors such as belief system, or situational factors such as workload, that influence nurses' use of CAM. Searches in PubMed, PsychInfo, and Cumulative Index to Nursing and Allied Health Literature (CINAHL), from 2004 through 2014 in the extant literature of peer-reviewed journals reveal no studies to delineate what factors are associated with the continued use of CAM by nurses educated in a CAM therapy.

1.4 Importance and Goal

The overarching goal of this study is the elucidation of intrinsic and extrinsic factors associated with practice patterns of hospital-endorsed CAM treatments for patient care. The objective of this research project is to explore and describe factors that promote nurses' use of hospital-endorsed CAM to meet patient needs.

It is important to understand the factors that promote the nurses' continuation and integration of CAM with their patients. The general benefits attributed to CAM treatments during hospitalization are decreased pain, decreased nausea, decreased stress, and relaxation (Ananth, 2012; Wang, Sundt, Cutshall, & Bauer, 2010). Additionally, patient satisfaction is directly related to hospital compensation making the appropriate use of CAM treatments economically important. Nurses have the opportunity to educate or advise their patients, and have the education to offer the patient a CAM treatment.

The importance of this project is that it will contribute to our understanding of the factors associated with the continued use of CAM among a cohort of nurses in order to identify factors that are an obstacle to continued effective use of CAM in practice, and which may be modified.

1.5 Purpose

The purpose of the study is to explore and describe the intrinsic personal factors (socio-demographics and nurses' attitudes and beliefs) and nurses' perception of patient receptivity to CAM, extrinsic situational factors (workload and peer support) and patient factors that influence nurses' continued use of hospital-endorsed CAM in a mid-Atlantic suburban hospital (see Table 1). CAM is considered a low-risk, high-benefit treatment that when consistently applied can offer increased satisfaction to nurses and patients (Kristiniak, 2011; Kryak & Vitale, 2010). The National Center for Complementary and Alternative Medicine (NCCAM) depicts a growing interest in CAM treatments as these are noninvasive, not dependent on high-tech care, and inexpensive, and can promote holism in a caring-healing approach in patient care and self-care (Dossey & Keegan, 2009; Kryak & Vitale, 2011; NCCAM, 2005). There is anecdotal and emerging research literature that suggests that holistic practices have relevance in stressful health-care environments, such as hospitals (Gallob, 2003; Kryak & Vitale, 2011; Whelan & Wishnia, 2003). Professional nurses are at the forefront of both the integration of CAM into traditional health care practice and research (Kryak & Vitale, 2011).

Table 1

Variables and Measures

Variable	Measure
Intrinsic Factors: Socio-demographics	1. Age 2. Have you been educated in Reiki? 3. Have you been educated in Aromatherapy/Guided Imagery? 4. Education (Highest level) 5. Years as a nurse 6. Years (months) since Reiki education 7. Years (months) since aromatherapy/guided imagery education 8. Spirituality 9. Area of nursing practice 10. Work status (Relief, full-time, part-time) 11. Have you received any CAM treatments? 12. Has a family member received any CAM treatments? 13. Self-reported health status
Intrinsic Factors: Personal Factors	Nurses' Attitudes and Beliefs (CHBQ) Perceived Patient Receptivity
Extrinsic Factors: Situational Factors	Workload Peer Support

1.6 Specific Aims

The conceptual model of this study is seen in Figure 1. The specific aims of the study are:

Specific aim 1) Define intrinsic and extrinsic factors that impact CAM practices. To address these aims, two focus groups of five to ten nurses practicing and educated in a

hospital-endorsed CAM program from a suburban hospital setting will be conducted. The expected product from focus groups provides information and themes related to intrinsic (personal and patient related) and extrinsic (situational) factors that support or are barriers to the prescription and delivery of CAM.

Specific aim 2) Development of a survey to characterize the relationship between intrinsic and extrinsic factors and the continuing use of CAM in nursing practice. To address this aim the population of nurses previously educated to provide hospital-endorsed CAM treatments was recruited to complete the survey, which was analyzed to address the hypothesis.

Intrinsic factors are factors that originate from within the nurse. They comprise personal factors and perceived patient receptivity/patient factors. Personal factors are the socio-demographics of nurses and their attitudes and beliefs about CAM. Perceived patient receptivity/patient factors are the nurse's perception of patients' acceptance of CAM when offered as a treatment option. Intrinsic factors may be obstacles to or facilitators of continued use of CAM. Some intrinsic factors may be modifiable.

Extrinsic factors are factors that originate outside of the nurse and their control. These include situational factors such as workload and peer support. Some situational factors may act as obstacles to or facilitators of the nurses' continued use of CAM. Some situational factors may be modifiable.

Patterns of use, the continuation of CAM treatments following education, are modifiable. A nurse who has received additional education in CAM practices, such as, meditation, yoga, and others, may have higher application of CAM treatments. A CAM

nurse who has more experience in CAM, reflected in years since initial education, may have a higher application of CAM treatments.

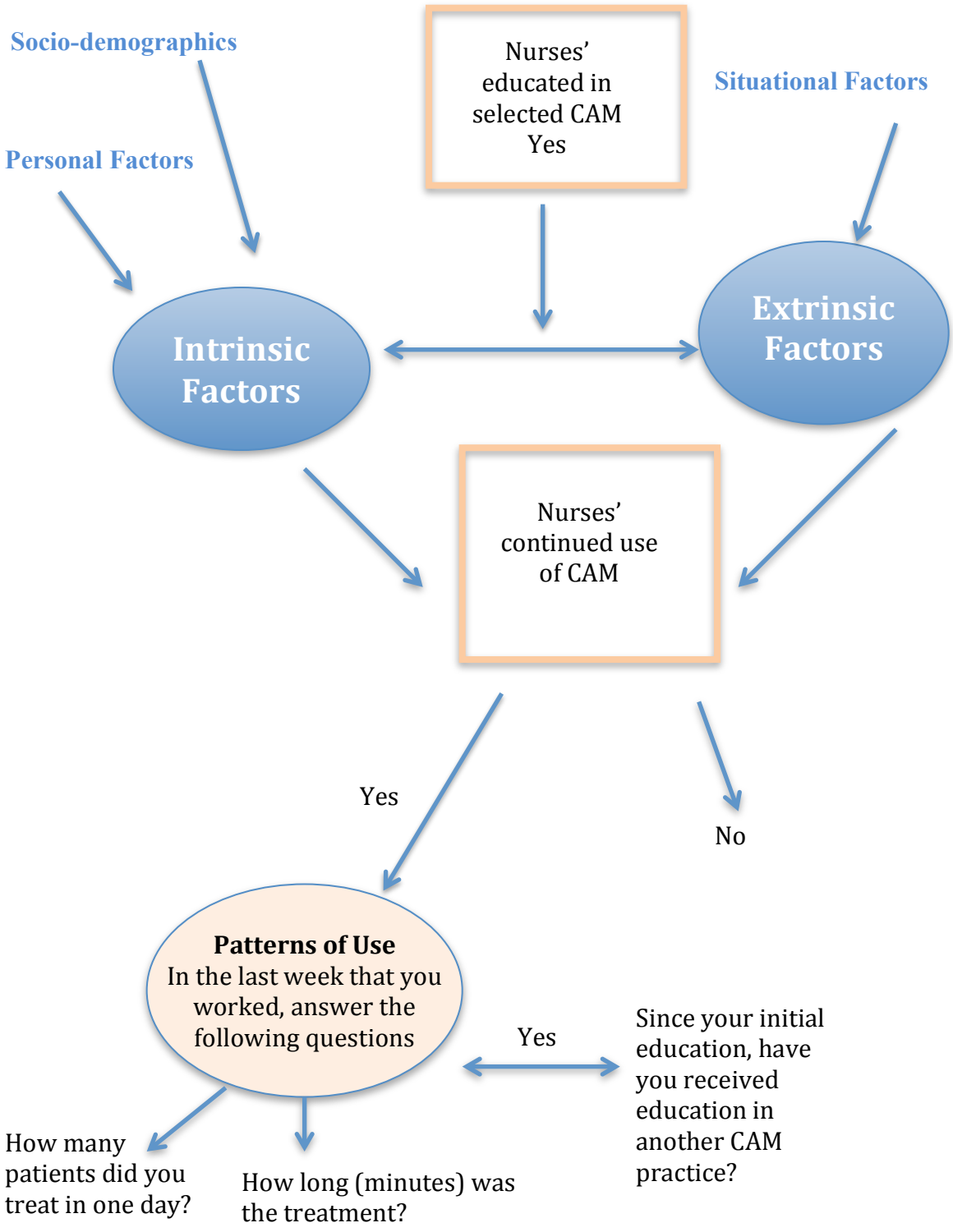

Figure 1. Conceptual map of variables

1.7 Research Hypotheses

To address the overarching goal, the following two hypotheses were evaluated in this research project.

Hypothesis #1: The continued use of CAM is associated with intrinsic factors of the CAM nurse as follows: H1a) nurses' attitudes and beliefs about health and healing will impact the frequency of their use of CAM with patients. Attitudes and beliefs will be measured using the CAM Health Belief Questionnaire (CHBQ) (Lie & Boker, 2004). H1b). Nurses with a higher level of belief in CAM (aggregate scores on the CHBQ) are more likely to use CAM with their patients.

Hypothesis #2: The continued use of CAM is influenced by extrinsic factors of the CAM nurse as follows: H2a). Nurses that have peer support for using CAM with their patients are more likely to practice CAM with their patients. H2b). Nurses that have peers using hospital-endorsed CAM treatments on their nursing units feel supported and more comfortable using the treatment. H2c). Nurses that have peers to discuss CAM are more likely to use CAM. H2d). Nurses that have peers who request their assistance for CAM treatments are more likely to use CAM. Peer support is an extrinsic factor that can encourage or create obstacles to the nurses' use of CAM.

1.8 Definition of Terms

The operational definitions of the following terms are used for this proposed study:

Extrinsic factors. Extrinsic factors are defined as the factors that are outside the nurses' control. Situational factors are extrinsic and related to nurses' workload and peer

support. Situational factors may influence the continuation of CAM by the nurse (Reiss, 2012).

Hospital-endorsed Complementary Alternative Medicine (CAM). Hospital-endorsed CAM is defined as two complementary treatments that are selected by the study site for education and integration in nursing care. The hospital-endorsed treatments are Reiki and aromatherapy/guided imagery.

Intrinsic factors. Intrinsic is most commonly defined as doing something for its own sake (Reiss, 2012). Intrinsic factors are the factors that originate from within the nurse. They comprise personal factors such as age, education (highest level), years as a nurse, years since Reiki and/or aromatherapy/guided imagery education, religion/faith, area of practice, any CAM treatments for stress or medical/surgical conditions, any family member receive CAM treatments for stress or medical/surgical conditions, and self-reported health status. Nurses' attitudes and beliefs are intrinsic factors that are measured using the CAM Health Belief Questionnaire (Lie & Boker, 2004). Nurses' perception of patient receptivity is an intrinsic factor.

Obstacles. Obstacles are any factor that can inhibit the nurse from continuing with CAM treatment for their patient (Kristiniak, 2011). Obstacles, to name a few, may be reported as time, workload, and need for peer support.

Patterns of use. Patterns of use are the continuation of CAM treatments by nurses educated in hospital-endorsed CAM. Treatments per month, as recorded on the survey, are the measure of patterns of use.

Peer support. Peer support is an extrinsic factor that may be modifiable. Peer support is defined as colleagues who are supportive of nurses' use of CAM.

Therapy (therapies). The literature interchanges the following words regarding CAM: therapy, modality, complementary, services and practices. This researcher utilizes the verbiage therapy (therapies) in referencing the form of CAM.

Treatment. Treatment is the application of CAM therapy.

1.9 Exemplar Model

This study explores multi-level (patient, nurse, and environment) factors that impact practice patterns of independent nursing CAM treatments within the hospital environment. There is dearth of knowledge about nursing clinical decision-making in providing CAM treatments by nurses in hospital setting which are endorsing these modalities and is the basis for this inquiry. Given this lack of information, the independent nursing decision-making in the application of pain control within the hospital setting provides an exemplar and support for the overarching goals of the study and its specific aims.

Decision-making is a complex multi-factorial process (Jasper, Elliott, & Koubel, 2011). Nurses are faced with decisions on a daily basis in their care of patients and their decision-making has an impact on their practice. This study draws on similarities in the literature between the administration or withholding of pain medication and administration or withholding of CAM. The exemplar model to frame this study aligns the nurses' knowledge and use of pain medication with knowledge and use of CAM.

Pain management decisions that nurses make are a closely related domain in which there are established frameworks or models. Latimer, Ritchie and Johnston's (2010) Knowledge Use in Pain Care (KUPC) provides an exemplar model for study design. KUPC was developed to provide a framework that is specific to the translation of

pain knowledge in the work context (Latimer et al., 2010). The KUPC model (see Figure 2) was conceptualized to "account for the complex circumstances surrounding nurse's knowledge uptake and use in the context of pain care" (Latimer et al., 2010, p. 274). The application of this model correlates to the nurse's knowledge of hospital-endorsed CAM treatments and the use of these CAM treatments with their patients (see Table 2.)

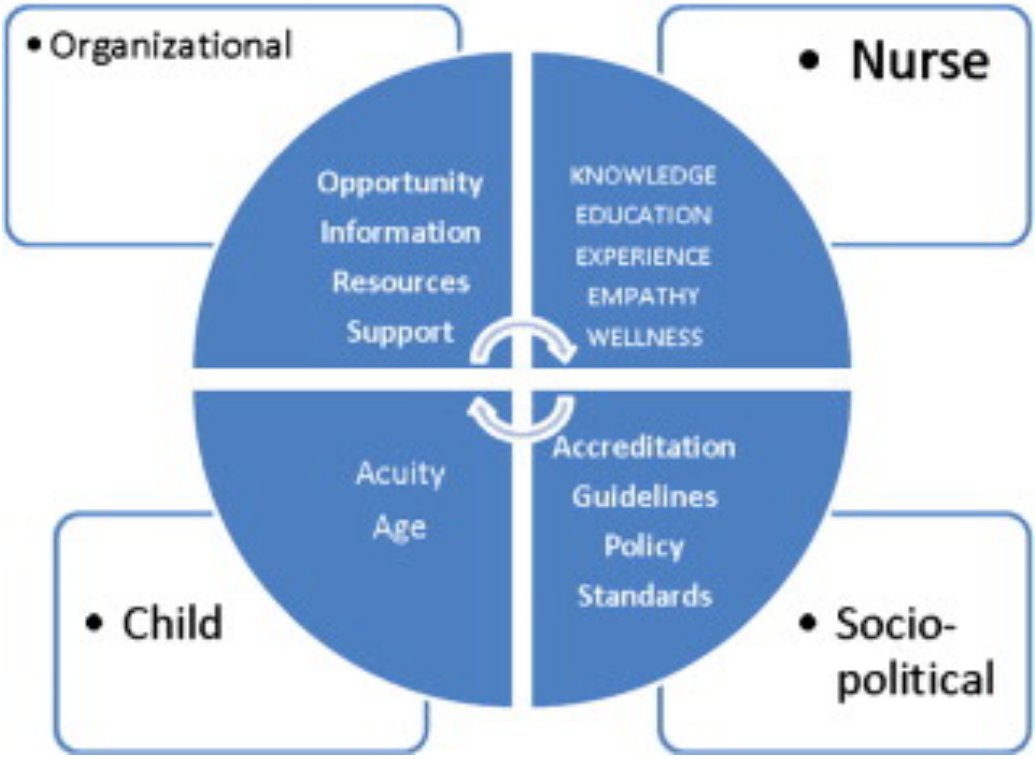

Figure 2. Display of Knowledge Use in Pain Control

(KUPC) Model From "Figure 1. KUPC model components" by M. Latimer, J. Ritchie, C. Johnson, 2010, Individual Nurse and Organizational Context Considerations for Better Knowledge Use in Pain Care, *Journal of Pediatric Nursing*, p. 275.

Table 2

Elements of the Knowledge Use in Pain Care Model and Application to Study

Factors	Key Tasks	Associated Activities	Application to Study
Organizational	Opportunity	Knowledge-enhancing opportunities Offered and accessible	Endorsed CAM practice classes are offered 1-2 times per month.
	Information	Exchange between nurse and physicians Exchange between nurse and leaders	Nurses integrating CAM are encouraged to email anecdotal experiences to co-chairs of Integrative council. These emails are shared with Chief Nursing Officer (CNO) and the AMH Board of Directors.
	Support	Autonomy to act on clinical judgment	Nurses are supported through hospital policies and competencies.
	Resources	Enough staff with enough expertise Available materials	The cost of aromatherapy oils and lotion is supported by the CNO budget.
Individual Nurse	Experience/education	Nurses with accurate (pain) knowledge	Individual nurse factors, such as education and work/CAM experience are intrinsic factors

	Critical Thinking	Nurse with critical thinking skills. Critical thinking dispositions are attributes of active thought processes filtered into an individual's belief system.	Nurses' assess their patients and make the decision to integrate CAM into their health care delivery. The nurses' attitudes and beliefs are a part of the critical thinking.
	Empathy	Nurse physically and mentally well and able to experience empathy (for pain)	Self-reported health status is reported in the socio-demographics. The use of treatments for personal (self) care is reported in socio-demographics.
Patient/Child	Acuity	High vs Low	Nurses' workload may act as an obstacle for the nurses' integration of CAM.
	Age	Developmental and verbal expression	Nurses' perception of patient receptivity (verbal expression or verbal cues) may be an obstacle for nurses' integration of CAM.
Sociopolitical		Policy statements Accreditation guidelines Professional associations External influences on the organizational structuring and care delivery.	Staffing, or nurse-to-patient ratios, is a potentially modifiable extrinsic factor that may influence the nurses' continued use of CAM.

Note. From "Individual Nurse and Organizational Context Considerations for Better Knowledge Use in Pain Care" by M. Latimer, J. Ritchie, C. Johnston, 2010, *Journal of Pediatric Nursing.*

The KUPC model links four components (organizational, nurse, child/patient, and sociopolitical) to the use of knowledge and positive work context to influence optimal pain care outcomes (Latimer et al., 2010) (see Figure 2.). The organizational context is derived from Kanter's (1993) Structural Theory of Organizational Behavior using concepts of power and opportunity. Employees are considered to have power if they have access to opportunity, information, support and resources at work (Latimer et al., 2010). The nurses at the study site are empowered through hospital-endorsed CAM education, provision of aromatherapy oils, and institutional support to integrate treatments in patient care delivery.

The second KUPC component is the individual nurse and their characteristics that may predict better pain care practices (Latimer et al., 2010). Factors specific to the nurse are educational preparation, critical thinking, disposition, knowledge, years of experience, and empathy for patient pain and mental/physical wellness (Latimer et al., 2010). These factors correlate to the intrinsic factors, socio-demographics and nurses' attitudes and beliefs about CAM. Nurses are educated in hospital-endorsed CAM, and taught the benefits of CAM. They are directed by policies and competencies along with documentation guidelines. Nurses who are educated in hospital-endorsed CAM are prepared to asses their patients, utilize critical thinking, and apply CAM treatments to improve patient pain and/or mental/physical wellness.

The third KUPC factor is child or patient characteristics (Latimer et al., 2010). This factor is important in determining whether knowledge use changes with patient characteristics, such as patient age or severity of illness. This factor correlates to the

nurses' perception of the patient's receptivity to CAM. Nurses may be less inclined to integrate CAM based on illness, or the nurses' perception of patients' receptivity.

The fourth KUPC factor is the sociopolitical context, which identifies the external elements believed to impact organizational structure and practice decisions (Latimer, Ritchie, & Johnston, 2010). CAM treatments are within the scope of nursing practice (Kristiniak, 2011; Shanahan, 2005) and there are growing numbers of patients using CAM (Ferrares et al., 2013). In a 2011 visit at the study site by The Joint Commission (TJC), the surveyors were impressed with the pain management offerings of Reiki and/or aromatherapy/guided imagery (S. Kristiniak, personal communication, November 16, 2011). CAM practitioners are educated regarding scope of practice, hospital policies and competencies in support of their CAM practice.

The KUPC provides a framework for nurses' use of knowledge in pain management. The framework links the four components: organizational, nurse, child/patient, and sociopolitical. This is an exemplar model as the use of hospital-endorsed CAM treatments is examined in a cohort of nurses who are educated, have hospital support, policies/competencies, patient availability, and a sociopolitical environment that is shifting paradigms to health promotion.

1.10 Significance of Study

A growing body of literature has documented the links between CAM and positive health behaviors (Williams-Piehota et al., 2011). Nurses who are CAM users are in an ideal position to educate and encourage their patients on CAM treatments to effect health behavior change in the patient. This can occur directly through the patient-provider relationship or indirectly through the administration of a CAM treatment by the nurse.

Nurses who use CAM for personal (self) care are more likely to engage in health promotion and disease prevention (Williams-Piehota et al., 2011).

This study specifically contributes to our understanding of the intrinsic and extrinsic factors associated with nurses' continuing CAM with patients in a hospital that supports CAM education and use. The data collected can be used to inform Abington Memorial Hospital (AMH) administration of any obstacles, the addressing of which could help nurses to continue using CAM with their patients. The data, while specific to the AMH population of CAM educated nurses, may help other institutions as they start to implement their CAM treatment programs.

1.11 Summary

The integration of complementary treatments into nurses' practice can enhance patient and nurses' satisfaction. CAM use has been associated with increased relaxation (Buettner, Kroenke, Phillips, Davis, Eisenberg, & Holmes, 2006; Myers, Jacobsen, & Huang, 2008) and satisfaction (Arthur et al., 2012) among cancer patients. Cancer patients endure difficult treatments involving radiation and chemotherapy; CAM can mitigate some of the side effects, improving compliance and quality of life. With the aging population, cancer treatments may be on the rise, which makes CAM, and the facilitation of treatments by the nurse, vitally important.

CAM treatments are within the scope of the nurses' practice, and there are policies and competencies in place at the study site. Professional development, in the form of holistic caring experiences, can provide a low-cost, positive scenario for both patient and nurse. This proposed study might discover factors that are easily modifiable to promote the continued use of CAM by nurses for patients.

At the proposed study site, nurses educated in hospital-endorsed CAM were initially enthusiastic about their new skill, and many shared their excitement with their colleagues. However, some nurses have stopped using CAM clinically with their patients; and some never integrated CAM into their nursing practice. At this point, it is unclear who has continued CAM or integrated CAM into patient care. What remain unknown are the factors, intrinsic and/or extrinsic, that may be modifiable to promote the nurses' continued use of CAM.

Chapter 2 includes a description of the literature pertaining to the historical and current state of CAM practice among professional nurses. In order to fully understand the phenomenon of acceptance of and continuation of CAM practices after education classes, one must understand the state of the science and literature on the following variables: acceptance of CAM, situational factors, and the patterns of use of CAM.

CHAPTER 2: LITERATURE REVIEW

The purpose of this study is to explore and describe the intrinsic factors (personal, such as socio-demographics, nurses' attitudes and beliefs, and perceived patient receptivity), extrinsic factors (situational, such as workload and peer support), and patterns of use that influence nurses' continued practice of CAM. The integration of complementary treatments into nursing represents a cultural shift from biomedical to holistic practices. The state of the science was examined with respect to the following key concepts: a) CAM; b) nurses' use of CAM; and c) patients' acceptance of CAM. The literature was reviewed for the study variables of: a) socio-demographics, b) perceived patient receptivity, and c) situational factors (workload and peer support); and their relationship with CAM practices in nurses for patient use. The exploration of the literature includes an examination of nurses' decision-making.

2.1 Literature Review Model

The model used to report the literature review is historical and thematic (Roberts, 2010). The historical review includes CAM, CAM in hospitals, and nursing and patient satisfaction with CAM. The thematic model is a review of the current literature, and categorizes it into themes as follows: nurses' use of CAM (personal use or patient care); nurses' knowledge, attitude and beliefs; and then a literature review of the study variables. These variables are personal factors (socio-demographics, nurses' attitudes and beliefs); perceived patient receptivity (nurses' perception of patient acceptance); and situational factors (workload, peer support).

Process for conducting literature search. The review begins with the titles search terms and databases utilized. The numbers of articles found are reported. All

articles were written in English. Articles published between 2000 and 2013 were examined. The literature review consisted of the review of books, peer-reviewed journal articles, published reports and research studies. Sources included the university library, peer-reviewed journals and the worldwide web.

Title search. The keywords for title search were complementary and alternative medicine and nurses, nurses' use and complementary and alternative medicine, holistic care, nurses' attitudes and/or beliefs, barriers and CAM, health belief, nurses' decision-making, and pain medication/attitudes of nurses.

Multiple database resources were explored for the literature review, including CINAHL, Medline, PsychINFO, PubMed, ProQuest, Elsevier, Cochrane Database, and Journal/Author Name Estimator (JANE) between inception of the database and 2013. The breakdown of literature sources included ten books, 64 peer-reviewed research articles, and popular articles. A total of three articles were from professional organization websites. Approximately 32 of the references were published since 2007. The review includes dialogue with Susan Kristiniak, DHA and Karen Avino, EdD, regarding their dissertation works in complementary and alternative medicine. The literature review in the current chapter provides an overview of the historical and current research findings.

2.2 Pain Medication: Clinical Decision-Making as an Exemplar to Exploring Nursing CAM Application

Clinical decision-making may be defined as choosing between alternatives (Thompson & Dowding, 2002). Nurses undertake clinical decision-making on a daily basis. They must continually make judgments about the care they provide to, or withhold

from, patients. The process of clinical decision-making becomes easier and more manageable as nurses become more experienced as care providers (Banning, 2007).

Some decisions are intuitive and based on repeated experiences, which we have integrated into a span of knowledge that we can access at will, without even being aware of it (Jasper et al., 2011). Other decisions are more analytical and require us to connect consciously. This requires deliberative cognitive engagement to reach the point of resolution that can be construed as our decision. Professional decision-making has an added element, in that the "decisions made may be open to scrutiny by a range of people, including patients, colleagues, other professional staff, or the public" (Jasper et al., 2011, p. 111). Additionally, professional decision-making is subject to legal and ethical frameworks.

Effective pain management remains an elusive goal within the profession of nursing, and while improvement has occurred, patients continue to experience inappropriate levels of pain (Brockopp et al., 2004). A patient's experience of pain is a multifaceted situation that obliges nurses to analyze a number of pieces of information in order to make treatment decisions (Brockopp et al., 2004). Preconceived notions about patients' behaviors, diagnoses, and personalities can impact the nurse's decision-making and prevent patients from receiving effective treatment for their pain (Brockopp et al., 2004).

There are many barriers to nurses exercising their pain management roles effectively. For instance, nurses may give patients lower and less frequent doses of opioids because of fears that they will cause harm to patients (Pasero & McCaffery, 2002) by potentially triggering respiratory depression or addiction. Open-ended physician

orders, such as as-needed dosing, are an additional barrier to effective nurse decision-making about pain relief (Gordon, Dahl, Phillips, Fransden, Cowley, & Foster, 2004), because as-needed strategies rely on patients requesting pain relief.

Kwekkeboom, Bumpus, Wanta, and Serlin (2008) investigated oncology nurses' use of four non-drug interventions for pain and identification of factors that influence their use in practice. There was a national sample of 724 oncology nurses that completed a survey regarding use of nondrug interventions in practice, beliefs about the interventions, and demographic characteristics. The percentages of nurses who reported administering the strategies in practice were 54 percent for music, 40 percent for guided imagery, 82 percent for relaxation, and 80 percent for distraction (Kwekkeboom et al., 2008). A composite score predicted use of each non-drug intervention on the basis of beliefs about the effectiveness of the intervention (e.g., perceived benefit; $X^2 = 14.62$, $P < 0.025$) and a composite score on beliefs about support for carrying out the intervention (e.g., time; $X^2 = 116.40$, $P < 0.025$). In addition, a composite score predicted use of guided imagery on beliefs about the characteristics of patients who may benefit from the intervention (e.g., cognitive ability; $X^2 = 5.44$, $P < 0.05$). Some nurse demographic, professional preparation, and practice environment characteristics also predicted use of individual non-drug interventions (Kwekkeboom et al., 2008).

Anderson, Hill, and Al-Shaer (2011) investigated 129 RNs from ten separate nursing units in a Midwestern metropolitan hospital for their knowledge of and attitudes regarding pain assessment and intervention. The purpose of the study was to determine nurses' knowledge regarding pain assessment and management, and to identify relationships that exist between selected demographic information and nurses'

knowledge. The findings suggested that the attitude of the nurse has an impact on pain management. Given that pain is a subjective experience, nurses "must refrain from basing pain management assessment and interventions on personal beliefs and judgments" (Anderson et al., 2011, p. 7).

Studies on nurses' decision-making and administration of pain medication have similarities to the CAM literature and nurses integration of treatments in their delivery of care. It appears that the administration or withholding of pain medication may follow a similar process in CAM treatment, which can be influenced by nurses' knowledge, attitudes, beliefs, and preconceived notions about the patient's behaviors/personalities (nurses' perception of patient receptivity). Therefore, Knowledge Use in Pain Care (KUPC) (Latimer et al., 2010) is an exemplar model for this study, and supports the foci of intrinsic (personal, such as socio-demographics, nurses' attitudes and beliefs, and perceived patient receptivity), extrinsic (situational, such as workload and peer support) and patterns of use that influence nurses' continued practice of CAM

2.3 Historical Overview of CAM Treatment

Complementary Alternative Medicine (CAM). Complementary treatments may offer nurses an opportunity to enhance their scope of practice and support reengagement of the nurse-patient relationship. The National Center for Complementary and Alternative Medicine (NCCAM) was formed in 1999 in response to the increase in consumer use of CAM treatments (NCCAM, 2008). NCCAM, under the National Institute of Health (NIH), was a leader in the recognition of current practices of complementary treatments in the United States.

The mission of NCCAM is to define, through rigorous scientific investigation, the usefulness and safety of complementary health approaches and their roles in improving health care. NCCAM's vision is that scientific evidence will inform decision-making by the public, by health-care professionals, and by health policymakers regarding the use and integration of complementary health approaches (NCCAM, 2008).

CAM was defined as "healthcare practices that are not an integral part of conventional medicine" (NCCAM, 2008). The CAM treatments were categorized in two major domains: natural products and mind and body practices. Natural products are biological-based treatments, such as vitamins, minerals, fatty acids, prebiotics, dietary supplements, aromatherapy, and botanicals (NCCAM, 2009b).

Mind-body therapies focus on the interaction of the brain, mind, body, and behavior. The interaction of the bio-psychosocial factors can directly affect health (NCCAM, 2008). The focus of mind-body therapies is an intervention to reduce stress for the promotion of health and wellness. Some of the interventions include relaxation, hypnosis, guided imagery, meditation, yoga*, tai chi, qi gong*, biofeedback, group support, cognitive-behavioral therapies, and spirituality.

CAM use in hospitals. According to a recent report by the American Hospital Association (AHA), more hospitals than ever are now offering CAM treatments integrated with traditional medical care (Ananth, 2012; Fenwick & Hutcheson, 2011). Hospitals are responding to the needs and requests of the patients in their community, as more patients demand the options provided by CAM. A 42-question survey of 5,838 hospitals in the United States in early 2010 received 714 responses, a 12 percent response rate, and found an increase in the percentage of hospitals using CAM. Of the hospitals

that responded, 42 percent offered CAM, up from 37 percent in 2007 (Anath, 2012). According to Dr. Ian Morrison, an internationally known author, consultant and futurist specializing in long-term forecasting and planning, “hospitals are recognizing that many of their patients see CAM as an integral part of managing their health, illness and recovery and smart leaders will figure how to integrate these services to broaden their appeal” (Ananth, 2012, para 6). The most common CAM treatments offered on an outpatient basis are massage therapy (64 percent), acupuncture (42 percent), and guided imagery (32 percent); the most popular inpatient offerings are pet therapy (51 percent), massage therapy (44 percent), and music/art therapy (37 percent). Key reasons for offering CAM therapies were patient demand (85 percent), clinical effectiveness (70 percent), and reflecting organizational mission (58 percent). Hospitals rely on patient demand (78 percent) in their decisions of what CAM treatments to offer; ranked next were evidence basis (74 percent), and practitioner availability (58 percent) (Ananth, 2012). Hospitals report startup costs below $200,000 for their CAM programs and 41 percent characterized their programs as breaking even (Ananth, 2012). For the hospitals not breaking even, 68 percent stated that they never expected to break even and that the programs were viewed as part of their organizational mission or the programs were developed in an effort to attract patients (Ananth, 2012). The predominant mode of payment for CAM services is patient self-pay (69 percent), which does form a barrier to access (Ananth, 2012). The metric of choice in the evaluation of CAM services is patient satisfaction (85 percent), followed by volume (57 percent). A weakness of hospital CAM efforts is outcomes research; only 42 percent are conducting any outcomes assessments (Ananth, 2012).

Wang et al. (2010) investigated the use of massage therapy in the Mayo Clinic to reduce pain, anxiety and tension following cardiac surgery. The favorable findings of a pilot study led to a randomized study of massage therapy or quiet time control on postoperative day 2 and 4 of 113 patients. Again, pain, anxiety and tension all improved significantly ($P < 0.001$) in the massage group compared with the control group (Wang et al., 2010). Based on the positive findings in both studies, the Mayo Clinic has incorporated massage therapy in other surgery departments (Wang et al., 2010).

While many hospitals are now offering CAM as part of their services, there still remains a paucity of literature on the efficacy of the programs. According to the literature, most programs were initiated in response to consumer demand and are offered for the outpatient population; few hospitals provide CAM for inpatients. The CAM services offered vary according to the institution.

2.4 Current Research

Nurses' use of CAM. In general, nurses accept CAM therapies; however, the majority of practicing nurses are not using CAM for patient care, citing a lack of knowledge, and institutional support (Chu & Wallis, 2007; Cooke, Mitchell, Tiralongo, & Murfield, 2012; Shorofi & Arbon, 2010; Smith & Wu, 2012). It is only in the past 10 years that faculty at nursing and medical schools have begun introducing CAM therapies into their curriculum, which means that there is a large cohort of practitioners who lack education in CAM (Avino, 2011).

Vitale (2009) explored the lived experience of nurses who practice Reiki for personal use. Interviews were conducted with nurses using open-ended questions to understand their perception of Reiki use for self-treatment. Themes emerged around the

topics of stress management, self-healing, spirituality, and the interconnectedness of self, others, and beyond. It was evident that the nurses in this investigation "value holistic practice and that the experience with self-Reiki includes a heightened consciousness of their mental, emotional, and spiritual being as well as their physical bodies" (Vitale, 2009, p. 140).

Kristiniak (2011) examined the experiences of nurses using complementary therapies for their patients in a qualitative phenomenological study. The lived experience of nurses practicing CAM treatments was explored to determine if their perceived scope of care is satisfying to their professional practice. Data collected were demographics, Complementary Nurses' Perception Interview Guide, and one-to-one tape-recorded interviews. The results demonstrated fulfillment in their role as a nurse after using complementary treatments with their patients.

Johnson, Ward, Knutson, and Sendelbach (2012) examined the personal use of CAM among U.S. health-care workers. A nationally representative sample of employed adults (n = 14,329), including a subsample of (n = 1,280) employed in hospitals or ambulatory care settings were surveyed. The findings showed health-care workers are more likely than the general population to use CAM. This study provided the first population-based description of CAM use by U.S. health-care workers. The findings were consistent with other studies of CAM use in narrowly defined health-care worker populations: 63 percent (n = 202) of nurse practitioners in Connecticut (Hayes & Alexander, 2000) reported use of CAM, while 96 percent (n = 726) of critical care nurses across the U.S. had personal experience of CAM (Lindquist, Tracy & Savik, 2003).

Studies have shown a correlation between the personal use of CAM and integration of the practice in the healthcare setting. Tracy et al. (2005) demonstrated a strong correlation between personal use of specific CAM treatments among critical care nurses and the use of those same CAM treatments in nursing practice. The personal use of CAM by healthcare workers may be a factor in the drive to integrate CAM into hospital-based care (Johnson et al., 2011; Mann, Gaylord, & Norton, 2004; Winnick, 2005).

Nurses' knowledge, attitudes and beliefs about CAM. Nurses are in a strategic position to educate their patients about evidence-based practices, and patients trust and rely on information given by a nurse (Shorofi & Arbon, 2010). There are studies investigating nurses' attitudes and beliefs about CAM, the majority of them done in countries other than the U.S. (Chu & Wallis, 2007; Cooke et al., 2012; Shorofi & Arbon, 2010; Smith & Wu, 2012).

Shorofi and Arbon (2010) investigated nurses' knowledge, attitudes, and professional use of CAM in five metropolitan hospitals in Adelaide, Australia. A five-page questionnaire was distributed to medical-surgical nurses. The findings showed that nurses (n = 322) believe that they have insufficient knowledge of CAM but are open to its use in the hospital context. Results demonstrated almost 50% of nurses were using CAM with patients, 59% of nurses were positive about CAM, and more than 60% had very little or no knowledge of CAM (Shorofi & Arbon, 2010). There was a positive association between nurses' knowledge and attitudes and their use of CAM with patients (Shorofi & Arbon, 2010).

Smith and Wu (2012) used an exploratory, descriptive, qualitative approach to

investigate nurses' beliefs, experiences and practice regarding CAM. Data were collected from registered nurses in Taiwan using in-depth, semi-structured interviews, field notes and memos. Very few nurses in Taiwan (n = 11) integrate CAM into their daily practice with patients on account of organizational policies and their personal knowledge base. Data showed three major categories emerging from the interviews: a lack of clear definition of CAM; limited experience; and high interest towards CAM (Smith & Wu, 2012). Limited experience was further categorized as the internal factor of limited knowledge and external factor of lack of time (Smith & Wu, 2012).

Cooke et al. (2012) investigated Australian critical care nurses' assessment practices, attitudes, knowledge, and use of complementary and alternative medicine in practice. A descriptive, exploratory online survey of Australian critical care nurses was undertaken in early 2011 through a national critical-care nursing database. Critical care nurses (n = 379) identified a need for increased knowledge and understanding. Lack of staff training (91.8%) and lack of knowledge regarding appropriateness of CAM therapies (89.8%) were identified as barriers. The majority of critical care nurses considered CAM therapies to be helpful for: stress (93.4%); anxiety (93.1%); restlessness (89.4%); pain/discomfort (89.1%); insomnia (87.6%); back pain (86.8%); and headaches (85.2%) (Cooke et al., 2012). Openness to the utilization of CAM therapies in their critical care practice was reported at 90.6%.

Cuttshall and colleagues (2010) investigated the knowledge about, attitudes toward, and use of CAM by Clinical Nurse Specialists (CNSs) in a large Midwest medical center in the U.S. This study utilized a descriptive exploratory correlational design. CNSs who worked in various inpatient or outpatient settings at the medical

center were surveyed electronically in the fall of 2008. The results demonstrated that CNSs (n = 76) use several CAM treatments at this medical center for their personal use and professional practice with patients. The following barriers were identified: lack of available providers/practitioners, 65%; lack of training, 57%; lack of institutional support, 53%; lack of knowledge, 47%; inadequate time, 47%; not aware of resources, 39%; lack of space and equipment, 39%; and lack of physician support, 33%. The results indicated that most CNSs thought CAM treatments were beneficial and that there was evidence for the use of these treatments by patients or CNSs.

Rojas-Cooley and Grant (2009) administered a survey to a random sample of 850 oncology nurses. This was a descriptive, cross-sectional study that demonstrated that nurses believe that CAM knowledge is necessary to help support and advocate for patients. This study provided the foundation for a CAM educational program for oncology nurses (Rojas-Cooley & Grant, 2009). The total CAM knowledge group mean score was 70%. The mean scores for attitudes were assessed within three subscales: beliefs (scores varied 5.47 to a high of 7.66), practice (scores varied between 3.10 and 3.95), and role (scores varied from 0.63 to 1.28). Role was evaluated using familiarity with the position statement for oncology nurse specialists (Rojas-Cooley & Grant, 2009).

Nursing faculty (n = 29) and students (n = 21) in the state of Delaware were surveyed by Avino (2011) to examine the knowledge, attitudes, and practices related to CAM. The descriptive study design used a survey tool, Complementary and Alternative Survey of Knowledge and Attitudes of Health Professions Students (or Faculty) from the University of Minnesota's Academic Health Center (University of Minnesota, Center for Spirituality and Health, 2002). The findings were significant for the need of education

for instructors and students.

A descriptive, qualitative approach was used to investigate the attitudes of nurses (n = 18) in the Rocky Mountain area regarding CAM (McDowell & Burman, 2004). The major themes that emerged were: lack of congruence between beliefs/experiences and professional practice; powerlessness; lack of professional relevance; lack of a clear definition of CAM; and lack of knowledge regarding CAM. The findings revealed a cautious acceptance of CAM (McDowell & Burman, 2004).

Osborn, Baxter, Barlas, and Barlow (2004) investigated the current use and perceptions of CAM among 192 rheumatology nurses in England. Over half (n = 84) had received at least one form of CAM treatment. Results of the study showed that nurses who received CAM might be more likely to provide advice to patients about CAM compared to the respondents who had not received CAM treatments (Osborn et al., 2004). CAM, principally aromatherapy, massage, and reflexology was provided by 8.3 % of the respondents. Over half of the respondents (51.6%) provided advice to patients and perceptions of the benefits of CAM were 89.8% positive.

Studies to date have investigated the nurses' knowledge, attitude and beliefs about CAM using a descriptive survey design, although some have taken a qualitative approach. Most studies have been with a cohort of nurses residing outside of the U.S. Aside from Kristiniak (2011), there were no studies found on the use of CAM by nurses who have been educated in hospital-endorsed CAM treatments in a hospital setting.

Patient and nurse satisfaction with CAM. Hospitals typically view CAM as part of their mission to address mind, body and spiritual issues. Eighty-six percent (n = 714) of hospitals assess the success of their CAM programs by patient satisfaction reports

(Fenwick & Hutcheson, 2011). Many nurses find the ability to offer holistic treatments, a whole-person, patient-centered approach, very rewarding. For example, Valley Hospital in Ridgewood, New Jersey trains every nurse on staff in a groundwork of CAM techniques, which includes bodywork therapy, aromatherapy, visualization, and meditation. Nurses started offering these therapies at no cost to the patient in 2002 (Wood, 2013). The patients and nurses have embraced these therapies. CAM can build customer loyalty and help with nurse recruitment and retention (Wood, 2013).

Patient satisfaction. There are many anecdotal articles and studies by CAM practitioners reporting patient satisfaction with CAM. In a national study in 1997, patients reported that they were satisfied with CAM because they found the health-care alternatives more congruent with their own values, beliefs, and philosophical orientations toward health and life (Astin, 1998).

CAM treatments are increasingly practiced in the general population, with an estimated 30 percent of patients with chronic disease using CAM on a regular basis (Ulrich et al., 2011). Many studies investigating a specific patient diagnosis group reported that satisfaction with CAM is related to the improved communication with the provider, and not the treatment itself (Bradley et al., 2011; Ulrich et al., 2011).

CAM in hospital settings has increased, suggesting a growing interest in individualized therapies by consumer requests (Ferrares et al., 2013). In a survey of cardiovascular patients (n = 1055), 48 percent were interested in participating in a clinical trial of an alternative treatment (Prasad et al., 2013). In a survey of 416 patients, the majority of patients in primary care want a general practitioner who listens, asks the patients about CAM and refers or collaborates with CAM practitioners (Jong, van de

Vijver, Busch, Fritsma, & Seldenrijk, 2012).

These studies on patient satisfaction are relevant to this research project because patient satisfaction is of utmost importance to hospitals in today's healthcare environment. Hospitals have evolved over the years into businesses, and attracting patients to use their services is of prime significance. As more patients use CAM, the patient expectation will be for hospitals and staff to become knowledgeable and to offer CAM treatments. This research project investigated nurses' use of hospital-endorsed CAM treatments and uncovered factors that may be modifiable and increase CAM integration by nurses, which has the potential to increase patient satisfaction.

Nurse satisfaction. Using a CAM treatment in lieu of medication for pain or nausea creates a sense of pride and accomplishment for the nurse. According to Aiken (2005), nurses' integration of CAM with patient care delivery may improve nurse satisfaction.

Patient care delivery by the nurse has changed from bathing, feeding, and hands-on touch to a technological focus of monitors, computers, and probes (Watson, 2009). This shift can lead to nursing dissatisfaction and stress (Archibald, 2006). Common themes of nursing dissatisfaction are lack of patient contact and the inability to provide care according to patients' needs (Kristiniak, 2011). The integration of hands-on CAM practices can mitigate nurses' dissatisfaction with their current practice (Kristiniak, 2011). Adams (2006) suggests that nurse-midwives feel that CAM gives them an increased sense of autonomy.

Nurses' satisfaction with their nursing practice is relevant to this project. There is a large cohort of nurses' educated in hospital-endorsed CAM, and its' use can enhance

their satisfaction with their practice by modifying any obstacles to its continuation of CAM practice (Kristiniak, 2011).

2.5 Variables

Personal factors: Socio-demographics and nurses' attitudes and beliefs. It appears that the holistic nurses' belief in each person's ability to heal their body fosters the willingness to use CAM with others. From previous surveys, we know that certain demographics are more likely to use CAM. Some of these demographics are: age, sex, race, ethnicity, and religion (Cherniack et al., 2008). Based on an extensive search of the extant peer-reviewed literature from 2004 to present, no studies have examined the correlation between acceptance of CAM and nurses' personal factors.

Astin (1998) evaluated common characteristics among the adult population who use CAM therapies. Predictors for CAM use included: higher education; poor health status; history of transformational experience that altered a person's worldview; seeking control over their illness; and identification with a cultural group with interests in spirituality and personal growth (Astin, 1998). Palinkas and Kabongo (2000) reported that CAM users (n = 542 primary care patients) perceived their health as worse than that of others in their age group.

There is a paucity of literature exploring the biomedical and psychosocial correlates of CAM use. However, describing the relationships between health and illness experiences and CAM is important in understanding why adults choose to use alternative therapies (Littlewood & Vanable, 2008). Berman and Strauss (2004) suggested that a driving force in the use of CAM therapies is the belief that the intervention works and can

make a difference. The majority of faculty (80 percent) and students (80 percent) reported in Avino (2011) that they would consider or have already used CAM personally.

Johannessen (2011) investigated Scandinavian nurses (n = 18) using a qualitative design to determine the realization and development of self in CAM nurses and CAM treatment. The themes that emerged were: to work with CAM allows for self-development in nurses; the nurses' own experience of being sick promotes self-development; CAM nurses help people to see their illness as an opportunity for self-development; and development of self as therapy (Johannessen, 2011).

Wong, Toh and Hong (2010) surveyed doctors, registered nurses, physiotherapists and occupational therapists (n = 993) in a hospital in Tokyo, Japan. Most referrals to CAM were made because their patients believed in it. The key reasons for referral were: patient preference (58 percent); efficacy of CAM for specific conditions (39 percent); and when other treatments were unsuccessful (22 percent) (Wong et al., 2010).

Nurses' socio-demographics, along with their attitudes and beliefs, are relevant variables in this research project. Nurses that practice CAM for personal use may have a perspective that is open to a holistic viewpoint of health and healing. This holistic viewpoint is the foundation of the practice of nursing and lends itself to a caring, healing environment.

Perceived patient receptivity: Nurses' perception of patient acceptance. There are no studies that have examined nurses' perceptions of patient receptivity to CAM. A nurse who approaches a patient to use a CAM treatment must be skilled in her knowledge and technique, and needs the verbal skills to explain the treatment in words that the patient can understand.

Shorofi (2011) studied frequency and patterns of CAM use, reasons for CAM use, preferences of CAM during hospitalizations and the association between patients' socio-demographic variables in Australia. Surgical in-patients were the highest users of CAM in the study site.

The nurses' perception of patient receptivity may be a key variable in their comfort level with offering a CAM treatment. While many consumers are using CAM, large portions are not sharing that information with their health-care providers. Some nurses may be reticent in offering a treatment if they are unsure of the patient's interest. There were no studies identified in a search that investigated nurse biases in offering CAM treatments.

Situational factors: Workload, peer support. The integration of CAM into nursing represents a change in culture and practice. Many studies, especially in European countries, cite educational needs and lack of institutional support as barriers (Chu & Wallis, 2007; Cooke et al., 2012; Shorofi & Arbon, 2010; Smith & Wu, 2012). Nurses, in these same studies, reported an interest in using CAM for their patients. Antigoni and Dimitrios (2009) identified workloads and staffing ratios as inhibiting CAM therapies.

Meghani, Lindquist, and Tracy's (2003) descriptive, correlational study explored critical care nurses' desire to use CAM and to identify existing barriers. Of the respondents, 63 percent (n = 348) reported openness to CAM; however, the barriers to its implementation were identified as lack of time, knowledge and staff education, lack of credentialed providers and equipment, and reluctance on the part of physicians and professional peers to offer it in their practice setting (Meghani et al., 2003).

In Kristiniak's (2011) qualitative study, nurses (n = 8) consistently reported time as a challenge to providing a CAM treatment. However, some of the nurses were able to prioritize their responsibilities and integrate CAM treatments into their patient care. Another challenge discovered by Kristiniak (2011) was peer support. At times, integration of CAM treatments was met with cynicism and ridicule, either by physicians or nurses, which presented a challenge for the nurse. General attitudes and biases interfere with the adoption of CAM treatments in the practice of nursing (Tracy et al., 2005).

Barriers to CAM use, as reported by Avino (2011), included a lack of staff education. The least frequently reported barrier was time. Both students (81 percent) and faculty (62 percent) responded that they would like some further education that is sufficient to advise patients about CAM use or to provide the treatment personally (Avino, 2011).

It is important to discover any obstacles that are present. The situational factors, workload and peer support, may be modifiable, thus providing support for the nurse to integrate the hospital-endorsed CAM treatment. Rojas-Cooley and Grant (2006) suggest that nurses "must be catalysts in initiating discussions with the rest of the healthcare team regarding patient interest and use of CAM therapies" (p. 586). This communication may require education of the other team members to develop their support of CAM.

2.6 CAM Interventions Defined

CAM encompasses a broad range of treatments. The hospital-endorsed CAM treatments that are the focus of this study are Reiki and aromatherapy/guided imagery. Both of these treatments have been researched in a broad range of patient populations,

including patients with chronic pain, cancer, and anxiety.

Reiki. Reiki is a Japanese technique for stress reduction and relaxation that also promotes healing. It is administered by "laying on hands" and is based on the idea that an unseen "life force energy" flows through us and is what causes us to be alive. If one's life force energy is low, then we are more likely to get sick or feel stress, and if it is high, we are more capable of being happy and healthy (Rand, n.d.). Reiki is simple and easy to use, which makes it an ideal CAM treatment for bedside nurses to integrate in their care delivery.

Birocco and colleagues (2011) investigated the role of Reiki in the management of anxiety, pain, and overall wellbeing in cancer patients receiving any kind of chemotherapy for any stage of the disease, after Reiki treatments administered in a day hospital setting. There were 118 participants over a three-year period, 57 percent women and 43 percent men, with a mean age of 55 years. All 118 patients received one Reiki treatment and overall the sessions were considered helpful in improving wellbeing (70 percent), relaxation (88 percent), pain relief (45 percent), sleep quality (34 percent), and reducing anxiety (70 percent). Of the subgroup of 22 patients who underwent the full cycle of four Reiki treatments, the mean anxiety score decreased from 6.77 to 2.28 after four treatments. This reduction was statistically significant ($P < .000001$); the mean pain score decreased from 4.4 to 2.32 ($P = .0191$).

Clark, Cortese-Jimenez, and Cohen (2012) investigated the effects of Reiki, yoga, or meditation on the physical and psychological symptoms of chemotherapy-induced peripheral neuropathy in a randomized pilot study ($n = 36$). Primary findings included increased quality of life in all intervention arms, reduction of neurotoxicity symptoms in

all intervention arms with significant worsening of symptoms in the control arm. Effect sizes for yoga and meditation conditions indicated a small effect, however, the magnitude of treatment effect was large in the Reiki group. The r^2 shows that 15% of the variation was attributable to the Reiki intervention; r^2 shows 19.3% of the variation was attributable to the meditation intervention. A weak to moderate effect size was noted in the yoga group and the r^2 shows that 3.9% of the variance was attributable to the intervention.

Vitale and O'Conner (2006) compared reports of pain and levels of state anxiety in two groups of women, with and without Reiki treatment, after abdominal hysterectomy. Reports of pain differed in the first 24 hours postoperatively, 3.8 for the treatment group versus 5.4 for the control group. The length of surgery was longer for the control group than for the treatment group, mean = 72 minutes for control group versus mean = 59 minutes for treatment group, using the same anesthesia protocol. This was a pilot study; control group (n = 12) and treatment group (n = 10).

Research findings indicate that Reiki shows promise for relieving pain from a variety of medical and psychiatric conditions that include cancer, surgical pain, chronic back pain, arthritis, depression, and anxiety (Dressen & Singg, 1998; Lee, Pittler, & Ernst, 2008; Miles, 2003; Olson & Hanson, 1997). Reiki is a CAM treatment that is easily incorporated in the hospital environment. There are currently two funded Reiki studies ongoing at the study site. One study is a pilot investigating the effects of Reiki and placebo Reiki on pain levels in patients undergoing a repeat Cesarean section. The other study is a randomized control trial investigating the effects of Reiki, placebo Reiki and quiet time (standard of care) on pain and anxiety levels in patients undergoing a

single knee replacement.

Aromatherapy. The medicinal use of plants has a long history in ancient Egypt, China, and India. The development of modern aromatherapy is attributed to the French chemist Rene Gattefosse in 1910 (Buckle, 2000). The recognized definition of aromatherapy is the use of essential oils for therapeutic purposes; however, the definition of clinical aromatherapy, as used in nursing, is more specific: "The use of essential oils for outcomes that are measurable" (Buckle, 2000, p. 36). Essential oils are the steam distillate of aromatic plants (Buckle, 2000).

Aromatherapy is beginning to enter hospital settings and mainstream medicine. Diverse groups such as the "American Cancer Society and the U. S. Department of Veterans Affairs are touting the use of fragrance as a treatment that can complement traditional health care" (Thompson, 2012, para. 1). While there is little evidence that suggests aromatherapy can cure illness, research is finding it helpful in reducing a range of symptoms and side effects in some patient populations (Thompson, 2012).

Soden, Vincent, Craske, Lucas, and Ashley (2004) investigated use of aromatherapy massage in a hospice setting using randomized controlled trial. Forty-two patients were randomly allocated to receive weekly massages with lavender essential oil and an inert carrier oil (aromatherapy group), an inert carrier oil only (massage group) or no intervention. The study was unable to demonstrate any significant long-term benefits of aromatherapy or massage in terms of improving pain control, anxiety or quality of life. However, sleep scores improved significantly in the aromatherapy group. The study suggests that patients with high levels of psychological distress respond best to these treatments.

Louis and Kowalski (2002) measured the responses of 17 cancer hospice patients to humidified essential lavender oil aromatherapy. The results demonstrated a positive change in blood pressure and pulse, pain anxiety, depression, and sense of wellbeing after both the humidified water treatment and the lavender treatment. The control session, no treatment, showed no improvement in pain or anxiety levels.

A current National Institutes of Health (NIH) clinical trial is aromatherapy to reduce pain and anxiety during cervical colposcopy using lavender. Patients will receive either essential oil or placebo with fake lavender scent. The primary outcome measure is pain and anxiety is the secondary outcome measure. This study is taking place in Nevada, and no results have been published at this time (NIH, 2012).

While health professionals and holistic health practitioners often support the therapeutic usefulness of aromatherapy, quantitative measurement of its results is difficult (Louis & Kowalski, 2002). Many cancer patients are in need of additional interventions that promote comfort and a sense of wellbeing. Aromatherapy is inexpensive and easy to apply, and can be diluted in a lotion and given as a five-minute hand massage. The apparent lack of side effects makes aromatherapy an appealing complementary therapy (Louis & Kowalski, 2002).

2.7 Controversies with CAM

While CAM is becoming more widely accepted and used with nurses and patients, there are controversies that need to be mentioned. One involves the lack of standardized credentialing of practitioners. Most CAM therapies are a certificate, not a licensed treatment, so there can be wide variations in education and practice.

Concerns about inadequate evidence regarding CAM may be well founded;

however, some findings from controlled studies have led clinicians to support various therapies. The majority of early studies on CAM were poorly designed, based on small sample sizes and mostly anecdotal data from the patient or practitioner.

Despite concerns, the use of CAM is increasing (Oldenick et al., 2000). The establishment of the NCCAM has given CAM legitimacy, along with funding in 2006 for $122,692,000 (NCCAM, 2006c). CAM courses are part of nursing and some medical school education.

The study site for this research project has competencies and policies for hospital-endorsed CAM treatments. There are two funded research projects in progress. There is an established Integrative Medicine Services that offer CAM treatments for inpatients and outpatients.

2.8 Synthesis of the Literature and Conclusion

In a review of the literature pertaining to nurses' decision-making and pain medication administration or withholding, has similarities to the proposed variables in this study. The literature supports that nurses' personal characteristics, their environment, their knowledge, attitudes and beliefs, and behaviors of the patient can influence the nurses' administration or withholding of pain medication. An appropriate exemplar to guide this study is Knowledge Use in Pain Care (KUPC) (Latimer et al., 2010).

The literature supports a common theme worldwide, that nurses need more education in CAM. A focus of study in the literature is the survey of practitioners' or patients' use of CAM. The majority of surveys of nurses indicated a desire to use CAM; however, an overwhelming number requested more education in the subject. The

majority of the surveys were investigating many CAM therapies and nurses' knowledge and attitudes. Most of the patient surveys investigate the treatment used and satisfaction with that treatment.

Additionally, the literature from the U.S. and other countries has shown that nurses are accepting of CAM; however, nurses feel the need for more education and support from the administration of the hospital. Some of the barriers to CAM practice that emerged from the literature are time (Kristiniak, 2011; Meghani et al., 2003), workload (Antigoni & Dimitrios, 2004), peer support (Chu & Wallis, 2007; Cooke et al., 2012; Kristiniak, 2011; Shorofi & Arbon, 2010; Smith & Wu, 2012)), and education (Avino, 2011; Chu & Wallis, 2007; Cooke et al., 2012; Shorofi & Arbon, 2010; Smith & Wu, 2012).

Based on the review of the literature, there have been no surveys that evaluate the use of CAM by nurses that have been educated in CAM and work in a hospital that is supportive of CAM. This current study analyzed data from two focus groups and an investigator developed survey. Face and content validity for the survey were established.

Not all of the nurses educated integrate the hospital-endorsed CAM treatments with their patients. What is not known at this point is: who stopped using CAM treatment; recognition of why some nurses never used CAM after being educated about the techniques, and, identification of factors that influence the continuation of nurses' use of CAM?

What has not been studied in the literature is a cohort of hospital nurses that are educated in CAM and whether there are modifiable factors to the nurses' integration of hospital-endorsed CAM into their nursing practice. There are no current surveys to

estimate the relationships between variables in the proposed study. The focus groups provided qualitative data, which was analyzed and informed the development of survey questions. Anticipated finding from the focus group and the literature include personal factors (socio-demographics, and the nurses' attitudes and beliefs), the perceived patient receptivity (nurses' perception of patient acceptance), situational factors (workload and peer support) and patterns of use.

This study adds additional information to the literature on nurses' that are educated in CAM and have hospital support for its integration into their patient care. Many hospitals are beginning to adopt CAM therapies because of consumer demand, and have begun educating their nurses (S. Kristiniak, personal communication, November 3, 2012). This study uncovered factors that influence the use of CAM. Hospitals can utilize the information gained from this study to analyze their programs.

CHAPTER 3: RESEARCH METHOD

To address the overarching goal of the study and the specific aims, the two primary hypotheses were evaluated using a mixed-method design. This was accomplished by obtaining data from a cohort of nurses educated in hospital-endorsed CAM treatments. This study proceeded in two stepwise stages. Given the identified gaps in our knowledge in this area, the first step in this inquiry was a qualitative exploration of factors that drive the use of the hospital-endorsed CAM practices in the nurses' patient care. Data from the qualitative efforts was combined with the limited existing data in the literature to develop questions, which were evaluated for face and content validity. The survey questions were examined with three members of the focus groups using cognitive interviewing technique to establish clarity and usefulness of questions (Willis, 2008). The survey was vetted with doctoral experts in research and CAM to support the characterization of the intrinsic factors (personal, such as socio-demographics, nurses' attitudes and beliefs, and perceived patient receptivity), extrinsic factors (situational, such as workload and peer support), and patterns of use that influence nurses' continued practice of CAM in a larger sample. The second stage of the study was the recruitment and survey of the population of nurses who have been previously educated in CAM and credentialed to independently prescribe and provide these treatments. Data from the survey was then used to address the two hypotheses of the study. The anticipated results characterized the factors associated with the continuation of CAM and/or reveal obstacles to its integration into practices.

Chapter 3 includes a discussion of a) the research method, b) design appropriateness, c) the target population and sample, d) the approach to data collection, e)

the type of data collected, f) the focus-group questions, g) integration of qualitative data into quantitative survey, and h) the data analysis procedure.

3.1 Research Method

The research design was mixed-methods using an exploratory, sequential approach. The exploratory sequential approach began with the researcher in the qualitative phase in the exploration of the views of participants. The data was then analyzed and the information was used to build into a second, quantitative phase (Creswell, 2014). The qualitative phase was used to build a survey that best identified variables that influence the continuation, or identification of obstacles that may be modifiable, of selected CAM practices (see Figure 3). The data from the first database was connected to the second. Connecting the data means "that the analysis of one data set was used to build into the second data set" (Creswell, 2014, p. 230).

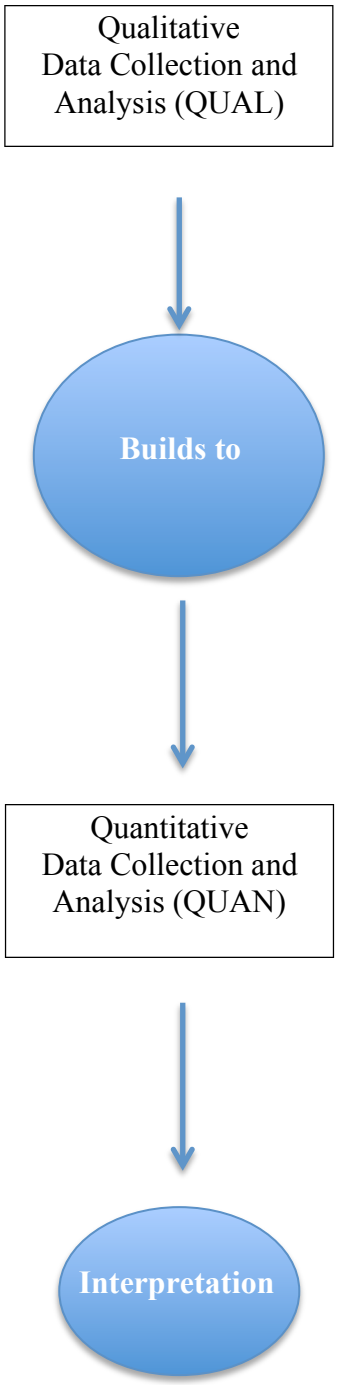

Figure 3. Display of mixed-method, exploratory, sequential design. From "Figure 10.1 Three basic mixed-methods design" by J. W. Creswell, 2014, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 4th edition,* p. 220.

This research follows the mixed-methods process model as outlined by Johnson and Onwuegbuzie (2004). There were eight distinct steps: 1) determine the research question; 2) determine whether a mixed design was appropriate; 3) select the mixed-method or mixed model research design; 4) collect the data; 5) analyze the data; 6) interpret the data; 7) legitimate the data; and 8) draw conclusions (Johnson & Onwuegbuzie, 2004).

Rational for the use of a mixed-methods design. The rationale for mixing data was that neither qualitative nor quantitative methods are sufficient by themselves to investigate the details of an issue, given our current knowledge in this area.

Mixed-methods approach. Mixed-methods approach is a new methodology that originated in the late 1980s and early 1990s (Creswell, 2014). A mixed-method is used in diverse fields, such as evaluation, education, management, sociology and health sciences (Creswell, 2014, p. 217). Mixed-methods have gone through several development periods, including a formative stage, philosophical debates, procedural developments and reflective positions (Creswell, 2014, p. 218). Mixed-methods have expanded into different disciplines and into many countries, along with a rise in federal funding initiatives and dissertations (Creswell, 2014). The first phase of the research was exploratory, the second was the development of a survey, and the third was the administration of the survey (Creswell, 2014).

Design Appropriateness. The strength of mixed-methods approach is the collection of both qualitative and quantitative data. It is ideal for a researcher with access to both qualitative and quantitative data. Mixed-methods are a useful strategy to gain a more complete understanding of the research questions. This methodology developed a

better survey using the data analyzed in the qualitative focus groups.

The challenges for mixed-method design reside in focusing on the appropriate qualitative findings to use and the sample selection for both phases of the research (Creswell, 2010). There are extensive data collection and time-intensive analyses of both qualitative and quantitative data.

In designing a mixed-methods study, there are three issues that need consideration: priority, implementation, and integration (Creswell, Plano Clark, Guttman, & Hanson, 2003). Priority refers to the method, either quantitative or qualitative, that is given more emphasis. Implementation refers to whether the data collection and analysis comes in sequence or in chronological stages, one following another, or in parallel or concurrently. Integration refers to the phase where the mixing or connecting of data occurs. This study has equal emphasis on qualitative and quantitative date, employed sequential implementation, and connected the data of the focus group with the survey.

Study design. The model used in this study was the exploratory sequential mixed-methods, which is one of the three primary models found in social sciences (Creswell, 2010). The design activity and proposed timeline is listed below in table 3.

Table 3

Steps and Timeline in Mixed-methods Data Collection

Topic/Task	Steps to accomplish	Timeline (Weeks)
Identify subject population	• Identify eligibility requirements of the study (inclusion/exclusion criteria). • Develop informed consent • Validate list of CAM educated nurses with nursing office to determine those still employed or no longer at the hospital. • Assign alphanumeric to those still employed.	1 day
Prepare focus group questions	• Develop focus group questions and vet with 3 experts and revised as needed • Submit and obtain IRB	2 weeks
Recruit and complete focus groups	• Send email letter of recruitment to 30 CAM practitioners requesting participation in focus group (see Appendix A). The first 20 to respond were scheduled in the focus groups. • Schedule 2 groups with 5-10 in each group. Repeat email for request to participate until reach minimum of 5 per group. • Schedule meeting rooms • Obtain Informed consent and confirm date/time and meeting place for focus group.	2 weeks

	• Tape record using 2 recorders in the event of one failing. • Follow Focus Group Questions (Appendix F) and Focus Group Script (Appendix G) • Audio recording was transcribed and checked with independent reviewer. • Member checking: verbatim transcripts were emailed to all participants. Any discrepancies were noted and changed.	
Develop qualitative results to guide survey question formation	Completed qualitative analysis using NVivo software • Grounded principles • Constant comparison method • Coding • Emergence of themes • Review with qualitative experts	2 weeks
Develop questions to address the hypotheses	• Developed questions to review with 2 experts (faculty member with expertise in research design and academician with CAM experience) • Recruited 3 subjects from focus group for cognitive interview (pilot) of questions • Used information from cognitive interviewing to revise questions and complete survey • Pre-tested survey with 3 doctoral	3 weeks

	experts in CAM • Used information from pre-test survey with 3 doctoral experts to revise questions	
Survey nurses	• Obtain revised IRB for the use of the survey • Recruit using the following methods: 1. Letter of recruitment with web address was hand-delivered to practitioners or placed in their mailbox at work. 2. Email letter of recruitment with web link and reminders to complete the survey at day 7 and 14.	3 weeks
Data analysis	• Data was exported from SurveyMonkey into SPSS. • Missingness was evaluated. • Data was evaluated using descriptive and graphical methods.	1 week

The exploratory sequential mixed model applied in this study started with a qualitative inquiry to define the critical components of intrinsic and extrinsic factors that impact CAM practices.

The qualitative data was analyzed and connected to the quantitative data collection with a survey, which was analyzed for interpretation. Questions had their validity assessed using cognitive interviewing and expert review. The resulting questions were used in research effort to develop a quantitative database to test the primary hypotheses of this study. The process maintained fidelity to a mixed-method design in

which the emphasis was equal for each data source and the philosophical worldview was pragmatic.

The pragmatic worldview arises out of actions, situations, and consequences (Creswell, 2014). Researchers focus on the problem and utilize all approaches available to understand the problem (Rossman & Wilson, 1985). Pragmatism is a real-world, practice-oriented worldview (Creswell, 2014). The qualitative focus-group data informed the development of a survey to further gather quantitative data for the purpose of understanding real-world practice of nurses educated in hospital-endorsed CAM.

3.2 Research Questions

The independent variables are the intrinsic and extrinsic factors that determine the dependent variable, associated with nurses practice patterns in the use of hospital-endorsed CAM treatments. It is unknown if the intrinsic and extrinsic factors function independently of each other; the intrinsic and extrinsic factors were tested independently and then examined in the presence of each other using multivariate analysis. The research questions are:

Question #1: What are the intrinsic and extrinsic factors that affect the nurses' use of CAM? *Hypothesis:* Intrinsic and extrinsic factors (independent variables) affect the nurses' use of CAM (dependent variable). *Specific aim #1:* explore the critical components of intrinsic and extrinsic factors that impact CAM practices. Focus groups delineated the intrinsic and extrinsic factors that promote or hinder the continued use of CAM.

Intrinsic factors of nurses' beliefs about health and healing impact their use of CAM with patients. Nurses with higher aggregate scores on the CAM Health Belief

Questionnaire (CHBQ) (Lie & Boker, 2004) are more likely to use CAM with their patients. A higher score on the CHBQ correlates with higher use of hospital-endorsed CAM.

Intrinsic factors of perceived patient receptivity (nurses' perception of patient receptivity) affects nurses' use of CAM. This study posits that nurses who use CAM for personal care are more likely to present CAM positively to their patients. Nurses that offer CAM positively to patients are more likely to have patients that are interested in receiving treatments.

Extrinsic factors are the situational factors that are modifiable and may act as obstacles to the nurses' use of CAM. There were questions on the survey to operationalize this variable. There are nursing units within the hospital, such as the emergency room, labor and delivery, the antepartum unit, hospice/palliative care, home care, and two medical-surgical units that have many nurses educated in hospital-endorsed CAM. These nursing units seem to have a higher application of CAM than those where only a few nurses are educated in CAM. This researcher expects a correlation between the use of CAM and peer support; there may be a higher use of CAM on nursing units where nurses have peer support for CAM.

Question #2: What is the relationship between intrinsic and extrinsic factors on the nurses' continued use of CAM in nursing practice? *Hypothesis:* There is a relationship between intrinsic and extrinsic factors, which influences the nurses' continued use of CAM. *Specific aim 2*) Characterize the relationship between intrinsic and extrinsic factors and the continuing use of CAM in nursing practice. The population

of nurses previously educated to provide hospital-endorsed CAM treatments was recruited to complete the survey, which was then analyzed to address the hypothesis.

3.3 Sample

The sample for the study consisted of nurses who were educated in hospital-endorsed CAM at AMH between June 2003 and September 2013. This sample was selected from the population of all nurses who participated in and completed hospital-endorsed CAM education from one study site; no nurses from other sites participated in the study. The eligibility criteria were nurses who have received a certificate from the hospital in Reiki and/or aromatherapy/guided imagery. The inclusion criteria are RNs educated in Reiki and/or aromatherapy/guided imagery by Integrative Medicine Services at AMH; RNs are currently employed at AMH. The exclusion criteria are RNs not educated in CAM through Integrative Medicine Services at AMH; and CAM educated RNs no longer employed at AMH.

The sample was primarily Caucasian females with nursing experience that ranges from 5 years to 52 years. The work status of CAM practitioners ranged from relief status (16 or more hours in a two week period of time) to full-time (80 hours in two weeks). The CAM practitioners work in all areas of the hospital, in-patient and outpatient units, however, there are larger cohorts working in the emergency room, labor and delivery, hospice/palliative care, home care and two medical-surgical units. The sampling frame was 300 nurses but 158 nurses are excluded as they have resigned from the institution. The sample size was therefore N = 142. The justification for the sample size is that it includes all the nurses that have been educated in hospital-endorsed CAM at the institution. There were 10 participants in the focus group who were excluded from the

survey, for a sample size of 132. This researcher projected a 77% completion rate, which would yield a final sample of 101 subjects.

Study site. The institution where the CAM nurses work is a suburban teaching hospital. Despite its conservative philosophy, the hospital endorses the use of CAM. In response to the Magnet journey, there is a shared governance model with a structure for multi-disciplinary councils. There is the Integrative Council, with many members who are educated in CAM. Some of these council members are integrating CAM treatments into their delivery of care. However, many nurses are not using the treatments after their education.

The CAM treatments offered at the study site are Reiki and/or aromatherapy/guided imagery. Either of these treatments can be requested by the patient or offered by the nurse, provided he/she received the education. The services are given as part of the nurses' scope of care. The decision to offer Reiki and aromatherapy/guided imagery through the Integrative Medicine Services is based on the employment and interest of two nurses certified as instructors. The Reiki instructor provided her certificate of completion as Reiki Master Teacher, which required over 80 hours of education and teaching. The aromatherapist provided her certificate of completion, which required 325 hours, 30 case reviews, research paper and testing. Both employees were approved as instructors for Integrative Medicine Services.

3.4 Education Classes: Reiki and Aromatherapy/Guided Imagery

American Holistic Nurses Association (AHNA) is a non-profit membership organization that is a voice for holistic nursing. AHNA promotes the education of nurses and other healthcare professionals, including the public in all aspects of holistic care and

healing. In 2006, the American Nurses Association (ANA) recognized holistic nursing as a specialty with a defined scope and standards of practice (AHNA, 2011).

The CAM therapies that were taught to this study sample of professional nurses were Reiki and aromatherapy/guided imagery. Both instructors were on the full-time staff of the hospital and also held part-time positions in Integrative Medicine Services within the organization. Both instructors were co-chairs of the Integrative Council, which was part of the shared governance model. There were continuing education units (CEUs) offered for each class with goals, objectives, evaluations and a post-test. Competencies were established for each level of Reiki classes and aromatherapy/guided imagery.

The Reiki instructor is a certified Reiki Master Teacher level with 15 years' experience in Reiki prior to teaching. The course offered for staff was an eight-hour class with a booklet and research articles. There was hands-on demonstrations plus didactic learning in the class. Class members pay a discounted rate for taking the course and receive a certificate of attendance. The course content followed the suggested guidelines of course content by the Center for Reiki Research (Rand, n. d.).

The nurse aromatherapist is certified through the Institute of Integrative Aromatherapy, endorsed by the AHNA. The course offered for staff was a five-hour class on aromatherapy and one hour on guided imagery. The course content covered the use of two oils, lavender and peppermint, along with the history of aromatherapy, mixing of oils, indications for use, and side effects. The course content was designed and developed by the instructor. There was a one-hour inclusion of the efficacy of guided

imagery for relaxation along with an experiential relaxation exercise with a pre-recorded compact disc (CD).

While many hospitals are now offering CAM as part of their services, there still remains a paucity of literature on the efficacy of the programs. According to the literature, most programs were initiated as a response to consumer demand and are offered for the outpatient population; few hospitals provide CAM for inpatients. The CAM services offered vary according to the institution.

3.5 Location and Context

Source of sample. The study site was a mid-Atlantic suburban, community teaching hospital in Abington, Pennsylvania. The study site was appropriate for the research because the hospital administration accepts and encourages the nurses' attendance at complementary certification classes and the integration of these therapies into their care delivery.

Geographic location. The staff at this 665-bed, acute-care, community-teaching hospital serve a five-county area in suburban Philadelphia. The hospital is a regional referral center, which provides comprehensive, high-quality services for people in Montgomery, Bucks, and Philadelphia counties for more than 90 years (Abington Memorial Hospital, n.d.). The hospital site achieved three Magnet designations, with CAM therapies playing a significant part in each application and renewal. There are 1700 professional nurses employed at AMH; over 300 have been educated in hospital-endorsed CAM; however, only 142 of these are still employed at the institution.

CAM use at the source. In 2003, the hospital established its Integrative Medicine Services (E. Jameson, personal communication, June 10, 2013). A committee met

monthly to determine the therapies that would be offered for patients. The committee members were upper management employees from the study site: Nurse Director, Nurse Manager, Rehabilitation Medicine Director, Vice President, and two physicians, a surgeon and a family practice physician. Any nurse offering treatments or classes through the hospital needed to be approved by the Integrative Medicine committee. The approval consisted of a practitioner resume, letters of references from clients treated, a certificate of education for the therapy, and an interview with the committee. Therapies approved and offered were acupuncture, yoga classes, aromatherapy classes, Reiki classes and Reiki treatments for inpatients and outpatients. The decision to offer these therapies was based on certified teacher-practitioner interest and employment at the hospital other than in Integrative Medicine Services.

The chief nursing officer was supportive of nurses' attending certification classes and incorporating treatments in their care delivery. The following factors made the program unique in an acute care setting: a) inclusion of an internal education program for staff; b) development of nursing practice policies for the bedside nurse; c) development of competencies for all levels of Reiki practice and aromatherapy; and d) approval of evidence-based practices through Integrative Medicine (Kristiniak, 2011).

3.6 Sampling Scheme

Qualitative and quantitative samples were retrieved from a list of RNs who attended education sessions in Reiki and/or aromatherapy/guided imagery at the study site. This researcher maintained the list of RN attendees in an Excel file. The list of attendees had an alphanumeric assigned to each nurse as a de-identifier. There were 142 nurses educated and employed at the hospital.

Qualitative sampling. The sampling scheme for qualitative focus groups was purposive sample within a convenience sample from a pre-specified group of RNs educated to use hospital-endorsed CAM. There were 30 RNs invited to participate in one of two focus groups and the first 14 to respond were confirmed. They were diverse groups, which represent many nursing units within the hospital, years as CAM practitioner, and CAM education in Reiki and/or aromatherapy/guided imagery. This selection of practitioners prevented homogenous focus groups: 1) there are many RNs educated on some nursing units; 2) avoided a focus group of all new practitioners or all same years of experience; and 3) avoided a focus group of all one therapy.

Quantitative sampling. The sampling frame for the quantitative survey was a convenience sample of all nurses educated in hospital-endorsed CAM, excluding the focus group subjects (n = 10).

According to Payton (1994), "most researchers consider a 40% return on questionnaires conducted by mail a very good response" (p. 105). The expected response rate is 77 percent of 132 currently employed, which will be 101 possible completions of surveys in the sample. The average completion rate of surveys by RNs in the hospital is 30 percent (B. Wadsworth, personal communication, October 10, 2012). However, CAM nurses are engaged in furthering the CAM therapies at the hospital and express interest in supporting any CAM research.

3.7 Procedure for Recruitment and Enrollment

Phase I qualitative recruitment and enrollment. After Drexel University and study site IRB approvals, there was a two-step recruitment process. Step one was recruitment for the two focus groups. Potential participants were drawn from a list of 142

practitioners educated in Reiki and/or aromatherapy/guided imagery. While the potential pool of subjects is 142 it is pragmatic to project that a portion of these were used in the qualitative component of the study design (up to 20 subjects) and others may be non-responders to survey recruitment or excluded as they are not in direct clinical roles (this could be as large as 30 subjects). It is projected that 101 subjects are recruited to participate in the survey, which would be a 77% recruitment rate. A power analysis was completed for a logistic regression using the two major variables of interest, which demonstrated the study power at .81 with 40 subjects and 1.0 with 100 subjects. The study would be adequately powered > 0.8 with a 31% recruitment rate. Given the population size the study is likely to be adequately powered even if the recruitment of 100 subjects in not attained. The power analysis support in provided below.

3.8 Power for a Test of the Null Hypothesis

Hypothesis to be tested. One goal of the proposed study was to test the null hypothesis that neither Peer support nor Attitude toward CAM is related to the event rate. Under the null the event rate (0.45) is the same at all values of Peer support and at all values of Attitude toward CAM. Or, equivalently, the odds ratio is 1.0, the log odds ratio (beta) is 0.0, and the relative risk is 1.0 for both variables.

Effect size. Power was computed to reject the null under the following alternate hypothesis. For peer support values of 0.0 and 0.5, the expected event rates are 0.45 and 0.58. This corresponds to an odds ratio of 1.69, beta (log odds ratio) of 1.05, and a relative risk of 1.29. Our computations assume that the mean value of Peer support is 0.0 with a standard deviation of 1.0, and that the event rate at this mean will be 0.45. For attitude toward CAM values of 0.0 and 0.5, the expected event rates are 0.45 and 0.62.

This corresponds to an odds ratio of 1.99, beta (log odds ratio) of 1.38, and a relative risk of 1.38. Our computations assume that the mean value of Attitude toward CAM is 0.0 with a standard deviation of 1.0, and that the event rate at this mean is 0.45. Finally, we assume that the correlation between the two-predictor variables is 0.50. This effect was selected as the smallest effect that would be important to detect, in the sense that any smaller effect would not be of clinical or substantive significance. It is also assumed that this effect size is reasonable, in the sense that an effect of this magnitude could be anticipated in this field of research.

Sample size. The study includes a total of 100 subjects based on the design but is powered at .81 at 40 subjects.

Alpha and tails. The criterion for significance (alpha) has been set at 0.05. The test is 2-tailed, which means that an effect in either direction is interpreted.

Power. For this distribution (Peer support mean of 0.0, standard deviation of 1.0), baseline (event rate of 0.45 at the mean), effect size (log odds ratio of 1.05), sample size (40), and alpha (0.05, 2-tailed), power is 0.81 (for 40 subjects) or 1.0 (for 100 subjects). This means that 81% of studies would be expected to yield a significant effect, rejecting the null hypothesis that the odds ratio is 1.0.

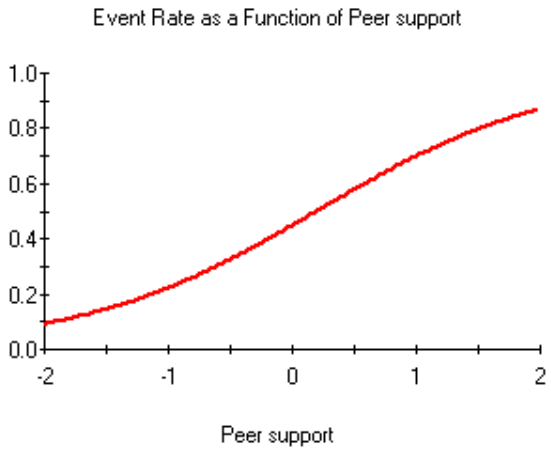

Figure 4. Event rate as a function of Peer support

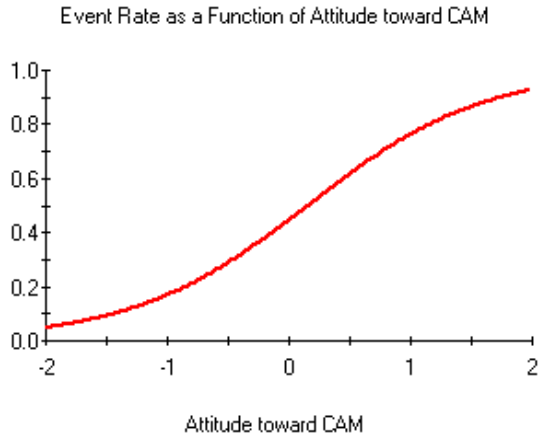

Figure 5. Event rate as a function of Attitude toward CAM

Table 4

Power as a Function of Sample Size, Event Rate at Mean, Odds Ratio for Peer Support, Odds Ratio for Attitude toward CAM

Power as a Function of Sample size, Event Rate at Mean, Odds Ratio for Peer support, Odds Ratio for Attitude toward CAM

Alpha = 0.050, Tails = 2, Correlation = 0.500,
Power for Peer support and Attitude toward CAM as a set

Rate at Mean	OR Peer support	Attitude toward	N1=	10	20	30	40	50	60	70	80	90	100	110	120	130
			N2=	10	20	30	40	50	60	70	80	90	100	110	120	130
0.350	1.200	1.300		0.131	0.222	0.317	0.409	0.496	0.576	0.647	0.709	0.763	0.808	0.846	0.877	0.903
		1.500		0.173	0.311	0.445	0.567	0.670	0.754	0.820	0.870	0.908	0.935	0.955	0.969	0.979
		1.994		0.237	0.436	0.610	0.743	0.838	0.901	0.941	0.966	0.981	0.989	0.994	0.997	0.998
	1.300	1.300		0.153	0.268	0.385	0.494	0.592	0.677	0.748	0.806	0.853	0.889	0.917	0.939	0.955
		1.500		0.190	0.346	0.494	0.622	0.726	0.806	0.866	0.909	0.939	0.960	0.974	0.983	0.989
		1.994		0.245	0.452	0.628	0.761	0.853	0.913	0.950	0.972	0.984	0.992	0.996	0.998	0.999
	1.688	1.300		0.217	0.399	0.563	0.696	0.796	0.868	0.916	0.948	0.968	0.981	0.989	0.994	0.996
		1.500		0.238	0.439	0.613	0.747	0.841	0.903	0.943	0.967	0.981	0.990	0.994	0.997	0.998
		1.994		0.265	0.488	0.670	0.800	0.884	0.936	0.965	0.982	0.991	0.995	0.998	0.999	0.999
0.450	1.200	1.300		0.136	0.232	0.331	0.428	0.518	0.600	0.671	0.733	0.786	0.829	0.865	0.894	0.918
		1.500		0.179	0.322	0.461	0.585	0.689	0.772	0.836	0.884	0.919	0.945	0.962	0.975	0.983
		1.994		0.242	0.447	0.622	0.755	0.848	0.909	0.947	0.970	0.983	0.991	0.995	0.997	0.999
	1.300	1.300		0.158	0.279	0.401	0.514	0.613	0.698	0.769	0.825	0.869	0.903	0.929	0.949	0.963
		1.500		0.196	0.358	0.510	0.639	0.743	0.821	0.879	0.919	0.947	0.966	0.978	0.986	0.992
		1.994		0.250	0.461	0.640	0.772	0.862	0.919	0.954	0.975	0.986	0.993	0.996	0.998	0.999
	1.688	1.300		0.223	0.410	0.577	0.711	0.809	0.878	0.924	0.954	0.973	0.984	0.991	0.995	0.997
		1.500		0.244	0.449	0.625	0.758	0.851	0.911	0.948	0.971	0.984	0.991	0.995	0.998	0.999
		1.994		0.269	0.496	0.679	0.808	0.890	0.940	0.968	0.984	0.992	0.996	0.998	0.999	1.000
0.550	1.200	1.300		0.136	0.232	0.331	0.428	0.518	0.600	0.671	0.733	0.786	0.829	0.865	0.894	0.918
		1.500		0.179	0.322	0.461	0.585	0.689	0.772	0.836	0.884	0.919	0.945	0.962	0.975	0.983
		1.994		0.242	0.447	0.622	0.755	0.848	0.909	0.947	0.970	0.983	0.991	0.995	0.997	0.999
	1.300	1.300		0.158	0.279	0.401	0.514	0.613	0.698	0.769	0.825	0.869	0.903	0.929	0.949	0.963
		1.500		0.196	0.358	0.510	0.639	0.743	0.821	0.879	0.919	0.947	0.966	0.978	0.986	0.992
		1.994		0.250	0.461	0.640	0.772	0.862	0.919	0.954	0.975	0.986	0.993	0.996	0.998	0.999
	1.688	1.300		0.223	0.410	0.577	0.711	0.809	0.878	0.924	0.954	0.973	0.984	0.991	0.995	0.997
		1.500		0.244	0.449	0.625	0.758	0.851	0.911	0.948	0.971	0.984	0.991	0.995	0.998	0.999
		1.994		0.269	0.496	0.679	0.808	0.890	0.940	0.968	0.984	0.992	0.996	0.998	0.999	1.000

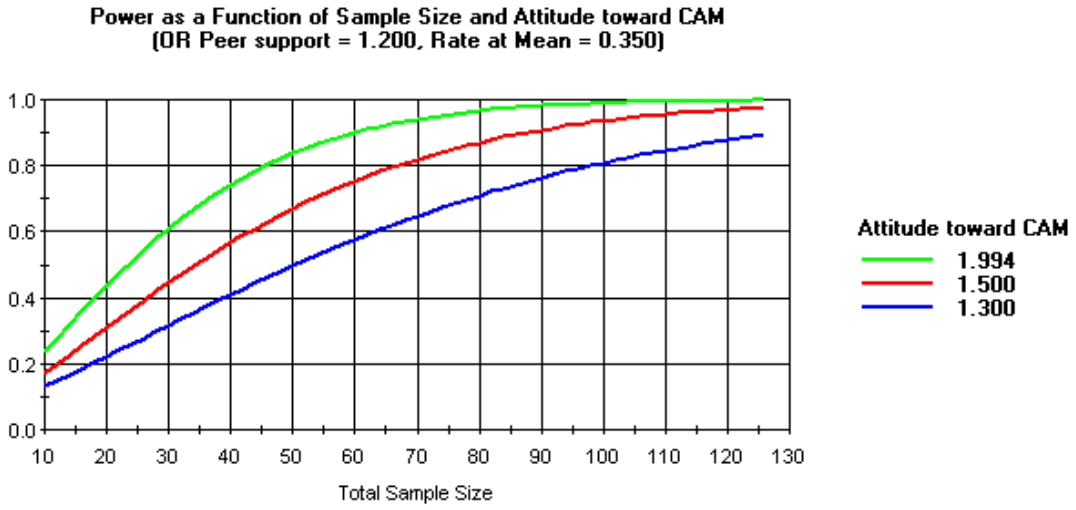

Figure 6. Power as a function of sample size and Attitude toward CAM

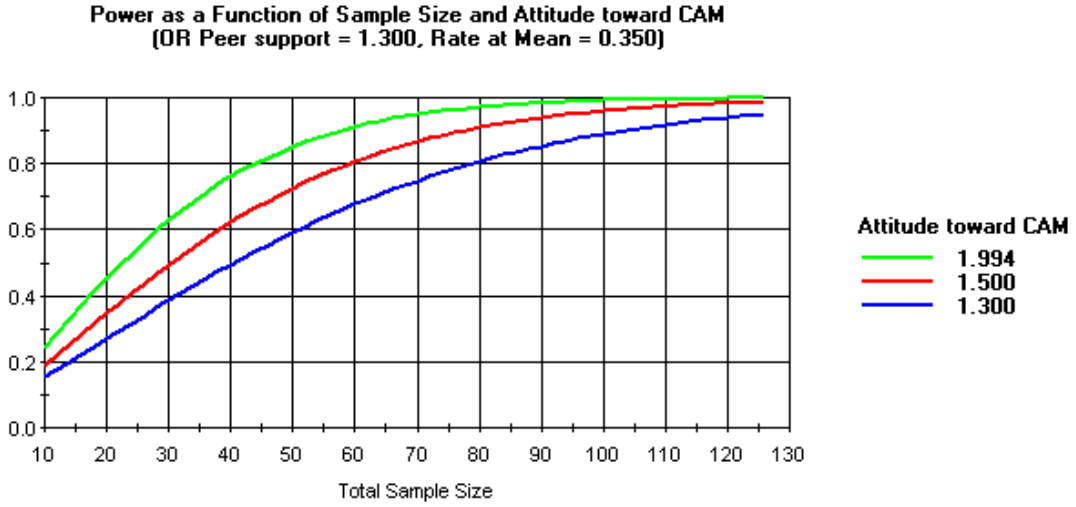

Figure 7. Power as a function of sample size and Attitude toward CAM

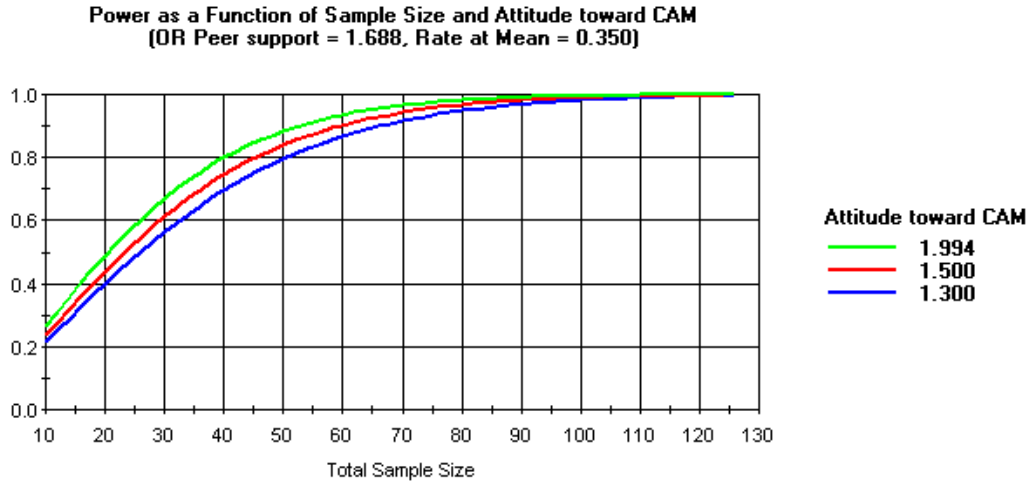

Figure 8. Power as a function of sample size and Attitude toward CAM (SamplePower™. Release 2.0. December 20, 2000. Developed by M. Borenstein, SPSS).

Steps for recruitment. There were 30 CAM practitioners recruited from the master list of CAM practitioners. There was a letter of recruitment sent via electronic email and given three days to respond and accept participation in the focus group. The researcher repeated the process until there were 12 acceptances with diverse backgrounds. The focus groups needed a minimum of 5 participants and continue until saturation has been reached.

The following steps were followed for recruitment: 1.) An email was sent to 30 CAM nurses that described the purpose of the study, why they are being contacted, approximate time commitment, and ask for their participation in a focus group (see Appendix A), 2.) Potential participants were requested to respond to the researcher via email or phone that they were willing to voluntarily participate in the focus group, 3.) The researcher confirmed with the potential participants the date, time and place of the

focus group and included a copy of the informed consent (see Appendix B) as an attachment in the email, 4.) The researcher scheduled a time with the potential participant to review, respond to participant questions, and sign the informed consent prior to the focus group meeting, and 5.) The informed consent included an explanation of the study, conditions of participation, confidentiality, and the option to withdraw at any time without penalty. Each focus group had a minimum of five participants and they met for 60 minutes.

After the completion of the study, the focus group participants had a separate draw to win a $100.00 VISA gift card. The completed focus group participants had their names placed in a "hat" and the chair of the Integrative Council selected the winner. The drawing took place at the completion of the study and this researcher, along with the Integrative Council chair, notified the winner.

Cognitive interviewing recruitment and enrollment. There were three CAM nurses recruited from the focus group participants. The potential participants represented various levels of education and different departments in the hospital. The researcher emailed the potential participants to request their participation in cognitive interviewing of the proposed survey questions. The research met with the potential participant at a mutually agreed time and place. The consent for cognitive interviewing is incorporated into the Informed Consent, which was signed prior to the focus group.

Phase II quantitative recruitment and enrollment. The potential subjects received an email and a paper copy letter requesting their participation in the survey (see Appendix B). The paper copy letter request was hand-delivered by the researcher or placed in the potential subject's mailbox at work. The rationale for the paper copy

request to participate was to ensure that all potential subjects had an opportunity to enroll in the study, as some nurses do not routinely check their email.

The email and paper mailbox letter explained the importance of their input in the study; included an introduction of the study, its purpose, and a request that the survey be completed online and the web link for the online survey was provided. The email and paper mailbox letter requested that the potential subject complete the survey within three weeks from the date of the email, and a specific end date was stated in the email and paper mailbox letter requesting participation. The survey was distributed to CAM practitioner members at the Integrative Council monthly meeting. The remainder were hand-delivered or given to the Nurse Manager of the unit for delivery if the employee is not working or does not have a mailbox available. Potential subjects were instructed to use the alphanumeric de-identifier provided in the letter, in lieu of their name, for anonymity.

Survey: Electronic response process. Informed consent (see Appendix C) was on page one of the electronic survey and completion of the electronic survey was the subjects consent to participate. The researcher's name and contact information was included in the recruitment letter and on the first page of the electronic survey in case the potential participant had questions. The electronic informed consent included an explanation of the survey, conditions of participation, confidentiality, and the option to withdraw at any time without penalty. The survey was self-administered online through Survey Monkey. Items on the survey were not forced choice selection.

Follow-up reminders for survey. After the initial email requesting participation in the study, there was a follow-up process of reminders. Repeat email invitations were

sent once a week for two weeks for those that have not responded (see Appendix K and L). Potential subjects had the option to request to be removed from the email list, which removes them from the study.

Strategies for Recruitment: Survey

Several strategies were put into place to enhance the focus group and survey response rate. For the survey, since all nurses do not check their email on a routine basis, there were two modes of delivery for the letter of recruitment, one via email, one via the hand-delivery by the researcher or placement in the potential subjects' mailbox at work. The electronic version of the survey had the informed consent included. Additionally, any non-respondents received reminder emails once a week for two weeks. Potential subjects had the option to request to be removed from the email list, which removes them from the study. There was a deadline of three weeks to complete the survey. Upon receiving the completed survey and demographics, this researcher entered the participant into a drawing to win $150.00 VISA gift card. The survey participants who completed the survey had completed survey had their names placed in a "hat" and the chair of the Integrative Council selected the winner. The drawing took place at the completion of the study and this researcher, along with the Integrative Council chair, notified the winner.

3.9 Ethical Considerations

Informed consent. Internal Review Board (IRB) at the study site gave ethical approval for the research. Research approval was obtained by Drexel University. Creswell (2007) proposes that each participant should complete an informed consent even if the study poses minimal risk. An informed consent form safeguards protection of the participants' rights throughout the study. The informed consent contained a

description of the study and the participants' involvement. In this current study, the informed consent forms indicated that participation in the study is voluntary; there was little risk involved; the participants could withdraw at any time without penalty; the participants would not incur any cost; participants' identity and responses would remain confidential; and nursing leadership and the general nursing community may benefit from the results of the study.

The IRB at the study site, Abington Memorial Hospital, reviewed the research proposal for the current study on January 7, 2014. The members of the IRB committee awarded permission (see Appendix F) to conduct the focus group and survey at the study site. All participants read and signed the informed consent before participating in the focus group (see Appendix C). Completion of the survey indicated informed consent for the survey participants.

Confidentiality. Ethical considerations must be a priority with researchers to avoid any physical or emotional harm (Polit & Beck, 2010). Privacy and confidentiality are among the key factors for the safety of the participants. Guarantees of confidentiality are vital to the ethical conduct of the researchers (Neumann, 2006). The current study omitted any identifying information to protect the identity of the participants.

Participants used their assigned alphanumeric code to ensure anonymity. The master list of participants, consent forms, tape recordings and surveys remain in a locked location during enrollment, data collection and analysis. Materials remain in the locked safe for three years following completion of the study. Destruction of the materials involves shredding, deletion from the database, and incineration, all in accordance with hospital policy. Drexel University internal review board requested a 'letter of reliance'

that ensures Abington Memorial Hospital takes responsibility for the study. Drexel University provided a letter of approval to the researcher and study site (see Appendix G).

Potential risks and benefits. A potential risk for the participant is breach of confidentiality. All measures to protect the privacy and confidentiality of the participants were taken, such as de-identification of the survey using their assigned alphanumeric, and storage of study material in a locked safe in the researcher's office. Another risk was the burden of time to read and sign the informed consent, participate in focus group, and complete the demographic and survey. The focus group took 60 minutes. The survey length took 15–20 minutes. Participants who completed the focus groups and surveys had their name entered into a draw for a $100.00 and $150.00 gift certificate, respectively.

The benefits to the participants from their enrollment in the focus group were the contribution of their findings in the survey questions. The survey information informed the study site, and other facilities that have educated their nurses in CAM. These data informed the study site of obstacles that are modifiable, the removal of which enable the study site to augment nurses' ability to integrate hospital-endorsed CAM practices into their nursing care. The information retrieved from the study contributed to the body of knowledge regarding nurses' acceptance and use of complementary treatments.

3.10 Phase I Qualitative

Data Collection

The qualitative data collection approach used was interviews, which was conducted through focus groups. Focus-group methodology requires careful planning

(Sharts-Hopko, 2001). The problem under investigation needs to be clear (nurses' continued use of CAM), the kinds of information being sought (enhancements or obstacles to CAM use), and intended use of information (development of survey) (Sharts-Hopko, 2001).

Careful consideration was given to participants' backgrounds and the members of each group. Homogenous groups are less likely to have divergent opinions (Ruff, Alexander, & McKie, 2005), therefore, each group had a mixture of nurses from various nursing units, different experience backgrounds, and education in both or differing CAM therapies.

Five participants were recruited into two focus groups, which was the minimum number needed in each group. The focus group was audiotaped and that data was evaluated to determine whether saturation had been reached. Saturation is the point when no new information emerges from the participants in the two groups.

The facilitator of the group needed to be skilled at "drawing people out and following the line of discussion with probing follow-up questions, or refocusing people on the topic at hand" (Sharts-Hopko, 2001, p. 90). This researcher/facilitator is skilled in group dynamics through teaching mindfulness and Reiki classes.

Questions were prepared in advance and they were open-ended, clear and short, and progressed from general to specific. The questions were tested on four to five CAM practitioners who were not part of the focus group. The testing of questions was done prior to the first focus group to ensure they were understandable and led to the desired information (Sharts-Hopko, 2001).

The setting for the focus group was a quiet conference room at AMH with soft music and low lights, which created a comfortable space that is familiar to the participants as CAM practitioners. The acoustics of the room were amenable to tape recording, and its layout allowed everyone to sit in a circle, which avoids the teacher-student relationship dyad and encouraged discussion. The researcher used two audio recorders in the event that there was a failure in one device.

The focus-group meeting included the researcher (as discussion facilitator) and the participants. The discussion facilitator opened the meeting by introducing herself, and then the participants introduced themselves. The method and purpose of the study was reviewed, along with the need for confidentiality to foster disclosure and generate trust. The rationale for the use of audiotaping and note taking was explained. The role of the participants was reviewed. The participants signed the informed consents prior to the meeting. Each participant was encouraged to share their opinions throughout the discussion; participants who speak less frequently were encouraged to express their opinion. At the conclusion of the discussion, the facilitator stated the purpose of the study and gave a two- to three-minute oral summary of the key findings, and asked the participants if they had anything to add and if the main ideas had been captured. The participants completed a demographic data form. The researcher asked for agreement from the participants to receive their personal transcript via electronic mail. The transcripts were verbatim and not summarized in any way by the researcher. The participants agreed to contact the researcher within three days of receiving the transcript with any changes or respond via electronic mail that the transcript was accurate. If the participant had changes, then the researcher arranged a meeting, tape recorded the session

for changes, transcribed the changes, and then sent the new transcript to the participant for verification. At the close of the focus group, the researcher thanked the participants and reiterate that their names were included in a draw for a $100 gift voucher.

Data Analysis: Focus Groups

Data analysis began with carefully developed questions and attention to facilitating the groups to encourage participation by all members. Data analysis occurs "simultaneously with data collection and involves the process of clarifying vague, inconsistent, or cryptic comments to probe meanings and documenting field notes" (Ruff, Alexander, & McKie, 2005, p. 137).

Demographic data was transcribed onto a spreadsheet. Descriptive statistics was used to analyze the demographic information. Focus group data was audiotaped and transcribed, along with field notes, to explicate significant and recurring themes using the grounded principles approach and constant comparison of codes described by Glaser and Strauss (1967). Starting lists of codes that are consistent with study's focus were used during the preliminary analysis (Miles & Huberman, 1994). The initial codes were CAM practices (Reiki/aromatherapy), factors that led to continuation of practices, and factors that are obstacles to practice. Additional codes emerged during the analysis. The researcher returned to the data and the participants' verbatim comments were reexamined to affirm the codes assigned.

Organizing and cleaning data. Audiotapes were transcribed verbatim following the focus-group meeting. The transcripts were reviewed while listening to the audiotapes and comparing with the field notes to clean the transcript data. Corrections in text were made. The transcripts and audiotapes were reviewed multiple times to identify

significant statements. Significant statements were highlighted and notes were be made in the margins relevant to voice inflection, laughter or emotion. Similar concepts were grouped together to form themes. Frequencies of similar words or phrases were noted to aid identification of important themes (Krueger, 1998; Sandelowki, 1995). The process of grouping concepts assisted in developing an understanding of the patterns in the data (Krueger, 1998). The findings were reviewed with the participants in the study and changes made as necessary.

The resulting transcripts were downloaded into NVivo® software. This software facilitated data organization, such as coding categories and content analysis. Following a protocol outlined by Kruger and Casey (2000), two qualitative experts independently reviewed transcripts using content analytic methods, which included a combination of both deductive and inductive approaches. Each qualitative expert used NVivo® software for coding. After coding three transcripts, the codes and text segments were compared. There was a codebook established with parent and child codes. The remaining transcripts were analyzed independently. The acceptable congruency percentage in coding was 80% as recommended by Miles and Huberman (1994). The qualitative expert completed a confidentiality agreement (see Appendix J).

Establish Credibility

Rigor in the data collection and analysis process ensured that the data was not misinterpreted or misrepresented. Rigor was enhanced by deliberately creating discussion-generating questions (Ruff et al., 2005). The questions were designed to encourage open discussion without suggesting or manipulating the direction of the conversation. Truth value was enhanced by avoiding leading the discussion or

suggesting obstacles to CAM practice. Verbatim transcripts, which maintain the purity of the data, enhanced truth-value. An auditable trail was provided in the analysis while protecting the anonymity of the participants by using an alphanumeric de-identifier for each.

The criteria used for evaluating rigor included: 1) truth value (credibility and consistency of the findings); 2) applicability (applicability or transferability of the findings refer to whether findings can fit outside the context of the study site); 3) consistency of the findings; and 4) neutrality (freedom from bias and confirmability) (Ruff et al., 2005).

The analysis of data was verified by giving a verbatim transcript to the participants for their review (Bader & Rossi, 1999). The process of member checking provided evidence of the credibility of this researcher's interpretations of participants' responses to the focus-group interviews (Creswell 2009; Trochim & Donnelly, 2007). Participants were asked to indicate whether the items appear to measure the constructs of interest.

Proposed Questions for Focus Groups

The methodology of focus group interviews was to obtain information and interactions from the participants in a small group setting (Ruff et al., 2005). The two main approaches to developing focus group questions include a topic approach and a question approach (Ruff et al., 2005). In this study, a question approach was utilized based on the format outlined by Ruff et al. (2005).

The questions were categorized into: 1.) opening questions, 2.) introductory questions, 3.) transitional questions, 4.) key questions, and 5.) closing questions.

Opening questions were factual about something the participants have in common (see Appendix H). The opening questions were used to "break-the-ice" and attempted to involve everyone in the discussion. The question that was asked is: What Complementary and Alternative Medicine (CAM) therapy have you been educated to use?

Introductory questions provide the opportunity for participants to share their experiences and hear the experiences of others. The purpose of the question was to capture the interest of the participants and engage them in conversation. The question that was asked was: How do you view CAM use in your personal (self) care?

A transitional question was designed to move the discussion toward the key questions. The question is more focused and provides a link between the introductory and key questions. The question that was asked was: How do you view CAM use in your patient care?

Key questions are the "heart of the interview and focus on the main areas of concern" (Ruff et al., p. 135). There are typically 3-5 key questions, they are usually open-ended, and ask the participants to think about specific experiences. The questions that were asked were: 1.) What happens in your environment that either facilitates or creates barriers for you to use CAM with your patient? 2.) What type of patient population is CAM effective or ineffective? 3.) How do you make the decision to treat or withhold CAM? and 4.) What if anything makes you more likely to use CAM with your patient?

Ending questions were designed to ensure that all the critical information has been elicited. The researcher/facilitator stated the purpose of the study: The purpose of the

study was to describe the personal factors, nurses' perception of patient receptivity of CAM, and situational factors that influence nurses' continued use of CAM. The ending question that was asked was: Is there anything else that you would like to add?

The closing remarks of the focus group were a summary of responses, a thank you for their participation, and an agreement to review the transcripts. Verbatim transcripts were initially reviewed via electronic mail. Any changes to the transcript were done in-person and audiotaped. There was a script for the facilitator/researcher to follow as a guide during the focus group data collection (see Appendix G). The participants agreed to receive verbatim transcripts via electronic mail and to read through and contact the interviewer within two days of receiving the transcript.

The digital audio recording file was saved to the researcher's laptop and then sent as a link to Dropbox via electronic mail to the transcriptionist. The transcriptionist signed a researcher confidentiality agreement (see Appendix J). The transcriptionist returned the verbatim-transcribed file in a Microsoft Word document within the agreed upon 24 hours. The researcher listened to the audio recording while viewing the written file and verified the audio with the written transcription. The researcher notified the transcriptionist that the audio and written files could be deleted from her computer per the confidentiality agreement. The researcher deleted the second device recording of the focus group since the first device recording was accurate and reflected the one-hour meetings in their entirety.

Participants received their verbatim transcript via electronic mail in a Microsoft Word document. All of the participants reviewed their transcript and responded via electronic mail within the two-day time frame. None of the participants made changes to

their answers after reviewing their transcripts. Since the transcripts were accurate, the researcher deleted the original device recording.

Cognitive Interviewing

Cognitive interviewing has developed as a prominent method for identifying and correcting problems with survey questions (Beatty & Willis, 2007). Beatty and Willis (2007) define cognitive interviewing as "the administration of draft survey questions while collecting additional verbal information about the survey questions, which is used to evaluate the quality of the response or to help determine whether the question is generating the information that its author intends" (p. 287). This researcher followed the guidelines suggested by Beatty and Willis (2007): 1.) General approach, 2.) Key decisions, and 3.) Evaluation of data.

The general approach can be based on explicit follow-up questions (probes) from the interviewer, or based on general instructions to "think out loud" as much as possible (Beatty & Willis, 2007). This researcher utilized the "think out loud" paradigm and encouraged the participants to verbalize thoughts while answering questions, for example, tell me what you are thinking when you answered this question. The participants' response was written down by the participant and reviewed by the researcher to verify the understanding of the response. Cognitive interviewing provided an explanation of what the participant interprets the question to mean and provided insight into any difficulties in answering questions.

Key decisions regarding cognitive interviewing study design involves participant selection, the number of interviews, and the bases for these decisions. There were ten participants in the focus group and three of those ten were selected for cognitive

interviewing as a convenience sample. The three selected were chosen because they represent varying levels of education (MSN at the bedside, BSN working as specialist, and a nurse practitioner). The three participants selected represented different departments in the hospital (operating room, cardiac care and palliative care). The settings for the focus group were done at the hospital, in a quiet room, on the participants' nursing unit.

The evaluation of the written data from the cognitive interviews involved analysis of item-specific recommendations, need for further specifications of questions, problems related to ordering of questions or answers, and problems related to reduction in overall length of survey (Willis, 2005). Questions on the survey were changed based on the findings and whether the intended construct and response process are aligned. The process of analysis followed Willis' (2005) recommendations of compiling results across interviews. This process involved compiling all the comments made by each participant for each question (Willis, 2005). The researcher looked to see what the problems were with each question and whether there were similar responses across interviews. Changes were made to survey questions based on problems that emerged from the analysis of data.

3.11 Phase II Quantitative

Data Collection

A survey completed electronically was chosen for this study as it provided an efficient method of collecting responses. Data was quantified using descriptive statistics (Terry, 2012). There are two methods of administering a written survey: surveys can be given to the subject in person or can be mailed via traditional mail service or through the Internet. One advantage of delivering the survey in person is that it permits the researcher

to elucidate questions and examine responses for completeness before the participant leaves (Cummings et al., 1988).

Data collection process. The process of data collection begins with the review of the literature, the definition of the variables, and how they will be operationalized or measured (Terry, 2012). As this researcher reviewed the literature, there were no surveys that measured the variables under investigation in the population of nurses.

Phase II, the question development for the survey, followed the steps outlined by Terry (2012): a) defining the concept to be measured; b) developing the items to be included on the survey; c) assessing the items for content validity; d) developing instructions for the research participants; (e) developing a pre-test for the items; f) pilot testing the items; g) estimating reliability; and h) ensuring validity (p. 136).

Survey data relies on the honesty and completeness of answers by the CAM practitioner. Those with missing data were excluded from analysis on a list-wise basis. Duplicate answers were not an issue since the electronic survey allowed questions to be designed as single answer, or single coded.

Proposed Survey Development

After exploration and analysis of qualitative data with focus groups, the findings were utilized to inform the questions for a survey. The intent of this strategy was the development of better measurements of the variables (Creswell, 2014).

There were seven major content sections in the survey: 1.) Informed consent, 2.) Demographic questions, 3.) CHBQ (Lie & Boker, 2004), and 4.) Researcher developed questions for sections four through seven. The CHBQ had a continuous scale from absolutely disagree to absolutely agree. Researcher developed questions had a 7-point

continuous scale from absolutely agree to absolutely disagree and categorical scales (i.e. yes/no). There was one open-ended question at the end of the survey, which gave the respondent the opportunity to express any thoughts or issues that may not have been asked in the survey.

From the analysis of the qualitative data sets, there were categories that emerged. These categories served as headings for the large-scale sections within the survey. The themes and codes derived from the categories served as individual survey items. A matrix describing how the qualitative findings corresponded to each survey item was listed. Not all codes were represented on the survey in an effort to keep the survey as short as possible, yet comprehensive.

The questions on the researcher-developed survey were directly aligned with the prevailing themes from the participants' focus group (Harris, 2013). Also, questions were supported from the literature review.

Data Analysis: Proposed Survey

Data was examined using descriptive and graphical methods to assess data quality and level of missingness. To address hypothesis #1, a model was constructed with continued use of CAM as the dependent variable and intrinsic and extrinsic variables as independent factors and co-variants. The primary outcome was the continued use of CAM and a logistic regression was used with the intrinsic and extrinsic factors as independent variables or predictors.

Analysis of the data subjected the answers on the surveys to statistical operations that revealed relationships, patterns or trends that seemed to exist among the variables and to test that the relationship is accurate. The purpose of the analysis was to draw some

conclusions from the data and to understand better the nurses' use of hospital-endorsed CAM therapies and any obstacles that exist. The quantitative data indicated changes in a dependent variable and allowed a comparison to another variable.

Levels of data collected. The survey questions on the CHBQ and researcher-developed questions had ordinal, discrete data. The majority of the questions had Yes/No answers that are dichotomous, nominal data. There were many questions with 5-point or 7-point Likert scale responses. There was one open-ended question at the end of the survey.

Question development. Surveys may contain open-ended and/or closed-end questions. In closed-ended questions, respondents are asked to choose one or more preselected answers. Open-ended questions seek an answer in the words of the respondents. There are advantages and disadvantages to both types of questions. Closed-ended questions provide a list of choices and are quicker and easier to answer; the answers are quicker and easier to analyze (Cummings et al., 1998, p. 43). Closed-ended questions were the style of choice for this survey. There was one optional open-ended question at the end of the survey to provide the respondent an opportunity to elaborate on a close-ended question, and to comment on CAM therapies or education not covered in the survey.

This researcher found no survey to measure the variables: intrinsic factors, extrinsic factors, or patterns of use. A previously validated survey would have been the first choice of this researcher. When developing survey questions and data collection, several factors need to be considered, such as threats to validity, managing bias, response sets, and cleaning data sets

Threats to validity. Internal validity is the ability to make causal conclusions. Observational studies are always open to the possibility that the effects seen are due to confounding factors, and therefore have low internal validity. Besides lack of randomization and lack of blinding, omission of a control group is a cause of poor internal validity (Seltman, 2013).

There can be internal and external threats to validity with observational designs. These designs are used to explore a research question about which little is already known in order to uncover generalizations and to develop hypotheses for further investigation and testing (Seltman, 2013).

Managing biases in data collection. Research participants want to respond in a way that makes them look as good as possible (Donaldson & Grant-Vallone, 2002). Self-report bias, such as reporting more use of hospital-endorsed CAM treatments with patients than is the case, is a possibility; however, the use of de-identifier should reduce this possibility. In an effort to reduce user error, the CAM nurses filled out the survey during non-work time and in a relatively quiet environment with no distractions.

Response set biases. Response set is the tendency of a person to respond to questions in a particular way independently of the content of the questions or, as conventionally termed, items (Topf, 1986). Types of response set bias are carelessness, social desirability, acquiescence, and extremity of response (Oskamp, 1977).

Carelessness is when the respondent lacks motivation to fill out the survey. The respondent may skip questions, fill in two responses to the same question, or answer all items of a scale in the same way. There are several ways to reduce carelessness. Certainly building a rapport with the respondent can help. This researcher has a rapport

with the population as their teacher. Another way to reduce carelessness is to develop the questions carefully, using simple items. This researcher utilized cognitive interviewing to establish understanding of questions along with flow and design. Some respondents may still skip items, and Zatz (1980) contends that this data should not be discarded. Persons who skip questions are part of the population being studied. Each question analyzed had the number of respondents listed along with the number of respondents that skipped the question. Analysis was based on the number of respondents for each question.

Social desirability is the tendency for respondents to answer questions with the most socially acceptable answer or to "fake good" (Crowne & Marlow, 1960; Edwards, 1957; Oskamp, 1977; Topf, 1968). This type of answer can be generated from a need for approval (Edwards, 1957). The respondent can also deny undesirable qualities that are true and claim desirable qualities (Robinson & Shaver, 1973). One way to reduce social desirability was to tell the respondents that there are no right or wrong answers, provide anonymity, and encourage respondents to answer honestly (Topf, 1968).

A third response set is the tendency of the respondent to acquiesce, or agree, with positively worded questionnaire items (Topf, 1968). A strategy to reduce acquiescence is to have an equal number of positively and negatively worded items (Crano & Brewer, 1973; Oskamp, 1977; Topf, 1968). Most of the Likert scales that were researcher-developed contained some negatively worded items.

The last response set is extremity of response. An extremity of response set occurs when there are more than two possible answers, such as Likert scales ranging from +3 to -3 (Topf, 1968).

Cleaning data sets. An important aspect in determining the quality of research findings is an activity called "cleaning the data" (Barhyte & Bacon, 1984; Polit & Hungler, 1983). The goal of cleaning the data is to obtain a "set of data that contains a minimum of errors resulting from human factors in coding and data entry" (Barhyte & Bacon, 1983, p. 62). The electronic survey was examined for errors or missing answers.

Reliability and Validity

Reliability. Reliability is the degree to which your survey measures something reliably from one time to another (Roberts, 2010). Cognitive interviewing was done to ensure understanding of the survey items.

Validity. Validity is the degree to which your survey truly measures what it purports to measure (Roberts, 2010). The CAM Health Belief Questionnaire (CHBQ) was designed and constructed by the interdisciplinary CAM Education Task Force. After an extensive literature review by Lie and Booker (2004), content validity was established for the CHBQ items. The internal consistency reliabilities of CAM attitude/belief scale scores, measured by Cronbach's coefficient α, and were 0.75 for the 10-item CHBQ.

Content validity: Researcher developed survey. Validity is a key factor in a survey and a two-stage process was used to determine content validity, development stage and judgment stage (Lynn, 1986). Utilization of a two-stage process is "fundamental to the validation of virtually all instrumentation" (Lynn, 1986, p. 382). The first stage was a faculty member with expertise in research design and an academician with CAM experience who were consulted to pretest the survey. Modifications were made to the survey based on their recommendations.

The second stage was a pretest of the survey by three doctoral experts in CAM. The survey was evaluated for face validity, simplicity, leading questions and the sequencing or flow. Face validity is defined as what a survey appears superficially to measure and whether the survey looks valid (Burns, 1995). The survey was modified based on the feedback.

According to Groves et al. (2004), there are three individual criterions that all survey questions should meet: a) content standards, b) cognitive standards, and c) usability standards. Content standards evaluates whether the question are asking the right things; cognitive standards assesses whether the respondents understand the questions; and usability gauges whether the respondents can complete the questionnaire easily and as intended (Groves et al., 2004, p. 241). To ensure content, cognitive, and usability standards, this researcher chose the "expert review" as described by Groves et al. (2004, p. 242).

Expert review. Expert review is described as a technique in which questionnaire design experts assess whether the proposed questions meet the content, cognitive, and usability standards (Groves et al., 2004). A questionnaire design expert consultant twice reviewed the survey and made recommendations, which were aimed at improving the content, cognitive, and usability standards of the survey. A doctoral faculty member with experience in research design also evaluated the survey. The suggestions from both experts included wording of the questions, ordering, and response alternatives of the survey.

While the design expert and faculty member had an understanding of survey methodology, there were areas outside of their expertise related to the topic. Groves et al.

(2004) recommends that subject matter experts review questions to consider whether the content is appropriate for quantifying the intended variables. The subject matter reviewers in this project were the dissertation chair, a doctoral qualitative researcher with extensive CAM experience, and a doctoral prepared nurse with CAM education experience. These experts recommended changes within the survey regarding wording of questions, flow of the questions, and design of the question (e.g. change question design from 'pick the most important' to a rating scale).

3.12 Assumptions

The study involves three assumptions. The first pertains to the interpretation of the data based on the participants' accurate understanding and honesty in answering the focus group and survey questions. The recognition of language and the understanding of words and meanings are important aspects of the research process (Polit & Beck, 2010). The assumption was that the participant has a working knowledge of the language specific to the research topic.

A second assumption was the nurses' commitment to continuing the use of CAM treatments after their initial education in Reiki and/or aromatherapy/guided imagery. The nurses received a post-test after the education and continuing education units (CEUs) after their voluntary attendance at class.

A third assumption pertains to the nurses' use of CAM therapies. The nurses from the study organization are identified as attending classes and demonstrate competency in CAM therapies. The assumption was that the nurses using CAM therapies had experience integrating hospital-endorsed CAM treatments in their delivery of nursing care.

3.13 Limitations of Study

Qualitative. Qualitative studies using focus groups have some limitations. The interviews are not done in a naturalistic setting, such as while the practitioner is treating the patient with Reiki/aromatherapy or directly after the treatment. The focus groups took place in a conference room at the hospital with low lighting and soft background music, which provided a quiet, peaceful environment.

The presence of the interviewer may bias responses. The interviewer was the Reiki instructor and those students may feel compelled to speak positively. The interviewer encouraged the participants to speak honestly in an effort to obtain accurate information. The interviewer created an environment that was permissive and nonjudgmental using positive feedback.

Not all participants are equally perceptive or articulate in their thoughts and feelings. The interviewer attempted to create an open-minded space in which the participants felt relaxed and comfortable expressing their experiences.

Quantitative. Quantitative cross-sectional descriptive research has some fundamental limitations. This study was not designed to investigate the respondents' experience or past exposure that may affect responses to the questions. It was not intended to establish a causal relationship. Additionally, information was based on self-reports.

The survey used mostly closed-ended questions and one optional open-ended question. A disadvantage of using closed-ended questions was that it does not allow the respondents to state their unique answers. The utilization of more open-ended questions may have allowed for analysis that was more detailed. However, such an approach could

have the potential to decrease the response rate because of the increased time to complete the survey.

The limitations of the study are the single site and homogenous population, mostly white and female.

Finally, validity concerns exist with a new data collection tool, despite precautions to minimize these threats. The survey was devised after an analysis of focus group taped interviews and based on variables from the extant, peer reviewed journals. The survey will be pre-tested before being used in this study.

3.14 Future Directions

The results of this research added to the CAM literature. The results determined the impact of intrinsic and extrinsic factors that influence continuation of CAM treatments for patient care in a population of nurses at a suburban mid-Atlantic hospital. These results informed hospital administration of nursing staff's use of CAM treatments with patient care and determined whether support or additional education was needed to offer sustainability of CAM. Future research could replicate this survey at multiple sites where CAM is accepted by the administration. Future research could look at a qualitative study of the nurses' experience in using CAM and job satisfaction. Another area of exploration is the use of CAM and nurse retention and/or recruitment.

Summary

Chapter 3 included a discussion of the methodology, the appropriateness of mixed-methods, exploratory survey development design to describe the intrinsic and extrinsic factors associated with a cohort of nurses educated in hospital-endorsed CAM treatments in a suburban hospital setting. The chapter included a description of the study

sample, geographic location, data collection method, procedure for ensuring confidentiality, focus group questions, integration of qualitative data into survey questions, pilot testing of survey, reliability, validity, assumptions, limitations, and data analysis procedures. Chapter 4 contains a discussion of the results of the focus groups and survey.

CHAPTER 4: RESULTS

Chapter 4 includes a presentation of the findings from the mixed methods study, a focus group and survey. The chapter is divided into three sections: qualitative focus group, integration of focus group analysis into survey questions, and quantitative survey results. Section one of this chapter discusses a) the description of sample of those who completed the focus group interviews, b) focus group data analysis, and c) results of analysis, with emerging themes. Section two reports a) the integration of the qualitative data into survey questions, and b) results of cognitive interviews. Section three discusses a) the description of sample of those who completed the survey, b) the results of the survey using descriptive statistics, and c) and inferential statistics of study variables.

4.1 Qualitative

Identifying nodes is a method of organization within the software. Node creation promotes theme identification when reviewing the data for language, concepts or words extrapolated from the transcribed text. The identification of nodes prompts the reviewer to categorize text phrases into common themes. Nodes are containers or folders for themes and can be organized into hierarchies, moving from general topics (the parent node) to more specific (child nodes) or the identification of themes (parent nodes) and sub-themes (child nodes). Keyword identification of nodes occurred in alignment of the questions from the focus group. Querying the nodes for word frequency led to the identification of keywords. The analysis of keywords in each node included samples of the participants' quoted text to further disclose the nurses' experiences.

Focus group data was analyzed using the grounded principles approach and constant comparison of codes described by Glaser and Strauss (1967). A starting list of

codes that are consistent with study's focus was used during the preliminary analysis (Miles & Huberman, 1994). The initial codes were CAM practices (Reiki/aromatherapy), factors that led to continuation of practices, and factors that are obstacles to practice. Additional codes emerged during the analysis. The researcher examined each piece of data and the participants' verbatim comments were reexamined to affirm the codes assigned using constant comparison analysis (Leech & Onwuegbuzie, 2001).

The codes and resultant themes that emerged were verified with an independent expert in qualitative research. The congruence between both analyses was greater than 80 percent. All data and preliminary findings were verified through member checking.

Demographic Analysis: Focus Group

The participants in the current study were nurses who were currently employed at the study site and completed education in Reiki and/or aromatherapy/guided imagery. There were 12 participants recruited into two focus groups, however, only 10 actually participated.

The focus group sample included a diverse group of nurses with various education backgrounds, years of nursing practice, years as CAM practitioners, and roles within the organization. The education level ranged from diploma RN (1), BSN (4), BSN, MA (2), MSN (1), MSN with specialty certification in holistic nursing (AHN-BC) (1), and advanced practice MSN Nurse Practitioner in Palliative Care (CRNP) (1). The focus group participants' years of service as RN ranged from 19 to 42 years with a mean of 29.9 years of practice. The participants' years as a Reiki practitioner ranged from 3 to 17 years with a mean of 7.7 years of Reiki practice. The participants' years as aromatherapy/guided imagery practitioner ranged from 3 to 5 years with a mean of 3.9

years of aromatherapy practice. The areas of the hospital represented in the focus group were labor/delivery, postpartum, antepartum, operating room, heart failure unit, medical intensive care unit, palliative care, medical-surgical and psychiatry. Table 5 is a summary of the key demographic features of the focus group sample.

Table 5

Focus Group Participant Demographic Data

Age	Education Level	Years Nurse	Years Reiki	Years Aromatherapy	Unit Work
57	BSN, MA	35	10	5	Labor
57	BSN, MA	35	10	5	Postpartum
52	Diploma RN	29	3	3	Antepartum
56	MSN, AHN-BC	35	17	5	OR
43	BSN	22	6	4	Heart Failure
43	BSN	21	N/A	3	MICU
62	MSN, CRNP	42	7	5	Palliative Care
63	MSN	36	15	N/A	Med-Surg
45	BSN	25	4	4	Psychiatry
48	BSN	19	5	5	Med-Surg

The participants' roles within the organization varied from staff nurse (6), team coordinator (1), clinical leader (1), transitions nurse (1), and a nurse practitioner (1). The ages varied from 43 to 63 years and all participants were White females.

Use of CAM therapies. The nurses in the current study received education in Reiki (9) and/or aromatherapy/guided imagery (9); there was one nurse in each focus group that was educated in only one CAM modality. All of the nurses integrated at least one modality in patient care. All of the nurses had integrated at least one of the hospital-endorsed modalities into self-care, along with acupuncture (1), yoga (3), meditation (7) and crystals/stones (2). Applications of CAM therapies for patient care and self-care interventions are shown in Table 6.

Table 6

Focus Group: CAM Use for Patient Care and Self-Care

Participant	Patient Care Intervention	Self-Care Intervention
1	Reiki	Reiki, meditation, aromatherapy
2	Reiki Aromatherapy/ Guided imagery	Reiki, meditation, crystals, stones, aromatherapy
3	Reiki Aromatherapy/ Guided imagery	Reiki, yoga, aromatherapy, crystals
4	Aromatherapy/ Guided imagery	Aromatherapy, meditation, acupuncture
5	Reiki Aromatherapy/ Guided imagery	Reiki, yoga, meditation
6	Reiki Aromatherapy/ Guided imagery	Aromatherapy, guided imagery, massage
7	Reiki Aromatherapy/ Guided imagery	Reiki, massage, meditation
8	Reiki Aromatherapy/ Guided imagery	Reiki, Yoga, meditation
9	Reiki Aromatherapy/ Guided imagery	Reiki, Aromatherapy
10	Reiki Aromatherapy/ Guided Imagery	Aromatherapy. Meditation

Data Analysis Methods: Focus Groups

Focus Group Interviews

There were four key questions that were intended to delve deeper into the experiences and beliefs of the CAM practitioners' integration of CAM into nursing practice and their decision-making process. The four key questions were: 1) What happens in your environment that either facilitates or creates barriers for you to use CAM with your patient, 2) What type of patient is CAM effective or ineffective, 3) How do you make the decision to treat or withhold CAM, and 4) What, if anything, makes you more likely to use CAM with your patient. The participants' responded with patient stories and described the challenges of integrating CAM in the acute care setting.

The ending question served as a summary of the purpose of the study and a time for the participants to add additional thoughts. The interviewer stated the purpose of the study is to describe the personal factors, nurses' perception of patient receptivity of CAM, and situational factors that influence nurses' continued use of CAM and asked: Is there anything else that you would like to add? The participants stated any additional thoughts and then the interviewer provided a summary of the key points in the discussion with clarification as necessary.

Focus Group Results

The transcribed data was identified with the respondents' alphanumeric in lieu of their name. Each participant responded to every question before moving on to the next question in the script. The verbatim transcripts were imported into NVivo® version 10 software.

Keyword and Theme Identification

The hierarchical name, number of sources coded, and the number of coding references were exported to a Microsoft Excel spreadsheet. This provided the researcher with a numerical count of codes (nodes) that were derived from the participants' transcripts. The researcher utilized this information for the development of themes and sub-themes. The themes, based on most frequent keywords, are a) barriers (obstacles) to use of CAM, b) promotes use of CAM, c) nurses' perceived benefits of CAM, and d) prompts for nurse to treat. The themes and sub-themes are shown in table 7 and figure 9.

Table 7

Themes and Sub-themes

Themes	Sub-themes
Barriers (Obstacles) to Use of CAM	Time Environment Resources
Promotes Use of CAM (Nurses' Perception)	Education Consults Healing Space Standard of Care
Benefits of CAM (Nurses' Perception)	Patient Nurses (treatment of peers) Nurses (self-care)
Prompts Nurse to Treat	Patient factors Peer factors

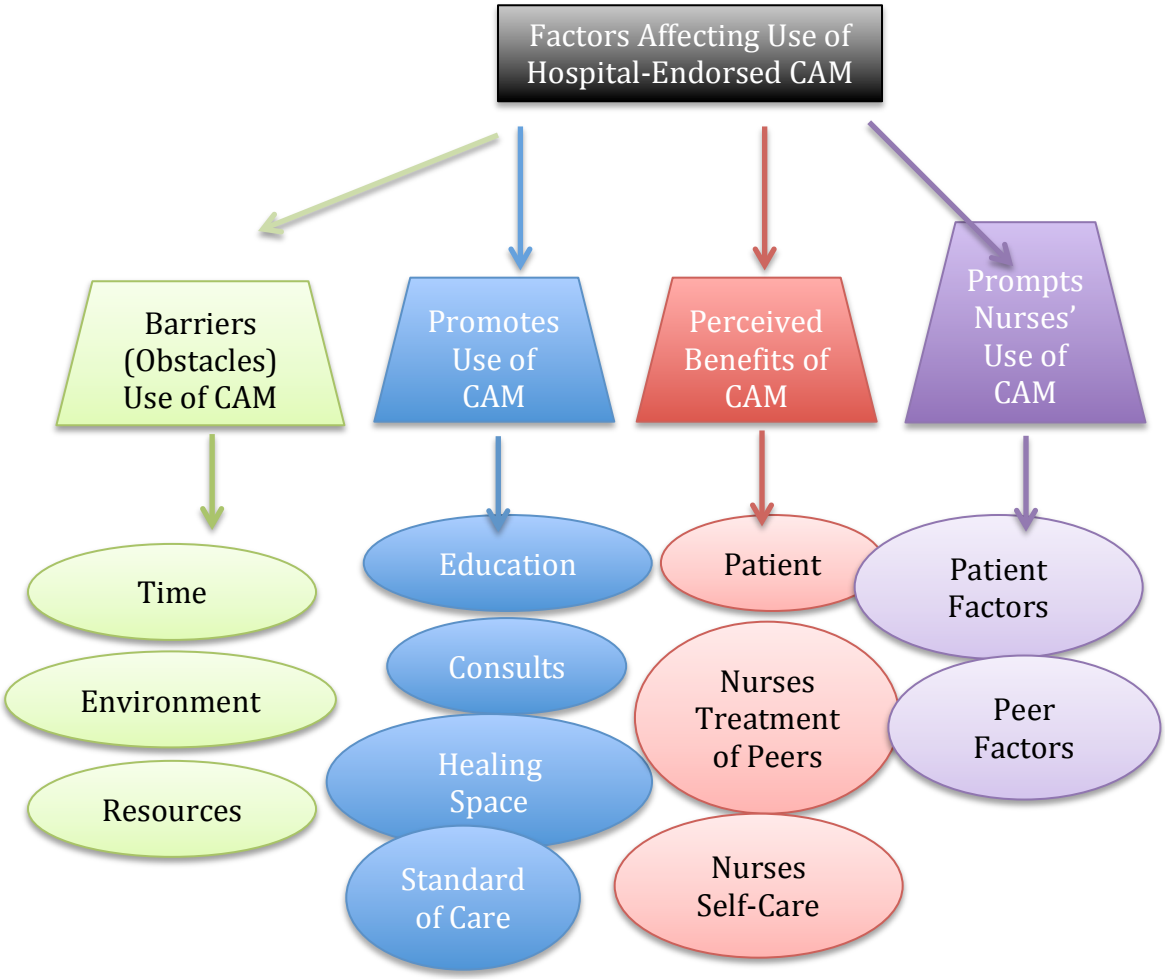

Figure 9. Themes and sub-themes: Factors affecting the use of hospital-endorsed CAM

Theme #1: Barriers (obstacles) to Use of CAM

The barriers (obstacles) to the use of CAM theme emerged from data patterns pertaining to the participants' integration of CAM into their patient care practices. Respondents all practiced CAM in their personal (self-care) use, however, 8 out of 10 (80%) expressed difficulty in the integration of CAM in nursing practice.

Participant L1 stated, "I would treat all of my patients if I had....time."

Participant C2 shared, “I think you get so busy in the day that sometimes even though it’s (providing CAM) part of my internal drive as a practitioner, you’re just moving so fast ……that time element…. You become lost and you cannot get to deliver a CAM treatment.”

Participant L2 explained, “I think all patients should have treatments. I wish I had time to do Reiki and aromatherapy with all of my patients. All patients are stressed and this helps them to relax. I would like to integrate it with my rounds, I just can’t seem to get time.”

Participant T1 stated, “I wish I could do the treatments more often. I think all patients should have treatments and that they would benefit from the treatment.”

Participant M1 said, “I can’t find enough opportunities to do CAM treatments at work. There just isn’t the time.”

All of the participants (100%) expressed that all (100%) of their patients could benefit from a CAM treatment. However, 10 out of 10 (100%) expressed obstacles, which kept them from administering CAM treatment for their patient. Participants (7 out of 10, 70%) felt frustrated that they could not meet what they saw as a need for a CAM treatment. The external factors that emerged as obstacles were time, environment, and resources.

Sub theme 1: Time. The primary barrier that emerged was time, which was cited with the most frequency (42 coded references). All focus group participants mentioned time as their number one barrier, however, 2 out of 10 (20%) CAM practitioners did manage to overcome time and administer some CAM treatments each week. Nursing

tasks, such as, documentation, assessments, medication administration, and testing are the priority, which precluded any time in the shift for a CAM treatment.

Participant LA1 stated,

> I think that the biggest obstacle is time; time to do everything I need to get done and find time to just sit with the patient. The fact that my coworkers know that I can do the aromatherapy is helpful because they'll suggest it or suggest a patient that will do it but the hardest thing is finding time to get in there and just sit."

Participant L2 expressed,

> If I go to do a Reiki treatment on my patient, I feel rushed and distracted because I know I have so many other things to get done. Sometimes I will do the treatment at the start of my lunch time or at the end of my shift because I feel like I am off the clock and then I can concentrate on doing a treatment.

Participant Be1 stated,

> …...barriers to giving a CAM treatments are that you have other responsibilities of documenting and just everything that is within your job description so that gets in the way of doing…laying your hands on somebody and giving them a treatment because you have to type stuff in the computer or hang a medication or so many different things.

Participant B2 articulated,

> I have frustration in my job because I can't do Reiki with all of my patients and sometimes I just feel frustrated with that. I have this desire and passion to do it and I guess I want to bring it forth more and don't know how to ……and I guess

this hospital wide I and I guess that maybe all of us are frustrated at that level because we do want to make it available to the patients.

Sub theme 2: Environment. The participants (80%) expressed their difficulties in CAM administration that were related to the physical environment, specifically, noise on the nursing unit and interruptions by phone or other staff.

Participant LA1 stated,

> I carry the admission phone and sometimes it rings off the hook and it's not very relaxing to sit with someone and say let me give you a nice hand massage. Ring, ring...and so it's like finding someone to take that phone from me for a few minutes so I can sit in there and then when I did have patients sometimes it would just be the amount of things I needed to get done with the patients.

Participant B1 expressed, "I could go do a treatment but there are always interruptions.....so the interruptions are barriers….the interruptions defeat the relaxation."

Participant C1 stated,

> I have talked to nurses on the oncology unit that are trained in CAM and they (the nurses) want to make it (CAM) more of a treatment modalities available in a room or a setting so that there would be even more time developed for it (CAM treatment) or a place developed for these patients who really have high needs because of their diagnosis and receiving chemotherapy…… folks who are experiencing nausea and some of the anxiety associated with chemotherapy and I know at some point they (nurses) were even talking about making an innovators circle application for really expanding CAM practice within their own unit so it's something that we really do have interest in from a nursing perspective.

Participant La1 said,

> ….it (CAM treatment) would be a designated time and there could be no interruptions even if that meant if you went in there was a little something on the door. I've had that happen where you're in there and you're feeling like okay we're having a very good session; I remember doing a visualization with somebody and then someone is knocking at the door. You wish you would have a sign for the patient door that read treatment in process, give us 15 minutes.

Sub theme 3: Resources. Resources emerged as a factor relevant to staff coverage. While 100% expressed nursing colleagues as supportive of CAM, participants (90%) spoke of a need for someone to cover their patients when administering a CAM treatment. Participants had difficulty locating someone to cover their patients to allow them the needed time to administer a CAM treatment.

Participant Be1 expressed, "The problem (with administering CAM treatment) is if I'm in a room with one patient than I can't watch my other patients that I'm responsible for. I need someone to watch that patient for me."

Participant LA1 stated,

> I've never had anyone not support it (CAM). Maybe there are nurses that wouldn't necessarily ask me to do it (CAM treatment) because they didn't really believe in it although once I give them a lavender hand massage, they tend to change their mind. But I haven't had anybody not want it or not want their patient to have it.

Participant C1 expressed, "I've never had any resistance (from peers on CAM administration). It's always been really enthusiastically received and in our practice, if a

patient has a high anxiety score and they feel that aromatherapy could be helpful then one of us who is trained is assigned that next day."

Participant La1 said,

> I'd have to say that some of the nurses at first were like 'oh okay yeah sure. Go ahead in and give your treatment.' But then when you come out and things are better (with the patient) they're like oh okay. So, I wouldn't say resistance but more of disbelief. Let's see if that helps (CAM treatment) and then after a couple times then they're the ones that are saying I have a patient that needs your help. So it's interesting the ones that were the most not believing are the same ones that are like oh wow that was really good.

Theme #2: Promotes the Use of CAM

Hospital administration and the department of nursing are supportive of CAM practice integration. Integrative Medicine Services was established in 2003 with the intent of offering inpatient and outpatient treatments of Reiki and/or aromatherapy/guided imagery. The shared governance Integrative Nursing Council supported further education of members through guest speakers. The chief nursing officer (CNO) reported nurses' de-identified experiences of CAM treatment administration with their patients to the board of directors at the study site. The CNO funded the cost of the aromatherapy oils and lotion.

The participant responses connected four things that would assist their ability to provide CAM treatments to patients, given that the obstacle time is removed. Education (10 out of 10, 100%), nurse-driven consults (7 out of 10, 70%), healing space (6 out of

10, 60%), and standard of care (5 out of 10, 50%) were all recognized as potentially promoting the use of CAM.

Sub Theme 1: Education. Participants mentioned education as needed for all disciplines. The education of patients, prior to admission to the hospital, would convey the awareness and understanding of the CAM modalities to patients. Education of nursing colleagues about the modalities would increase their awareness and possibly interest their colleagues in receiving education as a CAM practitioner. While the focus group participants acknowledge CAM as a nurse-driven intervention, they recognize that physicians and residents require education. Many times it is the ancillary personnel that spend time with patients, such as, housekeeping, so the need for education for that cohort was also mentioned. Participants (10 out of 10, 100%) recognized the necessity for the hospital to advertise and promote CAM as a service offered for patients.

Participant B2 stated,

> What I do think would be helpful is for people to have more of an understanding of what Reiki is and I think if they buy into it more, than they're going to be more willing to say okay, I know that this patient's really having a tough time. Why don't you go in and give her a Reiki treatment and I will do your documenting for you so that you can spend the time to do that (Reiki treatment).

Participant A3 said,

> ….as for the patients, I would like to see them knowing a little bit more about Reiki before giving them a treatment. It just seems to be so positive for them. I would like to see them get education as outpatients so they are more aware when they come to the hospital.

Participant La1 stated, “I like the idea of education channel for patients that would give information about CAM and how to get a treatment.”

Participant C1 expressed,

> Education of CAM modalities that are available should be part of hospital orientation education. I think so many people in this hospital crossover patients doors. A lot of times people in housekeeping, people in dietary see things that we (nurses) don’t even see. It’s one of the things that make this a special place to be that at least we have that capacity to do this (administer CAM treatments) in an authorized and solid way. We have our supplies (aromatherapy) provided by the hospital.

Participant L1 stated, “It’s one of the things that when you look at a lot of the ads for places like cancer treatment centers, they’re talking about the holism and care for the patient. We do that here, it is just nobody is tooting that horn.”

Participant La1 expressed,

> …..maybe some people are going to say I don’t want to do that (get training in Reiki/aromatherapy) but at least maybe some simple facts could be put on our Healthstream mandatory inservices that we have to do; maybe just an awareness that you know what it is at least. Maybe someone doesn’t want to have to go through the training.

Participant Lo1 expressed, “I would like all of our staff to see the benefits of Reiki or aromatherapy. I would like everyone, nurses and other staff, to be trained or have some education about treatments.”

Sub theme 2: Consults. Participants suggested that a nurse-driven consult would provide patients with the benefit of a CAM treatment. Participants, while they aspire to administer a CAM treatment, typically they cannot find the time. A nurse-driven consult would allow nurses to have the services provided for their patient; nurse-driven consult was coded 31 times, which were the second highest coded references.

Participant B1 stated, "I think a nurse to do treatments would be a big help and the nurse could see each patient to help them relax as part of a consult."

Participant Lo1 expressed,

> It would be awesome if each nursing unit had an on-call or prn nurse that could do treatments and be consulted for a treatment, then we wouldn't need to feel frustrated with not having the time to do a treatment on our shift. We could just call someone to come see our patients and then we could still get our assignments done.

Participant La1 stated,

> I like the idea of a consulted nurse. Let's consult, either meditation consult or stress management or aromatherapy. If we could consult that person then I think it would bring an awareness to the doctors as far as saying oh okay, this is something else we can use and also to all the other staff as well so I've always kind of liked that idea. If there was a consult goal (in the computer documentation), we could just go in and do it and then the awareness would be there.

Participant L1 stated,

> I think having a nurse designated to CAM is the answer to our time constraints. If there could be a designated time where that was all I had to do was go patient to patient and just sit with them and I didn't have anything else I had to do. I think it makes it more effective too if even in the back of your head you're thinking I've got all the patient assignment things to do. If all you have to do is just sit with someone I think it might get more effective and easier to do. I would like to see a CAM team, just like palliative care team and wound care team.

Participant B1 said,

> Our goal as nurses is patient comfort. We're here as nurses to be comforters and to alleviate pain and anxiety and I think that that is something that we should be looking at to get it (CAM treatments) hospital-wide so you have practitioners who do have the time and they're designated job is just to do CAM treatments.

Sub theme 3: Healing Space. Participants (6 out of 10, 60%) found difficulty in administering CAM treatments, especially Reiki, in the patient room. They cited frequent interruptions by other staff members, such as, laboratory technicians, physicians, residents, dietary services, and housekeeping. Participants felt that the interruptions diminished the effects of the Reiki treatment. Participants felt that a healing environment, such as a dedicated CAM treatment room, was more amenable to CAM treatments. The healing space would create a setting for the intention of the treatment and provide a quiet, private space.

Participant T1 stated, "I think a room dedicated to treatments would help....it provides an environment with music and quiet. And maybe there could be a nurse assigned to that room to do treatments."

Participant C said, “The downside for me is the time to do a Reiki treatment at times. There are times when you can just lay your hands…to make the whole environment appropriate I sometimes just don’t have the time to do it.”

Participant Be1 expressed, “I have tried to do Reiki treatments for patients and their were 5 interruptions in the 10 minutes during the session…..laboratory, housekeeping, dietary, and staff that had questions for me about other patients. It wasn’t very relaxing.”

Sub theme 4: Standard of care. Participants (5 out of 10, 50%) expressed the need to include CAM interventions as a standard of care for patients. While administering CAM treatments is inherent in the CAM practitioners, the tasks of their shift do not include time for CAM treatments. Participants stated that documentation is lacking and perhaps including a CAM treatment, as part of the assessment of the patient, would integrate CAM into nursing practice.

Participant La1 stated, “I like the idea of a designated time to do it (CAM treatment) then to schedule almost as if it’s part of a protocol like have we addressed this holistic need (for the patient).”

Participant Be1 expressed,

> I do find a lot of opportunities at work. It feels like from the moment that I became a Reiki practitioner; it was like I was drawn to situations. I certainly look at it (CAM treatments) as integration. I don’t see it as a separate entity. I think we need…it’s always integrated into medical care that we do.

Participant B1 said,

> The setting that I work in is not driven in thinking that way (administering CAM treatment) because they're looking at focusing on efficiency and moving things along in the operating room so it is not focused for that care. We're been trying to change that culture there and being able to provide some more comfort measures for the patient and having the nurses be more aware of that in their practice so it's challenging but it's a choice that I make that's how I want to practice so I have that intention of doing it when I have my patient is in a room. ……doing hands on mostly with Reiki.

Participant C said,

> Even for our practice (palliative care), part of our assessment is where does it (CAM treatments) fit in to the overall assessment of the patient? We do try to recommend additional CAM modalities when we have patients who score on a particular scale, that in palliative care we always do the scale on all our patients. A high end score on the anxiety scale….. so in addition to doing medication management, which is almost that reflexive medical modality, somebody's anxious in palliative care so it's a little bit of Ativan and you'll be fine.

Theme #3: Perceived Benefits of CAM

The nurses' perceived benefits of CAM were prevalent throughout the focus groups. Participants (10 out of 10, 100%) articulated many benefits in their own life from using CAM for self-care. The participants expressed that all of their patients (100%) could benefit from a CAM treatment and their preference is to administer CAM, regardless of diagnosis. The participants expressed opinions related to the benefits of

CAM treatments for the patient, for the nurses' treatment of peers, and nurses' care of self.

Participant C1 stated,

> What does CAM impact on the patient satisfaction, a big driving force for any of Abington's practice so if it improves patient outcomes, if it improves satisfaction shouldn't everybody know that it's available? That it exists and that it (CAM treatments) has value added to the services here in the hospital?

Participant M1 expressed, "I think it's nice for me as a nurse to be able to do something like offering CAM treatments that isn't invasive or causing pain in order to get relief."

Participant Be1 said, "Occasionally when I'm charge nurse, somebody's very upset, I have gone and done Reiki and it has helped the person to calm down. A lot of times even fall asleep."

Sub theme 1: Patient. Participants (10 out of 10, 100%) extolled the benefits of CAM treatments for the patient as calming, relaxing, decreasing the need for medication, and value-added service for the hospital. Participants expressed that their patients felt 'cared for' after a 10-minute treatment.

Participant LO1 stated,

> I think everyone benefits from treatments. It is effective for the patient and I feel better after giving a treatment. I like it when I can get the time to treat someone...the patient feels better and so do I....I am able to help without giving medications.....it is something that I can provide on my own.

Participant L1 expressed, “I think all patients should have treatments. I wish I had time to do Reiki and aromatherapy with all of my patients. All patients are stressed and this helps them to relax. I would like to integrate it with my rounds, I just can’t seem to get time.”

Participant Be1 stated,

> Most recently I had a patient with a really bad headache. She gets headaches and is getting induced so I said to her, do you mind if I just give you some Reiki and her family had left and she fell asleep. Her family came back, we were talking, and then she continued to sleep. Then she woke up and she says I feel so refreshed. I can do this now. So, it was so affirming to me.

Participant B2 talked about the patients admitted to the antepartum unit (MOMU), “The MOMU patients could definitely use the Reiki and the aromatherapy and hand massage. They’re coping with being out of their home, worrying about the outcome for themselves and their baby. They’re there with pain, headaches, so yes, they could always use it (CAM treatments).”

Participant A1 said,

> In the delivery room situation I found that when I’m having a baby who’s in a little bit of distress, placing my hands and doing Reiki for some reason the heart rate is getting better and I always find that with me, with my patients, it seems when I’m doing a Reiki treatment they deliver that much quicker. The patients are more relaxed between their contractions.

Participant La1 expressed,

> I think it (CAM treatments) could be effective for any patient okay but they have to be open to it. I mean you can deliver something but if there's resistance, than you can only take it so far. So I don't think it's an age, gender, nationality…I don't think it's any of that and quite honestly the Reiki's great when those things, when communication by language is an issue. So it can open the door to situations where you maybe couldn't normally communicate well so I think as far as who is it good for…it is good for everybody.

Participant B said, "I know that the recovery room nurses use peppermint a lot for nausea, to treat nausea; for post-op nausea. The treatments are very effective."

Participant M1 stated,

> I think everybody could potentially be positively affected by it (CAM treatments). I don't think there's anybody that it wouldn't be good for. I think it only makes things better. I mean I think that's a big draw and that we're not hurting you in any way. We're not sticking a needle in you or causing you any kind of discomfort. We're just trying to make things better.

Participant Be1 expressed, "I think it (CAM) is effective for everybody. I think all patients would benefit, no matter what their diagnosis is, they could get relaxed and that is effective. I think the treatments are for helping, it is not that I am looking to cure them, I want to make their hospital time easier."

Participant La1 stated,

> I haven't found anybody that it (CAM) wasn't helpful for. Some of the confused patients don't realize what you're doing but I've never had anyone that wasn't confused not want to receive aromatherapy and even if it doesn't completely get

rid of their headache, they always feel a little bit better. So I haven't found anyone that it didn't help.

Participant B1 expressed, "…..for my patient that was really confused, I was able to offer her an aromatherapy hand massage. When she's agitated I try to put my hands on her shoulders to do Reiki and her head and I see her close her eyes and it seems to help her, relax her."

Participant Be2 expressed, "….somebody's (patient) very upset, I have gone and done Reiki and it has helped the person to calm down. A lot of times even fall asleep."

Participant B1 stated,

> We (nurses) constantly have contact with the patients 24/7. Don't we have a responsibility to provide that care (CAM treatments) for the patients you know, ethically and morally to provide that comfort to them and having time against us we are really not providing the quality of care that we should be providing.

Participant A1 expressed, "…..when I do put hands on (Reiki treatment) the patients are saying to me that you were so comforting and I (the patient) feel so much more relaxed."

Participant B1 stated,

> Being in the operating room my patients may not know that I'm doing Reiki when I'm touching them but part of our practice there is to be with your patient when they go to sleep and hold their hand and have some kind of comforting touch as they go off to sleep so that's a perfect opportunity for me to do that treatment at that time.

Sub theme 2: Nurses' treatment of peers. Participants (6 out of 10, 60%) report that treatment of peers is part of their purview. Treatment of peers occurs for pain, such as, headache or backache and stress. The occurrence of treatments of peers was reported as high as 50% treatment of peers and 50% treatment of patients.

Participant La1 stated,

> I would add in addition to coworkers are probably 50/50 as far as the aromatherapy because often you'll have nurses that will have a headache or other ailment and they really appreciate that (CAM treatment) and I think it goes over well and then it really helps when they have a patient and they'll say oh do you have that peppermint because they're feeling this way or what not so I agree to treat the patient. So, it's not just all patients, it is peers as well that get treatments.

Participant A1 expressed,

> Reiki can certainly help with our stress level. I really think Reiki would make a lot of people here more positive. That's one thing that I found with Reiki and with the aromatherapy, you want to surround yourself with positivity. You want positive things in your life. You don't want negativity. You don't want to hear that so and so had a bad day. It's all about your patient. You want to make them have the best experience possible and when you're in there and you're a positive person and you're doing positive things on them, hopefully you get more of a positive outcome with any situation even with your coworkers.

Participant La2 stated, "In the hospital I use it (aromatherapy) probably more on my coworkers than on the patients for headaches and hand massages and then we use it for agitated patients to relax them."

Sub theme 3: Nurses' self-care Participants (10 out of 10, 100%) utilized CAM treatments for their own self-care. Participants expressed the value of the treatments for sleep difficulties, pain, and especially for general health and well-being. Participants valued the relaxation and stress management afforded with CAM treatments. While the hospital-endorsed CAM was integrated into the participants' daily routines, they included CAM modalities such as yoga, acupuncture, and crystals/stones.

Participant A1 stated,

> I thought learning Reiki and aromatherapy was just so wonderful, I would like to see every nurse in this hospital have to be educated in it so this way you have an entire hospital that any nurse or anyone else who wants to learn it, this entire hospital, we're a magnet hospital, all the nurses should be Reiki and aromatherapy educated.

Participant M1 expressed,

> I have a Reiki energy grid at home so I have my concerns, prayers on there and I use crystals on the Reiki grid. I've been trying to meditate every morning. Or if I have a pain or something, I will use Reiki. I was having a dental procedure, I was giving myself Reiki, and it did help me to remain calm.

Participant Be1 stated,

> I have used the aromatherapy for headaches, the peppermint for nausea on myself; I've used the tea tree oil for sores or something and certainly I have a Reiki grid and I give to myself. I give Reiki to my family and my pets as needed. Use the distance Reiki for people in the family. We've gone to a family member that just had knee surgery, we did Reiki for her, and she really enjoyed it and keeps asking

when we are coming back. There are so many ways that you use it (CAM) in your own personal life.

Participant A1 stated, "I find that I use Reiki more. I'm 'hands on' with my patients. Outside of the hospital in my private life definitely use Reiki and just a touch people will say that it's so calming and uplifting for them."

Participant Be1 expressed, "I use Reiki at night to help me go to sleep. I use it for about 10 minutes at bedtime and it helps me sleep through the night. I also use the lavender for sleeping."

Theme #4: Prompts Nurses' Use of CAM

Participants discussed factors that influence the nurse to administer a CAM treatment. While participants recognized that all patients could benefit from a CAM treatment, they discussed the external factors that prompt them to administer a treatment. The factors were either patient-related or peer-related.

Sub theme 1: Patient factors. The primary symptoms of anxiety or 'acting out' are triggers for the nurse to administer a CAM treatment. Family members that are aware of CAM, and request a treatment for the patient, is also a trigger. Participants (6 out of 10, 60%) recognized that patients that were combative or family member that requests a treatment are more likely to be treated.

Participant B2 stated, "So I think patients that are having a hard time coping is a real time where I would be moved to do a treatment but time is an issue too."

Participant Lo1 expressed, "I would treat all of my patients if I had....time. It can be frustrating because I know everyone could benefit from treatments but the only

patients I get to treat are those that are combative or acting out....the ones that are really stressed out."

Participant M1 stated, "When I've given Reiki to patients just whenever the opportunity comes or even to people I work with, I think people are receptive."

Participant LA1 stated, "I think, well, I could probably fit in some short treatments, but I may not always think about using Reiki or aromatherapy. I think about doing treatments if the patient is really exhibiting stress or pain but I don't think of using it on all of my patients, yet I do think they could all benefit."

Participant LA1 expressed,

> ….openness as far as your relationship with the patient and/or maybe the family member, if you're doing it (CAM treatment) for the family member. So openness is the non-verbal and could just be the way someone is presenting to you but I also mean how you're communicating with the person. If you say something to the patient, like 'Would you be open to some aromatherapy?' And if they say I don't know about that or if they say well what do you mean. Tell me a little bit more. Okay, that's a door that has opened for you to explore more with them.

Participant Be1 stated,

> MOMU (antepartum) patients could definitely use the Reiki and the aromatherapy and hand massage. They're coping with being out of their home, worrying about the outcome for themselves and their baby. They're admitted with pain, headaches, so yeah they could always use it. I mean we did have great outcomes when we were doing the study with Reiki for patients on the mom unit. They (patients) really, really liked it as a stress reducer, as a pain reliever.

Participant La2 stated, "……..use it (aromatherapy) for agitated patients to relax them."

Sub theme 2: Peer factors. All participants (100%) stated that they felt their peers supported their use of CAM. However, participants (6 out of 10, 60%) expressed the requisite to have a peer to cover their patients while they administer a CAM treatment. Participants (7 out of 10, 70%) found the time to administer a CAM treatment when their peer approached them that they had a patient who needed a CAM treatment.

Participant B1 stated, "I think if they (peers) buy into it more, than they're going to be more willing to say okay, I know that this patient's really having a tough time. Why don't you go in and give her a Reiki treatment and I will do your documenting for you so that you can spend the time to do that."

Participant B1 expressed, "I probably use Reiki more even with coworkers if they have a headache or backache. If we're in a lounge or something, I'll just do a quick treatment for them on their head or neck.

Participant A3 stated, "As for coworkers, a lot of us are Reiki practitioners and we do give Reiki to each other being that it's a high stressed area so I find a lot of the nurses like that treatment."

Participant La1 expressed, "A lot of times it is somebody else coming to me and saying would you look in on this patient or consider doing a Reiki/aromatherapy treatment. A peer knowing that I practice asking me to help them out will get me to do a treatment."

Participant C said, “A lot of times it’s somebody else coming and saying would you look in on her or would you consider doing this. Some other person knowing that we practice with aromatherapy or Reiki saying help me out here.”

Participant La1 stated, “I don’t think I’ve ever withheld it (CAM treatments) except for with time constraints. A lot of times at work I will use aromatherapy because my coworkers will come up and ask me. They’ll say my patient’s anxious or nauseous or had a headache, can you come in and do a treatment.”

Summary

There was no surprise, to this researcher, that time was an important factor in the administration of CAM treatments for patients. All of the practitioners reported using CAM for self-care on a daily basis, mostly for stress management or general well-being. All of the participants espoused the benefits of CAM for patients and felt that 100% of their patients could benefit from treatments. Surprisingly, education was seen as lacking. Participants expressed that education of patients, nurses, physicians, residents, and ancillary personnel could increase the receptivity of CAM treatments by patients and peers. Nurses expressed that CAM was not an expectation of patient care and therefore was getting lost to all of the tasks that needed to be done. However, triggers to initiate a CAM treatment came from either the patient or peers: (a) patient that is anxious will trigger the nurse to administer CAM, and (b) peers that request the CAM nurse to treat a patient will trigger the nurse to administer CAM.

Credibility

The focus groups were audio-recorded and the file was sent to a transcriptionist. This researcher, while listening to the audio recording, reviewed the written transcribed

data. There were no discrepancies found.

The process of member checking provides evidence of the credibility of this researcher's interpretations of participants' responses to the focus-group interviews (Creswell 2009; Trochim & Donnelly, 2007). Participants were emailed their verbatim transcripts within two days of the focus group meetings. Participants were expected to review and respond to the researcher within 48 hours of receiving the email. All of the participants responded and there were no changes made to the verbatim transcripts.

This researcher used the technique of peer debriefing to estimate the credibility of qualitative data (Creswell & Miller, 2000). The purpose of peer debriefing is to enhance the credibility, or truth value in a study, by proving an external check on the inquiry process (Lincoln & Guba, 1985). The chairperson of the dissertation committee, Dr. Thomas Hardie, and an external researcher, Dr. Susan Kristiniak, provided ongoing feedback on the research process and offered objective critiques.

4.2 Survey Development

Creswell and Plano Clark (2003) explain that in a mixed-methods exploratory design, the qualitative data is mixed through connecting the qualitative data to the quantitative design. The mixing of the qualitative data occurs between the two phases, at the qualitative analysis stage.

The existing peer-reviewed journals have no surveys to measure the intrinsic and extrinsic factors that may impact the nurses' use of complementary alternative medicine. The intrinsic and extrinsic variables served as the headings on the survey to organize the questions. A chart describing the page title, purpose of the page, and the associated variable is seen in Appendix H with the survey.

From the analysis of the qualitative data, the following four categories emerged as major themes: (a) barriers (obstacles) to use of CAM, (b) promotes use of CAM, (c) nurses' perceived benefits of CAM, and (d) prompts for nurse to treat. The themes and codes derived from the qualitative data sets served as individual survey items. Not all codes were represented as survey response items. Only the items that were most represented in the qualitative data were selected as survey response items. The major themes, and sub-themes, along with the intrinsic and extrinsic variables served as the basis for the questions on the survey. A matrix displaying how the qualitative findings correspond to each survey item is seen in table 8. A delineation of survey question and the associated variables are seen in table 9.

Table 8

Matrix of Themes/Sub-themes and Survey Questions

Themes	Sub-themes	Survey questions
Barriers (Obstacles) to Use of CAM	Time	26, 37, 39
	Environment	39, 40
	Peers	28, 30-32, 39
Promotes Use of CAM (Nurses' Perception)	Education	45
	Consults	40
	Healing Space	40
	Standard of Care	39
Benefits of CAM (Nurses' Perception)	Patient	38
	Nurses (treatment of peers)	38
	Nurses (self-care)	16
Prompts Nurse to Treat	Patient factors	42
	Peer factors	38

Table 9

Delineation of Questions and Associated Variable

Question #	Variable	Question
1-11	Demographics of participants	Name, Age, Education, Years as a nurse, Work status, Spiritual (yes/no), CAM education, Years as Reiki, Years as aromatherapy, Area of nursing practice, Job position (provide opportunity to administer CAM?)
12-16	Intrinsic variable: nurses' attitudes and beliefs	Have you received CAM treatment? Was treatment helpful? Has family member received CAM? How do you rate your health status? Do you use CAM for self-care?
17	CAM Health Belief Questionnaire	10 questions, 7-point Likert scale Aggregate score
18-25	Intrinsic factors: nurses' attitudes and beliefs and perceived patient receptivity	What percentage of patients would benefit from CAM? On scale of 0-10, what do you think is your patient's receptivity to Reiki? To aromatherapy? To guided imagery? Are patients more receptive based on gender? Based on race? Based on level of education? Based on socioeconomic status
26-37	Extrinsic factors: workload and peer support	On typical workday, do you have time to administer CAM treatment? What is typical patient assignment in one 8-hour shift? Are thee other nursing using CAM on your assigned unit? If yes, what percentages of other nurses are using CAM? Do you ever discuss CAM with other nurses?

		On a scale of 0-10, how receptive are nurses to CAM? On a scale of 0-10, how receptive are physicians, residents to CAM? On a scale of 0-10, how much peer support do you have to deliver a CAM treatment? Have you delivered CAM treatment to other nurses on your unit? Was the treatment beneficial? Have you received a CAM treatment from a peer? How often has peer-to-peer CAM treatments occurred?
38-40	Extrinsic factors: environmental or situational	What do you see is the benefit to administering CAM treatment? What are the obstacles for you to administer a CAM treatment? What would enhance your ability to provide CAM treatment for your patient?
41-45	Extrinsic factors: environmental or situational	On a scale of 1-5, how important are the following in your nursing practice and administration of CAM treatments? Which symptom would make you more likely to administer a CAM treatment? What is your perception of the effectiveness of treatments? For the symptoms listed below, which modality would you use and for how many minutes? Nurses have reported a greater need for education regarding CAM uses, benefits, and how to request services. Which group below should be a priority for this education?
46-51	Patterns of use	How many patients per week receive a CAM treatment? How many patients over the last month have received a treatment? What percent of patients, where indicated, did you use CAM? Of the patients you treated, how do you divide the treatments. Since your initial education, have you

received additional education in CAM?
If yes, please specify the modality
Any additional information/comments related to CAM education or use?

Cognitive interviews. There were three CAM nurses recruited from the focus group participants. The participants represented various levels of education, job positions, and different departments in the hospital. The education level of the participants was BSN, MSN, and MSN/Nurse Practitioner. The job positions and departments within the hospital were transitions nurse in the cardiac program, staff nurse/team lead in the operating room, and nurse practitioner in the palliative care department. The researcher met individually with the participants at a mutually agreed time and place. In total, there were 10 alterations to the survey as a result of the cognitive interviews.

4.3 Quantitative Survey

Response rate

The initial email and hand delivered letter yielded 40 responses in the first week. After 7 days, a reminder email (see Appendix L) was sent to all non-respondents, which generated another 32 responses. After another 7 days, another reminder email (see Appendix M) was sent to all non-respondents, which produced another 35 responses, for a total response number of 108. Given a sample size of N = 132, the response rate was 81.8%. The typical nursing survey response rate at AMH is 30 percent (B. Wadsworth, personal communication, October 10, 2012).

Survey Results: Descriptive Statistics

Quantitative data was collected, tabulated, and analyzed using the Statistical Package for Social Sciences (SPSS) version 22. Data were analyzed using descriptive statistics showing the mean, standard deviation, and variance and displayed using charts or graphs. There was one open-ended question, number 51, which was the final question on the survey. This question was analyzed in survey monkey using the text analysis feature of the program.

Question 1 on the survey was the respondent name, which was recorded with their alphanumeric code that they received in their email and letter of recruitment to complete the survey.

Question 2 asked the respondent for their age in years. The mean = 51.2, standard deviation (s. d.) = 9.33, and range of 26.00 minimum and 72.00 maximum. All respondents answered the question.

Question 3 asked the respondent for their highest level of education attained (see Table 10). BSN was the highest frequency reflected in 49 (45.79%) of CAM practitioners. The lowest percentage was 2 (0.93%) with doctorate.

Table 10

Level of Education (Highest Level Attained)

Level of Education		Frequency	Percent
Valid	ADN/ASN	13	12.20
	Diploma	22	20.60
	BSN	49	45.80
	MSN	22	20.60
	Doctorate	2	0.90
	Total	108	100.00
	Missing	0	0
	Total	108	100.00

Question 4 asked the respondent for the number of years as a nurse. The mean = 23.72, S.D. = 11.34, range = 48, minimum = 4, and maximum = 52. All of the respondents answered the question.

Question 5 asked the respondent for their work status. The highest frequency was full-time status, 71 (66.36%). There were no (0%) respondents that worked relief, usually more than 40 hours per week, however, there were 8 (7.48%) that worked relief, usually less than 40 hours per week. Part-time and full-time status accounted for 91.59% of respondents (see Table 11).

Table 11

Work Status

	Work Status	Frequency N	Percent
Valid	Full-time	71	66.36
	Part-time	27	25.23
	Relief, less than 40 hours per week	8	7.48
	Weekend Plan	1	0.93
	Other, Casual	1	0.93
	Total	108	100.0

Question 6 asked the respondent for a yes or no response, do you consider yourself a spiritual person. Not surprisingly, 100 (92.59%) of the respondents answered yes (see Table 12).

Table 12

Do You Consider Yourself Spiritual

		Frequency	Percent
Valid	Yes	99	92.5
	No	8	7.4
	Total	108	100.0

Question 7 asked the respondent for the hospital-endorsed CAM that they were educated in: Reiki, aromatherapy/guided imagery or both. There were 47 (43.93%) practitioners that were educated in both modalities. The remaining respondents were 26 (24.30%) educated in Reiki and 34 (31.78%) educated in aromatherapy/guided imagery.

Question 8 and 9 asked the respondent for the number of years since their education in Reiki or aromatherapy/guided imagery. The mean number of years since

Reiki education was 4 years 8 months and the mean number of years since aromatherapy/guided imagery was 3 years 1 month. The standard deviation was 3.87 for Reiki education and 1.82 for aromatherapy/guided imagery. This is consistent with the start year of Reiki classes being 2003 and the start year of 2008 for aromatherapy/guided imagery.

Question 10 asked the respondent for the area of nursing practice in the hospital (see Table 13). The highest area of practice is Medical Surgical with 17 (15.89%) nurses. Another area with higher cohorts educated was Labor/Delivery (9 nurses, 8.57%) and Home Care (8 nurses, 7.77%). The category of other, please specify, had a total of 6 nurses (5.82%). The areas specified were Clinical Resource nurse (1), Inpatient Care Coordination (1), Clinical Support/Vascular (1), Childbirth Education (1), Administrative (1), and Nursing Supervisor (1).

Table 13

Area of Nursing Practice

Nursing Unit	N =	Percentage
Medical Surgical	17	15.89%
Labor/Delivery	9	8.57%
Home Care	8	7.62%
Emergency Room	7	6.67%
Postpartum/Mother-Baby	7	6.67%
Other, specify below	6	5.71%
Medical Intensive Care Unit-MICU	5	4.76%
Telemetry	4	3.81%
Palliative Care	4	3.81%
Operating Room	3	2.80%
PACU-Post Anesthesia Care Unit	3	2.80%
Progressive Care Unit-2W Oncology	3	2.80%
Neurovascular-3W	3	2.80%
Psychiatric	3	2.80%
Pre-Admission Testing	3	2.80%
Management/Office Work	3	2.80%
School of Nursing	3	2.80%
Cardiac Surgical Unit	3	2.80%
Progressive Care Unit-1W	2	1.90%
Orthopedics-3W	2	1.90%
Cardiac Cath Lab	2	1.90%
Hospice (Warminster)	2	1.90%
Surgical Trauma Unit	1	0.95%
Heart Failure Unit-2WE	1	0.95%
Orthopedics	1	0.95%
Office Nurse	1	0.95%
Medical Procedure Unit	1	0.95%
Total	108	100%

Question 11 asked the respondents if their job position provided the opportunity for them to administer a CAM treatment to patients. There were 96 (89.72%) that responded yes, 11 (10.28%) that responded no, and one respondent that skipped the

question. The 11 that responded no is consistent with areas worked: 6 other areas of worked and 3 that answered management/office work.

Question 12 and 13 asked the respondent if they have received any CAM treatment and whether the treatment was helpful. There were 91 (84.26%) that received a treatment and 17 (15.74%) that had not received a CAM treatment. There were 90 of 91 (97.83%) respondents that found the treatment helpful, while 2 of 91 (2.17%) reported that the treatment was not helpful.

Question 14 asked the respondent if a family received any CAM treatments. There were 69 (65.09%) that responded yes, 36 (34.91%) responded no and 2 respondents skipped the question.

Question 15 asked the respondents that when they thought of other people like themselves, how do they rate their health status. There were 30 (27.78%) that rated their health status as excellent, 73 (67.59%) reported good, 5 (4.63%) reported fair, and 0 (0%) reported poor health status.

Question 16 asked the respondent if they used CAM for personal self-care use and to check the modality that they used: Reiki, aromatherapy, guided imagery and/or none. There were 39 (36.45%) using Reiki, 73 (68.22%) using aromatherapy, 38 (35.51%) using guided imagery. There were 15 (14.02%) that reported not using any of the modalities listed for self-care. There was 1 respondent that skipped this question. This question was designed that the respondent could pick more than one choice as their answer.

Question 17 was a 7-point Likert scale with 10 questions, CAM Health Belief Questionnaire (Lie & Boker, 2007). There was 1 respondent that skipped this question.

Question 6, 7, 8 were negatively coded and needed to be reversed before getting an aggregate score. A score of 10 was the lowest aggregate score possible and was equivalent with a low CAM belief (absolutely disagree) while a score of 70 was the highest possible score and was equivalent with high belief (absolutely agree) in CAM. There were 66 (62.26%) respondents that scored 60 or higher which represents agree with CAM. A neutral score would be reflected with a total of 40. A score of 50 or above would reflect a somewhat agree with CAM. The breakdown is as follows for the aggregate scores (see Table 14).

Table 14

Aggregate CHBQ Score

		Frequency	Percent
Valid	10.00	0	
	20.00	0	
	30.00	0	
	37.00	2	1.9
	38.00	1	.9
	39.00	3	2.8
	40.00	1	.9
	41.00	1	.9
	42.00	4	3.7
	43.00	5	4.6
	44.00	6	5.6
	45.00	8	7.4
	46.00	4	3.7
	47.00	10	9.3
	48.00	10	9.3
	49.00	12	11.1
	50.00	4	3.7
	51.00	14	13.0
	52.00	10	9.3
	53.00	4	3.7
	54.00	1	.9
	55.00	2	1.9
	56.00	1	.9
	57.00	1	.9
	58.00	1	.9
	61.00	1	.9
	Total	106	98.1
Missing	System	2	1.9
Total		108	100.0

Table 15

CHBQ Frequency Table

CHBQ Score		
N	Valid	106
	Missing	2
Mean		47.93
Median		48.00
Mode		51.00
Std. Deviation		4.50
Minimum		37.00
Maximum		61.00

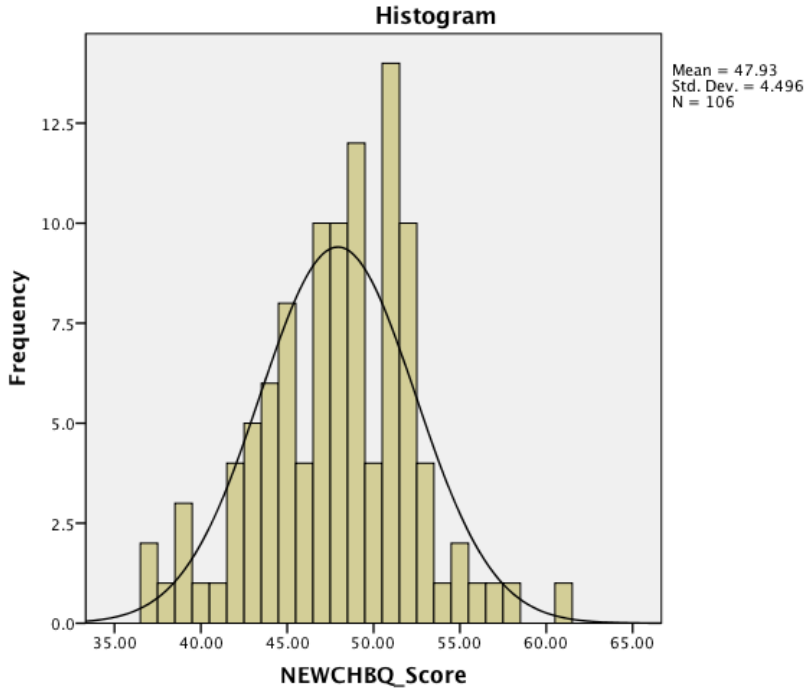

Figure 10. CHBQ Score

Question 18 asked the respondent what percentage of patients that you provide nursing care to would benefit from a CAM treatment. There was 1 respondent that skipped this question. There were 23 (22.5%) respondents that thought 100% of their patients could benefit from a CAM treatment. The mean was 64.74% and the median was 75%.

Table 17

Percentage of Patients that could Benefit from CAM

Percentage Patients		N=	Percent
Valid	.00	1	0.96
	5.00	1	0.96
	10.00	5	4.60
	20.00	5	4.60
	25.00	4	3.70
	30.00	5	4.60
	40.00	6	5.60
	45.00	1	0.90
	50.00	13	12.00
	60.00	7	6.50
	70.00	4	3.70
	75.00	13	12.00
	80.00	8	7.40
	85.00	3	2.80
	90.00	6	5.60
	95.00	1	0.90
	98.00	1	0.90
	100.00	23	21.30
	Total	107	99.1
Missing		1	0.9
Total		108	100.0

Question 19, 20, and 21 asked respondents what they thought their patients' receptivity was to Reiki, aromatherapy, and guided imagery (respectively) on a scale of 0 to 10. A score of 0 is equivalent to my patients have no interest; 5 is equivalent to most of my patients are interested; and 10 is equivalent to all of my patients are interested. While the nurses might not have been educated in a modality, some of them responded on what they felt might be a patients' receptivity to a particular modality. The responses for the questions are as follows: question 19, receptivity to Reiki (96 responses, 11 skipped); question 20, receptivity to aromatherapy (102 responses, 5 skipped); and, question 21, receptivity to guided imagery (100 responses, 7 skipped).

Table 17

Frequency Statistics of Nurses' Perception of Patient Receptivity to CAM Treatments

Nurses' Perceptions of Patient Receptivity to Treatments on a Scale 0-10

		Reiki	Aromatherapy	Guided imagery
N	Valid	96	102	99
	Missing	11	5	8
Mean		5.25	6.26	5.26
Median		5.50	6.00	5.00
Std. Deviation		1.81	1.99	2.06
Variance		3.33	3.98	4.26

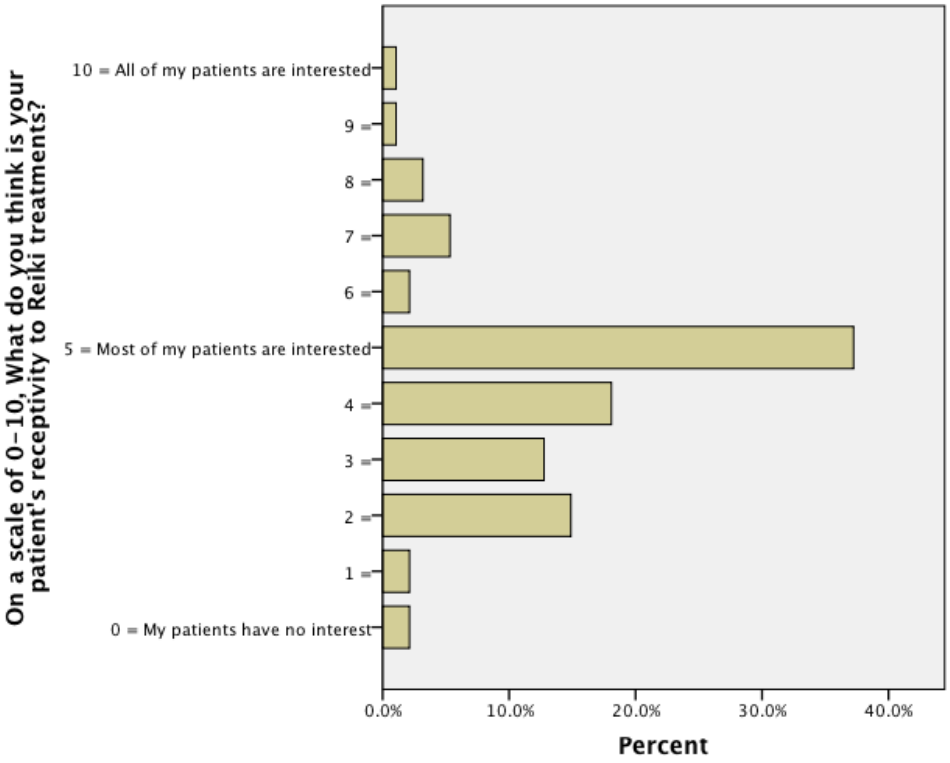

Figure 11. Patient's receptivity to Reiki (nurses' perception)

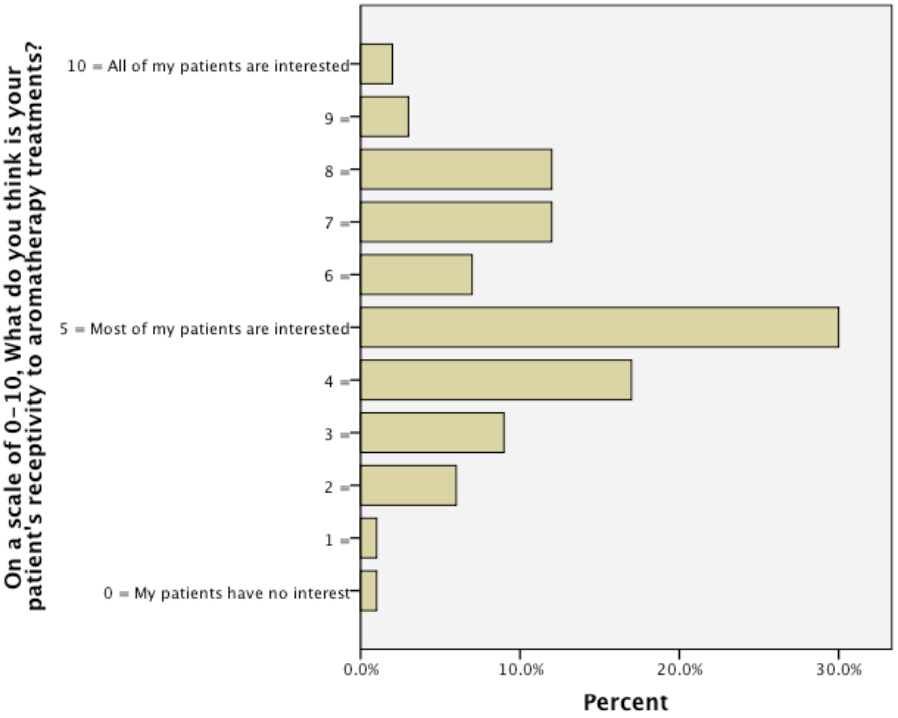

Figure 12. Patient's receptivity to aromatherapy (nurses' perception)

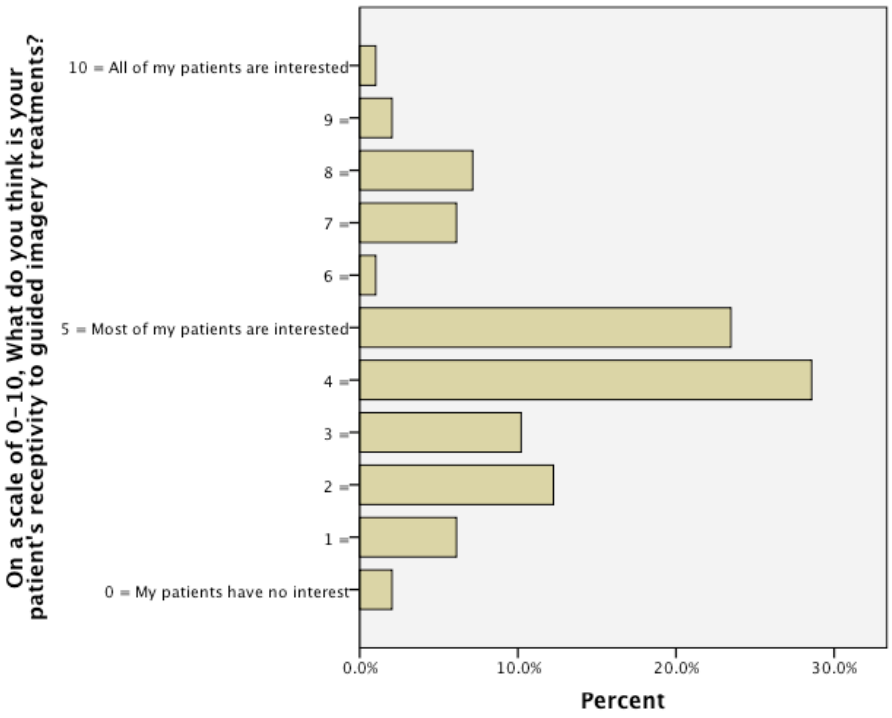

Figure 13. Patient's receptivity to guided imagery (nurses' perception)

Question 19, 20, and 21 also provided the ability to make a text comment. Noteworthy comments were, "I've only offered Reiki a few times because of time constraints", and "I believe this (score of 2 for receptivity for Reiki) to be because of lack of education and awareness for the patient".

Question 22, 23, 24, and 25 asked the respondent their perceptions of the patients' receptivity based on gender, race, level of education, and socioeconomic status. There were 2 respondents that skipped these questions. Nurses responded (62) that females were more receptive based on their perceptions (59.05%). Nurses responded that race made no difference on the patients' receptivity based on the nurses' perceptions (55.24%). Nurses responded that they did not know if education level made any difference in receptivity (47.62%). Nurses responded that they did not know if socioeconomic status made any difference in receptivity (47.62%).

Question 26 asked the respondents if on a typical workday did they have time to administer a CAM treatment. There were 3 respondents that skipped this question. There were 68 (65.38%) respondents that responded no, that they did not have time to administer a CAM treatment. There were 36 (34.62%) respondents that responded that they did have time to administer a CAM treatment on a typical workday.

Question 27 asked the respondents what their typical patient assignment was in one 8-hour shift (see Figure 14). There were 15 respondents that skipped entering a numeric answer, however, they did make comments in the text field. Some of the comments are as follows: “about 10-11 patients in preadmissions”, “CN responsible for all patients usually 60”, “I answer the emergencies throughout the organization so it varies from day to day”, “I primarily function as the Charge nurse/Team Coordinator so I am responsible for all 57 patients”, “I'm in charge for the majority of the time. Not always able to get the opportunity to provide CAM”, “No specific patient assignment but I see approximately 10-15 patients a shift” and “varies in the ER with number and acuity.”

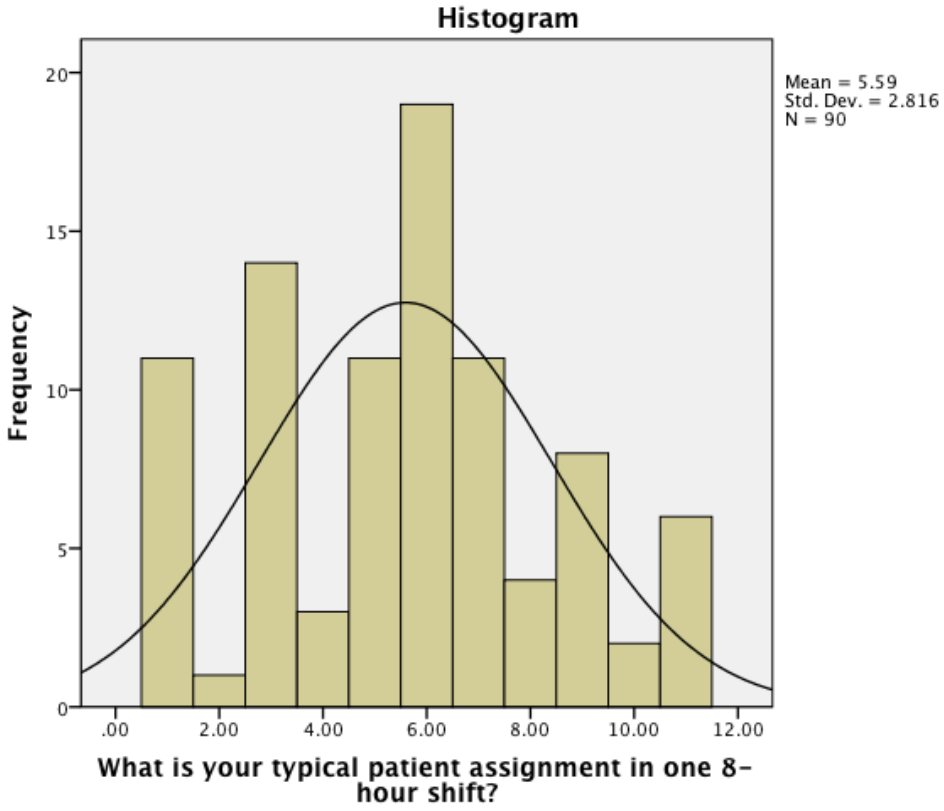

Figure 14. Typical patient assignment

Question 28 asked the respondents if there were other nurses using CAM on their assigned unit. There were 2 respondents that skipped this question. Nurses that answered yes were 65 (61.90%), answered no were 23 (21.90%), and answered I do not know were 17 (16.19%).

Question 29 asked the respondents if you do have other nurses using CAM on your nursing unit, what percentage of the nurses on your unit are using CAM. There were 27 that skipped this question, however, 22 had already answered no to the previous question. There were 11 responses that 0 percent of other nurses on their unit were using CAM.

Table 18

Percentage of Other Nurses on Unit Using CAM

Percentage Of Other Nurses Using CAM		Frequency N =	Percent
Valid	0.00	11	10.30
	1.00	5	4.70
	2.00	6	5.60
	3.00	3	2.80
	4.00	2	1.90
	5.00	13	12.10
	10.00	16	15.00
	15.00	4	3.70
	20.00	7	6.50
	25.00	5	4.70
	30.00	1	0.90
	50.00	3	2.80
	66.00	1	0.90
	75.00	1	0.90
	100.00	1	0.90
Total		79	73.80
Missing	System	28	26.20
Total		107	100.0

Question 30 asked respondents if they ever discuss Reiki or aromatherapy/guided imagery with other nurses. There were 2 respondents that skipped this question. There were 85 (80.95%) that answered yes they do discuss CAM, and 20 (19.05%) answered no that they do not discuss CAM with other nurses.

Question 31 and 32 asked respondents to rank on a scale of 0-10 how receptive are nurses and physicians/residents (respectively) to using CAM for themselves or patients. There were 3 respondents that skipped question 31 and 2 that skipped question

32. A response of 0 = not responsive at all, response of 5 = neutral, and a response of 10 = very responsive. Respondents (67.31%) scored 6 or above for nurses' receptivity to CAM for patients or self-care. Respondents (22.33%) scored 6 or above for physicians/residents receptivity for patients or self-care. Respondents scored 5 at neutral for nurses' receptivity (22.55%) and physicians/residents (44.66%).

Table 19

How Receptive are Nurses to CAM

	Scale	Frequency N =	Percent
Valid	0 = Not receptive at all	1	0.96
	1 =	0	0.00
	2 =	5	4.81
	3 =	3	2.88
	4 =	2	1.92
	5 = Neutral	23	22.12
	6 =	14	13.46
	7 =	20	19.23
	8 =	23	22.12
	9 =	2	1.92
	10 = Very receptive	11	10.58
	Total	104	97.20
Missing	System	3	2.80
	Total	108	100.0

Table 20

How Receptive are Physicians/Residents

Scale: Physician Receptivity		Frequency N =	Percent
Valid	0 = Not receptive at all	4	3.81
	1 =	6	5.71
	2 =	9	8.57
	3 =	8	7.62
	4 =	7	6.67
	5 = Neutral	48	45.71
	6 =	9	8.57
	7 =	8	7.62
	8 =	5	4.76
	9 =	0	0.0
	10 = Very receptive	1	0.95
	Total	106	98.10
Missing	System	2	1.90
Total		108	100.0

Question 33 asked the respondents on a scale of 0 to 10, how much peer support do you have to deliver a CAM treatment. The scale was 0 equals not supportive, 5 equals neutral, and 10 equals my peers volunteer to watch my patients so that I can administer a CAM treatment. There were 2 respondents that skipped this question.

Table 21

Peer Support

Scale for Peer Support		Frequency N =	Percentage
Valid	0 = Not supportive	4	3.81
	1 =	5	4.76
	2 =	5	4.76
	3 =	4	3.81
	4 =	4	3.81
	5 = Neutral	39	37.14
	6 =	11	10.48
	7 =	15	14.29
	8 =	9	8.57
	9 =	3	2.86
	10 = My peers volunteer to cover my patients while I deliver CAM treatment	6	5.71
	Total	106	98.1
Missing	System	2	1.9
Total		108	100.0

Question 34 asked the respondents if they ever delivered a CAM treatment to a peer on their unit; question 35 asked the respondents if that treatment was beneficial to their peer. There were 60 (57.14%) respondents that answered yes that they delivered a CAM treatment to other nurses and 60 (100%) that responded that the treatment was beneficial to their peer.

Question 36 asked the respondents if they ever received a CAM treatment from a peer. There were 70 (67.31%) of the respondents that had received a treatment from a peer, 34 (32.69%) that had not received a treatment, and 3 respondents skipped this question.

Question 37 asked the respondents how often, in their experience, had a peer-to-peer CAM treatment occurred. This was a 6-point Likert scale where 1 equals never, I do not have peers that use CAM on my nursing unit; 2 equals rarely (once a month); 3 equals sometimes (2-3 times per month); 4 equals often (at lease once a week); 5 equals frequently (several times a week); and 6 equals always (almost every shift that I work). The mean was 2.1961, median 2.000, standard deviation .99543 and variance .991. There were 3 respondents that skipped this question.

Table 22

How often Peer-to-Peer Treatments

	Peer-to-Peer CAM treatments occur	Frequency N =	Percent
Valid	Never, I do not have peers that use CAM on my nursing unit	25	24.04
	Rarely (once a month)	50	48.08
	Sometimes (2-3 times per month)	17	16.35
	Often (at least once a week)	9	8.65
	Frequently (several times a week)	3	2.88
	Total	105	97.2
Missing	System	3	2.8
Total		108	100.0

Question 38 asked the respondents what did they see as a benefit to offering a CAM treatment. This question was a 7-point Likert scale with 13 questions. The scale was 1 is equivalent to absolutely agree, 2 is equivalent to agree, 3 is equivalent to

somewhat agree, 4 is equivalent to neutral, 4 is equivalent to somewhat agree, 6 is equivalent to disagree, and 7 is equivalent to absolutely disagree. There was 1 question, number 6, which was worded negatively toward CAM.

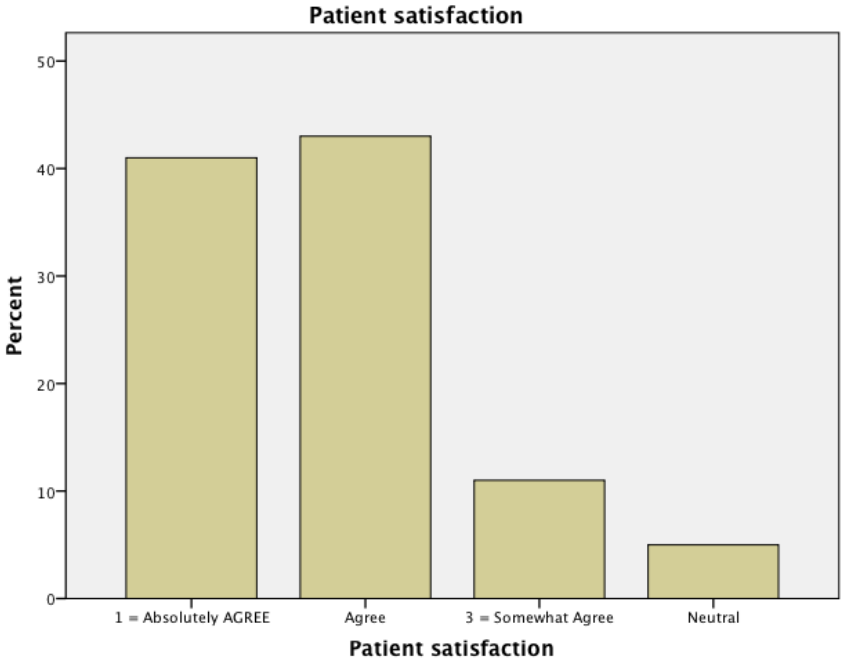

Figure 15. Patient satisfaction with CAM (nurses perception)

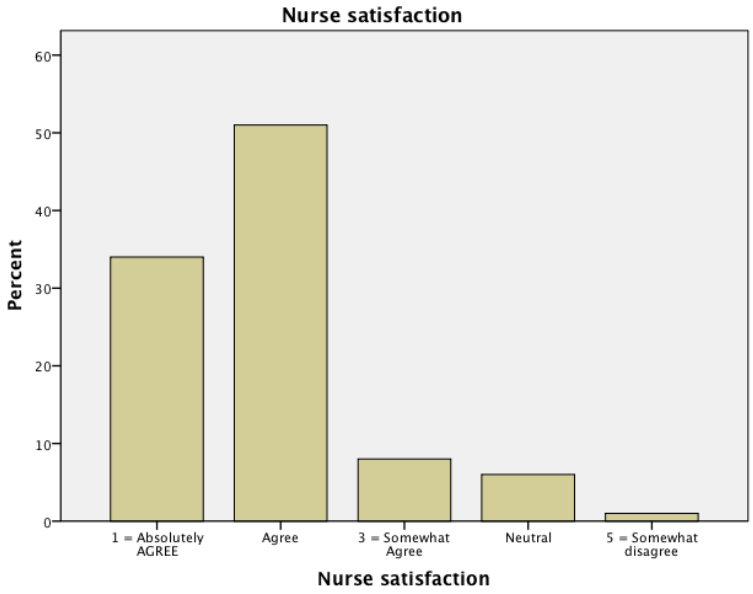

Figure 16. Nurse satisfaction with administering CAM

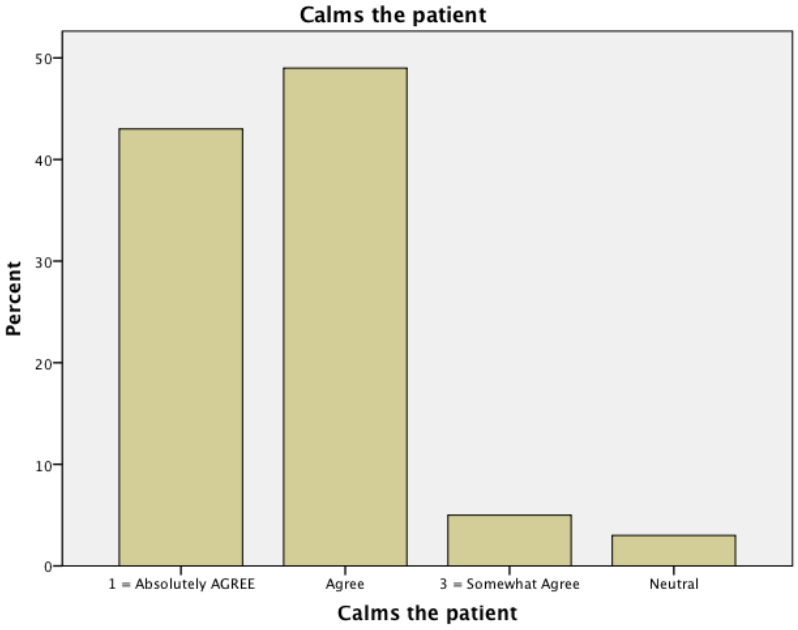

Figure 17. Calms the patient (nurses' perception)

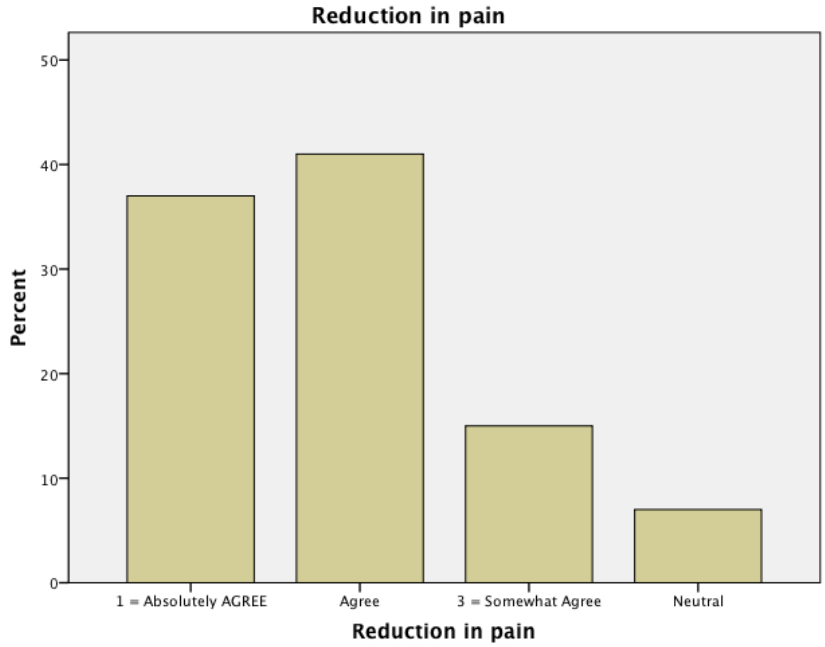

Figure 18. Reduction in pain for patient (nurses perception)

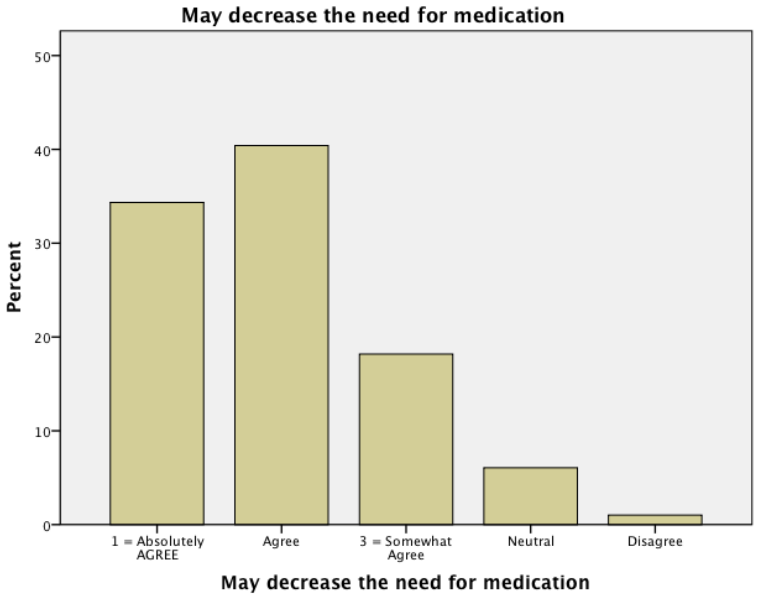

Figure 19. Decrease need for medication (nurses perception)

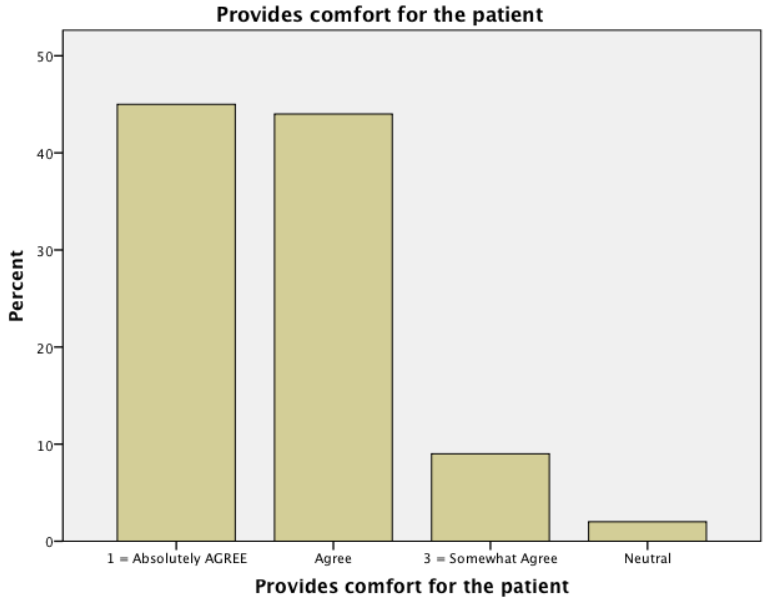

Figure 20. Provides comfort for the patient

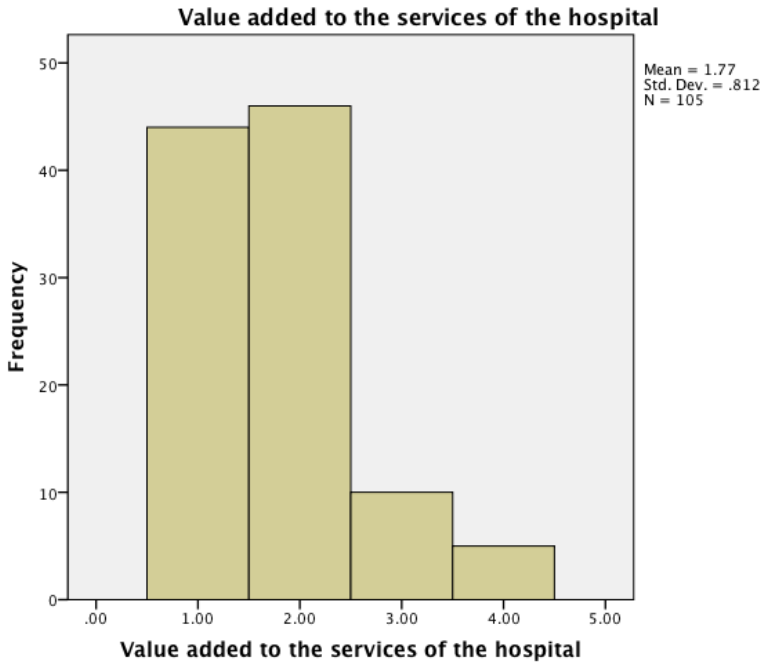

Figure 21. Value added to hospital services

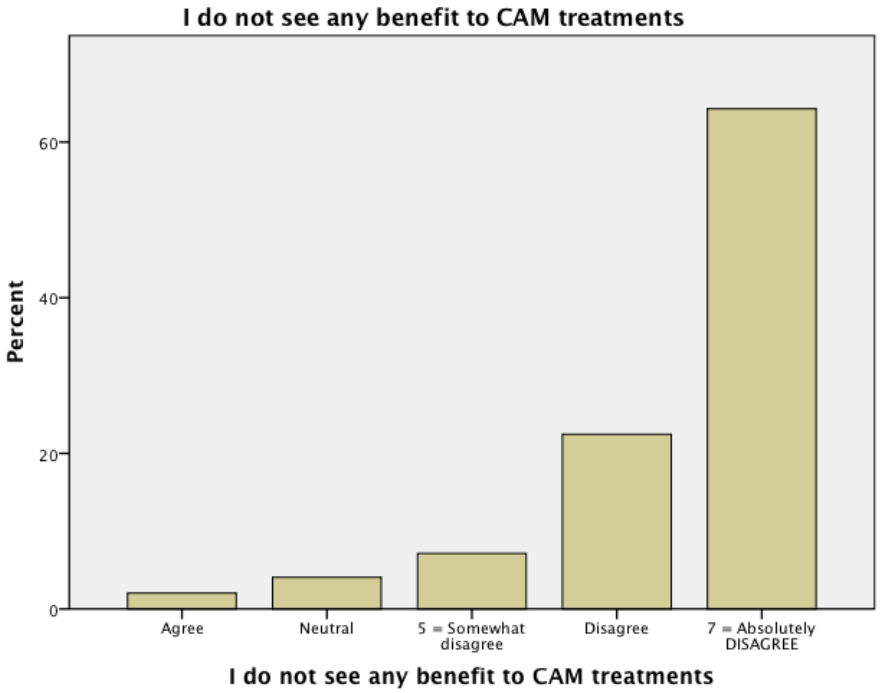

Figure 22. Do not see any benefit to CAM treatments

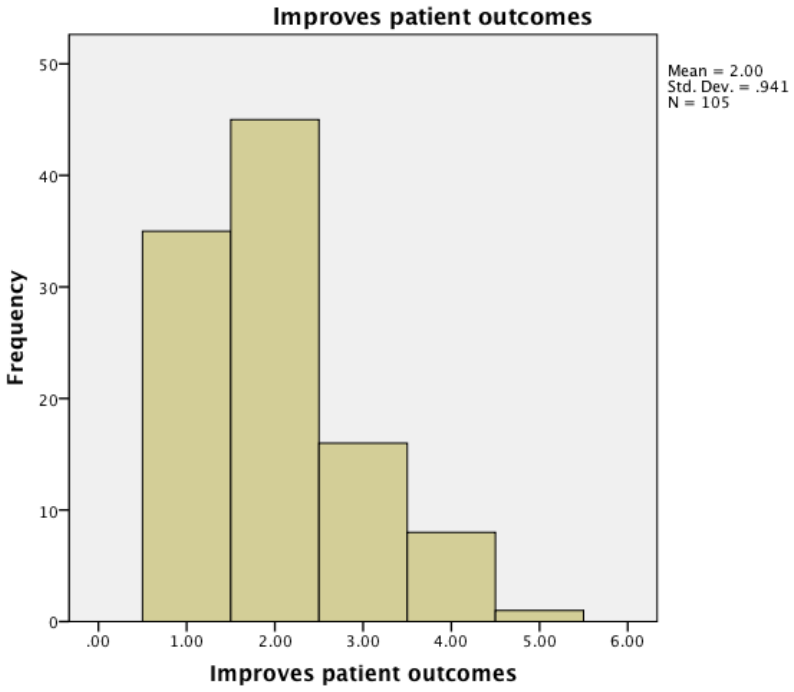

Figure 23. Improves patient outcomes (nurses perception)

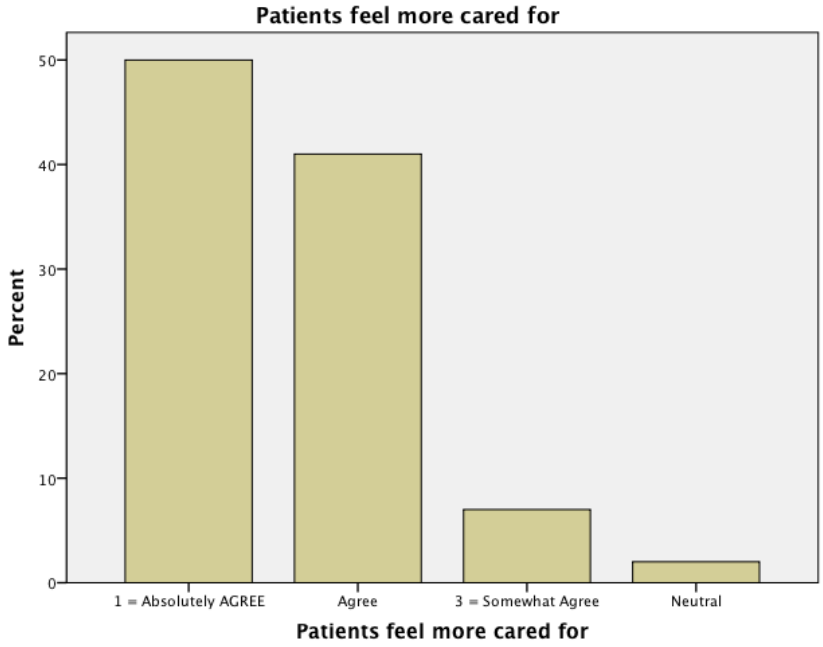

Figure 24. Patient feels more cared for (nurses perception)

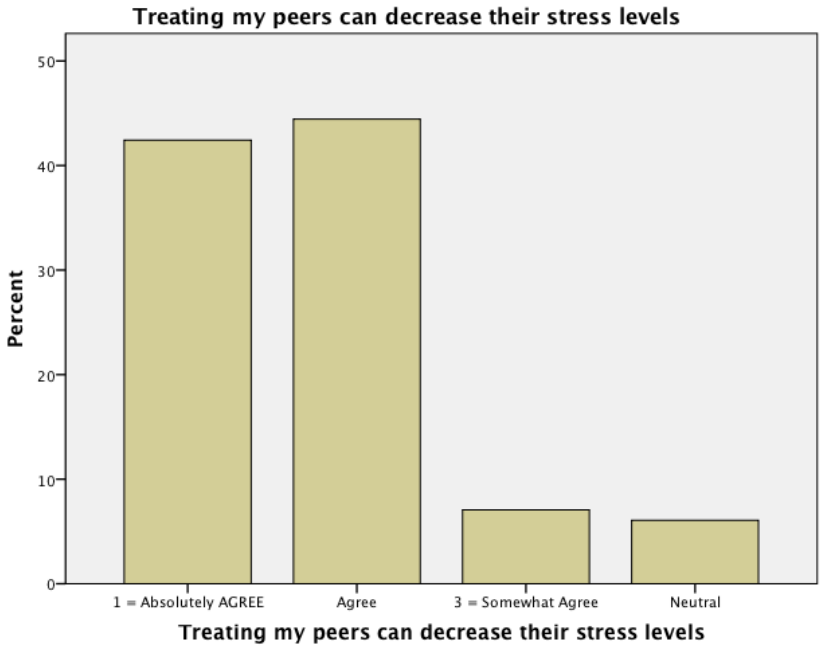

Figure 25. Treating my peers can decrease their stress levels

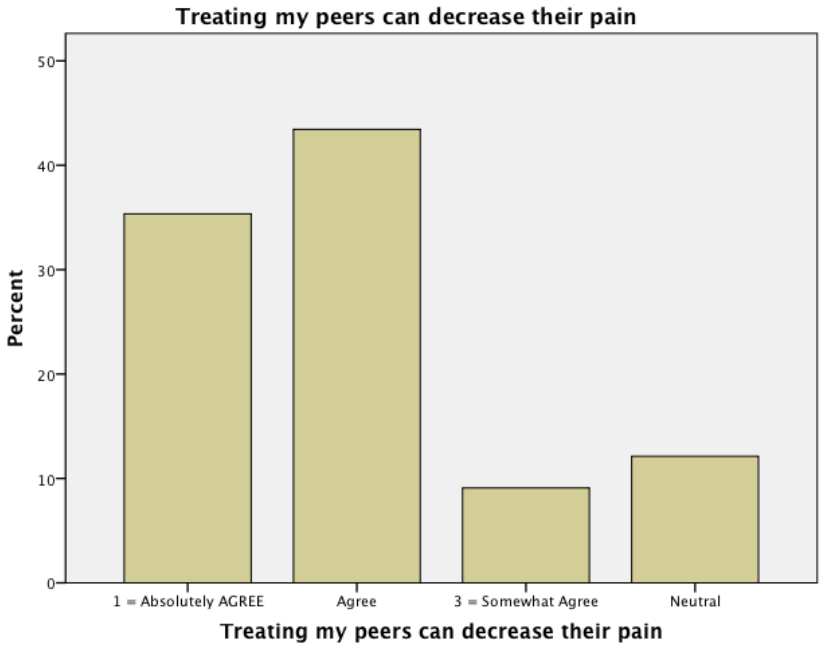

Figure 26. Treating my peers can decrease their pain

Figure 27. Opportunity to practice holistically

Question 39 asked the respondents what were their obstacles to administering a CAM treatment. This was a 7-point Likert scale with 7 questions. The scale was 1 is equivalent to absolutely agree, 2 is equivalent to agree, 3 is equivalent to somewhat agree, 4 is equivalent to neutral, 4 is equivalent to somewhat agree, 6 is equivalent to disagree, and 7 is equivalent to absolutely disagree. There were 2 questions, number 6 and 7 that were worded negatively toward CAM. There were 46 (43.81%) and 31 (29.52%) that absolutely agree and agree (respectively) that there was not enough time on their shift to administer a CAM treatment.

Table 22

Obstacles to Administering CAM Treatment

	Not enough time on my shift	Too much noise on the nursing unit	Too many interruptions	Peers that are too busy to cover my patients	CAM treatment is not an expectation of daily care	My patient is not receptive	I do not believe CAM helps the patient
Valid	105	105	105	104	104	102	104
Miss	2	2	2	3	3	5	3
Mean	2.01	2.98	2.46	2.60	2.38	4.15	6.27
Median	2.00	3.00	2.00	2.00	2.00	4.00	7.00
Mode	1.00	2.00	2.00	2.00	2.00	4.00	7.00
Std. Deviation	1.21	1.488	1.32	1.46	1.31	1.33	1.04
Variance	1.46	2.21	1.74	2.14	1.72	1.77	1.07

Question 40 asked the respondents what would enhance their ability to provide CAM treatments for their patients. This was a 7-point Likert scale with 5 questions. The scale responses were 1 is equivalent to absolutely agree, 2 is equivalent to agree, 3 is

equivalent to somewhat agree, 4 is equivalent to neutral, 4 is equivalent to somewhat agree, 6 is equivalent to disagree, and 7 is equivalent to absolutely disagree. There were no questions that were worded negatively toward CAM. There were 42 (40.38%) and 43 (41.35%) that responded absolutely agree and agree (respectively) that a nurse-driven consult for an 'on-call' CAM practitioner would enhance the administration of CAM treatments.

Table 24

Enhance Administration of CAM

		Nurse-driven consult for an 'on-call' CAM practitioner	A dedicated CAM treatment room located on the nursing unit for the purpose of uninterrupted, quiet environment	Peers that request you to administer a CAM treatment for their patient	Peers that volunteer to provide coverage for your patients while you administer a CAM treatment	A family member that requests a treatment for a patient
N	Valid	102	102	101	102	102
	Missing	3	3	4	3	3
Mean		1.82	2.03	1.80	1.82	1.81
Median		2.00	2.00	2.00	2.00	2.00
Mode		2.00	1.00	2.00	2.00	2.00
Std. Deviation		0.90	1.08	0.77	0.99	0.75
Variance		0.82	1.18	0.60	0.98	0.57

Question 41 asked the respondents how important were the delineated factors in their nursing practice and the administration of CAM treatments. This was a 5-point Likert scale with 1 equal to quite unimportant, 2 equal to not very important, 3 equal to

important on average, 4 equal to very important, and 5 equal to especially important. There were no factors negatively worded toward CAM and nursing practice. There were 3 respondents that skipped this question. The factor, opportunity to help patients, was scored the highest at 43 (42.16%) on the scale at 5, especially important.

Table 25

Factors in Nursing Practice/Administration of CAM

	Feeling of self-esteem from administering CAM treatment	Opportunity to help patients	Opportunity independent thought and action	Feeling of accomplishment	Opportunity personal growth in my job	Feeling frustrated at not being able to provide a CAM treatment
N	105	105	105	105	105	105
Missing	3	3	3	3	3	3
Mean	3.39	4.21	3.95	3.95	4.03	3.32
Median	3.00	4.00	4.00	4.00	4.00	3.00
Mode	3.00	5.00	4.00	4.00	4.00	3.00
Std. Dev	0.99	0.88	0.91	0.87	0.89	0.94
Variance	0.99	0.77	0.84	0.75	0.80	0.88

Question 42 asked the respondents which symptom would make them more likely to administer a CAM treatment. There were three choices: patient is anxious, patient is in pain, or patient is experiencing nausea. The respondents could only pick one choice. There were 3 respondents that skipped this question. There were 66 (63.46%) responses for the patient is anxious. This question had the opportunity for a text field comment. Some noteworthy comments were: “aromatherapy takes less time than Reiki treatment”, “all choices”, “work stress load with peers”, and “all of these symptoms are benefitted in

the PACU (post anesthesia care unit)".

Question 43 asked the respondents what their perception was of the effectiveness of treatments. This was a 5-point Likert scale with 1 equal to almost always effective, 2 equal to sometimes effective, 3 equal to every once in awhile, 4 equal to rarely effective, and 5 equal to never effective. There were 2 respondents that skipped this question. There were 0 responses for never effective for all 3 treatments.

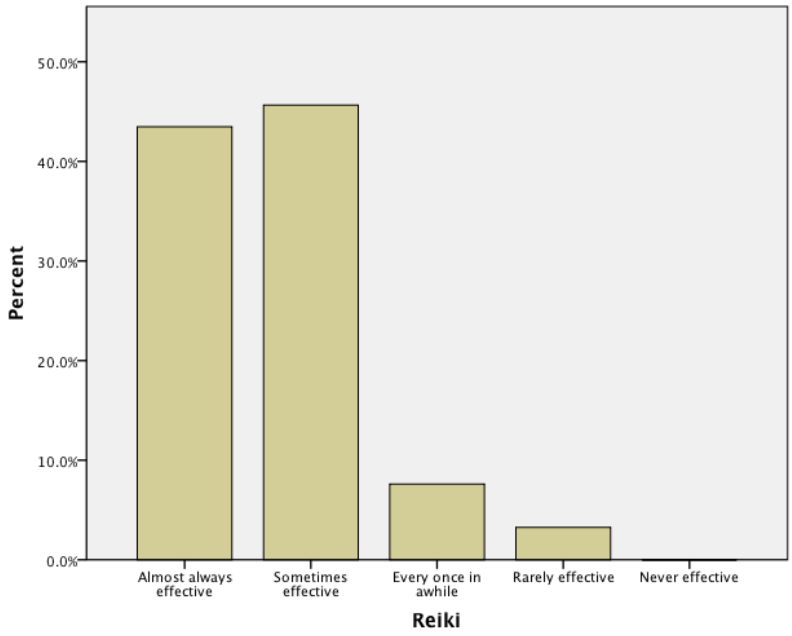

Figure 28. Effectiveness of Reiki treatment (nurses' perceptions)

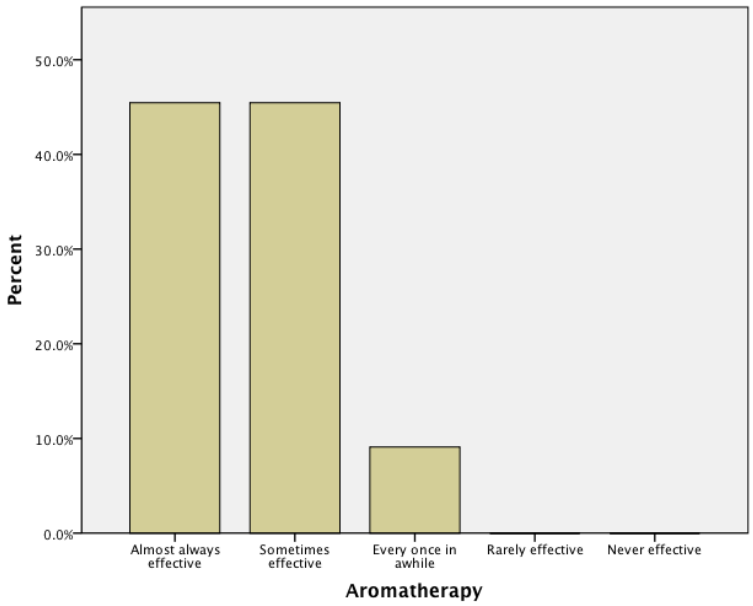

Figure 29. Effectiveness of aromatherapy (nurses' perception)

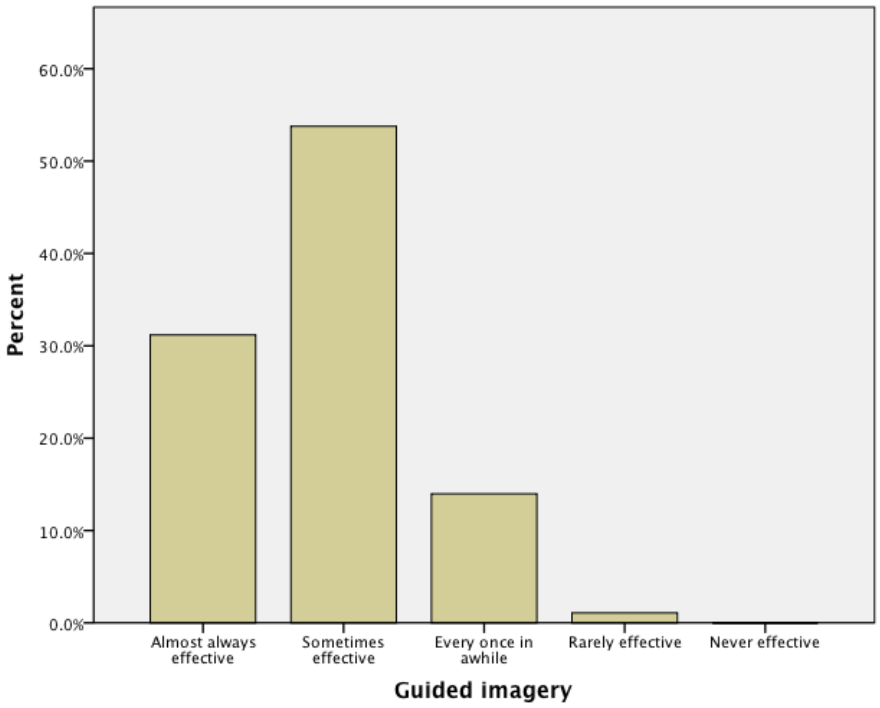

Figure 30. Effectiveness of guided imagery (nurses' perception)

Question 44 asked the respondents which CAM modality they would use and for how many minutes, based on the symptoms of nausea, pain, and anxiety. The choices for minutes were: not educated in Reiki, aromatherapy, or guided imagery; 5 minutes; 10 minutes; 15 minutes; 20 minutes; 30 minutes; or, more than 30 minutes.

Table 26

CAM Treatment for Nausea

Nausea	Reiki		Aromatherapy		Guided Imagery	
	N =	%	N =	%	N =	%
Not educated	27	25.20	14	13.10	27	25.20
5 minutes	8	7.50	35	32.70	8	7.50
10 minutes	12	11.20	22	20.60	12	11.20
15 minutes	7	6.50	12	11.20	6	5.60
20 minutes	6	5.60	5	4.70	2	1.90
30 minutes	1	0.90	0	0.00	1	1.00
more than 30 min	0	0.00	2	1.90	0	0.00
Total	62	57.00	91	84.10	56	52.30
Missing	46	43.00	17	15.90	52	47.70
Total	108	100	108	100	108	100

Table 27

CAM Treatment for Pain

Pain	Reiki		Aromatherapy		Guided Imagery	
	N =	%	N =	%	N =	%
Not educated	25	23.40	11	10.30	22	20.60
5 minutes	9	8.40	12	11.20	11	10.30
10 minutes	11	10.30	20	18.70	8	7.50
15 minutes	24	22.40	13	12.10	17	15.90
20 minutes	7	6.50	4	3.70	2	1.90
30 minutes	10	9.30	1	0.90	4	3.70
more than 30 min	3	2.80	0	0.00	0	0.00
Total	89	83.2	61	57.00	64	59.80
Missing	19	16.8	47	43.00	44	40.20
Total	108	100	108	100	108	100

Table 28

CAM Treatment for Anxiety

Anxiety	Reiki		Aromatherapy		Guided Imagery	
	N =	%	N =	%	N =	%
Not educated	24	22.40	10	9.30	22	20.60
5 minutes	6	5.60	16	15.00	10	9.30
10 minutes	12	11.20	32	29.90	16	15.00
15 minutes	13	12.10	15	14.00	17	15.90
20 minutes	5	4.70	4	4.70	5	4.70
30 minutes	4	3.70	1	0.90	4	3.70
more than 30 min	3	2.80	1	0.90	1	0.90
Total	67	62.6	80	74.8	75	70.10
Missing	41	37.4	28	25.2	33	29.90
Total	108	100	108	100	108	100

Question 45 asked the respondents their need for education regarding CAM uses, benefits, and how to request services for the selected groups: patient, nurses, ancillary personnel, physicians, and residents. Respondents were requested to rank the groups from 1 (highest priority for education) to 5 (lowest priority for education). There were 3 respondents that skipped this question. There were 50 (50.51%) respondents that ranked nurses as the highest priority for education. There were 63 (65.63%) that ranked ancillary personnel as the lowest priority.

Table 29

Education Needs

Edu	Patient		Nurse		Ancillary		MD		Resi-dent	
	N =	%	N =	%	N =	%	N =	%	N =	%
Highest Priority	33	30.8	50	46.70	2	1.90	12	11.20	7	6.50
2	27	25.2	29	27.10	7	6.50	13	12.10	22	20.60
3	10	9.3	12	11.20	16	15.00	37	34.60	24	22.40
4	23	21.5	7	6.50	8	7.50	26	24.30	33	30.80
Lowest Priority	7	6.5	1	0.90	63	58.90	10	9.30	15	14.00
Total	100	93.5	99	92.50	96	89.70	98	91.60	101	94.40
Missing	8	6.5	9	7.50	12	10.30	10	8.40	7	5.60
Total	108	100	108	100	108	100	108	100	108	100

Question 46 asked the respondents how many patients, on average, received a CAM treatment per week. There were 49 (45.8%) respondents that did not give any treatments per week. There were 3 respondents that skipped this question. The mean was 2.14 treatments, with a 3.82 standard deviation, and 14.63 variance.

Table 30

Approximate Treatments Per Week

Treatments Per Week		Frequency N =	Percentage
	0	49	45.80
	1	23	21.50
	2	6	5.60
	3	2	1.90
	4	2	1.90
	5	14	13.10
	10	4	3.70
	12	2	1.90
	15	1	0.90
	25		0.90
	Total	104	97.20
Missing	System	4	2.80
Total		108	100.0

Question 47 asked respondents how many patients received a CAM treatment over the last month. There were 37 (34.6%) of the respondents that reported 0 treatment for the month. The mean was 7.10 treatments, with a 13.37 standard deviation, and 178.88 variance. There were 4 respondents that skipped this question. In analysis of the data for treatments per week and treatments per month, the decision was made to use the number of treatments per month for analysis of the study variables. Many times the nurse entered zero for the number of treatments per week and entered a higher number for number of treatments per month, which is most likely the accurate depiction of practice patterns.

Table 31

Approximate Treatments Per Month

Treatments per Month		Frequency N =	Percentage
Valid	0	37	34.60
	1	16	15.00
	2	4	3.70
	3	9	8.40
	4	7	6.50
	5	3	2.80
	6	1	0.90
	7	1	0.90
	10	7	6.50
	15	4	3.70
	16	1	0.90
	18	1	0.90
	20	2	1.90
	25	2	1.90
	30	2	1.90
	40	2	1.90
	48	2	1.90
	60	1	0.90
	75	1	0.90
	Total	103	96.3
Missing	System	5	3.7
Total		108	100.0

Question 48 asked the respondents what percent of patients, where CAM was indicated, did they administer a treatment. There were 39 (36.4%) respondents that reported 0 percent of their patients being treated, when a treatment was indicated. The mean was 15.97, standard deviation 25.58, and variance 654.62. There were 5 respondents that skipped this question.

In examining the data related to number of treatments per month, clearly there were nursing units that had high administration of treatments, such as, delivery room (156 treatments per month by 9 CAM nurses), PACU (post-anesthesia care unit) (81 treatments per month by 5 CAM nurses), emergency room (80 treatments per month by 7 CAM nurses), and palliative care (35 treatments per month by 3 practitioners). However, nursing units was eliminated because there were many units with only 1 CAM nurse and no treatments being administered to patients.

Table 32

Percent of Patients That Received Treatment

Percent of patients that received a treatment when indicated		Frequency N =	Percentage
Valid	0	39	36.40
	1	10	9.30
	2	3	2.80
	3	1	0.90
	4	1	0.90
	5	7	6.50
	6	1	0.90
	10	9	8.40
	20	5	4.70
	25	4	3.70
	30	6	5.60
	50	8	7.50
	75	2	1.90
	80	1	0.90
	85	1	0.90
	90	2	1.90
	100	2	1.90
	Total	102	95.30
Missing	System	6	4.70
Total		108	100.0

Question 49 asked the respondents of the patients that they treated, how did they divide the treatments among the modalities (approximate percentage). There was more aromatherapy treatments reported (average 32 treatments), followed by Reiki (average 21 treatments), and then guided imagery (average 12 treatments). There were 11 respondents that skipped this question.

Table 34

How Treatments Divided Between Modalities

		Reiki	Aromatherapy	Guided imagery
N	Valid	84	86	79
	Missing	24	22	29
Mean		18.43	33.01	12.37
Median		0.00	10.00	0.00
Mode		0.00	0.00	0.00
Std. Deviation		33.26	40.75	25.31
Variance		1106.45	1660.57	640.74

Question 50 asked the respondents if they received any additional education in a CAM modality since their initial education in Reiki or aromatherapy/guided imagery. There were 23 (21.90%) respondents that reported yes, and 82 (78.10%) that reported no additional education. There were 2 respondents that skipped this question. There was a comments field for the respondent to record the modality that they pursued since their initial education. There were many noteworthy responses for continued education: mindfulness meditation (3), emotional freedom technique (1), Reiki level II (10), Reiki Master (6), Chinese 5 element theory (1), therapeutic massage (1), Reconnective healing (1), Holistic nutrition (1), MA holistic spirituality in healthcare from Immaculata University (2), Research (1), CAM certification from Drexel University (1), Holistic classes at Immaculata University (1), Self-help books and tapes (1), Happiness and laughter seminar (1), and Mind-body connection seminar (1).

Question 51 asked the respondents, as an open-ended text field, if they had any additional information/comments related to CAM education or use of Reiki/aromatherapy/guided imagery. There were 36 responses to this open-ended question. There were notable comments made, which will be reported below as they apply to the variables in the study.

Table 34

Qualitative Answers Question 51

Respondent	Intrinsic and Extrinsic	Variable	Construct
I am grateful to be able to offer my patients caring/ healing modalities to help reduce anxiety and pain. The knowledge that I have gained through CAM education has enhanced my professional and personal life and made me a better nurse and person.	Intrinsic	Health belief and attitude.	
I look forward to innovative application of these modalities in multiple settings!	Intrinsic	Health belief and attitude	
I had Reiki tx for a very painful case of bursitis. I found that I was tensing up over the pain but did not realize it. When I received Reiki from another RN, I relaxed. The pain was still there but it was not aggravated by the tension. So, in my experience, it worked because it made me feel better without the use of more drugs.	Intrinsic	Health belief and attitude	

When I first received my certification in Reiki I was eager to try it on family and patients. I still perform self Reiki daily, and it really is very calming. I often tell people that the root of all disease is stress, and if the only benefit derived from Reiki is a reduction of stress, we still have something that is a benefit.	Intrinsic	Health beliefs and attitude; Personal use	Patient comfort for restlessness and anxiety
Aromatherapy has really helped a lot of my patients (especially for patients who restless or anxious.)	Intrinsic	Health belief and attitude	Patient comfort from anxiety and pain
I use Reiki primarily when I can & have seen the result of easing anxiety & pain.	Intrinsic	Health belief and attitude	Education. Patient relief of nausea.
Mostly using Reiki on family members and staff members in my unit. Aromatherapy is something you can tell patients when they call on the phone. I have used peppermint for nausea a lot.	Intrinsic	Health belief and attitude. Personal self-care use.	Education. Patients and families satisfied. Value added for the hospital. Decreases pain, nausea, and anxiety.
The results of using aromatherapy have been very gratifying to those who received it. I wish more nurses would want to be certified and use this therapy to help others! Pt.'s and their families are very appreciative and then also able to educate them on alternative ways of helping their pain, nausea, and anxiety. I have seen great results with decreasing pain and nausea as well as decreasing anxiety, heart rates and even lowering high blood pressure.	Intrinsic	Health belief and attitude.	Patient satisfaction and decreased stress or anxiety.

☐ I enjoy using guided imagery and aromatherapy in my childbirth education classes to end the night. The patients seem to go home more relaxed and ready for bed. The stresses of the day seem to dissipate.	Intrinsic	Health beliefs and attitude	Patient comfort for confusion, nausea.
☐ It does seem to work well on confused demented patients. And with patients experiencing nausea from medications or ECT treatments.	Intrinsic	Health beliefs and attitude	Patient satisfaction. Nurse satisfaction
☐ Very beneficial for self-use and for families.	Intrinsic	Health beliefs and attitude.	Education and Time
☐ I have taught most of my students to do hand massage & have made suggestions that Student Nurses should be taught b/c they have the time & to encourage their holistic approach	Intrinsic and Extrinsic	Health Belief and workload	
☐ I believe in the practices to some extent but haven't had personal pain to enhance my usage. Slowly learning to use on self, friends and occasionally patients. I tend to see patients as uninterested, maybe will explore the truth of this more	Intrinsic and Extrinsic	Health beliefs and patient receptivity	Time
☐ There is never enough time to perform CAM on inpatients.	Extrinsic	Workload	Time
☐ No quiet place to do it way too many patients that are much sicker than previous years. Not enough time to do it, too much pressure to complete tasks, and not enough time to spend with pts.	Extrinsic	Workload	Time
☐ Guided imagery is the most effective with my patients, as I can be talking to them while preparing to a procedure. Oils are difficult to carry with me while rounding hospital. Reiki and aromatherapy has been extremely beneficial to family members as I can apply more time and it is easier to carry the oils with me.	Extrinsic	Workload	Time

I would really like to have the time for CAM	Extrinsic	Workload	Time and nurse-driven consult for CAM
Unfortunately, time is a major constraint in conducting CAM with patients. Nurses are not even eating during their shifts yet alone offering CAM to their patients. The key is to have someone on staff that can be consulted to come to see a patient or nurse in need of CAM. Thank you!	Extrinsic	Workload	Nurse-driven consult. Education
I think we should have a CAM team with the ability to consult them and more information given to patients and staff on how to get a treatment for a patient.	Extrinsic	Workload	Education
When other nurses see me or other staff using CAM therapies and realize that this is something they can professionally sanction without the permission from a physician or NP, then the nurses are interested in receiving education so that their nursing care can be enhanced.	Extrinsic	Peer support	Value added to the hospital
Cost, allocation of staffing is a hindrance to establishing a formal CAM at AMH. Many outside institutions use CAM as part of the core central care Cancer Treatment Centers of America have these modalities in place and patients are receptive.	Extrinsic	Patient receptivity.	Education
I only have used it once on a patient; I would like to have a refresher course.	Extrinsic		Education
I'd love to learn more right at my own hospital. It is not offered frequently.	Extrinsic		Education
Refresher courses would be nice!	Extrinsic		Education

We were initially encouraged to use the new skills we had acquired. Now we don't even know where to get supplies if we do have the opportunity. The institution seems to just be paying lip service to the importance of these therapies and, as usual, they are not interested in what the nurses have to say	Extrinsic		Education
I believe that there is not enough education dispersed among my coworkers and the patient population. This could be an option or another successful tool when treating patients if there was more awareness.	Extrinsic		Education
Refresher course may be helpful in reintroducing aromatherapy to nursing practice.	Extrinsic		Education
Appreciate the opportunity to have the practice of CAM offered at AMH both for nursing education and practice! Thanks	Extrinsic		Education
Would LOVE more classes and approved oils to use! Not enough classes/ opportunities to go around.	Extrinsic		Education

Inferential Statistics: Variables

The independent variables are the intrinsic and extrinsic factors that determine the dependent variable, associated with nurses practice patterns as defined by the number of treatments per month of hospital-endorsed CAM. The decision to use the number of treatments per month was based on the nurses' discrepancy in entering zero for the number of treatments per week and entering a higher number for the number of treatments per month; therefore, number of treatments per month is likely the most accurate depiction of practice patterns.

Research question #2. Research question #2 was examined first to determine what is the relationship between intrinsic and extrinsic factors on the nurses' continued use of CAM in nursing practice. Results of analysis were addressed with negative binomial model.

The dependent variable, CAM treatments per month, was recoded as CAM yes/no to reflect continuing use of CAM. Data entered as zero or missing was re-coded as no, everything else (number of treatments entered) was coded yes. Question 16, do you use CAM for personal self-care use, was a multiple-choice response of Reiki, aromatherapy, guided imagery, or none. This question was recoded to dichotomous variable to indicate use of CAM versus no use of CAM. Therefore, a response of Reiki or aromatherapy or guided imagery was equivalent to a yes or 1 (personal use of CAM) and a response of none was equivalent to as none or 0 (personal use of CAM). The three separate questions 'on a scale of 0-10, what is your patient's receptivity to' Reiki, aromatherapy, and guided imagery was recoded into a sum score, which was relabeled 'patient receptivity'.

The dependent variable distribution was highly positively skewed and over dispersed. Rather than transform the variable, a negative binomial regression was used to address the question. Negative binominal regression is useful when the conditional variance exceeds the conditional mean. In this model, the response variable of interest is continued use of CAM.

The generalized linear model (genlin) command is used to estimate a negative binomial regression model. The SPSS keyword 'by' indicates that the variable that follows is a categorical predictor, and the SPSS keyword 'with' indicates that the variable

that follows is a continuous predictor. The distribution used is 'negbin' (negative binomial) and the link is a log link.

To address research question 2, a model was constructed with the monthly number of treatments as the dependent variable and independent variable personal use, and have you received any CAM treatments (intrinsic factors) and variable are there other nurses using CAM on your unit (extrinsic factors) and CHBQ Score, what is your typical patient assignment, and patient receptivity as covariates. The output tables are seen below.

Table 35

Case Processing Summary

	N	Percent
Included	83	76.9%
Excluded	25	23.1%
Total	108	100.0%

In the table above, 83 cases were included, and 25 cases excluded in the analysis. Below is information on the distribution of the categorical predictor variables, as well as information on the distribution of the dependent variable and the continuous predictor variables.

Table 36

Categorical Variables and Continuous Variable Information

Categorical Variables

			N	Percent
Factor	Are there other nurses using Reiki/aromatherapy/guided imagery on your assigned unit?	Yes	52	62.7%
		No	19	22.9%
		I do not know	12	14.5%
		Total	83	100.0%
	Have you received any Complementary Alternative Medicine (CAM) treatments?	Yes	71	85.5%
		No	12	14.5%
		Total	83	100.0%
	Personal use	No	12	14.5%
		Yes	71	85.5%
		Total	83	100.0%

Continuous Variable Information

		N	Minimum	Maximum	Mean	Std. Dev
Dependent Variable	Approximate number CAM treatments per month	83	.00	75.00	7.73	14.02
Covariate	CHBQ Score	83	37.00	61.00	48.06	4.71
	What is your typical patient assignment in one 8-hour shift?	83	1.00	11.00	5.61	2.81
	Patient receptivity	83	3.00	28.00	16.90	4.47

Table 37

Omnibus Test and Tests of Model Effects

Omnibus Test[a]

Likelihood Ratio Chi-Square	Df	Sig.
55.681	7	.000

Dependent Variable: Approximate number treatments per month
Model: (Intercept), Are there other nurses using CAM on your unit, Have you received any CAM treatments from a peer, CHBQ Score, What is your typical work assignment in an 8-hour shift, Patient receptivity, Personal use
a. Compares the fitted model against the intercept-only model.

Tests of Model Effects

	Type III		
Source	Wald Chi-Square	df	Sig.
(Intercept)	.033	1	.856
Are there other nurses using CAM?	.890	2	.641
Have you received any CAM treatment?	1.491	1	.222
CHBQ Score	.047	1	.828
How many patients per 8-hour shift?	3.171	1	.075
Patient receptivity	.043	1	.836
Personal use (Yes)	13.685	1	.000

Dependent Variable: Approximate number treatments per month
Model: (Intercept), Are there other nurses using CAM, Have you received any CAM treatment, CHBQ Score, How many patients per 8-hour shift, Patient receptivity, Personal use (yes).

The tables above provide tests of the model as a whole (Omnibus Test). The likelihood ratio chi-square provides a test of the overall model comparing this model to a

model without any predictors (a “null” model). The model used is a significant improvement over a “null” model. The p-value is .000 for this model, $p < 0.0001$, which is statistically significant.

Table 38

Parameter Estimates Negative Binomial Regression Coefficients for Predictor Variables

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	Df	Sig.
(Intercept)	1.300	1.5584	-1.754	4.355	.696	1	.404
Are there other nurses using CAM on your unit (yes)	.331	.4316	-.515	1.177	.590	1	.443
Are there other nurses using CAM on your unit (no)	.035	.6042	-1.149	1.219	.003	1	.954
Are there other nurses using CAM on your unit (I do not know)	0[a]	.	.	.	.	.	.
Have you received any CAM treatment (Yes)	.662	.5422	-.401	1.725	1.491	1	.222
Have you received any CAM treatment (No)	0[a]	.	.	.	.	.	.
CHBQ Score	.007	.0313	-.055	.068	.047	1	.828
What is your typical work assignment in an 8-hour shift	-.093	.0521	-.195	.009	3.171	1	.075
Patient receptivity	.009	.0442	-.077	.096	.043	1	.836
Personal use (no)	-4.082	1.1034	-6.244	-1.919	13.685	1	.000
Personal use (yes)	0[a]	.	.	.	.	.	.
(Scale)	1[b]						
(Negative binomial)	1[b]						

Dependent Variable: Approximate number treatments per month
Model: (Intercept), Are there other nurses using CAM on your unit, Have you received any CAM treatments, CHBQ Score, What is your typical nursing assignment, Patient receptivity, Personal use
a. Set to zero because this parameter is redundant.
b. Fixed at the displayed value.

The table Parameter Estimates contains the negative binomial regression coefficients for each of the predictor variables along with their standard errors, Wald chi-square values, p-values and 95% confidence intervals for the coefficients. The dummy variable of 'no personal use' for the variable 'personal use' is statistically significant. Compared to personal use 1 (which is yes personal care use) the expected log count of personal use 0 (which is no personal care use) decreases by 4.08. The variable 'personal use no' has a coefficient of -4.08, which is statistically significant, $p < 0.001$. This provides an estimated mean number of patients treated over one month of 0.9 for no and 5.3 for yes.

Research question #1. Research question #1 examined the intrinsic and extrinsic factors (independent variables) that affect the nurses' use of CAM (dependent variable). Logistic regression model was utilized to determine the relationship between intrinsic and extrinsic (independent) variables on the continued use of CAM (dependent variable).

Logistic Regression Model was applied to research question #1. The goal of analysis using this method is to find the best fitting model to describe the relationship between an outcome (dependent) variable and a set of independent (predictor or explanatory) variables (Hosmer & Lemeshow, 2002). The outcome variable is binary or

dichotomous in a logistic regression model. The independent variables were entered as a form of data reduction to screen if they worked in the logistic regression model.

The outcome variable was CAM_YESNO and the independent variables entered were as follows: a) intrinsic factors: perceived patient receptivity to Reiki, aromatherapy, and guided imagery; b) extrinsic factor: workload (number of patients in an 8-hour shift); c) intrinsic factor: nurses' attitudes and beliefs (CHBQ); and d) intrinsic factor: nurses' attitudes and belief (personal use). The output tables are seen below.

Table 39

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	27.188	6	.000
	Block	27.188	6	.000
	Model	27.188	6	.000

The table above gives the overall test for the model that includes the predictors. The chi-square value of 27.188 with a p-value of less than 0.0005 demonstrates that the model as a whole fits significantly better than an empty model, such as, a model with no predictors.

Table 40

Model Summary

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	78.930[a]	.279	.387

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

The -2* log likelihood (78.930) in the Model Summary table can be used in comparisons of nested models. This table also gives two measures of pseudo R-square.

Table 41

Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	Patient receptivity to Reiki	-.041	.209	.039	1	.844	.960
	Patient receptivity to aromatherapy	.174	.183	.905	1	.342	1.191
	Patient receptivity to guided imagery	.025	.192	.017	1	.896	1.025
	Typical patient assignment in one 8-hour shift	-.167	.112	2.228	1	.135	.846
	CHBQ Score	.053	.059	.823	1	.364	1.055
	Personal use (Yes)	3.258	1.130	8.320	1	.004	26.010
	Constant	-4.681	3.439	1.853	1	.173	.009

a. Variable(s) entered on step 1: Patient receptivity to Reiki, Patient receptivity to aromatherapy, Patient receptivity to guided imagery, Typical patient assignment, CHBQ Score, Personal use (Yes).

In the table labeled Variables in the Equation, the coefficients, standard errors, Wald test statistic with associated degrees of freedom and p-values, and the exponented coefficient (also known as an odds ratio) are listed. The variable personal use (yes) is statistically significant. The logistic regression coefficients give the change in the log odds of the outcome for a one-unit increase in the predictor variable. For every one-unit change in personal use, the log odds of administering a CAM treatment (versus not administering a treatment to the patient) increases by 3.258. Or stated differently, there is a 26-fold increase in the odds of treating a patient if you use CAM personally.

Using logistic regression, the dependent variable CAM_YESNO was examined with the variable 'personal use'. The output table is below.

Table 42

Estimates Personal Use and Covariates

Estimates

Personal use	Mean	Std. Error	95% Wald Confidence Interval	
			Lower	Upper
No use	.0937	.10042	.0115	.7659
Yes use	5.5507	1.57918	3.1782	9.6943

Covariates appearing in the model are fixed at the following values: CHBQ Score=48.0602; Patient Receptivity (sum score) =16.9036; Typical patient assignment=5.6145

Table 43

Variables Personal Use (Yes)

		B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Personal use (Yes)	-3.561	1.065	11.184	1	.001	.028	.004	.229
	Constant	.996	.239	17.400	1	.000	2.708		

a. Variable(s) entered on step 1: Personal use (yes)

Since the variable ‘personal use’ is statistically significant, logistic regression was explored to determine the factors that may affect personal use. The predictor or dependent variable was ‘personal use’ and the covariates of age, education level, years as a nurse, work status, whether they considered themselves a spiritual person, years since Reiki education, and years since aromatherapy/guided imagery education. For the output table, see Table 44. There are no statistically significant covariant for personal use.

Table 44

Personal Use and Covariates

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	Age	.031	.059	.273	1	.601	1.031
	Education Level	-.231	.449	.266	1	.606	.793
	Years as nurse	-.011	.051	.044	1	.834	.989
	Work status	-.418	.436	.918	1	.338	.658
	Spiritual person	-.682	1.433	.226	1	.634	.506
	Years since Reiki education	.028	.119	.056	1	.813	1.029
	Years since aromatherapy education	.412	.236	3.045	1	.081	1.510
	Constant	1.385	3.558	.151	1	.697	3.993

Next, dependent variable 'personal use' was examined using the covariates what do you think is your patient's receptivity to Reiki, what do you think is your patient's receptivity to aromatherapy, and what do you think is your patient's receptivity to guided imagery. The output table is seen in Table 45. The patient's receptivity to aromatherapy is statistically significant for personal use, Sig 0.018.

Table 45

Personal Use and Receptivity

Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	Patient receptivity to Reiki	-.267	.223	1.432	1	.231	.766
	Patient receptivity to aromatherapy	.566	.239	5.618	1	.018	1.761
	Patient receptivity to guided imagery	.049	.204	.059	1	.809	1.051
	Constant	.024	.913	.001	1	.979	1.025

a. Variable(s) entered on step 1: Patient receptivity to Reiki, Patient receptivity to aromatherapy, and Patient receptivity to guided imagery.

Next, dependent variable 'personal use' was examined using the covariant have you ever delivered a CAM treatment to other nurses on your unit, have you received a CAM treatment from a peer, and how often has peer-to-peer CAM treatments occurred. The output table is below for covariates have you delivered a CAM treatment to other nurses on your unit and have you delivered a CAM treatment to a peer is statistically significant (see Table 46). The covariant table for how often has peer-to-peer CAM treatments occurred is seen in Table 47.

Table 46

Dependent Variable Personal Use and Covariants

Variables in the Equation: Have you delivered CAM to other nurses?

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Have you ever delivered a CAM treatment to other nurses	2.467	.791	9.727	1	.002	11.781
	Constant	.901	.329	7.501	1	.006	2.462

a. Variable(s) entered on step 1: Have you delivered a CAM treatment to other nurses.

Variables in the Equation: Have you received a CAM treatment from a peer?

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Have you received a CAM treatment from a peer	1.345	.577	5.430	1	.020	3.840
	Constant	1.022	.389	6.907	1	.009	2.778

a. Variable(s) entered on step 1: Have you received a CAM treatment from a peer.

Table 47

Output Tables for Logistic Regression

Variables in the Equation: How often does peer-to-peer CAM treatments occur?

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	How often does peer-to-peer CAM treatments occur			5.532	4	.237	
	Never	-20.628	23205.440	.000	1	.999	.000
	Rarely (once month)	-19.210	23205.440	.000	1	.999	.000
	Sometimes (2-3 times month)	.000	25169.830	.000	1	1.000	1.000
	Often (once a week)	.000	26795.329	.000	1	1.000	1.000
	Constant	21.203	23205.440	.000	1	.999	1615476726.572

a. Variable(s) entered on step 1: How often does peer-to-peer CAM treatments occur.

Methods to Ensure Validity and Reliability of Survey

A primary consideration when developing a survey to measure constructs is estimating the validity and reliability. Validity refers to the degree a survey measures what the researcher intends it to measure, whereas reliability centers on whether the survey produces a consistent result.

Using a mixed methods design can "build on the strength of each data collection step and minimize the weaknesses of a single approach which is argued to increase both the validity and reliability of data" (Katzenmeyer, 1997, p.1).

This researcher conducted cognitive interviews to permit estimation of content validity of the survey. The survey was vetted with experts in research and CAM practices prior to implementation with CAM practitioners.

There are no surveys found by this researcher that investigate nurses' use of CAM in a hospital setting. The use of an exploratory sequential mixed methods approach, with cognitive interviewing of survey items, addressed this gap in the professional literature.

4.4 Summary

Chapter 4 included a presentation of the findings and was divided into three sections. Section one focused on the qualitative results of the study, section two reported the integration of the qualitative data into survey questions, and section three discussed the quantitative survey results.

Analysis of the participants' focus group interviews yielded emerging themes. Analysis began with hard copy reading of verbatim transcripts and involved using NVivo10 software to determine word frequency and the development of nodes. The major themes that emerged were a.) Barriers (obstacles) to use of CAM, b.) Promotes use of CAM (nurses' perception), c.) Nurses' perceived benefits of CAM, and d.) Prompts (decision-making) nurse to treat.

Each major theme included sub-themes, which further delineated the nurses' use of hospital-endorsed CAM. Theme number one, barriers (obstacles) to the use of CAM, had three sub-themes. The biggest barrier was time, with too many tasks, computer

documentation, or other responsibilities cited by all the participants. Another barrier was the environment, which nurses felt were too noisy or they had too many interruptions while attempting to administer a CAM treatment. The last barrier was resource from the aspect of having a peer that could cover patients while a CAM treatment was being done.

The second theme was promotes use of CAM from the nurses' perception and the sub-themes were education, consults, environment, and standard of care. The nurses expressed the need of education for the patient prior to admission to the hospital. The nurses articulated a need of peers being educated which may lead to more support in patient coverage as peers request a CAM treatment for their patient. The nurses further expressed education for physicians, residents, and ancillary personnel. The sub-theme consults emerged as a solution to nurses' not having enough time to administer CAM treatments. Consults were suggested as nurse-driven with an assigned nurse to administer treatments. The assigned nurse could administer treatments to all the patients admitted to the hospital or be assigned from the nursing unit. The sub-theme healing space was seen as a solution to the noise and interruptions. Nurses' expressed that a designated room on the nursing unit could be designated as a place to take the patient to administer a CAM treatment. The room could have signage for CAM treatment in session with the expectation that there would be no interruptions. The sub-theme standard of care emerged from the discussion of all patients could benefit from and should have a CAM treatment. Nurses' expressed that CAM treatments should be an expectation of standard care and documentation should be built into the electronic record.

The third theme that emerged was the nurses' perceived benefits of CAM and the sub-themes were patient, nurses (treatment of peers), and nurses' self-care. The nurses

extolled the many benefits of CAM treatments to patients, such as, improved patient satisfaction, comfort, improved outcomes, a reduction in pain, relaxation, and value added services for the hospital. The nurses' treatment of peers occurred frequently and was expressed as a decrease in stress, reduction in headache, and reduction in backaches. All of nurses were using the hospital-endorsed CAM treatments for their self-care to decrease stress, improve their sleep, and/or general well-being.

The fourth theme that emerged was prompts nurse to administer a CAM treatment and the sub-themes were patient factors and peer factors. Anxiety or difficulty coping was expressed as a trigger for the nurse to treat a patient. A patient or peer request was a frequent reason for the nurse to administer CAM. Peer factors of complaints of headache, backache, or stress were reasons for nurses to treat their peers.

The themes were then integrated into the intrinsic and extrinsic factors and utilized to enhance and develop the survey questions. The themes that emerged from the qualitative analysis were reflected in the survey responses (see Table 48).

Table 48.

Integration of Qualitative Analysis and Survey Results

Theme	**Sub-theme**	**Focus Group**	**Survey results**
Barriers (obstacles) to use of CAM	Time	100% reported time as an issue, although 20% did manage to integrate CAM and 80% reported great difficulty with integration	65.38% reported not having enough time on a typical workday. Not enough time on their shift to administer CAM • 43.81% reported "Absolutely agree" • 29.52% reported "Agree"
	Environment	80% expressed difficulties in CAM administration related to the physical environment	Too much noise on the nursing unit • 14.29% reported "Absolutely agree" • 34.29% reported "Agree" Too many interruptions when administering a CAM treatment • 24.76% reported "absolutely agree" • 37.14% reported "Agree"
	Resources	90% spoke of need to have someone cover their patients so that they could administer CAM treatments	Peers that are too busy to provide coverage of patients • 25.96% reported "Absolutely agree" • 32.69% reported "Agree" Peers that volunteer to provide coverage while you administer a CAM treatment • 41.35% reported "Absolutely agree" 43.27% reported

			"Agree"
Promotes use of CAM	Education	100% requested that education of patients, nurses, physicians, residents, and ancillary personnel would help them administer CAM treatments.	The priority for education was reported as highest: • 50.51% Nurses • 33.00% Patient • 12.24% Physicians • 6.93% Residents • 2.08% Ancillary personnel
	Consults	70% expressed that a nurse-driven consult would enhance the ability for all patients to receive CAM treatments	Nurse-driven consult for an on-call CAM practitioner • 40.38% reported "absolutely agree" • 41.35% reported "Agree"
	Healing space	60% stated that a designated treatment room on the patient unit would provide a quiet, healing space with little to no interruptions	Dedicated CAM treatment room for uninterrupted, quiet environment • 36.54% reported "Absolutely agree" • 34.63% reported "Agree"
	Standard of care	50% expressed that currently CAM treatments are not viewed as a standard of care	CAM treatment is not an expectation of daily care • 25.96% reported "Absolutely agree" • 41.35% reported "Agree"
Nurses' perceived benefits of CAM	Patient	100% extolled the many benefits of CAM treatments for patients	Improves patient outcomes • 32.69% reported "Absolutely agree" • 43.27% reported "Agree" Patients feel more cared for • 48.08% reported "Absolutely agree" • 42.31% reported "Agree"

			Provides comfort for the patient • 43.27% reported "Absolutely agree" • 45.19% reported "Agree"
	Nurses (treatment of peers)	60% stated that they frequently treat their peers to decrease their stress levels or pain	Treating my peers can decrease their stress levels • 41.75% reported "Absolutely agree" • 44.55% reported "Agree" Treating my peers can decrease their pain • 33.98% reported "Absolutely agree" • 44.66% reported "Agree"
	Nurses self-care	100% reported use of Reiki, aromatherapy/guided imagery. Additionally, acupuncture, stones/crystals, yoga, meditation, and massage were reported.	Nurses reported use of CAM for self-care • Reiki 35.85% • Aromatherapy 67.92% • Guided imagery 34.91% • None 14.15%
Prompts (decision-making) nurse to treat	Patient factors	60% reported that anxiety is the primary symptom that prompts them to administer a CAM treatment. They also recognized that a family member who requests a treatment will prompt them to administer a treatment	Which symptom would make you more likely to administer a CAM treatment? • 63.46% patient is anxious • 23.08% patient is in pain • 13.46% patient is nauseated A family member that requests a treatment for a patient • 36.54% reported "Absolutely agree" • 45.19% reported "Agree"

	Peer factors	70% expressed that peers that ask them to treat patients makes them more likely to administer CAM 60% stated the peers who volunteer to provide coverage are more likely to administer a CAM treatment	Peers that ask you to treat a patient • 36.54% reported "Absolutely agree" • 48.08% reported "Agree" Peers that volunteer to provide coverage while you administer a CAM treatment • 41.35% reported "Absolutely agree" • 43.27% reported "Agree"

Chapter 4 explicated the results of the qualitative focus groups with analysis of data and emergence of themes, development of the survey with integration of qualitative analysis, and the results of the survey. Chapter 5 reports the discussion, conclusions, and recommendations.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

A sequential exploratory mixed methods design was utilized to inform survey questions to determine the intrinsic and extrinsic factors that impact the practice patterns of the nurses' use of hospital-endorsed CAM. Chapter 5 includes a) statement of the problem, b) a review of the research questions and study purpose, c). summary of the findings, d). strengths of the study, e). limitations, f.) implications, and g). future research. The purpose of the chapter is to align the results of the study with the variables.

The purpose of the study was to explore and describe the intrinsic personal factors (socio-demographics and nurses' attitudes and beliefs) and nurses' perception of patient receptivity to CAM, extrinsic situational factors (workload and peer support) and patient factors that influence nurses' continued use of hospital-endorsed CAM in a mid-Atlantic suburban hospital. The significance of the study specifically contributed to our understanding of the intrinsic and extrinsic factors associated with nurses' practice patterns of CAM administration for patients in a hospital that supports CAM education and use.

5.1 Statement of Problem

An essential gap is our knowledge of the factors that contribute to the nurses' integration of CAM into patient care. The literature supports the positive effects of CAM. However, some nurses, who are educated and supported by their hospital, are not engaged in using CAM with their patients. This study was an examination of factors that may act as barriers (obstacles) or enhance the use of CAM to delineate what factors are associated with the continued use of CAM by nurses educated in a CAM therapy.

5.2 Research Questions

The following research questions guided the study:

Question #1: What are the intrinsic and extrinsic factors that affect the nurses' use of CAM? *Hypothesis:* Intrinsic and extrinsic factors (independent variables) will affect the nurses' use of CAM (dependent variable).

Question #2: What is the relationship between intrinsic and extrinsic factors on the nurses' continued use of CAM in nursing practice? *Hypothesis:* There is a relationship between intrinsic and extrinsic factors, which influences the nurses' continued use of CAM.

5.3 Summary of Findings

Research question 1. Research question 1 asked, "What are the intrinsic and extrinsic factors that affect nurses' use of CAM?" The focus group and survey data presented in chapter 4 indicate that the four major themes (barriers/obstacles to CAM use, promotes use of CAM, benefits of CAM, and prompts nurse to treat) the intrinsic factor 'use of CAM for personal self-care', and the extrinsic factors 'have you treated a peer with CAM?' and 'have you received a treatment from a peer?' are significant. The study results supports the hypothesis that intrinsic and extrinsic (independent variable) affects the nurses' use of CAM (dependent variable). In a survey of rheumatology nurses (n = 192), identified a trend that nurses who received CAM (53.5%, n=84) were more likely to provide advice to patients about CAM, compared to those respondents who had not received CAM treatments (Osborn, Baxter, Barlos, & Barlow, 2004). While the study of rheumatology nurses did not delineate the receiving of CAM being from a peer, or its application by a nurse for a patient, it aligns with this study as the nurse having a positive

experience with treatments for themselves and then transferring that experience as advice or application of treatment for patients.

Specific aim #1 was to explore the critical components of intrinsic and extrinsic factors that impact CAM practices. Focus groups delineated the intrinsic and extrinsic factors that promote or hinder the continued use of CAM.

Intrinsic factors of nurses' beliefs about health and healing impact their use of CAM with patients were not supported in this study using the CHBQ (Lie & Boker, 2004). Intrinsic factors of perceived patient receptivity (nurses' perception of patient receptivity) affects nurses' use of CAM. While patient receptivity was not statistically significant, this study posited that nurses who use CAM for personal care are more likely to present CAM positively to their patients was supported in the study results. Nurses that offer CAM positively to patients are more like to have patients that are interested in receiving treatments.

Extrinsic factors are the situational factors that are modifiable and may act as obstacles to the nurses' use of CAM. The gross count of nursing unit treatments demonstrated that the nursing units with higher application of CAM for patients had more nurses that were educated in the modality. The highest application of CAM occurred in labor and delivery, which had 156 treatments in a month, administered by 9 nurses. Other areas in the hospital were the emergency room (80 treatments by 7 nurses), post anesthesia care unit (81 treatments by 4 nurses), operating room (54 treatments by 3 nurses), palliative care (35 treatments by 3 nurses), and medical surgical (57 treatments by 17 nurses). Most units that had less than 2 nurses educated did not administer any treatments. There were, however, job positions that worked as solo that had high

administration of treatments, such as, instructor in the school of nursing (80 treatments by 2 nurses), Clinical Support Resource Nurse (40 treatments by 1 nurse), nursing supervisor (25 treatments by 1 nurse), and nursing administrative (10 treatments by 1 nurse). So, while peer support, or having peers on your unit that are educated in CAM, was not a significant statistical finding, there are units that have higher application of CAM practice patterns. This may be due to the type of patient population, such as, labor/delivery and the emergency room which have patients with acute pain or anxiety needs, which prompts the nurse to utilize CAM. Another factor could be the job position of the nurse, such as palliative care consultant or clinical support/resource nurses are able to reach a wide array of patient types on consult and are better able to apply a CAM practice.

Research question 2. Research question 2 asked, "What is the relationship between intrinsic and extrinsic factors on the nurses' continued use of CAM in nursing practice?" The survey data presented in chapter 4 were used to answer this question. Statistically significant results demonstrated that nurses' use of CAM for personal self-care practice impacted their continuation of CAM practices with their patients. If the nurse is not using CAM for personal self-care, then there is a decrease of 4.04 treatments per month. The study results support the hypothesis that there is a relationship between intrinsic and extrinsic factors that influence the nurses' continued use of CAM. This is supported in the extant literature. There is a correlation between the personal use of CAM and integration of the practice in the healthcare setting (Johnson et al., 2011; Mann, Gaylord, & Norton, 2004; Winnick, 2005). Tracy et al. (2005) demonstrated a strong correlation between personal use of specific CAM treatments among critical care nurses and the use of those same CAM treatments in nursing practice.

In summary, the study supported the intrinsic variable, attitude and beliefs of the nurse (do you use CAM for personal self-care practice); and the extrinsic variables, peer support (have you given a CAM treatment to a peer and/or have you received a CAM treatment from a peer). The study did not support the intrinsic variable health belief and attitude (CHBQ); and the extrinsic variable, workload. Other studies in the extant literature have examined intrinsic and extrinsic variables in the nurses' use of CAM as an independent nursing practice.

5.4 Strengths

The study strength was in the design choice, mixed methods with the focus group interviews that informed the development of the survey questions. The sequential format allowed the qualitative analysis to take place first, followed by the development and implementation of the survey. The sequential exploratory mixed methods approach to construct a survey was more thorough than selecting items solely through a review of the literature.

The response rate, 81.8% (N = 132), was a strength that gave power to the study. The CAM practitioners are vested in their practice and would like to provide CAM treatments to all of their patients. The study was powered at 80% to protect against type II error. The practitioners recognize the benefits of CAM for patients and self-care use. The nurses' beliefs in CAM supported a willingness to complete a survey that required 15-20 minutes of their time.

The cognitive interview process enabled the researcher to complete necessary revisions before the quantitative completion of the survey questions.

Using survey monkey provided ease in the input of data for the user and analysis of data by the researcher. The data was easily exported to SPSS for descriptive and inferential statistical analysis.

For the most part, the CAM nurses (97%) completed all of the questions and had no skipped items in the questions. There were 3 respondents that only answered the first few pages of the survey and then skipped the remaining pages.

5.5 Study Limitations

There were a number of limitations to this study. The findings are limited to the study site and may not be generalizable to other hospitals with CAM practitioners. Currently, this researcher is not aware of any hospitals with inpatient hospital-endorsed CAM services available for application by the nursing staff.

The limitations of the study are the single site and homogenous population, all or mostly females limiting ability to generalize. Currently, the study site is the only local hospital known to this researcher with a large cohort of CAM practitioners with hospital-endorsed CAM available on an inpatient basis. Typically, in this researcher's experience of teaching Reiki, the majority (90%) of class attendees are female.

Retrospective design based on self-reports, which includes the threats to validly observational cross-sectional studies. Information was based on self-reports and the trustworthiness of respondents.

The survey questions to investigate health beliefs and attitudes were the CHBQ. The CHBQ tool was developed and used on medical students and had a reported internal consistency reliabilities measured by Cronbach's coefficient α, and were 0.75 for the 10-item, 7-point Likert scale (Lie and Boker (2004). Cronbach's alpha is a coefficient of

reliability, or internal consistency, and measures how closely related sets of items are as a group. A reliability coefficient of .70 or higher is considered acceptable in most social science research (Institute for Digital Research and Education, UCLA Retrieved from http://www.ats.ucla.edu/stat/spss/faq/alpha.html). The Cronbach's alpha for this study was .531, which became a limitation for measuring the nurses' attitudes and beliefs.

The survey used mostly closed-ended questions and one optional open-ended question. A disadvantage of closed-ended question is that it does not allow the respondents to state their unique answers. The utilization of more open-ended questions may have allowed for analysis that is more detailed. However, such an approach could have the potential to decrease the response rate because of the increased time to complete the survey.

Using a mixed methods design was more time consuming and required the resources to collect and analyze both qualitative and quantitative data.

CAM nurses are vested in furthering the ability to offer CAM treatments to their patients. The reminder emails focused on the importance of the CAM nurses' input on completing the survey, even if they were no longer administering CAM treatments. While the VISA gift card was part of the subject line of the email, it was not a focus in the body of the email. The body of the email focused on their input being very important and it was their opportunity to add to the CAM literature since there are no surveys that currently investigate nurses' use of CAM.

Finally, validity concerns of a new data collection tool exist, despite precautions to minimize these threats. The instrument was devised after a review of existing instruments in the literature and was pre-tested before being used in this study.

While consideration of a strictly qualitative study as an optional design, but this researcher selected mixed methods to expand on some of the prior sited qualitative studies. Consideration of a more extensive instrument development was rejected due to time cost and a limited availability of access to nurses with CAM being part of their independent inpatient practice.

This researcher considered a prospective study, however, the limitation in knowledge of intrinsic and extrinsic did not support this level of inquiry.

5.6 Conclusions

Conclusions are presented in this section along with a brief summarization of the study sample, research questions, the hypothesis, and additional analyses are presented. The focus group subjects were all female; the survey participants were 2 males and 106 females. The mean age was 51 years and 2 months. The educational level was primarily BSNs (45.79%), diploma (20.56%), and MSN (20.56%).

Research question #1. The conclusion for research question #1 is the dependent factor of personal self-care use of CAM is affected by the extrinsic factors of peer support, as measured by 'have you administered a CAM treatment to a peer' and/or 'have you received a CAM treatment from a peer'. Kristiniak (2011) cited a lack of peer support in her study using the same study site. Nurses' reported peers that were skeptical of CAM and nurses were met with cynicism and ridicule (Kristiniak, 2011). General attitudes and biases interfere with adoption of complementary care modalities in nursing practice (Tracy et al., 2005). In the current study, participants (100%) in the focus group reported acceptance of CAM by peers. Focus group participants reported that 50% of their treatments are administered on peers to decrease their stress level or pain. The

survey respondents reported 66.67% have received a CAM treatment from a peer and 57.55% have administered a CAM treatment to a peer.

The extrinsic variables workload and the intrinsic variable nurses' perception of patient receptivity have no effect on the administering CAM treatments to patients. The variable workload has been cited as a barrier to CAM in other studies (Broom & Adams, 2009; Shorofi, 2011). In the current study, survey respondents (65.71%) reported that they did not have time in their typical workday to administer CAM. The majority (20.43%) of nurses reported a typical patient assignment of 5 patients; 13.98% reported 6 patients assigned on a typical workday. However, in this study, workload was not statistically significant in the nurses' administration of a CAM treatment. There are no studies that investigated the nurses' perception of patient receptivity of CAM. The survey respondents reported aromatherapy as having the highest receptivity by the patient, followed by Reiki, and guided imagery having the least receptivity by the patient, according to the nurses' perceptions.

Research question #2. The conclusion for research question #2 is the intrinsic variable 'do you use CAM for personal self-care' affected the dependent variable of whether the nurses administered a CAM treatment. There were no extrinsic variables that impacted the nurses' use of CAM on patients. For each additional nurse that uses CAM for personal self-care, there is an increase in patient treatments of 4 per patient.

Theme #1. Theme #1 obstacles (barriers) to use of CAM have three sub-themes: time, environment, and peers. The focus group reported 100% that time is an obstacle for the administration of CAM. However, 20% of the focus group managed to treat their patients on a weekly basis. The survey group reported 65.71% not having enough time in

their workday to administer a CAM treatment. The sub-theme of time emerged as a theme in Kristiniak's (2011) study at the same study site. According to Kristiniak (2011), the most frequent challenge for the participants in the study was time. Antigoni and Dimitrios (2009) identified workloads and staffing ratios as obstacles for integrating CAM practices at the bedside. While time was an issue, 56% of the participants in Kristiniak (2011) were able to redefine their nursing practice to include CAM practices in their daily care delivery. The current study demonstrates 66 (61%) nurses have integrated CAM into their nursing practice.

Sub-theme #2 involved the environment. Focus group participants (80%) expressed their difficulties in CAM administration that were related to the physical environment, specifically, noise on the nursing unit and interruptions by phone or other staff. The survey respondents reported that noise on the unit was an issue for 48% and 61% reported too many interruptions was an issue in the administration of CAM. Noise and interruptions are an inherent component of many work environments, especially hospitals (Beyea, 2007). Any noise has the potential of distracting or interrupting a health care professional when providing care to a patient; however, this is particularly disturbing while attempting to administer a CAM treatment. In this researcher's experience, administering a CAM treatment is still effective even during noise and interruptions. The recipient of the CAM treatment does not report that the treatment was ineffective. Possibly, the noise and interruptions are more distracting to the practitioner than the patient. There are no studies that have investigated the effect of the environment on the helpfulness of a CAM treatment.

Sub-theme #3 entailed resources needed to cover their patients while administering a CAM treatment. The focus group reported (90%) that an obstacle was not having staff available when they wanted to administer a treatment. The survey respondents (58.65) reported agreement that their peers were too busy to provide coverage for their patients. The study site, similar to many hospitals, has experienced budget cuts over the past 5 years, layoffs of professional nursing staff, and not replacing the staff that have either retired or left the organization. The nurse-to-patient ratios are higher than in previous years and nurses' do not have the resources of asking a peer to cover their patients while they administer a CAM treatment. This issue has created frustration, as reported by 70% of the focus group, because they desire to administer a CAM treatment but have not been able to do so. The survey respondents reported the importance of the feeling of frustration at not being able to provide a CAM treatment as especially important (9.52%), very important (32.38%), and important on average (40.95%).

Theme #2. The conclusion for theme #2 promotes use of CAM has four sub-themes: education, consults, healing environment, and standard of care. Participants in the focus group identified education as a way to promote the use of CAM. Respondents (50.5%) in the survey saw the priority for education would be for the nurses followed by education for patients (33%). While the CAM practitioners were educated through an hospital-endorsed program, the need for refresher courses and more education for the nurses was a recurrent them on the open-ended question on the survey. Education of patients, prior to hospitalization, was seen as a mechanism to promote CAM and relieve the nurse of the time required to explain the modalities. Kristiniak (2011) identified that

a solution for time constraints was to develop a brochure about Reiki that the patient and family could read before receiving a treatment. The brochure was seen as a "time-saving alternative to providing personal face-to-face education about the treatment" (Kristiniak, 2011, p. 123).

A nurse-driven consult for a CAM nurse was seen as a mechanism to promote the use of CAM by 100% of the focus group. The survey respondents (81.90%) agreed with nurse-driven consults. While a nurse-driven consult would certainly ensure that more patients could potentially receive a CAM treatment, this is a decision that requires an alignment with the philosophy of the department of nursing. A nurse-driven consult does not foster the nurse-patient interaction or increase the nurse's presence with the patient. Kristiniak (2011) identified a sub-theme of positive feelings with the administration of CAM. The feelings occurred in the primary areas of increased scope of practice, professional identification, and sense of fulfillment. Andrews (2003) reported positive feelings with CAM integration and nursing satisfaction. The survey respondents reported the opportunity for personal growth and development in their job as very important (43.81%) and especially important (31.43%). Survey respondents reported the feelings of self-esteem resulting from administering CAM treatment as very important (26.57%) and especially important (14.29%).

Focus group participants (50%) cited difficulty in administering CAM treatments in a patient room. They expressed that a separate dedicated CAM treatment room would be more conducive to the intent of the CAM treatment, a healing space. Survey respondents agreed (34.29%) and absolutely agreed (36.19%) that a dedicated CAM treatment room would enhance their ability to administer a CAM treatment. Ananth and

Smith (2008) report that 50% of 55 completed hospital surveys use light, color, architecture, nature and/or art to promote patient wellness and recovery. While the study site has implemented healing colors, light, and art in the lobby and hallways, there is only 1 patient room designated as a healing space for CAM treatments.

Focus group participants (40%) recognized the need to integrate CAM interventions into the standard of care. Participants expressed that inclusion of CAM treatments as part of assessment of the patient in the electronic documentation system could possibly improve the integration. Survey respondents agreed (40.95%) and absolutely agreed (25.71%) that CAM treatment is not an expectation of daily care. Integration of CAM therapies has occurred in 42% of hospitals in the United States, as reported in a 2010 survey (Anath, 2012). While the Pennsylvania Nurse Practice Act supports autonomy and the use of CAM, many nursing organizations have not integrated CAM therapies for inpatient use by nurses (Larson, 2006; The State Board of Nursing, 2008). Approval of hospital-endorsed CAM therapies does not necessarily translate into integration in patient care experiences. Kristiniak (2011) reported nurses' feelings associated with their experiences of integrating CAM therapies into their scope of nursing practice as positive.

Theme #3. Theme #3, nurses' perceived benefits of CAM, has three sub themes: patient, nurses treatment of peers, and nurses self-care.

Focus group participants and survey respondents expressed the many benefits of CAM and that 100% (focus groups) and 65% (survey respondents) of their patients could benefit from a CAM treatment. The benefits of CAM treatments for patients, as reported by the CAM practitioners, were calming for the patient, reduction in pain, providing

comfort for the patient, improving patient outcomes, patients feeling more care for, and value added services of the hospital. Many hospitals do not measure the patient outcomes for inpatient CAM treatments; primarily patient satisfaction is an indicator of success of inpatient CAM treatments. The evidence-based literature could benefit from an investigation of the patients' perceptions and benefits of inpatient CAM treatments.

Nurses' treatment of peers was professed as a way to reduce peer stress or complaints of pain. The treatments were perceived as helpful 100% of the time. In this researcher's experience at the study site, many nurses have remarked on the benefits of a CAM treatment by a peer, such as, 'my headache went away', 'my back pain was relieved', and 'I was relaxed after my treatment' (personal conversations). Treatment of peers was reported as statistically significant for increasing the nurses' use of CAM for self-care, which was significant for the administration of CAM for patients. There are no studies in the literature that investigate the use of CAM with peers.

Nurses' use of CAM for personal self-care was identified as statistically significant for the continuation of CAM practices with patients. The focus group (100%) and survey respondents (86%) reported using CAM practices for personal self-care practice. The benefits of self-care practice is reported in the extant peer-reviewed literature. Vitale (2009) investigated the use of Reiki for self-care through the nurses' lived experience. Themes that emerged were around the topics of stress management, self-healing, and spirituality. Other studies have shown a correlation between the personal use of CAM and integration of the practice in the healthcare setting (Johnson et al., 2011; Mann, Gaylord, & Norton, 2004; Tracy et al., 2005; Winnick, 2005). The

personal use of CAM could be the driving force to integrate CAM into hospital-based patient care.

Theme #4. Theme #4 prompts (decision-making) nurses to treat have two sub-themes: patient factors and peer factors. Participants discussed external factors that influenced their decision to administer a CAM treatment for patients.

Patient factors involved the primary symptom of anxiety or 'acting out' that became a trigger for the nurse to administer a CAM treatment. Both groups reported over 60% of patients with anxiety are more likely to receive a treatment. Another trigger was a family member that requested a treatment for the patient. Focus group participants (60%) recognized that patients that were receptive to treatments were more likely to be treated. The study site policies and guidelines support the use of CAM for pain, nausea, and anxiety. The literature supports the use of CAM for a relaxing, calming effect (Birocco, 2011; NCCAM, 2008; Ulrich et al., 2011; Wang et al., 2010). The symptoms of nausea or pain are easily treated with medications that are typically ordered on most patients, however, anti-anxiety medication comes with many side effects and typically takes longer for the patient to respond. Anti-anxiety medication would most likely require the nurse to call the physician for an order, obtain the medication from the pharmacy, and then administer the medication; whereas, CAM treatment could be administered easily and quickly with a positive response. Kristiniak (2011) described a theme 'treatment failure' as a factor in the CAM practitioners' decision to use CAM therapies in conjunction with traditional nursing practices whereby the traditional treatment approaches failed. CAM practitioners specifically cited the patient as being confused, or emotionally, or physically out of control (Kristiniak, 2011).

Peer factors related to the application of CAM when a peer requested the treatment for a patient. Nurses in the focus group (70%) and survey respondents (85%) reported finding the time to administer a CAM treatment if the request came from a peer. Kristiniak (2011) reported peer recognition as great value for the participants. Peers were represented as challenges and opportunities for support for the CAM practitioners (Kristiniak, 2011). General attitudes and biases interfere with adoption of CAM modalities in nursing practice (Tracy et al., 2005).

5.7 Implications

The significance of this study lies in the data generated regarding the factors, intrinsic and extrinsic, that impact the nurses' use of hospital-endorsed CAM. The findings of this study may serve as a catalyst for moving forward the integration of CAM practices at the bedside in hospitals. Based on the results of this study, the following are implications for nursing practice, nursing education, and nursing research.

Implications for nursing practice. The study contributed to the knowledge of intrinsic and extrinsic factors that contribute to the nurses' use of hospital-endorsed CAM. The conclusions of the current study include a description of the factors influencing the continued use of CAM in a cohort of nurses' educated in a hospital setting. The results of this study can be examined and utilized by other hospitals that are implementing CAM therapies in a hospital setting.

Based on the findings, nurses' use of CAM for self-care may translate into the integration of CAM for patients. Nurses' use for self-care is correlated with application of CAM for peers, administering or receiving a treatment. Nurses need to be provided opportunities for peer-to-peer CAM treatments which can be accomplished through

hospital sponsored health fairs, CAM services offered in the cafeteria for all employees, CAM practitioner visits to nursing units to administer CAM treatments to the nursing staff, and/or educational seminars that foster self-care experiences.

While this study suggests that the primary driver in the nurses' application of CAM treatments is dependent on the nurses' use of CAM for personal self-care, there may be other underlying factors, which were not explored as part of this study. Overwhelming, nurses in this study requested 'refresher course' and more education. This supports the nurses' integration of a new practice relying on evidence-based care. Another aspect of application of CAM treatments may be dependent on the nurses' internal beliefs. While the CHBQ in this study was not a reliable measure, there needs to be a positive attitude and belief for the nurses' application or integration of CAM. Nurses would not continue to apply CAM for personal self-care use if there was no belief in the modality. Individual beliefs are shaped by personal knowledge and experiences (Trail-Maban, Mao, & Bawel-Brinkley, 2013). According to Trail-Maban et al., if an individual believes an action will have positive consequences and is socially accepted by their peers, he or she is more likely to follow that path of action (2013). McDowell (2003) reported that nurses with a greater understanding of the value of CAM and how it can be effectively incorporated into acute care, are more able to assess patient CAM use. Therefore, nurses' education on CAM integration, such as, assessing patient needs on a routine basis, the opportunity to apply CAM with peers, and how to incorporate CAM into the acute care setting may be integral to the nurses' practice patterns.

Holistic nursing practice is a way of thinking, reflecting, practicing, and of life (Klebanoff & Hess, 2013). As a way of life personally and professionally, self-care becomes and is incorporated into one's existence. Nurses must continually develop knowledge and skills in all aspects of their nursing practice.

Implications for nursing education. The use of hospital-endorsed CAM treatments is dependent on the intrinsic factor, nurses' use of CAM for self-care. Nursing schools can utilize the results of this study to support education of nursing students in self-care practices. Schools can educate nurses in holistic practices to foster mind, body, and spirit, along with CAM modalities to encourage the management of stress. Nurses that graduate with knowledge and skills for self-care are more likely to integrate CAM with their patients.

The millennium has become the metaphor for the extraordinary challenges and opportunities available to the nursing profession and the academic institutions responsible for preparing the next generation of nurses (Heller, Oros, & Durney-Crowley, 2000). There were 10 trends to watch for in nursing education listed by the National League for Nursing; emerging complementary modalities was listed fourth among the trends (Heller, Oros, & Durney-Crowley, 2000). Additionally, the National Organization for Nurse Practitioner Faculty has prepared guidelines for integrating content on complementary modalities into nursing practitioner programs (Quinn, 2002).

Implications for nursing research. Based on the findings from this study, future research in nursing should investigate the nurses' use of CAM for personal self-care. Additionally, studies should test whether causal mechanisms are producing observed

associations, using randomized controlled trials, for example, determine whether peer-to-peer CAM treatments increases the application of CAM treatments for patients.

An area to investigate is a qualitative study of nursing units with high application of CAM treatments, such as labor/delivery, emergency room, post-anesthesia care unit, palliative care, and medical surgical and nursing units with no application of CAM treatments.

Investigate the impact of CAM treatments on patient outcomes.

5.8 Recommendations for Action

Based on the data collected, analysis of the study data and findings presented in chapter 4, the following recommendations for actions are made for the study site:

1. Dissemination of results of the study to Integrative Council, CAM nurses, Abington School of Nursing, and hospital administration.
2. Ensure all stakeholders work collaboratively to strengthen and support the CAM practitioners in provision of CAM treatments for patients and encouragement of CAM for nurses' personal use.
3. Develop an action plan that promotes a comprehensive CAM program for employees and application with patients.
4. Provide opportunities for CAM practitioners to administer CAM treatments to peers, such as, health fairs for all employees, CAM practitioner visits to nursing units to provide treatments to nursing staff, and CAM treatments in the cafeteria.
5. Provide education for CAM practitioners regarding necessity of CAM for personal self-care use that fosters mind-body integration through attendance at 8-hour experiential conference. Provide the same education for non-CAM nurses.

6. Provide education for patients regarding CAM: definition, benefits, and how to access treatments.
7. Incorporate patient assessment and application of CAM treatments into the electronic documentation system.
8. Apply for grant funding to investigate patient outcomes for patients' receiving CAM treatments during hospitalization.

5.9 Recommendations for Further Study

There are diverse opportunities for further studies pertaining to CAM therapies, nurses, patients, and hospital leadership. There is a paucity of peer-reviewed literature studying CAM therapy use in nurses in a hospital setting and the patient outcomes. While leaders at the hospital have supported the use of Reiki and aromatherapy/guided imagery, further studies of such modalities might have a focus on the patient outcomes. Another area of focus could be the impact of the implementation of nurse-driven consults program and educational programs for the patient and providers.

The current study did not cover a delineation of the factors that comprise the time obstacle. A future study might examine the nurses' experience of the concept of time in relationship to integration of CAM treatments into their nursing practice. Additionally, a future study examining the concept of standard of care and its relationship to CAM treatments may be of benefit.

Further studies could examine the nurses' decision-making of applying or withholding a CAM treatment. An exploration of the nurses' ability to integrate CAM practices, as seen in a few areas of the hospital, may inform the CAM literature of the nurses' thought processes.

Another study could focus on how to integrate CAM into the standard of care and the impact of CAM treatments on patient outcomes.

5.10 Dissemination of Research

Highlights of the dissertation study were presented to the Integrative Council at the study site, Abington Memorial Hospital, using a PowerPoint presentation. Hospital administration will receive the results, along with the nurses that participated in the focus group and completed the survey via an executive summary.

A publication plan will include presentation of research methodology and results in peer-reviewed publications to inform CAM community, hospital administrators, nurses, and educators. The aim is to enhance the science base of the discipline regarding the practices of nurses educated in hospital-endorsed CAM.

Abstracts will be submitted for podium and/or poster presentation of the study.

5.11 Summary

Chapter 5 contained a review of the research questions, problem statement, purpose, significance, results, strengths, limitations, and recommendations for future research. The results of the current study might help leaders at the study site determine a course of action to assist the nurses in their aspiration to integrate CAM modalities in their nursing care. The participants expressed the benefits of CAM for patients, themselves, and beliefs that are amenable to the assimilation of CAM in the standard of care. Kristiniak (2011) noted the challenges to integrating CAM, at the same study site, as time constraints and widespread resistance to CAM therapies. However, in the current study, participants expressed having support from their peers, however, there are a lack of resources of nurses to cover their patients, and most importantly, a lack of time. Notably,

this demonstrates a change in culture toward acceptance of CAM by peers. With widespread education of staff and patients, an increase in resources, CAM treatments could be integrated as a standard of care for all patients. The study adds to the body of CAM knowledge and these results can be used by other organizations as they move forward with their CAM programs.

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Appendix A: Recruitment Letter for Focus Group

Dear Colleague,

I am a student at Drexel University working on a Doctorate in Nursing Practice. I am conducting a research study entitled: Impact of Intrinsic and Extrinsic Factors on the Nurses' Use of Hospital-Endorsed Complementary and Alternative Medicine (CAM) Treatments.

I am contacting you because you completed integrative nursing certifications in Reiki, and/or aromatherapy/guided imagery. I am requesting your participation in a focus group that will have 5-10 participants in each of two groups. The purpose of the focus group is to identify themes related to the factors that influence the nurses' continued use of CAM. It will take you approximately 60 minutes to complete the focus group questions. Your responses will be tape-recorded and the tapes kept in a locked safe in the researcher's office. The verbatim transcripts will be returned to you for your approval of transcription. Any changes or additions to the verbatim transcript will be audiotaped, transcribed, and returned for further review and approval.

Additionally, you may be asked to participate in an interview regarding questions developed for the survey. Your participation will be strictly voluntary and will take approximately 20 minutes of your time.

The results of the focus group will contribute to the development of a survey to describe the intrinsic and extrinsic factors influencing the continued use of CAM in a

cohort of nurses educated in a hospital setting. The body of knowledge generated can assist nursing leadership for future planning for the profession of nursing.

Although there may be no direct benefit of participation, the possible benefit is that the findings from the study may promote continued CAM treatment use and increase opportunities for nursing education and scope of practice.

There will be two focus groups so the first ten-twenty participants to respond (via email or phone to the researcher) will be assigned to one of two groups. All participants that partake in the focus group will have an opportunity to win a $100.00 gift card.

Your participation is voluntary and you can choose to withdraw at any time without penalty or loss of benefit. There are no foreseeable risks and the participant will not encounter the possibility of stress or psychological, physical, or legal risks that are greater than those ordinarily encountered during daily life. The results of the research study will be published, however, participant's names will not be used. All data will be kept in a locked safe in the researcher's office and destroyed according to hospital policy after three years.

I am happy to answer any questions you may have regarding this research study and hope to have your support for this important project. If you have any questions, please call me at [redacted] (cell) or email ekryak@amh.org or ekryak@verizon.net. I will answer your messages within 24 hours.

Sincerely,

Elizabeth Degnan Kryak, DrNP(c), MSN, RN-BC

Appendix B: Recruitment Letter for Survey

Dear Colleague,

I am a student at Drexel University working on a Doctorate in Nursing Practice. I am conducting a research study entitled: Impact of Intrinsic and Extrinsic Factors on the Nurses' Use of Selected Complementary and Alternative Medicine (CAM) Treatments. The purpose of the study is to describe the personal factors, nurses' perception of patient receptivity of CAM, and situational factors that influence nurses' continued use of CAM. Data from this research will contribute to the body of knowledge for nursing leadership as a guide for future planning for the profession of nursing.

I am contacting you because you completed integrative nursing certifications in Reiki, and/or aromatherapy/guided imagery. If you enroll in the study, you will complete a short electronic survey using Survey Monkey©. It will take you approximately 15-20 minutes to complete the survey. The web link for the survey is provided at the end of this email. The informed consent is part of the electronic survey.

All participants that complete the survey, within three weeks of the date of this email, will have an opportunity to win a $150.00 gift card. I am requesting receipt of the survey by _____ (this date will be filled in based on the send date).

Please use the alphanumeric de-identifier _____ in lieu of your name on the survey to provide anonymity.

Although there may be no direct benefit of participation, the possible benefit is that the findings from the study may promote continued CAM treatment use and increase opportunities for nursing education and scope of practice.

I am happy to answer any questions you may have regarding this research study and hope to have your support for this important research. If you have any questions, please call me at [redacted] (cell) or email ekryak@amh.org or ekryak@verizon.net. I will answer your messages within 24 hours.

Sincerely,

Elizabeth Degnan Kryak, DrNP(c), MSN, RN-BC

Appendix C: Informed Consent

Research Study Title: **Impact of Intrinsic and Extrinsic Factors on Nurses' Use of Complementary Alternative Medicine Treatments in Suburban Hospital Setting**

Sponsor: Abington Memorial Hospital
1200 Old York Rd. Abington, PA 19001
215-481-2000

Principal Investigator: Elizabeth Degnan Kryak, MSN, RN-BC
ekryak@amh.org
[redacted] (cell, 24-hour)

You have been asked to participate in a research study. This form is designed to give you information about this research study. The principal investigator or person authorized to obtain your consent (co-principal investigator) will tell you about the study and answer any of your questions. If you have any questions about this research study or an injury related to this research study you should contact Elizabeth Degnan Kryak at [redacted]. If you have any questions about your rights as a human research subject please contact the Director of Patient Advocacy at Abington Memorial Hospital at 215-481-2209.

Purpose
The purpose of this mixed-method study is to explore and determine the factors that influence the nurses' continued use of Complementary Alternative Medicine (CAM). The selected CAM therapies practiced at the hospital are Reiki and aromatherapy/guided imagery.

There will be two focus groups and the data analyzed from the focus group will inform the questions for a survey. The overarching goal of this study is the elucidation of factors associated with practice patterns of selected CAM therapies for patient care. The objective of this research project is to describe factors that promote nurses' appropriate use of CAM.

The study will test the hypothesis that the use and frequency of CAM therapies as part of independent nursing practice is associated with intrinsic nurse factors, situational factors and professional assessment of a patient's likelihood to benefit from a selected CAM treatment.

Funding
This is no funding for this study.

Research Participants
There are 150 RNs that have been educated in Reiki and/or aromatherapy/guided imagery.
There will be two focus groups with 5-10 nurses in each group (n=10-20)

There will be a web link to a survey on Survey Monkey (n= 150, minus focus group members)

Treatments
There are no treatments in this study.

Audio Recording (Focus Group Only)
To assist with accurate recording of participant responses, focus group interviews will be recorded on two audio recording devices. Please select one of the following options.
x I consent to the use of audio recording.
□ I do not consent to the use of audio recording.

Procedure
RECRUITMENT
Focus Group: An email will be sent to 30 RNs who are sampled from a Master List of nurses' educated in CAM requesting their participation in the focus group. An agreed upon date, time, and place will be confirmed via email for participation in the focus group. The interview will be audio recorded. The Informed Consent will be signed prior to the meeting.
Survey Group: Letter of Recruitment will be emailed AND hand-delivered or placed in the employee mailbox at work (n=150). The letter of recruitment will have an alphanumeric de-identifier for anonymity in completing the survey. The email will have a web link to survey monkey. The first page of the survey monkey will have the Informed Consent.

COGNITIVE INTERVIEWING
As part of the focus group, you may be asked to participate in a review of survey questions. This is voluntary and will take 15 minutes of your time.
You will be asked your opinion in writing of your understanding of survey questions.

SURVEY
There will be a three-week deadline for completion of the survey, which will be stated in the Letter of Recruitment (via email and employee mailbox). The deadline date will be stated specifically as month/date/year.

DRAWING
Participants in focus group will be entered into a drawing 'from a hat' for $100.00 VISA gift card
Subjects in the survey will be entered into a drawing 'from a hat' for $150.00 VISA gift card.
Drawing will take place at Integrative Council meeting (you do NOT need to be present at the meeting to win the gift card).

Risks
Participation in the study is voluntary without risk to you. There is no known stress or psychological, social, or physical risks that are greater than those ordinarily encountered in daily life

Benefits
Although there may be no direct benefit to you, a possible benefit by your participation is that this information may contribute to the body of nursing knowledge regarding nurses' acceptance and use of complementary therapies.

All information will be confidential and stored in a locked safe in the principal investigator's office on 4Lenfest East. The information will only be available to the primary investigator, the Institutional Review Board, the Department of Health and Human Services, Office for Human Research Protection.

Withdrawal
Participation is this research study is your choice. You can decide to stop participation at anytime. If you choose to withdrawal after data has been entered without identification, it will not be possible to remove it from the study. There will be no consequences of the subject's decision to withdraw after consenting to participate.

New Findings
Any significant findings that develop during the course of this study will be shared with you and you may withdraw from the study at any time.

Payment for services
There will be no type of payment or reimbursement to the subject.

Costs to participants
There is no cost to the subject at any time during the study.

Injury
If you have been injured as part of participating in this study, please contact the principal investigator.

Legal rights
There will be no waiver of Subject's legal rights or release of investigator, sponsor, or institution from negligence.

Confidentiality
All interviews and transcriptions will be locked in a safe by the principal investigator. The results of this study will be published without name identification. This data may be released to the Department of Health and Human Services, Food and Drug Administration and the Institutional Review Board of Abington Memorial Hospital in an investigation.

All of your questions have been answered and this informed consent has been explained to you in a language understandable to you.

You understand that your participation is voluntary and refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled and you may stop participating in this study at any time without penalty or loss of benefits, to which you are entitled. You will receive a copy of this informed consent form.

For pertinent questions, please contact the primary investigator, Elizabeth Degnan Kryak at [redacted].

The following person is authorized to obtain my consent: Elizabeth Degnan Kryak, MSN, RN-BC.

Subject signature	Date
Principal Investigator	Date

Appendix D: Study Site IRB Approval

Institutional Review Board
G. Chris Christensen, III, D.O., Chairman
(215) 481-7467
December 18, 2013

Dr. Susan Nolte
Center for Clinical Research
Abington Memorial Hospital
1200 Old York Road
Abington, PA 19001

NEWSTUDY APPROVAL
Re: Study #13-080- Impact of Intrisic and Extrinsic Factors on Nurses' Use of Complementary Alternative Medicine Treatments
Institutional Assurance #: FWA00004123 (renewal date: February 7, 2017)

Dear Investigator:
The above named study, which includes Protocol version dated November 19, 2013 and Main Informed Consent form dated November 19, 2013 was reviewed and Approved by the Abington Memorial Hospital Institutional Review Board at a Full Board meeting held on December 18, 2013.

Acknowledged was Appendix A: Recruitment Letter for Focus Group, Appendix B: Recruitment Letter for Survey, Appendix C: Informed Consent form, Appendix D: Focus Group Questions, Appendix E: Focus Group Script, Appendix F: Alignment of Proposed Variables/Survey Items, Appendix G: Proposed Survey, Appendix O: Researcher Confidentiality Agreement and Appendix P: Survey Reviewer Confidentiality Agreement.

This study will require annual reports. These reports are important and failure to comply will result in termination of your study on December 17, 2014. You are required to notify the Institutional Review Committee and the FDA promptly should there be any serious adverse effect of this study.

Sincerely,
G. Chris Christensen, III, DO, FACP, FCCP
Chairman, Institutional Review Board

GCC/anp

cc: Elizabeth Kryak, DrNPc, MSN, RN-BC
Main ICF version date: 11/19/13
AMH IRB Approval date:December 18, 2013
AMH IRB Expiration date:December 17, 2014

Abington Memorial Hospital
1200 Old York Road, Abington, PA 19001-3788

Institutional Review Board
G. Chris Christensen, III, D.O., Chairman
(215) 481-7467

February 20, 2014

Dr. Susan Nolte
Center for Clinical Research
Abington Memorial Hospital
1200 Old York Road
Abington, PA 19001

AMENDMENT APPROVAL

Re: Study #13-080- Impact of Intrisic and Extrinsic Factors on Nurses' Use of Complementary and Alternative Medicine Treatments

Institutional Assurance #: FWA00004123 (renewal date: February 7, 2017)

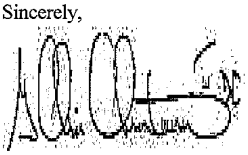
Dear Investigator:

The above named study amendment which includes a Revised Informed Consent form dated January 29, 2014 was reviewed and Approved by the Institutional Review Board (IRB) at a Full Board meeting held on **February 20, 2014**.

Acknowledged was a Reike and/or Aromatherapy/Guided Imagery Practitioners Survey form.

You are required to notify the Institutional Review Committee and the FDA promptly should there be any serious adverse effects of this study.

Sincerely,



G. Chris Christensen, III, DO, FACP, FCCP
Chairman, Institutional Review Board

GCC/anp

cc: Elizabeth Kryak, DrNPc, MSN, RN-BC

Main ICF version date: 1/29/14
AMH IRB Amendment Approval date: February 20, 2014
AMH IRB Expiration date: December 17, 2014

Appendix E: Drexel University IRB Approval

IRB AUTHORIZATION AGREEMENT BETWEEN DREXEL UNIVERSITY AND ABINGTON MEMORIAL HOSPITAL FOR THE PROTECTION OF HUMAN SUBJECTS

Name and Address of Institution or Organization Providing IRB Review (Institution A):
Abington Memorial Hospital
1200 Old York Road
Abington, PA 19001-3788
Federal Wide Assurance Number: 00004123
IRB Registration Number: 00003100

Name of Institution Relying on the Designated IRB (Institution B):
Drexel University
Human Research Protection
3 Parkway Building - 1601 Cherry Street
10th Floor Suite 10444
Philadelphia, PA 19102
Federal Wide Assurance Number: 00005917
IRB Registration Number: IRB #1 – 00000696

The Officials signing below agree that Drexel University will rely on the designated IRB of Abington Memorial Hospital for review and continuing oversight of its human subjects research described below.

This agreement is limited to the following specific protocol(s):

Name of Research Protocol: Impact of Intrisic and Extrinsic Factors on Nurses' Use of Complementary and Alternative Medicine Treatments

Sponsor or Funding Agency: _____ **Award Number, if any:** _____

Name of Principal Investigator (Institution A): Susan Nolte, PhD (no. 13-080)

Name of Principal Investigator (Institution B): Thomas Hardie, EdD, RN (no. 1402002578)

The protocol reviewed and approved by the IRB of Institution A will include a description of the research to be conducted at Institution B. Principal Investigators at both Institutions will maintain current copies the IRB approved protocol. Institution A will conduct this research in accord with the terms and conditions of its OHRP-approved Assurance and will provide relevant minutes of its IRB meetings to Institution B upon request. Institution B will conduct this research in accord with the terms and conditions of its OHRP-approved Assurance. Institution B remains responsible for ensuring compliance with the IRB's determinations and with the terms of its OHRP-approved Assurance. This agreement will be kept on file at both Institutions and will be available to OHRP upon request.

Recruitment/Intervention location(s): Abington Memorial Hospital

This protocol will expire on December 17, 2014. A continuing review is required and must be approved by the IRB of record and a copy of the approval letter must be sent to the relying institution (Drexel University).

Authorizing Officials

Abington Memorial Hospital

X _____
G. Chris Christensen, III, DO, FACP, FCCP
Chairman, IRB
Abington Memorial Hospital
1200 Old York Road
Abington, PA 19101-3788
215 481-7467 (phone)

2/10/14
Date

Drexel University

X _____
Jack Medendorp, MS, BSN, CIP
Director, Human Research Protection
Drexel University
3 Parkway Bldg., 1601 Cherry Street
10th floor Suite 10-444
Philadelphia, PA 19102
215-255-7857 (phone)
215-255-7874 (fax)
jcm29@drexel.edu

02.04.2014
Date

Appendix F: Focus Group Questions

1) Opening questions: factual question about something the participants have in common.

Which Complementary and Alternative Medicine (CAM) treatment have you been educated to use?

2) Introductory questions: provides opportunity for participants to share their experiences and hear the experiences of others.

How do you view CAM use in your personal (self) care?

3) Transitional questions: moves the discussion toward the key questions.

How do you view CAM use in your patient care?

4) Key questions

What happens in your environment that either facilitates or creates barriers for you to use CAM with your patient?

What type of patient population is CAM effective or ineffective?

How do you make the decision to treat or withhold CAM?

What, if anything, makes you more likely to use CAM with your patient?

5) Ending questions

The purpose of the study is to describe the personal factors, nurses' perception of patient receptivity of CAM, and situational factors that influence nurses' continued use of CAM.

Is there anything else that you would like to add?

Appendix G: Focus Group Script

Interview Script: Focus Group

Hello, my name is Bette Kryak and I am a doctoral student with Drexel University. I am conducting a research study titled: Impact of Intrinsic and Extrinsic Factors on Nurses' Use of Hospital-Endorsed Complementary and Alternative Medicine (CAM) Treatments. The purpose of the study is to describe the personal factors, nurses' perception of patient receptivity of CAM, and situational factors that influence nurses' continued use of CAM. This is a mixed-method study with two focus groups and the development of questions for a survey. I have asked if you could participate in the development of questions for the survey by participating in this focus group. Before we begin the focus group interview, are you comfortable? Do you have any questions? Will you be able to stay to complete the interview or do we need to reschedule?

I ask that you read and sign and the Informed Consent.

I will be audiotaping the interview to assure accuracy. This participation is voluntary. The data will be coded by number only, as this is for the protection of privacy and to maintain confidentiality.

After completion of the Informed Consent and the demographic data, I will remind the participants that the interview will be taped and at any time, the discussion can be discontinued.

The questions for the focus group are:

1) Opening questions: factual question about something the participants have in common.

Which Complementary and Alternative Medicine (CAM) treatment have you been educated to use?

2) Introductory questions: provides opportunity for participants to share their experiences and hear the experiences of others.

How do you view CAM use in your personal (self) care?

3) Transitional questions: moves the discussion toward the key questions.

How do you view CAM use in your patient care?

4) Key questions

What happens in your environment that either facilitates or creates barriers for you to use CAM with your patient?

What type of patient population is CAM effective or ineffective?

How do you make the decision to treat or withhold CAM?

What, if anything, anything makes you more likely to use CAM with your patient?

5) Ending questions

The purpose of the study is to describe the personal factors, nurses' perception of patient receptivity of CAM, and situational factors that influence nurses' continued use of CAM.

Is there anything else that you would like to add?

During and at the end of the interview, I will ask for clarification of responses if needed. I will verify any discussion points of the conversation.

If the participants have any further questions or concerns, I will inform them to feel free to call or email me. I will end communication with thanking all participants for their time.

Appendix H: Survey

Page #	Title Page	Purpose Page	Variable or Topic	Question #
1	Informed Consent	To provide informed consent per AMH standards.	Informed Consent	N/A
2	Demographics	To collect basic background information	Demographics	1-11
3	CAM Beliefs	To explore views of CAM and its effect on health.	Intrinsic: nurses' attitudes and beliefs	12-16
4	CAM Health Belief Questionnaire (CHBQ)	To gather data related to your health beliefs.	Intrinsic: nurses' attitudes and beliefs	17
5	Nurses' attitudes and beliefs and perceived patient receptivity	To gather data on nurses' attitudes, beliefs, and perceptions of patient's receptivity to treatments.	Intrinsic: nurses' attitudes and beliefs and nurses' perception of patient receptivity of CAM	18-25
6	Workload and peer support	To gather data related to workload and peer support for the use of CAM treatments.	Extrinsic: workload and peer support	26-37
7	Environmental or situational factors	To gather data related to your environment that may promote/enhance or are obstacles to your ability to administer CAM treatments with your patient.	Extrinsic: situational	38-40
8	Decision-making in treatments	To gather data related to CAM use for patient symptoms and educational needs.	Decision-making	41-45
9	Patterns of use of CAM treatments	To gather data related to the nurses' use of Reiki and/or aromatherapy/guided imagery	Patterns of use	46-51

Survey Monkey

Informed Consent: The purpose of this page is to provide Informed Consent i...

Dear Reiki and/or Aromatherapy participant,

My name is Bette Degnan Kryak and I am conducting this survey as part of the work required for completion of a Doctorate in Nursing Practice at Drexel University. My project requires understanding the current knowledge, attitudes and patterns of use of Complementary Alternative Medicine (CAM) by nurses educated in Reiki and/or aromatherapy/guided imagery.

This survey is being sent to all nurses educated at Abington Memorial Hospital in Reiki and/or aromatherapy/guided imagery. I would be grateful for your responses. I would like everyone to answer this survey, whether you have continued to use Reiki/aromatherapy or not. Your input is very important! Understanding your current use will help me evaluate any factors that help or hinder the practice of CAM by nurses educated in a hospital setting.

Please use the ALPHANUMERIC CODE provided to you as your NAME in the survey. Your alphanumeric will be 'placed in a hat' for a drawing to win a $150.00 gift card. There is a deadline of three weeks to complete the survey.

The survey should only take 15 minutes to complete. It is not possible to leave and return to the survey, so I request that you complete the survey in one sitting. REMEMBER to click the DONE button when you reach the end of the survey or your responses will not be recorded.

Completing the survey acknowledges your consent to participate. Participation in the survey is completely voluntary and you have the right to refuse to participate, answer any questions, or withdraw from the study at any time, and your information will be destroyed without penalty. Participation carries no risk for harm and offers no direct benefits to you. Your responses are confidential. All data will be stored in a secure, password protected program behind a locked door, only accessible to the researcher, and destroyed after three years.

I sincerely thank you for your time and valuable input! Thank you for your willingness to participate.

If you have any questions, please contact Bette Kryak, 215-882-3094 or email ekryak@abingtonhealth.org

DEMOGRAPHICS: the purpose of this page is to collect basic background infor...

Please use your assigned ALPHANUMERIC CODE for your NAME.
Please complete ALL information.

1. Your Name (use ALPHANUMERIC CODE provided in your letter)

2. Age (years)

Years

3. Education (Highest Level Attained)

- ◯ ADN/ASN
- ◯ Diploma
- ◯ BSN
- ◯ MSN
- ◯ Doctorate (DNP, DrNP, PhD, EdD, etc)

4. Years as a nurse

5. What is your work status?

- ◯ Full-time
- ◯ Part-time
- ◯ Relief, usually less than 40 hours per week
- ◯ Relief, usually more than 40 hours per week
- ◯ Weekend Plan

Other (please specify)

6. Do you consider yourself a spiritual person?

- ◯ Yes
- ◯ No

7. Which hospital-endorsed CAM have you been educated in?

- ◯ Reiki
- ◯ Aromatherapy/guided imagery
- ◯ Both

8. Years since Reiki education

Approximate years

9. Years since Aromatherapy/Guided Imagery education

Approximate years

10. Area of nursing practice (area that you most frequently work)

- ◯ Emergency Room
- ◯ Operating Room
- ◯ PACU-Post Anesthesia Care Unit
- ◯ Surgical Trauma Unit
- ◯ Cardiac Surgical Unit
- ◯ Progressive Care Unit-1W
- ◯ Progressive Care Unit-2W Oncology
- ◯ Heart Failure Unit-2WE
- ◯ Orthopedics-3W
- ◯ Neurovascular-3W
- ◯ Cardiac Cath Lab
- ◯ Medical Intensive Care Unit-MICU
- ◯ Medical Surgical
- ◯ Telemetry
- ◯ IPU Interventional Procedure Unit
- ◯ Orthopedics
- ◯ Psychiatric
- ◯ Labor/Delivery
- ◯ Postpartum/Mother-Baby
- ◯ Special Care Nursery
- ◯ Pediatrics
- ◯ Home Care
- ◯ Hospice (Warminster)
- ◯ Palliative Care
- ◯ Same Day Procedure
- ◯ Medical Procedure Unit
- ◯ Pre-Admission Testing

- ◯ Management/Office Work
- ◯ Physician Office
- ◯ School of Nursing
- ◯ Wound Care
- ◯ Lansdale Health
- ◯ Other, specify below

Other (please specify)

11. Does your job position provide the opportunity to administer CAM treatments?

- ◯ Yes
- ◯ No

CAM Beliefs

The purpose of this page is to explore your views of CAM and its effects on health

12. Have you received any Complementary Alternative Medicine (CAM) treatments?

- ◯ Yes
- ◯ No

13. Was the CAM treatment helpful?

- ◯ Yes
- ◯ No

14. Has a family member received any CAM treatments?

- ◯ Yes
- ◯ No

15. When you think of other people like yourself, how do you rate your health status?

- ◯ Excellent
- ◯ Good
- ◯ Fair
- ◯ Poor

16. Do you use CAM for personal self-care use? (Check ALL that apply)

- ☐ Reiki
- ☐ Aromatherapy
- ☐ Guided imagery
- ☐ None

Please review above for completion of answers

CAM Health Belief Questionnaire

The purpose of this page is to gather data related to your health beliefs.

17. CAM Health Belief Questionnaire

	1 = Absolutely DISAGREE	Disagree	3 = Somewhat Disagree	Neutral	5 = Somewhat Agree	Agree	7 = Absolutely AGREE
The physical and mental health is maintained by an underlying energy or vital force.	○	○	○	○	○	○	○
Health and disease are a reflection of balance between positive life-enhancing forces and negative destructive forces.	○	○	○	○	○	○	○
The body is essentially self-healing and the task of a health care provider is to assist in the healing process.	○	○	○	○	○	○	○
A patient's symptoms should be regarded as a manifestation of a general imbalance or dysfunction affecting the whole body.	○	○	○	○	○	○	○
A patient's expectations, health beliefs and values should be integrated into the patient care process.	○	○	○	○	○	○	○
Complementary therapies are a threat to public health.	○	○	○	○	○	○	○
Treatments not tested in a scientifically recognized manner should be discouraged.	○	○	○	○	○	○	○
Effects of complementary therapies are usually the result of a placebo effect.	○	○	○	○	○	○	○
Complementary therapies include ideas and methods from which conventional medicine could benefit.	○	○	○	○	○	○	○
Most complementary therapies stimulate the body's natural therapeutic powers.	○	○	○	○	○	○	○

Nurses' attitudes and beliefs and perceived patient receptivity

The purpose of this page is to gather data on the nurses' attitudes, beliefs and perceptions of patient receptivity for treatments.

18. What percentage of patients that you provide nursing care to would benefit from CAM (Reiki, aromatherapy/guided imagery)?

Approximate percentage

19. On a scale of 0-10, What do you think is your patient's receptivity to Reiki treatments?

- ◯ 0 = My patients have no interest
- ◯ 1 =
- ◯ 2 =
- ◯ 3 =
- ◯ 4 =
- ◯ 5 = Most of my patients are interested
- ◯ 6 =
- ◯ 7 =
- ◯ 8 =
- ◯ 9 =
- ◯ 10 = All of my patients are interested

Other (please specify)

20. On a scale of 0-10, What do you think is your patient's receptivity to aromatherapy treatments?

- ◯ 0 = My patients have no interest
- ◯ 1 =
- ◯ 2 =
- ◯ 3 =
- ◯ 4 =
- ◯ 5 = Most of my patients are interested
- ◯ 6 =
- ◯ 7 =
- ◯ 8 =
- ◯ 9 =
- ◯ 10 = All of my patients are interested

Other (please specify)

21. On a scale of 0-10, What do you think is your patient's receptivity to guided imagery treatments?

- ◯ 0 = My patients have no interest
- ◯ 1 =
- ◯ 2 =
- ◯ 3 =
- ◯ 4 =
- ◯ 5 = Most of my patients are interested
- ◯ 6 =
- ◯ 7 =
- ◯ 8 =
- ◯ 9 =
- ◯ 10 = All of my patients are interested

Other (please specify)

22. In your experience, are patients more receptive to CAM based on gender:

- ◯ Males more receptive
- ◯ Females more receptive
- ◯ Same receptivity
- ◯ I do not know

23. In your experience, do you see any difference in receptivity to CAM based on race:

- ◯ Yes
- ◯ No
- ◯ I do not know

24. In your experience, do you see any difference in receptivity to CAM based on level of education:

- ◯ More education = more receptivity
- ◯ Less education = less receptivity
- ◯ Education level makes no difference in receptivity
- ◯ I do not know

25. In your experience, do you see any difference in receptivity to CAM based on socioeconomic status (SES):

- ◯ More SES = more receptivity
- ◯ Less SES = less receptivity
- ◯ Makes no difference
- ◯ I do not know

Workload and peer support

The purpose of this page is to gather data related to your workload and peer support for the use of CAM treatments.

26. On a typical workday, do you have time to administer CAM treatment?

- ◯ Yes
- ◯ No

27. What is your typical patient assignment in one 8-hour shift?

- ◯ 0 patients, I do mostly office work
- ◯ 1 patient
- ◯ 2 patients
- ◯ 3 patients
- ◯ 4 patients
- ◯ 5 patients
- ◯ 6 patients
- ◯ 7 patients
- ◯ 8 patients
- ◯ 9 patients
- ◯ 10 or more patients

Other (please specify)

28. Are there other nurses using Reiki/aromatherapy/guided imagery on your assigned unit?

- ◯ Yes
- ◯ No
- ◯ I do not know

29. If yes, what percentage of other nurses on your unit are using Reiki/Aromatherapy/Guided Imagery?

Approximate percentage

30. Do you ever discuss Reiki or Aromatherapy/Guided Imagery with other nurses?

- ◯ Yes
- ◯ No

31. On a scale of 0-10, how receptive are nurses to CAM (for themselves or patients)?

- ◯ 0 = Not receptive at all
- ◯ 1 =
- ◯ 2 =
- ◯ 3 =
- ◯ 4 =
- ◯ 5 = Neutral
- ◯ 6 =
- ◯ 7 =
- ◯ 8 =
- ◯ 9 =
- ◯ 10 = Very receptive

32. On a scale of 0-10, how receptive are physicians/residents to CAM?

- ◯ 0 = Not receptive at all
- ◯ 1 =
- ◯ 2 =
- ◯ 3 =
- ◯ 4 =
- ◯ 5 = Neutral
- ◯ 6 =
- ◯ 7 =
- ◯ 8 =
- ◯ 9 =
- ◯ 10 = Very receptive

33. On a scale of 0-10, how much peer support do you have to deliver a CAM treatment?

- ◯ 0 = Not supportive
- ◯ 1 =
- ◯ 2 =
- ◯ 3 =
- ◯ 4 =
- ◯ 5 = Neutral
- ◯ 6 =
- ◯ 7 =
- ◯ 8 =
- ◯ 9 =
- ◯ 10 = My peers volunteer to cover my patients while I deliver a CAM treatment

34. Have you ever delivered a CAM treatment to other nurses on your unit?

- ◯ Yes
- ◯ No

35. Was the CAM treatment beneficial for your peer?

- ◯ Yes
- ◯ No

36. Have you received a CAM treatment from a peer?

- ◯ Yes
- ◯ No

37. In your experience, how often has peer-to-peer CAM treatments occurred?

- ◯ Never, I do not have peers that use CAM on my nursing unit
- ◯ Rarely (once a month)
- ◯ Sometimes (2-3 times per month)
- ◯ Often (at least once a week)
- ◯ Frequently (several times a week)
- ◯ Always (almost every shift that I work)

Please review above for completion of answers

Environmental or situational factors

The purpose of the this page is to gather data related to your environment that may promote/enhance or are obstacles to your ability to administer CAM treatments with your patient.

38. What do you see is the BENEFIT to administering a CAM treatment?

	1 = Absolutely AGREE	Agree	3 = Somewhat Agree	Neutral	5 = Somewhat disagree	Disagree	7 = Absolutely DISAGREE
Patient satisfaction	○	○	○	○	○	○	○
Nurse satisfaction	○	○	○	○	○	○	○
Calms the patient	○	○	○	○	○	○	○
Reduction in pain	○	○	○	○	○	○	○
May decrease the need for medication	○	○	○	○	○	○	○
I do not see any benefit to CAM treatments	○	○	○	○	○	○	○
Value added to the services of the hospital	○	○	○	○	○	○	○
Provides comfort for the patient	○	○	○	○	○	○	○
Improves patient outcomes	○	○	○	○	○	○	○
Patients feel more cared for	○	○	○	○	○	○	○
Treating my peers can decrease their stress levels	○	○	○	○	○	○	○
Treating my peers can decrease their pain	○	○	○	○	○	○	○
Nurses have the opportunity to practice holistically	○	○	○	○	○	○	○

39. What are the OBSTACLES for you to administer a CAM treatment for your patient?

	1 = Absolutely AGREE	Agree	3 = Somewhat Agree	Neutral	5 = Somewhat disagree	Disagree	7 = Absolutely DISAGREE
Not enough time on my shift	○	○	○	○	○	○	○
Too much noise on the nursing unit	○	○	○	○	○	○	○
Too many interruptions when I administer a treatment	○	○	○	○	○	○	○
Peers that are too busy to cover my patients so that I can administer a treatment	○	○	○	○	○	○	○
CAM treatment is not an expectation of daily care	○	○	○	○	○	○	○
My patient is not receptive	○	○	○	○	○	○	○
I do not believe CAM helps the patient	○	○	○	○	○	○	○

40. What would ENHANCE your ability to provide CAM treatment for your patients?

	1 = Absolutely AGREE	Agree	3 = Somewhat Agree	Neutral	5 = Somewhat disagree	Disagree	7 = Absolutely DISAGREE
Nurse-driven consult for an 'on-call' CAM practitioner for a Reiki/aromatherapy treatment	○	○	○	○	○	○	○
A dedicated CAM treatment room located on the nursing unit for the purpose of uninterrupted, quiet environment	○	○	○	○	○	○	○
Peers that request you to administer a CAM treatment for their patient	○	○	○	○	○	○	○
Peers that volunteer to provide coverage for your patients while you administer a CAM treatment	○	○	○	○	○	○	○
A family member that requests a treatment for a patient	○	○	○	○	○	○	○

Decision-making in treatments

The purpose of this page is to gather data related to CAM use for patient symptoms and educational needs.

41. On a scale of 1 to 5, how important are the following in your nursing practice and administration of CAM treatments?

	1 = Quite UNIMPORTANT	2 = Not very important	3 = Important on average	4 = Very important	5 = Especially IMPORTANT
Feeling of self-esteem resulting from administering CAM treatment	◯	◯	◯	◯	◯
The opportunity to help patients	◯	◯	◯	◯	◯
The opportunity for independent thought and action	◯	◯	◯	◯	◯
The feeling of accomplishment	◯	◯	◯	◯	◯
The opportunity for personal growth and development in my job	◯	◯	◯	◯	◯
The feeling of frustration at not being able to provide a CAM treatment	◯	◯	◯	◯	◯

42. Which symptom would make you more likely to administer a CAM treatment? (Select only one choice)

◯ Patient is anxious

◯ Patient is in pain

◯ Patient is experiencing nausea

Other (please specify)

43. What is your perception of the effectiveness of treatments?

	Almost always effective	Sometimes effective	Every once in awhile	Rarely effective	Never effective
Reiki	◯	◯	◯	◯	◯
Aromatherapy	◯	◯	◯	◯	◯
Guided imagery	◯	◯	◯	◯	◯

44. For the symptoms listed below, which modality would you use and for how many minutes? (approximately)

	Reiki	Aromatherapy	Guided Imagery
Nausea			
Pain			
Anxiety			

45. Nurses have reported a greater need for education regarding CAM uses, benefits, and how to request services. Which group below should be a priority for this education? (please be sure to place 5 checks....one check per column by priority)

	1 Highest Priority	2	3	4	5 Lowest Priority
Patient	○	○	○	○	○
Nurses	○	○	○	○	○
Ancillary personnel	○	○	○	○	○
Physicians	○	○	○	○	○
Residents	○	○	○	○	○

Patterns of use of CAM treatments

The purpose of this page is to gather data related to the nurses' use of Reiki and/or aromatherapy/guided imagery.

46. On average, how many patients PER WEEK receive a CAM treatment?

Approximate number

47. Over the last MONTH, how many patients received a CAM treatment?

Approximate number

48. What percent of patients (where Reiki or aromatherapy/guided imagery was indicated) did you use it?

Approximate percentage

49. Of the patients that you treat, how do you divide the treatments (approximate percentage)?

Reiki

Aromatherapy

Guided imagery

50. Since your initial education in Reiki and/or aromatherapy/guided imagery, have you received additional education in a Complementary Alternative Medicine modality?

◯ Yes

◯ No

If yes, please specify the modality

51. Any additional information/comments related to CAM education or use of Reiki/aromatherapy/guided imagery?

Please REMEMBER: click on the DONE button at the end of the page!

You have reached the end of your survey. I appreciate your honesty, time, and thoroughness.

The drawing for the gift card will take place in May 2014 and you will be notified of the winner.

Thank you!

Appendix I: Researcher Confidentiality Agreement

To:

From:

Date:

I will be transcribing/reviewing and analyzing data for the research study, "Impact of Intrinsic and Extrinsic Factors on the Nurses' Use of Complementary Alternative Medicine Treatments" proposed by Elizabeth Degnan Kryak. I will maintain the data in strictest confidence, will transmit the data only to Elizabeth Kryak, and will erase the documents from my personal computer after confirmation that the data were received.

_____ _____

Signature Date

Appendix J: Survey Reviewer Confidentiality Agreement

To:

From:

Date:

I will be transcribing data for the research study, "Impact of Intrinsic and Extrinsic Factors on the Nurses' Use of Complementary Alternative Medicine Treatments" proposed by Elizabeth Degnan Kryak. I will maintain the data in strictest confidence, will transmit the data only to Elizabeth Kryak, and will erase the documents from my personal computer after confirmation that the data were received.

_____ _____

Signature Date

Appendix K: Second Invitation Email for Survey

Email Reminder Sent 7 days after the initial Request for Participation

Dear (Insert First Name),

This is a reminder email and I am hopeful that you can fill out the survey on nurses educated in Reiki or aromatherapy/guided imagery. Even if you no longer use the modalities, please still fill out the survey. Your input is very important! It will take about 15 minutes. There are no surveys in the literature that investigate nurses' use of CAM so the results will add a great deal to the CAM literature.

Thank you for your consideration,

Bette Kryak

Appendix L: Third Invitation Email for Survey

Email Reminder Sent 14 days after the initial Request for Participation

Hello (Insert First Name),

This is the last reminder email and I am hopeful that you can fill out the survey on nurses educated in Reiki or aromatherapy/guided imagery. Even if you no longer use the modalities, please still fill out the survey. **Your input is very important!** It will take about 15 minutes. There are no surveys in the literature that investigate nurses' educated in CAM so the results will add a great deal to the CAM literature.

Thank you for your consideration,

Bette Kryak

[redacted]