

11-21-2025

## Nursing Faculty Demographics, Attitude, Knowledge, and Integration of Complementary and Alternative Medicine in Nursing Curriculum

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# Walden University

College of Nursing

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Patricia Balistreri

has been found to be complete and satisfactory in all respects,  
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the review committee have been made.

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Walden University

2025

Abstract

Nursing Faculty Demographics, Attitude, Knowledge, and Integration of Complementary  
and Alternative Medicine in Nursing Curriculum

by

Patricia Balistreri

MSN, Walden University, 2013

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Walden University

November 2025

## Abstract

Nurses have demonstrated positive attitudes toward complementary and alternative medicine (CAM); however, additional education is limited in nursing programs to prepare them to discuss and educate patients about these practices. Nursing faculty play a significant role in educating, mentoring, and influencing students' knowledge levels and attitudes toward CAM. The purpose of this quantitative, non-experimental, cross-sectional study, guided by the CAM healthcare model, was to examine relationships among nursing faculty demographics, CAM knowledge, attitudes, and curriculum integration. The *Knowledge, Attitudes, and Use of CAM* survey was administered to 111 nursing faculty across multiple programs. Data were analyzed using multiple linear regression to determine whether age, degree level, and years of teaching predicted knowledge or attitude, and logistic regression was used to examine whether knowledge and attitude predicted CAM integration. None of the regression models showed statistically significant relationships among the variables. Findings suggest that demographic factors, CAM knowledge, and attitudes may not directly influence CAM integration. Future research should include larger, more diverse, and stratified samples of nursing faculty to improve generalizability. Implications for positive social change include identifying other factors, such as institutional support and faculty preparedness, which may affect CAM integration and guide nursing education leaders in strengthening faculty readiness and promoting evidence-based, holistic, patient-centered care.

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## Dedication

This dissertation is dedicated to my dear late husband, Mark, who encouraged me to begin this journey before his passing. Your love, faith, and belief in me continue to inspire my every step. I also dedicate this work to my children—Kathleen, Samantha, Danielle, Amanda, and Grace—and my grandchildren, who lovingly sacrificed their time and understanding so I could complete this goal. To my best friend, Scott, thank you for being my greatest supporter and for the many sacrifices you made to help me reach the finish line. Above all, I thank God for never leaving me nor forsaking me and for giving me the strength to move forward when the path felt impossible.

## Acknowledgments

I would like to express my heartfelt gratitude to my chair, Dr. Janice Long, whose endless patience, encouragement, and genuine care guided me through every step of this journey. Your wisdom, steady reassurance, and thoughtful feedback made it possible for me to continue when I felt overwhelmed. You never let me give up, and your kindness and belief in my ability will always be remembered. I am also deeply grateful to my committee member, Dr. Leslie Hussey, for her insightful feedback, time, and commitment to helping strengthen this study. I am truly thankful to both of you for your dedication to the nursing profession and for your compassion and commitment to nurturing the next generation of nursing scholars. Your example of excellence, leadership, and care has inspired me more than words can express.

To my family and friends, thank you for your unwavering love and support. To my children and grandchildren, you are my greatest blessings and my constant motivation. To my dear friend Scott, your selfless encouragement, patience, and sacrifices made this achievement possible. Above all, I thank God for His faithfulness, strength, and guidance that carried me through each challenge and brought me to this moment.

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## Chapter 1: Introduction to Study

Complementary and alternative medicine (CAM) is defined differently depending on the source. The term CAM is often used interchangeably with integrative medicine (IM; Mortada, 2024). The National Cancer Institute (NCI) (2024) defined CAM as the use of medical products along with practices that are not part of conventional medicine. The National Center for Complementary and Integrative Health (NCCIH; NCCIH, 2024) has also defined the terms complementary, alternative, and integrative. The term complementary refers to using nonconventional methods with conventional medicine. Alternative medicine refers to the use of non-conventional methods in place of conventional medicine. The term IM refers to the use of both complementary and conventional medicine in combination to complement each other. Furthermore, the NCI defined IM as combining CAM with conventional medicine. In this study, I will primarily use the term CAM.

The use of CAM has been growing (Mortada, 2024). The most recent study done by the NCCIH revealed 36.7% of American adults used CAM as compared to only 19.2% in 2002 (NCCIH, 2024; Nahin et al., 2024). According to global estimates, CAM use exceeds 70% among the world's population (Lee et al., 2022). Thus, the growing and widespread use of CAM makes it an important healthcare issue today. Currently, several different professional health organizations, such as the World Health Organization, Hospice and Palliative Nurse Association, Oncology Nurse Society, and The Joint Commission, have recognized that CAM has relevance in today's health care (Hospice

and Palliative Nurse Association, 2017; The Joint Commission, 2017; World Health Organization, 2013).

The National League for Nursing (NLN, 2017) has asserted that nursing education must incorporate diverse cultural perspectives and practices, enabling nurses to engage in culturally competent healthcare. To provide competent cultural nursing care, nurses need to be knowledgeable about discussing and educating patients on CAM, providing them with resources for CAM, and advocating for patients who are using CAM. Many nurses have a positive attitude toward CAM but need more education (Admi et al., 2017; Avino, 2011; Booth-Laforce et al., 2010; Fenton & Morris, 2004; Kreitzer et al., 2002; Richardson, 2003).

It is a core responsibility of nursing faculty to prepare students for current nursing practice. To fulfill this responsibility, nursing faculty must design and evaluate nursing curricula that incorporate and take into consideration contemporary health trends. Nurses have reported needing more education on CAM, so it is important to better understand the nursing faculty's attitude, knowledge, and integration of CAM into their nursing courses. No current studies related to nursing faculty's demographics, attitude, knowledge, or integration of CAM into their nursing courses were found in the literature.

A better understanding of nursing faculty's demographics, knowledge, attitudes, and integration of CAM into their courses can guide curriculum development and revisions that address current healthcare needs related to CAM. In Chapter 1, I discuss the problem statement, purpose of the study, research questions, theoretical framework, nature of the study, and significance.

## Background

Approximately over one-third of the United States population uses CAM (Clarke et al., 2015; NCCIH, 2024). However, in some parts of the world, such as Australia, the use of CAM is estimated to be about 79% (Thomson et al., 2014). Globally, the market for CAM in 2023 was valued at over \$ 144 billion (Grand View Research, 2024). There are a variety of reasons for using CAM, including the perceived benefits of CAM, dissatisfaction with conventional medicine, and the perceived safety of CAM (Tangkiatkumjai, 2020). Of the people who use CAM, 49% report they use CAM to help control pain (Nahin, 2024). CAM includes the use of non-mainstream and mainstream medical therapies (NCCIH, 2019). On the other hand, alternative medicine uses only non-mainstream medicine (NCCIH 2019). CAM practices include natural products and mind-body practices (NCCIH, 2019). Based on the latest comprehensive National Health Interview Survey conducted in 2012, the most frequently used approaches of CAM in the natural products categories were nonvitamin and nonmineral dietary supplements, such as fish oil, probiotics, glucosamine, chondroitin, and melatonin. In the mind-body practices category, deep breathing, yoga, Tai Chi, chiropractic, meditation, and massage were the most frequently used (Clarke et al., 2015). CAM therapies are used most frequently to treat pain, colds, anxiety, and stress (Clarke et al., 2015). The latest NCCIH (2022) survey analysis demonstrated that yoga saw the greatest increase in use from 5% in 2002 to 15.8% in 2022. The NCCIH also found acupuncture increased from 1% in 2002 to 2.2% in 2022, and it was suspected that it was due to the increase in insurance coverage.

The increasing use of CAM at academic medical centers (Pang et al., 2015) and by the public makes CAM a relevant contemporary health trend.

Nurses are the largest healthcare group, and they play an instrumental role in patient care, communication and collaboration with patients and the healthcare team, and policy and procedure development in healthcare (American Association of Colleges of Nursing, 2019). As such, nurses can help shape the present and future healthcare system. Hence, nurses must be prepared to include contemporary healthcare trends, such as CAM, in their patients' plan of care, which can empower patients with the information needed to make informed decisions about their healthcare options. However, nurses do not consistently discuss CAM with their patients, and patients do not discuss CAM with their nurses (Hall, 2018; Jou & Johnson, 2016). King et al. (2015) claimed that approximately 80% of patients reported that no provider had asked them about CAM use. Spencer et al. (2016) also revealed statistics regarding nurse-patient communication about CAM. They found that only 6% of nurses working in a specialty area known to have high CAM use by patients had asked their last five patients about CAM. The lack of communication about CAM with patients can negatively affect the patient's health outcomes when providers do not have the necessary information to guide clinical decisions (Hall, 2017). Reasons for this lack of communication are in part due to providers not asking patients about CAM use (Foley Steel et al., 2019). Other reasons for lack of communication include patients' believing the provider did not need to know of their CAM use, discouragement of CAM use by the provider, negative responses from

the provider, and perceived provider lack of knowledge of CAM (Foley et al., 2019; Jou & Johnson, 2016).

As nurses frequently engage with patients for more extended periods than other healthcare providers, communication about CAM therapies is an essential aspect of holistic care. Education about CAM is part of communication on CAM. Educating patients is a core nursing responsibility (American Nurse Association, n.d.). Spencer et al. (2016) found that only 50% of nurses discussed CAM with their patients. Insufficient discussion or education about CAM may limit patients' understanding and ability to make informed healthcare choices. Providing evidence-based CAM education allows nurses to empower patients in their decision-making processes (Stenberg, 2018). When patients are empowered to participate actively in their healthcare decisions, overall outcomes and satisfaction improve, while hospital admissions tend to decline (Smith et al., 2013).

Nurses can serve a pivotal role in integrating Western medicine with CAM approaches, but this responsibility depends on adequate knowledge and access to appropriate resources. A significant obstacle to effective CAM communication between nurses and patients is the lack of sufficient CAM knowledge among nurses (Brewer et al., 2019; Chang & Chang, 2015; Hall et al., 2017; Hall et al., 2018; Spencer et al., 2016). Many nurses have reported that they rely on their personal experiences to guide their understanding when interacting with patients who are using CAM (Spencer et al., 2016). The nurse's knowledge level and formal education of CAM then influence their communication about CAM with their patients (Hall et al, 2018; Spencer et al., 2016).

According to Spencer et al. (2016), nurses with formal CAM education demonstrated a greater likelihood of initiating conversations about CAM with their patients. However, less than 10% of nurses have reported having formal education on CAM (Spencer et al., 2016). Nurses' knowledge level and formal education influence their communication with patients about CAM; therefore, it is important to understand how and when nurses are being educated about CAM.

Nursing faculty have an influential role in educating, mentoring, and impacting students' knowledge levels and attitudes toward CAM. Moreover, nurse educators are responsible for reviewing nursing curricula and nursing courses to ensure the curriculum and courses are relevant and meet the needs of the students and society (National League for Nursing, 2019; World Health Organization, 2016). Few studies were found that examined nursing faculty's beliefs about CAM and their incorporation of CAM education in their nursing courses. In the studies found, nursing faculty had a positive attitude about CAM and believed CAM should be included in nursing courses and curriculum (Avino, 2011; Booth-Laforce et al., 2010; Kreitzer et al., 2002). Despite the positive attitude toward CAM, faculty lacked education on CAM (Kreitzer et al., 2002).

Recommendations have been made to educate nursing faculty about CAM (Avino, 2011; Booth-Laforce et al., 2010; Fenton & Morris, 2004; Kreitzer et al., 2002; Richardson, 2003). No current United States studies were found in the literature related to nursing faculty's demographics, attitudes, knowledge, and integration of CAM into their nursing courses, which represents the gap in the literature for this study. A better understanding of nursing faculty's knowledge, attitudes, use, and integration of CAM into their courses

has the potential to guide and impact curriculum development and revisions. Determining whether CAM is incorporated into the nursing curriculum is important. Incorporating CAM education within nursing programs equips future nurses with the knowledge and confidence needed to discuss CAM practices effectively with patients. Including CAM in the nursing curriculum can prepare graduate nurses to be knowledgeable about CAM and increase their ability to communicate effectively with patients about CAM. Providing patients with accurate information about CAM can positively impact their ability to make informed decisions.

### **Problem Statement**

There is a lack of understanding about the relationship between nursing faculty's demographic factors and their knowledge, attitude, and integration of CAM principles into nursing curriculum. The use of CAM in nursing practice can be traced back to Florence Nightingale, who encouraged massage and pleasant aromas. For years, nursing has embraced holistic care while utilizing traditional medicine and conventional treatments (Hajbaghery & Mokhtari, 2018). However, only over half of the United States Boards of Nursing accept CAM as a nursing activity (Booth-Laforce et al., 2010). The American Nurse Association's nursing scope of practice in Standard 8, Culturally Congruent Practice, identifies that nurses must demonstrate respect, equity, and empathy with all patients and families while applying knowledge of various health practices and beliefs (Marion et al., 2016).

Nurses generally have a positive attitude about CAM and personally use CAM (Balouchi et al., 2018; Cırık et al., 2016). However, despite the positive attitudes about

CAM, nurses have reported a lack of knowledge of CAM, with less than 10% of nurses reporting having received formal education on CAM (Brewer et al., 2019; Chang & Chang, 2015; Hall et al., 2017; Hall et al., 2018; Spencer et al., 2016). The lack of knowledge of CAM has also been linked to nurses not communicating with patients about CAM (Foley et al., 2019; Jou & Johnson, 2016). Patients' perception of nurses' lack of knowledge has also been linked to patients not communicating about CAM to providers (Foley et al., 2019; Jou & Johnson, 2016). The lack of communication on CAM with patients is also a concern with providers, as only one-third of providers talk to their patients about CAM (NCCAM, 2008). The reasons noted for the lack of provider-patient CAM communication were due to the provider not asking, the patient not knowing they should discuss their CAM use, and insufficient time during the office visit (NCAAM). The lack of communication about a patient's CAM use poses significant safety concerns for the patient because there could be detrimental interactions with the CAM, along with the use of Western medicine. Some CAM methods, such as yoga and meditation, have been studied and proven safe, but other CAM methods have not been tested for efficacy, safety, and interactions (National Cancer Institute, 2023). Hence, it is important to understand nurses' lack of knowledge of CAM as this can impact the lack of communication between the nurse and patients about CAM and, ultimately, the patient's ability to make informed patient safety decisions.

The importance of nurses being adequately educated on CAM has several important aspects. One aspect is that CAM can potentially impact patients' image of nurses' lack of knowledge of CAM (Hall et al., 2018). Another aspect is that a nurse's

essential role is to educate patients in a nonjudgmental manner while considering a patient's culture and health beliefs. A nurse must also know where to obtain and refer patients to CAM. An additional important aspect is the developing recommendation to include CAM therapies. An example of this is the Joint Commission requiring nurses to promote the use of nonpharmacologic methods of pain control as a first line of treatment (The Joint Commission, 2022). For the use of nonpharmacologic methods of pain control as a first line of treatment to occur, nurses need to know nonpharmacological options, which include CAM. Nurses should also be aware of the evidence to support different CAM therapies, such as acupuncture, manipulation therapies, and herbals (World Health Organization, 2004).

Professional organizations such as the American Holistic Nurses Association, the Hospice and Palliative Nurse Association, the Institute of Medicine of the National Academies, the Oncology Nurse Society, the World Health Organization, the National Center for Complementary and Alternative Medicine, and the Joint Commission have recognized CAM as a relevant health topic. In addition, 17 state Boards of Nursing have developed position statements incorporating holistic treatments or CAM approaches into the plan of care for patients (American Holistic Nurses Association, 2019). For instance, the Institute of Medicine Committee on the Use of Complementary and Alternative Medicine by the American Public recommended including CAM in health care curricula, including medicine, nursing, pharmacy, and allied health (Institute of Medicine, 2005).

Faculty in nursing programs play a pivotal role in shaping and preparing future nurses for entry into professional practice. In other words, the nursing faculty acts as a

catalyst in building strong nurses. To better understand why nurses, lack knowledge of CAM, it is important to examine nursing faculty's incorporation of CAM into the curriculum. I found no current literature indicating if CAM is being taught in nursing schools. However, nursing faculty have reported having a positive attitude about CAM and believed it should be included in the nursing curriculum (Avino, 2011; Booth-Laforce et al., 2010; Kreitzer et al., 2002). Despite nursing faculty's positive attitude towards CAM, their lack of knowledge of CAM may be one obstacle to their incorporating it into the curriculum (Avino, 2011; Booth-Laforce et al., 2010; Fenton & Morris, 2004; Kreitzer et al., 2002; Richardson, 2003). No current literature was found that specifically examined nursing faculty's attitudes, knowledge level, and integration of CAM in nursing curriculum, nor the degree they hold in nursing, the number of years of experience, or whether nurses are more likely to increase or decrease use with increasing age. Thus, a better understanding of nursing faculty's demographics, attitude, knowledge, and integration of CAM into their nursing courses has the potential to identify factors that should be considered when designing a curriculum to effectively incorporate CAM nursing faculty's knowledge and attitude and their integration of CAM into the nursing curriculum into the nursing curriculum. Having an up-to-date, holistic, and relevant nursing curriculum can help prepare future nurses with the necessary skills needed to provide comprehensive, patient-centered care that incorporates CAM practices.

### **Purpose of the Study**

The purposes of this quantitative cross-sectional correlational study were to determine if (a) there is a relationship between the nursing faculty's age level, degree

level, years of nursing faculty experience, and the knowledge of CAM principles, (b) there is a relationship between nursing faculty's age level, degree level, years of nursing faculty experience, and the attitude of CAM principles, and (c) there is a relationship between knowledge and attitude and the integration of CAM principles into the nursing curriculum. The predictor variables for the first research question were age level, degree level, and years of nursing experience. The outcome variables were knowledge of CAM. The predictor variables for the second research question are age level, degree level, and years of nursing experience. The outcome variable for the second question was the attitude toward CAM principles. The predictor variables for the third question were knowledge and attitude. The outcome variable for the third question was the integration of CAM principles into the nursing curriculum. Newly graduated nurses are tasked with developing and delivering patient education in acute and outpatient environments. To fulfill this role effectively, they must possess a sufficient understanding of CAM to communicate and teach patients about its use. In this study, I used multiple regression analysis to determine the extent to which faculty demographics, knowledge, and attitudes toward CAM influence faculty integration of CAM into their nursing courses.

### **Research Questions and Hypotheses**

The research questions (RQs) and hypotheses for my study were as follows:

RQ1: What is the relationship between age level, degree level, years of nursing faculty experience, and knowledge of CAM principles?

*H*<sub>01</sub>: There is no relationship between age, degree level, years of nursing faculty experience, and knowledge of CAM principles.

*H<sub>a1</sub>*: There is a relationship between age level, degree level, years of nursing faculty experience, and knowledge of CAM principles.

RQ2. What is the relationship between age level, degree level, years of nursing faculty experience, and the attitude of CAM principles?

*H<sub>02</sub>*: There is no relationship between age level, degree level, years of nursing faculty experience, and the attitude on CAM principles.

*H<sub>a2</sub>*: There is a relationship between age level, degree level, years of nursing faculty experience, and the attitude of CAM principles.

RQ3: What is the relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum?

*H<sub>03</sub>*: There is no relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum.

*H<sub>a3</sub>*: There is a relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum.

In RQ1, I explored the relationship between nursing faculty's age level measured in years at the interval/ratio level; degree level measured as BSN, MSN, DNP or PhD as nominal level; years of nursing faculty experience measured in years as interval ratio level data; and knowledge of CAM principles measured in ordinal levels with a 4-point Likert and treated as interval ratio.

IN RQ2, I explore the relationship between nursing faculty's age level measured in years at the interval/ration level; degree level measured as BSN, MSN, DNP or PhD as nominal level; years of nursing faculty experience measured in years as interval ration

level data/ and attitudes of CAM principles measured in ordinal levels with a 4-point Likert and treated as interval ration.

In RQ3, I explored the relationship between knowledge and attitude of CAM as listed above, with the degree of integration of CAM principles into the nursing curriculum measured on a 5-point Likert scale treated as interval/ratio (see Wu & Leung, 2017).

### **Theoretical Framework for the Study**

The CAM healthcare model is a model specific to CAM use and includes cultural practices, CAM knowledge, personal factors such as self-efficacy, perceived need for CAM, and is founded on Andersen's behavioral model (Fouladbakhsh & Stommel, 2007). The CAM healthcare model examines the predisposing, enabling, and need-related factors that influence the use of health services (Anderson, 1968). According to Fouladbakhsh and Stommel (2007), the model incorporates predisposing and enabling components that help identify patterns and predictors of CAM utilization, encompassing health practices, products, and provider-directed approaches. A central concept of this model is the push-pull dynamic: push factors refer to elements that drive individuals away from conventional medical care, such as dissatisfaction with treatment, high costs, lack of insurance, or limited access, whereas pull factors describe those that attract individuals toward CAM, including beliefs that these methods are natural, culturally aligned, and reflective of personal values (Fouladbakhsh & Stommel, 2007). The CAM healthcare model provides a guide that helps to understand people's patterns of CAM health behaviors.

The CAM healthcare model uses Anderson's behavioral model of health services. Anderson's behavioral model of health services is a common model used when looking at the use of health services (Babitsch et al., 2012). Anderson's behavioral model helps to better understand access to the use of healthcare services, and the factors affecting a person's decision to use or not use healthcare services (Anderson, 1995). Despite the extensive use of the behavioral model of health across various disciplines, its adaptation and application to CAM have been relatively minimal (Fouladbakhsh & Stommel, 2007).

Because my research focused on the relationship between nursing faculty demographic factors, and the knowledge, attitude, and integration of CAM principles into the nursing curriculum, the CAM healthcare model is more relevant to guide my study. The CAM healthcare model focuses on the principles and practices of CAM. The CAM healthcare model can help to examine the relationships between demographics, knowledge, attitudes and integration of CAM into nursing curriculum. The CAM healthcare model is described in greater depth in chapter 2.

### **Nature of Study**

The nature of this study was a non-experimental quantitative cross-sectional correlational design. I used a correlational design to explore the relationships between the nurse faculty's demographics, level of knowledge, attitudes toward CAM, and incorporation of CAM in the classroom curriculum (Creswell, 2009). The cross-sectional correlational design is used for data collection at one point in time. I used convenience sampling to recruit nursing faculty teaching at the undergraduate level. I collected data using the survey from Johnson et al. (2008) titled "Knowledge, attitudes, and use of

CAM survey.” Demographic information was collected as part of the survey, including age, gender, years of teaching experience, and years in the role of nursing instructor. I used multiple regression analysis to examine the relationship between nursing faculty demographics, CAM attitude, knowledge, and integration of CAM in courses that nursing faculty teach (Burns & Grove, 2009; Field, 2018). The predictor variables were the faculty’s demographics, knowledge, and attitude. The outcome variable was the integration of CAM into nursing courses that nursing faculty teach.

### **Definitions**

*Alternative medicine:* Non-mainstream health practices instead of mainstream medicine practices (National Center for Complementary and Integrative Health, 2019).

*Attitude:* Attitudes are how a person feels about something, and they impact our behaviors (Olson & Kendrick, 2008). Attitudes can be learned and, therefore, can help predict behaviors.

*Complementary medicine:* Using non-mainstream medicine together with mainstream medicine (National Center for Complementary and Integrative Health, 2019).

*Conventional medicine:* - mainstream medicine, conventional medicine, modern science, or biomedicine (Fjaer et al., 2020).

*Holistic care:* Care that involves the whole person and includes the use of CAM (Frisch & Rabinowitsch, 2019). Holistic care is a philosophy that considers and incorporates people’s physical, psychological, emotional, and spiritual needs to bring about personal wellness (Jasemi et al., 2017).

*Integrative medicine:* Focuses on a holistic and patient-centered approach that incorporates conventional medicine and complementary medicine in a coordinated fashion (National Center for Complementary and Integrative Health, 2019). Integrative medicine combines CAM and conventional medicine when treating patients (Van Sant-Smith, 2014; National Cancer Institute, 2024). The term integrative medicine is becoming the preferred term over CAM (Van Sant-Smith, 2014).

*Nursing Knowledge:* Knowledge comes from both theoretical and practical knowledge (Hall, 2005). Knowledge is essential as a nurse as it can impact a patient's positive or negative outcome. Nurses are also expected to have a basic set of knowledge. A nurse's culture can also impact how a nurse uses their knowledge (Hall, 2005). What a nursing faculty knows can impact what a student learns (Fennema & Franke, 1992).

*Nursing faculty:* Nurses who hold an advanced degree and teach nursing. The National Council of State Boards of Nursing (NCSBN) recommends that all nursing faculty should hold at least a master's degree in nursing and act in the roles of collaborator, director of learner, and role modeling (National Council of State Boards of Nursing, 2008).

*Personal use:* A person's self-report of self-treatment of CAM (Johnson et al., 2011).

*Traditional Medicine:* A medical practice that has a long history of use (Wiseman, 2004). Another term for traditional medicine is alternative medicine. The term CAM is used more often in the Western part of the world, and traditional medicine is used more in the developing parts of the world (Shewamene et al., 2017).

*Western Medicine*: Also referred to as conventional, mainstream, or biomedical medicine, is the dominant health care system practiced in most Western countries (National Cancer Institute [NCI], n.d.; Wiseman, 2004). This model is grounded in the biomedical perspective, emphasizing the diagnosis and treatment of disease through evidence-based interventions. Illness is typically managed by licensed health care professionals who employ pharmacologic therapies, surgical procedures, and radiation-based treatments to address specific physiological symptoms or pathological processes (NCI, n.d.). Western medicine prioritizes measurable outcomes, clinical testing, and scientific validation as its foundation for treatment and decision-making.

### **Assumptions**

Assumptions are based on what is thought to be probably true (Simon, 2011) It is assumed the respondents will meet the screening requirements outlined in the study. The first assumption is that nursing faculty desire to prepare nurses with the necessary skills and competencies to meet the population's demands and desire knowledge about CAM. A second assumption is that the participants will respond truthfully and thoroughly.

### **Scope and Delimitations**

The Knowledge, Attitudes, and Use of CAM Survey will be used for this study, with some minor adjustments, with permission to use from the author. The CAM Health Belief Questionnaire Survey was considered, but it did not account for the knowledge level or inclusion of CAM instruction in nursing courses.

Delimitations are boundaries the researcher sets to control the scope of the study (Creswell, 2009). My target population consisted of nursing faculty currently teaching in

pre-licensure nursing degree programs, such as baccalaureate, associate degree, diploma nursing, and direct-entry Master of Science in nursing programs in the United States. I collected data from nursing faculty within the United States. I recruited prelicensure nursing faculty because these instructors work with nursing students who are considered entry-level nurses. The entry-level nurse is considered to have the minimum knowledge and skills to provide safe and effective care (National Council of State Boards of Nursing, 2014).

The CAM healthcare model guided this study. The CAM healthcare model uses Andersen's behavioral model, which includes predisposing factors, enabling factors, and need factors as determinants of health services. However, the CAM health care model is designed to address both self-directed and provider-directed situations (Anderson, 1968). Anderson's behavioral model of health services is a common model that has been used in health services, but was developed for conventional healthcare services and doesn't address self-directed practices (Von Lengerke et al., 2013). The CAM healthcare model incorporated predisposing and enabling factors that help identify patterns and predictors of CAM use, including health practices, products, and provider-directed therapies (Fouladbakhsh & Stommel, 2007). Anderson's model does not include cultural beliefs or holistic perspectives surrounding CAM practices. Another theory I considered was Leininger's theory of cultural care, diversity, and universality. Leininger believed nurses have a critical role in practicing cultural care values, beliefs, and practices of different cultures, and doing so would lead to positive, healthy outcomes (Leininger, 1991, 1995). Leininger also believed that nurses needed to establish knowledge in cultural care, which

would require nurses to shift their thinking and attitudes toward understanding cultures and caring.

The CAM Healthcare Model was selected as the theoretical framework for this study because it directly aligns with the purpose of examining nursing faculty knowledge, attitudes, and integration of complementary and alternative medicine into curricula. This model emphasizes predisposing and enabling factors that predict CAM use, such as accessibility of CAM resources, prior exposure, personal health practices, and provider-directed therapies, which closely parallel the variables being investigated in this dissertation (Fouladbakhsh & Stommel, 2007). In contrast, Leininger's theory of cultural care, diversity, and universality centers on understanding cultural values, beliefs, and caregiving practices to guide culturally congruent nursing care. Although Leininger's theory provides a strong foundation for culturally responsive care, it does not directly address predictors of CAM utilization, nor does it explain how individual knowledge or attitudes drive CAM behaviors or teaching practices among nurse educators. Therefore, the CAM Healthcare Model offers a more targeted structure for analyzing relationships between demographic characteristics, knowledge, attitudes, and the integration of CAM content, making it the most appropriate theoretical framework for the aims of this study.

The CAM healthcare model includes concepts on the patterns, utilization, and integration of CAM practices within healthcare systems. A central concept of this model is the push-pull dynamic. Push factors describe the conditions that drive individuals away from conventional medical care, such as dissatisfaction with treatment, financial barriers, lack of insurance coverage, and lower income levels. In contrast, pull factors are

influences that draw individuals toward CAM modalities, including beliefs that such approaches are more natural, culturally congruent, and aligned with personal values (Fouladbakhsh & Stommel, 2007). This framework provides insight into the behavioral patterns underlying CAM use and is well suited to guide the present study, which explores nursing faculty demographic characteristics, knowledge, attitudes, and the integration of CAM principles into nursing curricula. The model is built upon Andersen's behavioral model of health services use, which is extended to include CAM-related health behaviors.

### **Limitations**

A potential limitation is that faculty members may feel they are too busy to participate. The survey remained open to address this challenge until adequate responses were obtained and closed. Some prelicensure schools of nursing may not have core nursing classes during the summer. Nursing faculty may have time off during the summer, so attempts will be made to send out surveys during the nursing academic school year before summer. I sent follow-up emails to nursing faculty to complete the survey to ensure an adequate sample size (See Creswell, 2009). Another limitation was the potential for cultural bias. To avoid this, the way questions are asked and the data-gathering process were examined for appropriateness (See Creswell).

Another potential challenge is identifying the specific terms of CAM and the different types of CAM. Although it is impossible to include and define all possible types of CAM, the National Center for Complementary and Integrative Health's definitions of

the most well-known CAM will address this. Another limitation is that I could not identify the extent of CAM integration into the curriculum or courses.

The design of the study had some potential limitations. This study was a non-experimental quantitative cross-sectional correlational design. This design limits making causal relationships (Polit & Beck, 2018). I used convenience sampling, which has the potential for bias since participants can be selective in their participation (Etikan, 2016). Another limitation was that the potential to generalize the study is limited to the characteristics of the sample.

### **Significance**

CAM use is prevalent in the United States and worldwide (National Center for Complementary and Integrative Health, 2017). Nurses have a positive view of CAM but report a lack of adequate knowledge about CAM and feel uncomfortable discussing it with patients (Balouchi et al., 2018). A major concern is that nurses do not have adequate knowledge of CAM and do not believe their nursing education included adequate education on CAM (Balouchi et al., 2018; Hall et al., 2017).

Directives from the Institute of Medicine indicate the need to incorporate CAM into nursing education so nurses can be more competent in educating patients about CAM (Institute of Medicine, 2005). The American Association of Colleges of Nurses (1998) also included CAM concepts as a core competency for nursing education programs. Despite this, no recent research has been done to see if CAM is being incorporated into nursing courses.

Nursing faculty have not been adequately educated in CAM and need to be given formal education on CAM (Avino, 2011; Fenton & Morris, 2003; Kreitzer et al., 2002; Richardson, 2003). Nursing faculty play an integral role in educating and mentoring nursing students to become nursing professionals, advocates, innovators, and leaders, all of whom are key roles of a nurse and bridge the gap between Western medicine and CAM (Zittel et al., 2016).

The results of this study have the potential for positive social change for faculty, the nursing profession, and patients. National survey data show that adult use of complementary approaches has nearly doubled over the past two decades, with the greatest increases seen in yoga and meditation, and a gradual rise in acupuncture use (Nahin, 2024). Nurses want more education on CAM (Burke et al., 2004; Chlan & Halcon, 2003; Joswiak, 2016; Richardson, 2003). The absence of significant relationships among knowledge, attitudes, demographics, and CAM integration suggests that additional factors may influence whether CAM content is incorporated into nursing curricula, reinforcing the value of continued investigation into faculty preparedness and curriculum design. Patients use CAM, so faculty must address this without personal bias. The results can potentially guide faculty in developing and revising nursing curricula to include evidence-based content relating to CAM. Incorporating CAM content into nursing courses has the potential to provide graduate nurses with the knowledge to provide patients with evidence-based information and resources about CAM that will help patients make informed decisions and potentially improve patient health outcomes and effect positive social change.

## Summary

In Chapter 1, I identified the current trend of increased use of complementary and alternative medicine (CAM). Although nurses generally hold positive attitudes toward CAM, research has shown that they often lack sufficient knowledge to discuss or integrate these therapies into clinical care (Balouchi et al., 2018). Preparing nurses to understand complementary and alternative therapies reflects an emerging educational priority within nursing, as national standards such as the NCLEX-RN Test Plan require graduates to recognize complementary therapies and identify their benefits and contraindications (National Council of State Boards of Nursing [NCSBN], 2023). Beyond education, healthcare delivery standards are also shifting. The Joint Commission supports the use of non-pharmacological and integrative therapies as part of pain management and safe patient care, indicating national recognition of CAM within professional nursing practice expectations (The Joint Commission, 2025).

In addition, the role of nursing faculty in preparing future nurses for practice was emphasized. Understanding faculty knowledge, attitudes, and current use or integration of CAM within nursing curricula is essential to determine how well students are being equipped to address CAM in clinical settings. However, there is a lack of literature examining nursing faculty's knowledge, attitudes, and curricular integration of CAM, indicating a gap this study sought to address.

In Chapter 2, I provide literature indicating the current trends in CAM regarding nursing and nursing faculty. I also provide literature for CAM knowledge, attitudes, and

personal use for nurses and nursing faculty. I provide the literature for nursing faculty incorporation of CAM in the nursing curriculum.

## Chapter 2: Literature Review

### **Introduction**

National data indicate that roughly one-third of Americans utilize complementary and alternative therapies as part of their healthcare choices (Clarke et al., 2015; National Center for Complementary and Integrative Health, 2017). The usage of CAM by patients can impact their safety and health outcomes. Nurses need to know how to communicate with patients about CAM so they can provide resources and education and identify potential risks. The National Council of State Boards of Nursing (NCSBN) test plans for the practical nurse and registered nurse include concepts of CAM (National Council of State Boards of Nursing, 2023). Other professional organizations recognize the value of CAM, including the World Health Organization, Hospice and Palliative Nurse Association, Oncology Nurse Society, and The Joint Commission (Hospice and Palliative Nurse Association, 2017; The Joint Commission, 2017; World Health Organization, 2013). The National League of Nurses stated that nurses must be educated in different cultural beliefs and practices (National League for Nursing, 2017). Nurses have a positive attitude about CAM but believe they need more education on CAM (Admi et al., E, 2017; Avino, 2011; Booth-Laforce et al., 2010; Fenton & Morris, 2004; Kreitzer et al., 2002; Richardson, 2003).

The purposes of this quantitative cross-sectional correlational study were to determine if (a) there is a relationship between the nursing faculty's age level, degree level, years of nursing faculty experience, and knowledge of CAM principles, (b) there is a relationship between nursing faculty's age level, degree level, years of nursing faculty

experience, and the attitude of CAM principles, and (c) there is a relationship between knowledge and attitude and the integration of CAM principles into the nursing curriculum.

In this chapter, I provide the literature review, library databases used, search engines used, key search terms and combination search terms, scope of literature review, theoretical foundation, and key variables of the study.

### **Literature Search Strategies**

I found relevant information for the literature review in journals, websites, and professional organizations. The Walden University Library was used to collect relevant literature. Databases used were CINAHL, MEDLINE, ProQuest, PubMed, Ovid, Science Direct, Springer, Wiley, and Cochrane. Google Scholar was also utilized to access pertinent information. Individual search terms included *complementary AND alternative medicine, integrated medicine, holistic medicine, and natural medicine*. These searches discovered too many articles that were not relevant to the topic. To narrow the search, I used these combination Boolean operators: *Complementary AND alternative medicine AND nursing faculty, complementary AND alternative medicine AND nursing instructor, complementary AND alternative medicine AND nursing faculty and knowledge, integrative medicine AND nursing faculty AND knowledge, holistic care AND nursing faculty AND knowledge, natural medicine AND nursing faculty AND knowledge, and complementary AND alternative medicine AND nursing faculty AND attitudes*.

Initially, the search was limited to research within the last ten years but expanded the years searched due to not finding relevant literature. The search was limited to 2000 and more recent. The literature search spanned from March 2019 to December 2019 and from October 2023 to March 2024. The literature search was limited to relevant literature in the United States. The literature demonstrated limited research articles focused on the United States nursing faculty's demographics, knowledge, attitude, and inclusion of CAM in the nursing curriculum. Most of the literature was focused more on nurses in practice and not on nursing faculty knowledge and attitude of CAM or patients' attitude and use of CAM. Another finding was that the research article was focused on a specific specialty of nursing, such as nurses working in cancer, or on a specific type of CAM, such as aromatherapy (Terry et al., 2023). The Boolean searches also generated general nursing curriculum or other specific curriculum topics versus the CAM-specific curriculum. Limited research was found that was based in the United States. The literature review also included using the Walden Library Dissertation and Theses and ProQuest Dissertations and Theses Global. The research was limited to peer-reviewed and full-text literature. Several articles indicated nurses' attitudes toward CAM (Balouchi et al., 2018; Chang & Chang, 2015; Christina et al., 2016; Hall et al., 2017; Trail-Mahan et al., 2013). Several articles also indicated nursing students' attitudes toward CAM (Walker et al., 2017; Yildirim et al., 2010). No recent United States-based research addressed the association between nursing faculty's knowledge and attitude and their integration of CAM into the nursing curriculum in pre-licensure nursing programs.

## Theoretical Foundations

The theoretical framework selected to guide this study is the CAM healthcare model. The CAM healthcare model uses Andersen's behavioral model, which looks at predisposing factors, enabling factors, and need factors as determinants of health services. Anderson's behavioral model of health services is a common model used when looking at the use of health services (Babitsch et al., 2012). The CAM Healthcare model factors in Andersen's behavioral model but enriches it by adding individual and system-level predisposing and enabling factors, as well as variables that examine patterns and predictors (Fouladbakhsh & Stommel, 2007). The CAM Healthcare model also incorporates health practices and products. Within the CAM healthcare framework, predisposing and enabling factors are viewed as key elements that reveal predictors and utilization patterns across various CAM practices, including self-care approaches, commercial products, and practitioner-delivered interventions (Fouladbakhsh & Stommel). A recent study by Wolf et al. (2024) used the CAM healthcare model as the framework of their study.

A central idea of the CAM healthcare model is the push-pull dynamic that influences individuals' health behaviors. Push factors represent the elements that discourage reliance on conventional medical systems, including dissatisfaction with care, high treatment costs, lack of insurance coverage, and lower income levels. Additional push influences may include limited knowledge or insufficient evidence regarding CAM practices. In contrast, pull factors describe the motivations that attract individuals toward complementary and alternative approaches, such as the perception that these methods are

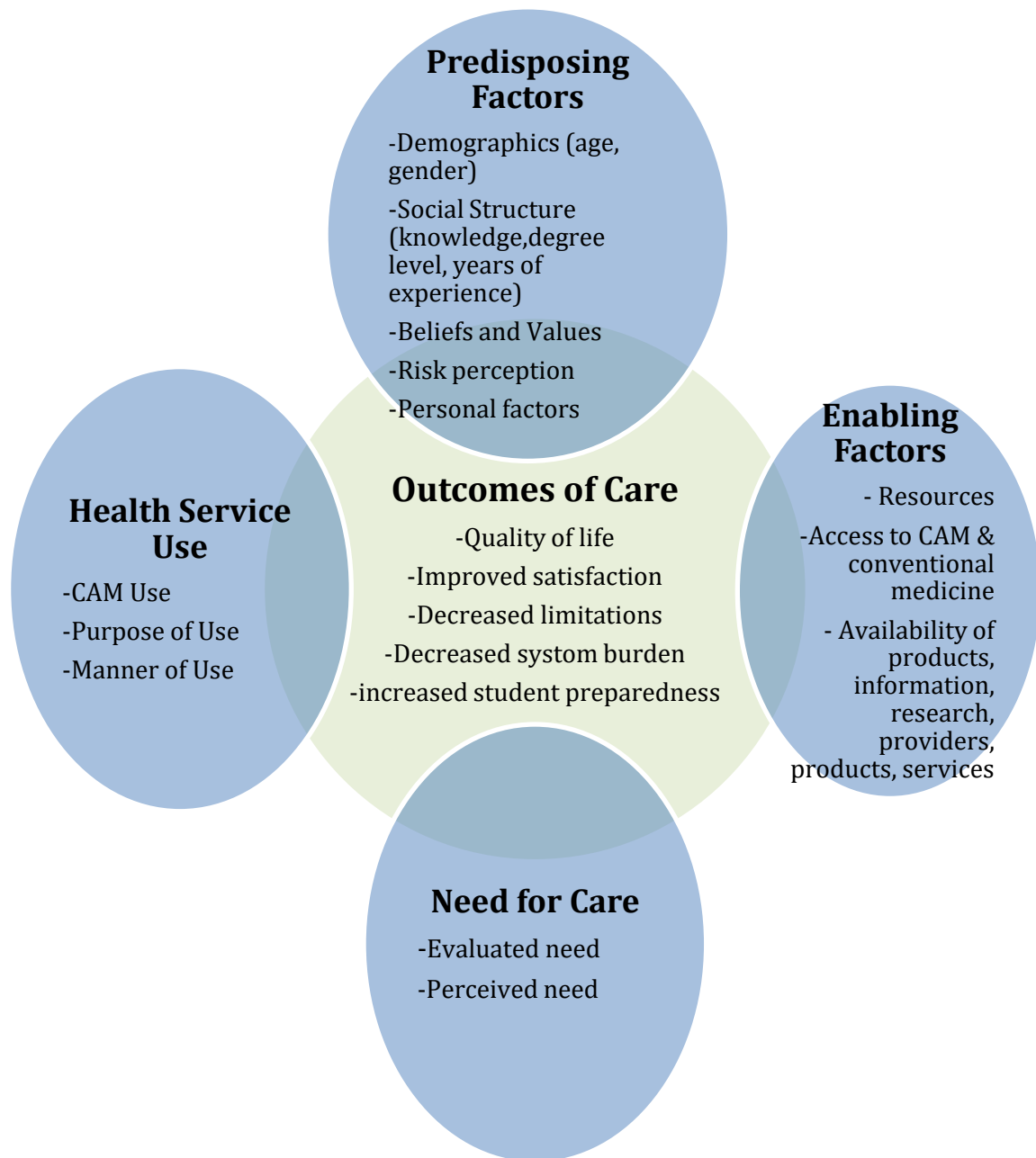
natural, culturally consistent, and aligned with personal values (Fouladbakhsh & Stommel, 2007). This model provides a framework for understanding patterns of CAM use and the factors that shape health behavior decisions.

The CAM healthcare model identifies determinants that can impact CAM use. At the aggregate level, determinants encompass the availability of CAM modalities, the inclusion of CAM curricula within nursing programs, and the widespread access to CAM providers, products, and information via the internet. Individual-level determinants included predisposing factors. Predisposing factors, including community lifestyle, cultural and ethnic practices, values, and attitudes about self-care, can pull one towards the use of CAM or push away from CAM use. Risk perception of an illness or CAM treatment can pull or push them away from CAM use. For example, if nursing faculty have a negative attitude toward CAM or believe there is a high risk of negative outcomes associated with CAM, there is a tendency to move away from CAM. A person's knowledge of CAM, self-efficacy beliefs, autonomy, and risk-taking ability can impact a person's use of CAM.

Additional components of the CAM healthcare model include enabling and need-related factors, the utilization of health services, and care outcomes (Fouladbakhsh & Stommel, 2007). Enabling elements refer to the accessibility of CAM resources, providers, and products that facilitate individuals' use of complementary and alternative therapies. Income and insurance are other factors and variables in the use of the CAM section that is included in the CAM healthcare model. Need factors are things that fall under a person's illness experience, presence of illness, person's response to illness, and

measures taken to prevent illness (Fouladbakhsh, & Stommel). These factors also encompass an individual's diagnosis and perceived health status. Health service utilization extends to both provider-directed and self-directed care, including practices and products obtained through CAM modalities. The outcomes associated with CAM care include improvements in symptoms and overall well-being, reduced functional limitations, increased satisfaction with care, and a stronger sense of personal control over one's health (Fouladbakhsh & Stommel, 2007).

The CAM healthcare model was selected because it is based on Anderson's behavioral model, which has been widely used in healthcare services (Babitsch et al., 2012). Anderson's behavioral model has been used and identified as an effective model for determining decisions for CAM use (Lorenc et al., 2009). The CAM healthcare model expands on Anderson's behavioral model to include a person's knowledge, attitude, and use. This study aimed to determine the association between nursing faculty's knowledge and attitude and their integration of CAM into the nursing curriculum. Using the CAM healthcare model can help determine any associations between factors that pull faculty toward CAM integration into the nursing curriculum and factors that may push nursing faculty away from integrating CAM into the nursing curriculum (Fouladbakhsh, & Stommel, 2007). Nursing faculty are responsible for developing and revising nursing curricula that are contemporary and prepare them for practice (Ard et al., 2019). Using the CAM healthcare model can help better understand how nursing faculty's knowledge, beliefs, attitudes, use of CAM, the perceived need for CAM, and decisions impact nursing faculty integrating CAM into the nursing curriculum (see Figure 1).

**Figure 1***CAM Healthcare Model*

### **Literature Review Related to Key Concepts**

The key concepts in this study included nursing faculty demographics, CAM integration in the nursing curriculum, knowledge and attitude of nursing faculty, and the association or relationship between knowledge, attitude, and integration into the nursing curriculum. My study primarily focused on United States nursing faculty, so I included only studies involving nursing faculty in the United States. Most of the literature reviewed, which was United States-based, was on research topics that were older than 10 years. The literature search was opened to include global results that pertained to the key concepts. Articles from other countries were initially reviewed and demonstrated similar results to the United States-focused articles.

#### **Nurses' Knowledge and Attitude on CAM**

The search using nursing knowledge and attitude on CAM delivered 112 articles from 2000 to the present. Of those articles, only the United States-based articles were selected. The articles covered nurses' attitudes and knowledge of CAM demonstrated that nurses have a positive attitude toward CAM but believe they need more education (Balouchi et al., 2018; Brown et al., 2007; Chang & Chang, 2015; Cutshall, 2010; Hall et al., 2017; Rojas-Cooley & Grant, 2009; Keene, et al., 2020; Trail-Mahan et al., 2013). In one study by Trail-Mahan, et al., nurses believed patients had the right to use CAM, but they did not believe it was a nurse's responsibility to educate or communicate with patients on CAM. The nurses also reported having limited knowledge of basic CAM terminology and CAM practices. Other studies combined nurses with students in other health programs or other health instructors, such as medical or pharmacy instructors. The

consistent theme of the results showed that nurses, or nursing students, had a positive attitude toward CAM but needed more education on CAM (Cornman, et al., 2006; Kim et al., 2006; Walker et al, 2017).

### **Nursing Faculty's Knowledge and Attitude on CAM**

The search for nursing faculty knowledge and attitude on CAM revealed one article that focused on nursing faculty alone (Cornman, 2006). There were a few articles that combined nursing faculty and nursing students in their research (Avino, 2011; Booth-LaForce et al., 2010; Halcon, 2003; Kim et al, 2006). These studies demonstrated that the faculty had a positive attitude toward CAM and believed they needed more education on CAM. These studies are over 13 years old and were limited in sample size. None of the studies listed above addressed the predisposing factors listed in the CAM model, which are a part of the demographic questions included in the CAM instrument adopted for this study.

### **Need for CAM Education**

There have been identified reasons why CAM has not been embraced. Some of the top barriers identified are lack of evidence, lack of credentialed providers, lack of reimbursement, and lack of staff training (Halcon et al., 2003). Despite these barriers, the population is embracing CAM. In the United States, nearly 40% of the population has used some form of CAM (Barnes et al, 2008). The expenditure of CAM is estimated to be about \$34 million out of pocket in 2012 (Nahin et al., 2016). Due to the demand of the community use of CAM nurses to be educated on CAM, nurses need to be prepared to

provide health education and health promotion, provide resources, and identify potential adverse effects (Chang & Chang, 2015; Hall et al., 2018).

The nursing curriculum must be rigorous enough to meet entry-level nurse standards and pass the National Council Licensure Examination (NCLEX). Entry-level nurses must make complex decisions and use clinical judgment to support client safety (National Council of State Board of Nursing, 2023). Nursing is an art and a science that incorporates concepts from the arts and biological, physical, psychological, and social sciences. Nurses implement care that considers a person's culture and spiritual preferences (American Nurse Association, nd; National Council of State Board of Nursing, 2023).

I found a few articles on the need for CAM education, but all concluded that more CAM education is needed (Burke et al., 2004; Chlan & Halcon, 2003; Joswiak, 2016; Richardson, 2003). A systematic review by Zhao et al. (2022) concluded that there needs to be more theoretical and clinical education on CAM in the nursing curriculum. The nursing curriculum needs to prepare student nurses, so they are prepared to care for their clients' needs, including physical, psychological, and cultural needs. The curriculum needs to include CAM education (Sok et al, 2004; Gaydos, 2001). The nursing curriculum needs to include an assessment of CAM use and the evaluation of health outcomes (Reed et al., 2000). It is also important there is an accepting learning environment on CAM to help overcome the negativity of CAM (Gaydos, 2001).

### **CAM Integration**

An exploratory study by Fenton and Morris (2003) found that concepts of CAM are being integrated into the nursing curriculum. A study by Richardson (2003) found 77% of nursing faculty in baccalaureate nursing programs had CAM in their program, but 10% of those 77% said CAM is only in an elective course. The study used a survey with both closed- and open-ended questions. Comments left by nursing faculty included that faculty needed to be trained in CAM and suggested nursing programs, bring in guest speakers who are certified in those areas of CAM. Richardson recommended that nursing faculty examine the nursing curriculum for didactic and experiential learning. It is unclear the extent CAM was taught in the findings of any of the studies used for this review of the literature.

Halcon et al. (2001) explained how they planned and incorporated CAM into the nursing curriculum at their university. They found that students and faculty had positive feedback for integrating CAM into the curriculum. Part of the program included encouraging faculty to attend a week-long training on CAM. CAM-specific course objectives were added to the courses. An entire unit, which included didactic and experiential learning, was added to CAM. Halcon et al. identified future directions of their program to fully integrate CAM into the curriculum, which included adding a CAM course; all courses are to include CAM, will include provider groups (ex. acupuncture, massage), and faculty increase knowledge and skill of CAM.

Booth et al. (2010) identified that nurses rarely teach CAM in their nursing programs. This recognition led to a program funded by a grant to integrate CAM into the

nursing curriculum. The result of the grant-funded project was that 70% of students believed their CAM knowledge had increased, and 50% of students in the grant-funded program had an increased interest in CAM (Booth et al., 2010). The Booth study demonstrated a positive outcome of integrating CAM into the nursing curriculum.

While the studies described in this review are over ten to twenty years old, research indicates nurses want more information on CAM (Hall et al., 2017). No studies reviewed in this review of literature identified the extent CAM was covered. For example, I could not determine if CAM content was just introduced or if concepts of CAM included resources, actions, potential side effects, how CAM was to be used, or how to evaluate the effectiveness of CAM.

### **Communication on CAM**

Therapeutic communication with patients is a core lesson that is taught in nursing school. Nursing students must pass the NCLEX to become a nurse, and a component of that test includes verbal and nonverbal communication, which is integrated throughout (National Council of State Boards of Nursing, 2023). Communication, including communication about CAM, is fundamental to nursing practice. Nurses need to be prepared to discuss CAM with their patients. Rojas-Cooley and Grant (2006) found that patients rarely initiated communication about CAM; therefore, it is the nurse's responsibility to initiate conversations with patients.

A few relevant articles discuss how communication between nurses/providers and patients is lacking (Chang et al., 2019; Choa et al., 2008; Davis et al., 2012; Spencer et al., 2016). Nurses who know about CAM tend to communicate with patients about CAM

(Holroyd et al., 2008; Jong et al., 2015; Spencer et al., 2016; Trail-Mahan et al., 2013).

The lack of communication about CAM with patients can have potentially harmful outcomes (Chang et al, 2019). Nurses need to communicate with their patients about CAM to prevent negative outcomes (Balneaves et al., 2021). Zick et al, (2018) suggested that education on CAM can help improve communication with patients. Nursing schools need to prepare nursing students so they can discuss CAM with their patients.

### **Nursing Faculty Personal Use of CAM**

Nursing faculty are at the forefront of educating nursing student students on CAM. A better understanding of nursing faculty's personal use of CAM may help to understand if there is a relationship between using and incorporating CAM education into the nursing curriculum. Studies have shown that nurses and nursing faculty have a positive attitude toward CAM, but their personal use of CAM is limited (Halcon, 2003; Kreitzer et al., 2002). The studies found on nursing faculty personal use of CAM is dated and it is unclear how many faculty members used CAM versus those considered CAM (Johnson et al., 2011; Kreitzer et al., 2003; Richardson, 2003). It is important to understand nursing faculty's personal use of CAM as it may influence their attitudes, teaching, and integration of CAM in nursing curriculum. This study will provide current information on the nursing faculty's personal use of CAM.

### **Nursing Faculty Demographics**

I collected data on nursing faculty's age, degree level, and years of teaching in an undergraduate nursing program. Age and degree level have been linked to the usage of CAM (Neiburg et al., 2011). No studies were found that have explored how nursing

faculty's teaching experience influences CAM. The previous studies used demographics for descriptive information only and did not indicate to what extent demographic data were used as determining factors in incorporating CAM into nursing curriculum. Little is known about nursing faculty age, degree level, and years of nursing faculty knowledge and attitude of CAM, and integration of CAM into nursing curriculum and if there is a relationship. The intent of this study was to determine the relationship between the demographic factors included in the CAM healthcare model and the attitudes and knowledge about CAM. This has not been explored yet.

### **Summary**

The literature review revealed that the research on the nursing faculty's knowledge and attitude and their integration of CAM into the nursing curriculum in pre-licensure nursing programs is limited and old. Research has shown that nurses and nursing faculty have positive attitudes toward CAM but lack sufficient knowledge and expertise on CAM. The few studies that identified CAM being integrated into the nursing curriculum were nonspecific to the degree of integration. It is unclear if CAM is just briefly included or if it is discussed from a nursing process standpoint. This means the CAM methods are fully described with actions, uses, potential side effects, reliable resources, how or where to refer, and how to evaluate the effectiveness and potential side effects

In Chapter 3, I introduce the purpose of my study, the research design and rationale. I explain the methodology and will include the population, sampling and

sampling procedures, instrumentation and operationalization of constructs. I also present the data analysis plan, threats to validity, and the summary.

## Chapter 3: Research Method

### **Introduction**

The purposes of this quantitative cross-sectional correlational study were to determine if (a) there is a relationship between the nursing faculty's age level, degree level, years of nursing faculty experience, and the knowledge of CAM principles, (b) there is a relationship between nursing faculty's age level, degree level, years of nursing faculty experience, and the attitude of CAM principles, and (c) there is a relationship between knowledge and attitude and the integration of CAM principles into the nursing curriculum. I discuss research design and rationale, methodology, data analysis plan, threats to validity, and summary. The methodology included the population, sampling and sampling procedures, procedure for recruitment, participation, and data collection, and instrumentation and operationalization of constructs.

### **Research Design and Rationale**

I used a quantitative, non-experimental, analytical, correlational, and cross-sectional design for my study. A correlational design explored the relationships between the variables of this study, such as the nursing faculty's level of knowledge, attitude, and the incorporation of CAM in the nursing curriculum (see Bloomfield and Fisher, 2019). The CAM Healthcare Model helps to explain the factors related to CAM use and the association between the factors that push people away from CAM and the factors that pull people toward the use of CAM (Fouladbakhsh & Stommel, 2007). Because nursing faculty are at the forefront of preparing nursing students for practice, nursing faculty could develop and revise curricula that could or could not include CAM. I used a cross-

sectional survey for my study because it allows participants to be selected based on criteria and for data collection at one point in time. A cross-sectional study was appropriate due to time constraints. A cross-sectional survey design surveys participants at one point in time and selects participants based on inclusion and exclusion criteria (Setia, 2016). For this study, inclusion criteria included being a nursing faculty member in an undergraduate degree program. This included faculty that teach in an associate degree nursing program, Bachelor of Science in nursing, or direct entry Master of Science in nursing. The majority of nurses entering the nursing field enter with an associate degree or a bachelor's degree, but there is a small percentage of students who enter with a master's degree (National Center for Health Workforce Analysis, 2024). This design study aimed to determine the relationship between the nursing faculty's demographics, knowledge, and attitude, and their integration of CAM into the curriculum in pre-licensure nursing programs. I explored the nursing faculty's age level, degree level, and years of nursing faculty experience as the outcome variable on the relationship between knowledge and attitude of CAM principles. I also explored the relationship between knowledge and attitude as the predictor variable on integrating CAM principles into the nursing curriculum as the outcome variable. The cross-sectional design is appropriate because the variables will not be manipulated, and an association between the variables will be studied (see Grove et al., 2013; Setia, 2016; Wang & Cheng, 2020). Multiple linear regression analysis was most appropriate because it is used to understand the effect of multiple independent variables on a dependent variable (Laerd Statistics,

2013). I utilized a survey instrument, the Knowledge, Attitudes, and Use CAM Survey, which has been tested by Johnson et al. (2008).

## **Methodology**

### **Population**

Nursing faculty play a critical role in shaping students' learning and confidence through their teaching and mentoring practices (Henderson et al., 2020); therefore, faculty knowledge and presentation of CAM may influence students' exposure to and understanding of CAM within the curriculum. The undergraduate nursing student, whether a diploma, associate degree, or bachelor's degree, is where the student nurse can become an entry-level registered nurse and gain practice experience. The entry-level nurse is considered to have the minimum knowledge, skills, clinical judgment, and critical thinking to provide nursing care (National Council State Board of Nursing, 2023). The population for this study was nursing faculty who teach undergraduate degree nursing programs in the United States.

### **Sampling and Sampling Procedures**

I used convenience sampling. The sample consisted of registered nurses teaching in an undergraduate nursing program in the United States. I posted a flyer on social media to recruit nursing faculty to complete a survey (see Appendix B). The inclusion criteria were nursing faculty teaching in undergraduate nursing programs in the United States. Nursing faculty teaching certified nursing assistants with master's degrees or doctoral degrees will be excluded. Using G\* Power, with an alpha of 0.05 and a power level of 0.80, the effect size ( $r$ ) will be 0.3, medium, and using a two-tailed correlation analysis or

linear regression analysis, with 3 predictors (age level, degree level, and years of nursing faculty experience) I needed a sample size of 77 (see Faul et al., 2007). It was important to ensure the sample size was large enough to answer the question but not too large to prolong the study (See Pourhoseingholi,2013).

### **Procedure for Recruitment, Participation, and Data Collection**

Walden University's procedure policy for low-risk anonymous surveys was used. Participants' demographics, including sex, age, degree earned, race, primary employment setting, and profession, were collected. I recruited potential study participants by using a social media platform, Facebook. I also reached out to the Administrators of Nursing Education of Wisconsin (ANEW). ANEW is a membership of nursing administrators of all Wisconsin-based nursing programs. The list of the ANEW administrator emails is publicly listed on the web. The administrator was emailed to ask if the volunteer participant flyer can be shared with all the nursing school administrators. The email contained the recruitment flyer and standard email (Appendix C). The email instructed volunteers to click on a link to access the screening question of *do you teach in an associate degree of nursing, Bachelor of Science in nursing, or a direct entry Master of Science in nursing program*. If the individual answered "no" to the screening question, the individual was thanked for their time, and the screen closed. Participants' names, contact information, and names were not collected. I maintained control of the data collected and used password protection. The invitation template from Walden University for email, social media, and flyers was used. The flyer contained the Survey Monkey link for participants to access the consent and the survey.

If the individual answered yes to the screening question, then the next screen was the consent form. If the individual answered “no” to any of the screening questions, the individual was thanked for their time, and the screen closed. Each participant provided informed consent form from Walden University was provided to participants before they participated in the survey. The informed consent ensured participants’ confidentiality and provided the sponsoring organization’s information and the researcher’s contact information. The informed consent explained the purpose of the study and outlined the risks and benefits of participating. Participants were informed that they could withdraw at any time without penalty.

If the individual gave consent (by clicking continue), the following screen was the demographic information. After the demographic information was completed, the participant began the Knowledge, Attitudes, and Use of CAM Scale, a 42-item instrument scored using a 4-point Likert scale for questions 1-17 from 0 to 4 points (0=definitely false, 1=probably false, 2=probably true, 3= definitely true). Questions 18-38 were scored using a 5-point Likert scale (0=strongly disagree, 1=disagree, 3=neutral, 4=agree, 5=strongly agree). Question 39 was a dichotomous yes/no question. Question 39 was used for descriptive analysis of participants’ use of various types of CAM and will not be used to answer the research questions. Question 40 had demographics. Question 41 was scored using a 5-point Likert scale (0=never integrated CAM, 1=almost never integrated CAM, 2=sometimes integrated CAM, 3=almost every class CAM was integrated, 4=frequently integrated CAM. Question 42 was a dichotomous yes/no question, used for descriptive analysis. Permission to use the Knowledge, Attitudes, and

Use of CAM scale is included in Appendix A. The maximum estimated time to complete all items was 60 minutes.

I collected data anonymously through an online platform, Survey Monkey ®. I used the feature that de-links the participants' information from the data. Data were stored electronically on a secure external device and secure cloud storage to which only I have access. All data storage is password-protected. All raw data collected remained in my possession and will be maintained for 5 years as required by the Walden IRB. No monetary or similar form of compensation was offered.

The participants were informed that the results of their participation would be posted in ProQuest. I provided each participant with my name and email address so they could contact me with questions. Participants were also informed that they can contact the Walden University Participant Advocate to discuss their rights or any negative parts of the study.

### **Instrumentation and Operationalization of Constructs**

This study focused on nursing faculty teaching in an undergraduate nursing program. The survey questionnaire, knowledge, attitude, and use of CAM survey focused on knowledge, attitudes, and use of CAM (Johnson et al., 2008 & Johnson et al., 2010). The CAM survey was scored on a four-point Likert-type scale ranging from definitely true (a) to definitely false (d) for knowledge and a 5-point Likert-type scale ranging from strongly agree (a) to strongly disagree (e) attitudes. This study aimed to determine the association between nursing faculty's knowledge and attitude and their integration of CAM into the nursing curriculum in pre-licensure nursing programs. The CAM survey

instrument was developed by Johnson et al. (2008) and Johnson et al. (2010), who studied health educators' knowledge and attitudes toward CAM. The CAM instrument had been reviewed by five CAM experts in research and practice for the validity of the instrument. Johnson et al. then had 35 health educators pilot the survey. The health educator professionals provided feedback from the pilot, which led to further revisions (Johnson et al., 2010). The CAM knowledge and attitude scale had an alpha value of .71. The survey from Johnson et al. was also used by Bradshaw (2016), who studied occupational therapists' knowledge, attitudes, and personal use of CAM among occupational therapists. No other studies have examined the degree of integration of CAM into nursing courses along with studying the relationship between attitude, knowledge, and demographics (Kreitzer et al., 2002; Richardson, 2003). This study aimed to add to the current literature and make it stronger.

Permission was granted by email from Ping Johnson to use the survey (see Appendix A). The final researcher developed a question added to the survey, which asked the participant for the degree to which nursing faculty have integrated CAM into the classroom. This question was the dependent variable for question 3, and it was a 5-point scale from never integrated CAM to frequently integrated CAM. A part of the questionnaire included a descriptive question that was a yes or no question on which types of CAM they integrate into the classroom.

### **Operationalization**

The Knowledge, Attitudes, and Use of CAM Survey measured knowledge, attitude, and personal use of CAM using a 4-point and 5-point Likert scale (Johnson et

al.,2008; Johnson et al., 2010). The author gave me permission to use the tool for my research study (See Appendix A).

### ***Nursing Faculty Knowledge***

The nursing faculty's knowledge of CAM is the extent of their understanding of CAM practices, theories, and evidence. The Knowledge, Attitudes, and Use of CAM Survey used 17 items assessed on a 4-point Likert scale (definitely true to definitely false) to test knowledge of CAM. There are six basic CAM concept questions and eleven questions on common CAM therapies. The first 17 questions (1 -17) address nursing faculty knowledge of CAM, and they served as the foundation for testing the reliability and validity of the scale. Scoring will be discussed in the data analysis plan.

### ***Nursing Faculty Attitude***

Nursing faculty attitudes toward CAM include perceptions, beliefs, and openness. Nursing instructors with positive attitudes positively impact students' engagement (Lawrence et al., 2024). The instrument used 19 questions to measure CAM attitude, with responses rated on a 5-point Likert scale. Questions 18 through 38 addressed nursing faculty attitudes toward CAM and served as the foundation for testing the scale's reliability and validity. Scoring will be discussed in the Data Analysis plan. The scale ranges from strongly agree (a) to strongly disagree (e). The scale represents a range of attitudes from positive to negative on CAM.

### ***Nursing Faculty Personal Use of CAM***

The CAM instrument was constructed on a yes-and-no question to measure personal use of CAM over the last 12 months. The CAM instrument identified 31

common CAM therapies and included a fill in the blank for other CAM used by nursing faculty over the last 12 months. This was used for descriptive analysis and will serve as the foundation for testing the scale's reliability and validity. Scoring will be discussed in the Data Analysis plan.

### **Demographics**

The instrument used one question, question 40, for demographics. The demographics include sex as male/female; age as a fill in the blank for years, highest degree earned (Bachelor's, Master's, Doctoral), race/ethnicity (Asian/Pacific Islander, Black, Hispanic, Multiracial, Native American, White, and other (fill in blank)), primary setting of employment (college/university, community, health agency, school, worksite, and other (fill in the blank)), and primary area of profession (dance, exercise science, health education, recreation, physical education, and fill in the blank)). For my study, the highest degree earned was categorized as Bachelor's, Master's, Doctor of Nursing Practice (DNP), and Doctor of Philosophy (PhD). Age was categorized into the following age brackets: 20 to 35, 36 to 50, 51 to 65, and 66 and above. There was a demographic question about years of nurse educator experience, categorized as less than 5 years, 6-15 years, and 16+ years. This served as the foundation for testing the reliability and validity of the scale. Scoring will be discussed in the Data Analysis plan.

### ***Integration of CAM in Nursing Curriculum***

There was a 41<sup>st</sup> question added to address to what degree did nursing faculty integrate (incorporate) CAM into the courses they taught in the nursing program over the

last 12 months. This question used a 5-point Likert scale from never integrated CAM (a) to frequently integrated CAM (e). This question served as the foundation for testing the reliability and validity of the scale.

The survey also included yes and no questions on the same types of CAM used but will be used to address which types of CAM were integrated into nursing courses taught. This data was used for descriptive analysis. Some of the specific CAM types include biofeedback, hypnosis, yoga, Tai Chi, guided Imagery, prayer, vitamins, minerals, herbs, aromatherapy, massage, chiropractic therapy, reflexology, Reiki, and Ayurvedic medicine.

### **Data Analysis Plan**

I used IBM SPSS version 29 from Survey Monkey to analyze the data. Self-reported surveys are a common method of collecting data because they are inexpensive and relatively easy (Desimone et al., 2015). Data cleaning and screening will be done to ensure the accuracy and reliability of the results. Outliers were reviewed for data entry errors or legitimate values. Data errors were corrected. I analyzed data using multiple linear regression analysis and tested the assumptions prior to the analysis of data.

The research questions and hypotheses are as follows:

**RQ1:** What is the relationship between age level, degree level, years of nursing faculty experience, and the knowledge of CAM principles?

H<sub>01</sub>: There is no relationship between age level, degree level, years of nursing faculty experience, and knowledge on CAM principles.

H<sub>a1</sub>: There is a relationship between age level, degree level, years of nursing faculty experience, and the knowledge of CAM principles.

For RQ1 I analyzed descriptive statistics of each variable. The independent variables for RQ1 are age measured as mean age; degree level measured in 4-levels as BSN, MSN, DNP and PhD; and years of nursing experience in 3 levels as less than five years, 6 to 15, and 16 and over. The dependent variable was nursing faculty attitude toward CAM.

**RQ2:** What is the relationship between age level, degree level, years of nursing faculty experience, and the attitude of CAM principles?

H<sub>02</sub>: There is no relationship between age level, degree level, years of nursing faculty experience, and the attitude on CAM principles.

H<sub>a2</sub>: There is a relationship between age level, degree level, years of nursing faculty experience, and the attitude of CAM principles.

For RQ2 I analyzed descriptive statistics of each variable. The independent variables for RQ1 are age measured as mean age; degree level measured in 4-levels as BSN, MSN, DNP and PhD; and years of nursing experience in 3 levels as less than five years, 6 to 15, and 16 and over. The dependent variable is nursing faculty knowledge toward CAM.

**RQ3:** What is the relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum?)

H<sub>03</sub>: There is no relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum.

H<sub>a3</sub>: There is a relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum.

Before running the regression analyses for **(RQ1)**, **(RQ2)**, and **(RQ3)**, the assumptions for multiple regression and logistic regression were tested to make sure that the data met the statistical requirements for valid results (Field, 2015; Laerd Statistics, 2015). For **RQ1**, the dependent variable was knowledge of Complementary and Alternative Medicine (CAM) principles. For **RQ2**, the dependent variable was attitude toward CAM principles.

The independent variables for both **RQ1** and **RQ2** were age level, degree level, and years of nursing faculty experience. For **RQ3**, binary logistic regression was used, with integration of CAM principles into the nursing curriculum as the dependent variable and knowledge and attitude toward CAM principles as the independent variables.

#### **Assumptions for Multiple Regression RQ1 and RQ2**

The dependent variables in **RQ1** and **RQ2** were measured at the continuous level, which meets the first assumption for multiple regression (see Laerd Statistics, 2015). For **RQ1**, the dependent variable was knowledge of CAM, which was measured as a mean score from a Likert scale. For **RQ2**, the dependent variable was the attitude of CAM, measured by a mean score from a Likert scale. For both **RQ1** and **RQ2**, the independent variables were age level, degree level, and years of nursing faculty experience. The independent variables were dummy coded and were treated as categorical variables. **RQ1** and **RQ2** included three independent variables measured at the nominal level, meeting the second assumption of multiple regression (see Laerd Statistics, 2015). The

assumption of independence of observations means that the data collected from each participant is not related to or influenced by other participants' responses (Field, 2015). For **RQ1** and **RQ2**, this assumption was expected to be met since each participant completed the survey independently.

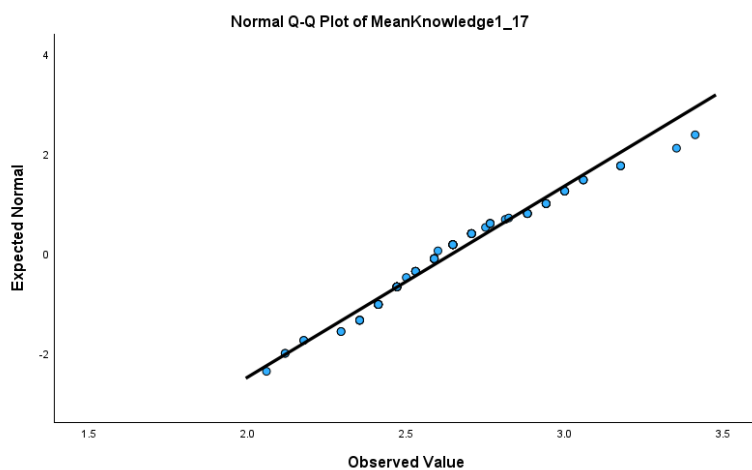
For the assumption of linearity to be met there should be a linear relationship between the dependent and independent variables (Field, 2015). For RQ1 and RQ2, the scatterplots and partial regression plots will be examined to determine if a linear relationship exists. If the scatterplots show a roughly straight-line pattern, the assumption of linearity is assumed to be met (see Field, 2015; Laerd Statistics, 2015). The assumption of homoscedasticity of residuals was tested by visually checking the scatterplots of standardized residuals. It was expected that there would be no clear pattern or funnel shape which would indicate the assumption of homoscedasticity was met (see Field, 2015; Laerd Statistics, 2015). **RQ1** and **RQ2** were checked for the assumption of multicollinearity by looking at the variance inflation factor (VIF) and tolerance values in SPSS. Tolerance values greater than .10 and VIF values below 10 indicate that multicollinearity is not a concern (Field, 2015; Laerd Statistics, 2015).

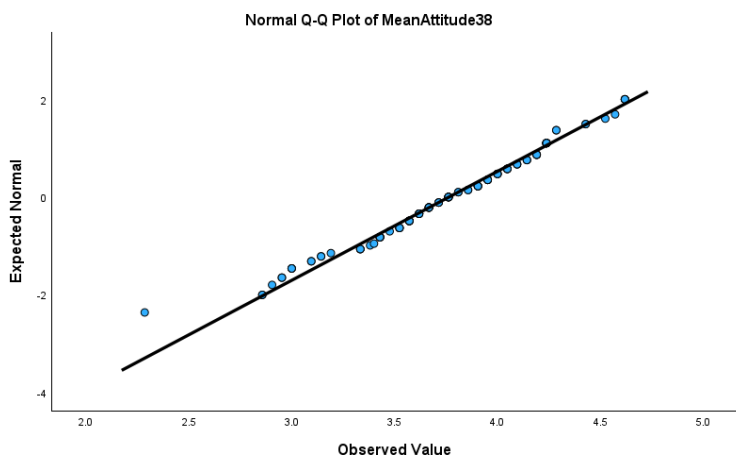
Based on the expected independence among the predictors (age level, degree level, and years of nursing faculty experience), it was anticipated that this assumption would be met for both **RQ1** and **RQ2**. RQ1 and RQ2 were checked for outliers and influential cases using standardized residuals, leverage values, and Cook's distance in SPSS. Standardized residuals greater than  $\pm 3.0$ , leverage values substantially higher than the average leverage value, and Cook's distance values greater than 1.0 were examined

for potential influence (Field, 2015; Laerd Statistics, 2015). For the assumption of normality of residuals were assessed using histograms, normal probability-probability (P-P) plots, and normal Q-Q plot of the studentized residuals to determine if the residuals followed an approximately normal distribution (see Figure 2 and Figure 3). The assumption was the residuals of the regression model would be approximately normally distributed (Field, 2015; Laerd Statistics, 2015).

**Figure 2**

*RQ1 Q-Q Plot Knowledge*



**Figure 3***RQ2 Q-Q Plot Attitude***Assumptions for Binary Logistic Regression (RQ3)**

For RQ3, the dependent variable was integration of Complementary and Alternative Medicine (CAM) principles into the nursing curriculum. The outcome variable (integration of CAM) was recoded as a dichotomy variable (0 = low [never/rarely], 1 = moderate/high [sometimes/often/always]). This variable was dichotomous because responses were collapsed into two categories. This satisfied the first assumption for binary logistic regression, which requires that the dependent variable be measured at the dichotomous level (Field, 2015; Laerd Statistics, 2015).

For RQ3, the independent variables were knowledge of CAM principles and attitude toward CAM principles. Both variables were measured as continuous variables using composite mean scores from Likert-type scale responses. Because binary logistic regression requires that the independent variables be measured at the continuous or nominal level, this assumption was met (Field, 2015; Laerd Statistics, 2015). The

assumption of independence of observations was met because there was no relationship between the observations in each category of the dependent variable or in the independent variables. Each participant completed the survey independently, and no participant's response influenced another's. In addition, the categories of the dichotomous dependent variable, integration of CAM principles into the nursing curriculum, were mutually exclusive and exhaustive, meaning each participant was classified into only one of two possible groups; those who integrated CAM principles or those who did not. This ensured that participants could not belong to both groups or be omitted from classification (see Laerd Statistics, 2015). The assumption of adequate sample size was addressed. Binary logistic regression requires a sufficient number of cases for each independent variable to ensure stable and reliable estimates. A minimum of 15 cases per independent variable is generally recommended, although some sources suggest as many as 50 cases per variable (Field, 2015; Laerd Statistics, 2015). The sample size in this study exceeded the minimum requirement for two independent variables: knowledge of CAM principles and attitude toward CAM principles. Therefore, this assumption was expected to be considered. The assumption of linearity was checked. Logistic regression assumes that there is a straight-line relationship between each continuous independent variable and the logit of the dependent variable (see Laerd Statistics, 2015). The knowledge and attitude toward CAM principles variables were tested for this assumption using the Box–Tidwell test (see Laerd Statistics, 2015). The assumption of linearity with the logit was expected to be met.

The assumption of multicollinearity was addressed for **RQ3**. Logistic regression assumes that the independent variables are not too closely related (see Laerd Statistics, 2015). In this study for **RQ3**, the independent variables were knowledge of CAM principles and attitude toward CAM principles. These variables were reviewed for multicollinearity by examining tolerance and Variance Inflation Factor (VIF) values (Field, 2015; Laerd Statistics, 2015). The assumption of no multicollinearity was met. The assumption that there were no significant outliers, high leverage points, or highly influential cases was addressed. Outliers or highly influential data points can distort the results of logistic regression and reduce the accuracy of the model (see Laerd Statistics, 2015). To check this assumption standardized residuals were reviewed in SPSS (Field, 2015; Laerd Statistics, 2015). The data were examined to ensure that no single case had an undue influence on the model. This assumption was considered met.

### **Threats to Validity**

#### **External Threats to Validity**

External validity refers to the degree to which the findings of a study can be generalized to populations, settings, and times beyond the scope of the sample being studied (Shadish, et al., 2002). In this study, several potential threats to external validity were considered, including testing reactivity, interaction effects of selection and experimental variables, specificity of variables, and reactive effects of experimental arrangements. A threat to the study is if faculty members alter their responses about knowledge or attitude toward CAM because of perceived socially desirable responses or if they feel they are being watched or evaluated. To minimize the potential for testing

reactivity, participants were limited to a single survey submission, preventing repeated exposure to the instrument. To reduce selection interaction effects and increase variability among participants, faculty were recruited nationally rather than from a single program or geographic region.

To address the specificity of variables, a survey tool was selected that has been pilot tested and examined for content validity. To address reactive effects of experimental arrangements, nursing faculty from different schools of nursing will be included such as technical school, community college, 4-year university and private and public schools (see Shadish et al., 2002).

### **Internal Threats to Validity**

Threats to internal validity may occur when factors other than the variables being studied influence the results, leading to incorrect conclusions (Gray et al., 2017). To prevent this error from occurring, I had my committee check my work. I also consulted with a Walden statistician/methodologist multiple times to review this area and double check my work. Threats to internal validity include history, maturation, testing, instrumentation, statistical regression, experimental mortality, and selection maturation interaction can impact a study (see Gray et al., 2017; Shadish et al., 2002).

To address history of effects, data collection occurred over a short period of time (Creswell, 2009). To reduce the impact of the historical effect, data collection was completed in a short time frame. There were no significant external events during the study. In this study, the testing instrument effect refers to changes in the way data is collected that could affect the results. This can happen if the tools or methods used to

measure knowledge, attitudes, or behaviors change during the study or if they are not applied consistently (Creswell, 2009). To prevent this, I used a standardized, validated survey for all participants and ensured that the same procedures were followed for each person. There was no other person involved in the data collection process. Different people are involved in data collection; they will be trained to follow the same guidelines to ensure consistency.

Statistical regression refers to the tendency for extreme scores to move closer to the average over time (Creswell, 2009). Statistical regression can affect results, especially if participants start with very high or very low levels of knowledge or attitudes about CAM. To reduce the impact of statistical regression, I ensured that the participants represented a range of knowledge and attitudes and avoided focusing only on those with extreme scores.

This study did not have a pre- or posttest. The survey tool used for knowledge, attitudes, and integration of CAM principles had been validated and was consistently applied to all participants. The survey tool had seventeen questions to assess knowledge and uses questions eighteen to thirty-eight to address attitudes.

Maturation refers to the natural changes that occur in participants over time, such as gaining experience or knowledge, which could influence the results (Creswell, 2009). These changes may occur regardless of the specific factors being studied. For example, nursing faculty might naturally improve their knowledge and attitudes about CAM simply because they are gaining more experience over time, not necessarily because of age, degree level, or years of experience. This makes it challenging to distinguish

whether differences in knowledge or attitudes are due to the variables being studied or simply a result of natural progression over time. To address this, the study focused on collecting data over a relatively short time period to reduce the chance that significant changes due to maturation occur during the study.

Experimental mortality refers to participants dropping out before the study is completed. This can be a problem because if certain types of participants drop out more than others, it can affect the results (Gray et al., 2017).

### **Ethical Procedures**

It is important, when conducting research, to protect participants and implement strategies that do so. Contemporary federal guidance continues to uphold the three foundational ethical principles of human-subjects research: respect for persons, beneficence, and justice (Office for Human Research Protections, 2023).

I implemented several strategies to help protect and respect the participants. For this study, access to participants and/or data was obtained through formal agreements with Walden University. Approval of recruiting participants and collecting data for this study was granted by the Walden University Institutional Review Board (IRB Approval No. 01-08-25-0179359). All participants' confidential information was protected using strategies outlined by the National Institute of Health (nd). Participants were provided with information on the details of the study. Participation was voluntary, and consent was obtained from the participants. The consent included the purpose of the study, the procedures involved, any risks or benefits, assurance of confidentiality, and that the study was voluntary. Participants also had the opportunity to ask questions (see National

Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, (1979).

As I conducted the study, my aim was to do no harm. The risks and benefits of participation were carefully evaluated, and every effort was made to protect participants from harm. The potential risks to participants in this study were expected to be minimal. Participants were asked to reflect on their attitudes or experiences related to CAM. This could have potentially led to discomfort if participants had negative views or experiences with CAM. To address this, participants were informed in advance about the types of questions they would be asked and given the option to skip any questions that made them uncomfortable. Additionally, they were reminded of their right to withdraw from the study at any time without penalty.

Participation in this study may have required time and effort, particularly for busy nursing faculty. To minimize this burden, the survey was designed to be as efficient as possible, with clear instructions and was brief. Participants were also informed about the approximate time commitment required before they consented (see National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

Protecting participants was a priority. Protecting participants' privacy is essential. All personal information was de-identified to prevent any risk of breaches in confidentiality. This includes ensuring that any data related to participants' names, institutions, or personal identifiers was securely stored and handled only by authorized researchers.

All electronic data are password-protected, and physical records will be stored in a locked location to prevent unauthorized access (see National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Participants in this study were nursing faculty, who are not typically considered a vulnerable population; additional steps will be taken to ensure that no group is unfairly burdened. Care was taken to avoid putting undue pressure on participants to join the study. I will keep the data for 5 years, according to Walden IRB policy, and destroy the data after 5 years.

### **Summary**

In this chapter, I discussed the methodology components of my study. The population consisted of nursing faculty teaching undergraduate nursing students. The sampling and sampling procedures were discussed. The procedure for recruitment, participation, and data collection was reviewed. The instrument and operation of constructs were discussed, which included permission to use the instrument tool. The data analysis plan was discussed, including that IBM SPSS will be the software used for data analysis. The research questions were identified. Internal and external threats were identified, along with a plan to minimize them. Finally, the ethical procedures were identified including the approval of IRB and the protection of the participants.

In chapter 4, I will introduce the purpose, research questions, and hypotheses. I will describe the data collection process, the data results, and the summary.

## Chapter 4: Results

### Introduction

The purposes of this study were to examine the (a) relationship between nursing faculty's age level, degree level, years of nursing faculty experience and the knowledge of CAM principles, (b) the relationship between nursing faculty's age level, degree level, years of nursing faculty experience and the attitude of CAM principles, and (c) the relationship between knowledge and attitude of CAM and the integration of CAM principles into the nursing curriculum. The independent variables for the first research question were age level, degree level, and years of nursing experience. The dependent variable was knowledge of CAM. The independent variables for the second research question were age level, degree level, and years of nursing experience. The dependent variable for the second question was the attitude toward CAM principles. The independent variables for the third question were knowledge and attitude. The dependent variable for the third question was the integration of CAM principles into the nursing curriculum.

This study was guided by the following research questions and the associated null and alternative hypotheses:

RQ1: What is the relationship between age level, degree level, years of nursing faculty experience, and knowledge of CAM principles?

$H_{01}$ : There is no relationship between age, degree level, years of nursing faculty experience, and knowledge of CAM principles.

*H*<sub>a1</sub>: There is a relationship between age level, degree level, years of nursing faculty experience, and knowledge of CAM principles.

With the assumptions for multiple regression met, I ran the multiple regression to answer RQ1: What is the relationship between age level, degree level, years of nursing faculty experience, and the knowledge of CAM principles? Multiple regression requires a dependent variable measured at the continuous level (see Fields, 2013). In this study, the dependent variable was knowledge of CAM principles, calculated as a total score from the faculty survey. The knowledge score was treated as a continuous measure, with higher values indicating greater knowledge. This satisfied the assumption of a continuous dependent variable.

RQ2. What is the relationship between age level, degree level, years of nursing faculty experience, and the attitude of CAM principles?

*H*<sub>02</sub>: There is no relationship between age level, degree level, years of nursing faculty experience, and the attitude on CAM principles.

*H*<sub>a2</sub>: There is a relationship between age level, degree level, years of nursing faculty experience, and the attitude of CAM principles.

RQ3: What is the relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum?

*H*<sub>03</sub>: There is no relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum.

*H*<sub>a3</sub>: There is a relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum.

In Chapter 4, I describe the results of the data analysis, including the time frame, recruitment procedures, and response rate. I also present baseline descriptive and demographic characteristics of the sample, along with an evaluation of the extent to which the sample represents the population of interest. The results of univariate analysis used to justify the inclusion of covariates are also reported. The results are organized by each research question, including statistical values, *p*-values, confidence intervals, and effect size. Tables and figures are included throughout this chapter to visually support the findings. I conclude the chapter with a summary of the findings in relation to the three research questions.

## **Data Collection**

### **Process of Collection**

Approval from Walden University Institutional Review Board (IRB) was obtained to conduct this study prior to participant recruitment. The data collection for this study began on March 22<sup>nd</sup>, 2025, and continued until May 30<sup>th</sup>, 2025. This was a period of 10 weeks for data collection. Recruitment was done using a social media site, Facebook, that specifically targets nursing educators. The social media invitation message had a direct link to the survey.

The social media site has over nineteen thousand members. Of these, 111 completed the Knowledge, Attitudes, and Use of CAM survey. During the 10 weeks, the invitation for participation was reposted several times to enhance participation. All survey responses were anonymous, and data were securely downloaded from SurveyMonkey and stored in a password-protected file for analysis using SPSS software.

There were no significant changes in data collection procedures compared to the plan outlined in Chapter 3.

As described in Chapter 3, I needed 77 participants based on an analysis using G\*Power with an alpha of 0.05 and a power level of 0.08, the effect size ( $r$ ) was at 0.3, medium, and 3 predictors (age level, degree level, and years of nursing faculty experience) (see Faul et al., 2007). The final sample exceeded this requirement with 111 nursing faculty completing the survey ( $n=111$ ). Of the 111 participants, all but one participant responded to the age question ( $n=110$ ). Of the 111 participants, 109 ( $n=109$ ) responded to gender. The highest degree earned had all 111 participants respond ( $n=111$ ). One participant did not respond to race/ethnicity, reducing the sample by one ( $n=110$ ). The primary setting of employment had all 111 participants respond. All participants responded to the degree of CAM integration ( $n=111$ ), knowledge of CAM ( $n=111$ ), and attitudes of CAM ( $n=111$ ). I entered data into IBM SPSS Statistics for Windows (Version 30.0.0, 2024). Each participant had a randomized twelve-digit number (American Psychological Association, 2017).

### **Descriptive and Demographics**

A total of  $N = 111$  nursing faculty participated in the study. Table 1 presents the baseline descriptive and demographic characteristics of the sample. Fourteen participants (12.5%) were 20–35 years old, 47 (42.0%) were 36–50 years old, 46 (41.1%) were 51–65 years old, and 3 (2.7%) were 65 years or older. Of the 109 participants who reported gender, 108 (96.4%) identified as female and 1 (0.9%) as male. Two participants did not report gender. Of the 110 participants who reported race/ethnicity, 97 (86.6%) identified

as White, 4 (3.6%) as Hispanic, 4 (3.6%) as Multiracial, 3 (2.7%) as Black, and 2 (1.8%) as Asian/Pacific Islander. One participant did not report race/ethnicity. Most participants held a master's degree ( $n = 71$ , 63.4%), followed by a PhD ( $n = 21$ , 18.8%), DNP ( $n = 18$ , 16.1%), and a bachelor's degree ( $n = 1$ , 0.9%). Employment included colleges/universities ( $n = 62$ , 55.4%) and community/technical colleges ( $n = 49$ , 43.8%). Teaching experience ranged from less than 5 years ( $n = 42$ , 37.5%) to 6–15 years ( $n = 51$ , 45.5%) and 16 or more years ( $n = 18$ , 16.1%).

Table 2 presents the descriptive statistics for the mean knowledge and attitude scores toward complementary and alternative medicine (CAM). Knowledge items (Questions 1–17) used a four-point response scale: 1=Definitely True, 2=Probably True, 3=Probably False, and 4=Definitely False, with no neutral option provided to encourage a directional response. Attitude items (Questions 18–38) used a five-point Likert-type scale: 1=Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, and 5=Strongly Disagree. For the 111 nursing faculty participants, mean knowledge scores ranged from 2.06 to 3.41 ( $M = 2.65$ ,  $SD = 0.26$ ). Mean attitude scores ranged from 2.29 to 4.62 ( $M = 3.76$ ,  $SD = 0.45$ ). The relatively narrow standard deviation for knowledge suggests limited variability among faculty knowledge levels, whereas attitudes showed slightly greater variability across participants.

**Table 1***Frequency and Percentage of the Demographics*

	N	%
Age		
20-35 yr	14	12.5
36-50 yr	47	42
51-65 yr	46	41.1
65 plus yr	3	2.7
Gender		
Female	108	96.4
Male	1	.9
Race/Ethnicity		
Asian/Pacific	2	1.8
Black	3	2.7
Hispanic	4	3.6
Multiracial	4	3.6
White	97	86.6
Highest Degree		
Bachelor's	1	0.9
Master's	71	63.4
DNP	18	16.1
PhD	21	18.8
Employment		
College/University	62	55.4
Community/Technical	49	43.8
Years Teaching		
Less than 5 yrs	42	37.5
6-15 yrs	51	45.5
16 plus yrs	18	16.1
Integration of CAM		
Never integrated	16	14.3
Almost never	19	17.0
Sometimes integrated	63	56.3
Almost every class	7	6.3
Frequently integrated	6	5.4

**Table 2***Descriptive Statistics for Knowledge and Attitude Scores Toward CAM*

	N	Minimum	Maximum	Mean	Std. Deviation
Mean Knowledge	111	2.06	3.41	2.6488	.26137
Mean Attitude	111	2.29	4.62	3.7638	.44688

**Representativeness of Sample and External Validity**

To address external validity threats, I decided to use a social media site, specifically a Facebook page (Teachers Transforming Nursing Education) with over 19,000 members. This site was an attempt to obtain a geographically diverse sample (see Polit & Beck, 2018). The participants were allowed to attempt the survey only once. This was designed to help reduce situational bias and strengthen the results.

To ensure population validity, the survey included a qualifying question at the start, requiring participants to confirm they were nursing faculty teaching in an undergraduate nursing program. Only those participants who met this criterion were able to proceed with the survey. This screening process ensured that responses reflected the intended population, thereby improving the representativeness of the sample (see Polit & Beck, 2018). Restricting participation to eligible faculty, the study reduced the likelihood of including participants from unrelated disciplines, which could weaken the findings.

**Basic Univariate Analyses**

I conducted a univariate analysis on RQ1: What is the relationship between age level, degree level, years of nursing faculty experience, and knowledge of CAM principles? I ran a multiple regression analysis with knowledge scores as the dependent variable and each independent variable separately as the factor.

The dependent variable for RQ1 was knowledge of CAM principles, operationalized as the mean knowledge score across the study items, questions 1 through 17. Because this variable is a numerical mean on a fixed scale, it was treated as continuous. This satisfies the requirement that multiple linear regression be conducted with a continuous outcome (see Laerd Statistics, 2013). All predictors were measured at the nominal level and were entered using indicator (dummy) coding, which is appropriate for multiple linear regression (see Laerd Statistics, 2013). Age group (20–35, 36–50, 51+) was represented by two indicators with 20–35 as the reference: Age\_36\_50 (1 = 36–50, 0 = otherwise) and Age\_51plus (1 = 51+, 0 = otherwise). Degree level (Your highest degree you have earned) collapsed to a dichotomous variable coded as Degree\_DNPPhD (1 = DNP/PhD, 0 = BSN/MSN). Years of undergraduate teaching were collapsed to a dichotomous variable coded as Years\_6plus (1 = 6–15 or 16+, 0 = <5). Coding was verified via crosstabulations, confirming the intended mappings. The study design ensured independence because each faculty member contributed a single, cross-sectional response.

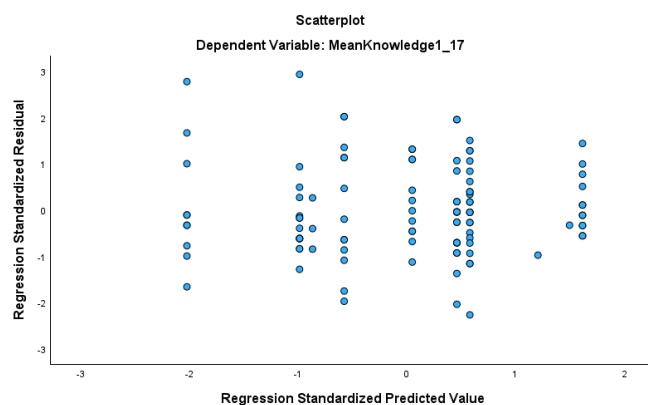
As a statistical check, the Durbin–Watson statistic from the multiple regression was 2.003, which is approximately 2 and within commonly accepted bounds (Goss-Sampson, 2020), indicating no first-order autocorrelation of residuals. Thus, the assumption of independent errors was satisfied. I assessed linearity by plotting studentized residuals against unstandardized predicted values (SRE\_1 vs. PRE\_1). Points were randomly dispersed around the horizontal axis with no evident curvature, indicating an approximately linear relationship between the predictors and the outcome collectively

(see Figure 4). The same plot showed no funneling, indicating homoscedasticity.

Multicollinearity was evaluated by inspecting correlations among predictors and the collinearity diagnostics in the coefficients table. Tolerance values ranged from .319 to .764 and VIFs from 1.309 to 3.138, all well within recommended limits (Tolerance > .10; VIF < 10) (see Laerd Statistics, 2013). These suggest that multicollinearity was not a concern.

#### Figure 4

*Residual scatterplot for Knowledge Regression (RQ1)*

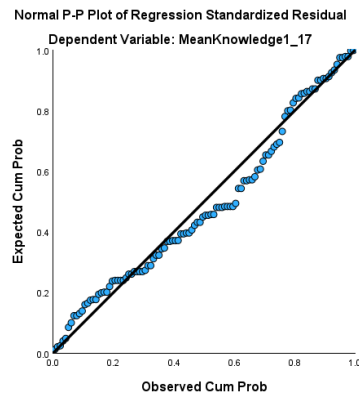


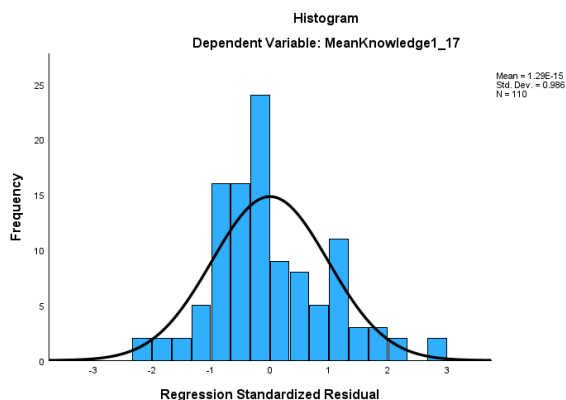
Casewise diagnostics with the default  $\pm 3$  cutoff did not flag any cases. No observations were considered influential, and this assumption was considered met. I checked the leverage points, and the highest value was 0.11296. This value is below less than 0.2 which is considered safe (see Laerd Statistics, 2013). Influence was assessed using Cook's distance. Following the guideline that values greater than 1.0 warrant investigation (see Laerd Statistics 2013), no cases exceeded this threshold. The maximum Cook's D was 0.86. No observations were considered influential on the regression results.

I evaluated normality visually using the histogram of standardized residuals with a superimposed normal curve and the Normal P–P plot produced by SPSS (see Figure 5). The histogram was roughly symmetric and bell-shaped, and points on the P–P plot closely followed the 45° line (see Laerd statistics), indicating approximate normality of errors (see Figure 6). Consistent with this, standardized residuals had  $M = 0$  and  $SD = .98$ , ranging from  $-2.29$  to  $2.99$ ; studentized deleted residuals ranged from  $-2.37$  to  $3.19$ . Taken together, these diagnostics support that the normality assumption was met (see Laerd Statistics).

### Figure 5

#### *P-P Plot RQ1*



**Figure 6***Histogram Knowledge RQ1*

The results indicated no significant differences in mean knowledge scores across age groups,  $F(1,108)=0.000$ ,  $p=.984$ . Knowledge scores did not differ significantly from degree level,  $F(1,109)=0.195$ ,  $p=.659$ , or by years of nursing faculty teaching,  $F(1,109)=0.279$ ,  $p=.598$ . All  $p$ -values exceeded the .05 significance threshold, indicating no statistically significant univariate associations between the independent variables and knowledge (See Field, 2013). I retained the null hypothesis (see Table 3).

**Table 3***One-Way ANOVA Results for Knowledge Scores by Predictor Variables*

Predictor Variable	df (between, within)	$F$	$p$
Age Level	(1,108)	0.000	.984
Degree Level	(1,109)	0.195	.659
Years Teaching	(1,109)	0.279	.598

For RQ2: What is the relationship between age level, degree level, years of nursing faculty experience, and the attitude of CAM principles? I conducted univariate analysis to determine if age level, degree level, and years of nursing faculty teaching

experience were significantly associated with attitudes toward CAM principles. I ran a multiple regression analysis with knowledge scores as the dependent variable and each independent variable separately as the factor.

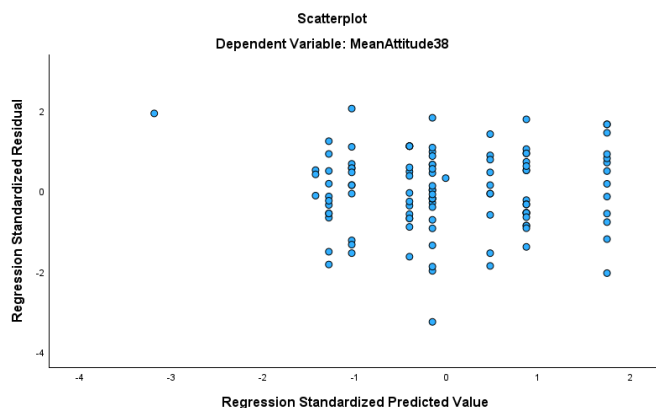
The dependent variable was knowledge of CAM, measured as a mean scale score and treated as continuous (Scale in SPSS), satisfying the assumption of a single continuous dependent variable (see Laerd Statistics, 2013). All of my independent variables are categorical and were entered as simple 0/1 dummies, which is appropriate for multiple regression. Age used 20–35 as the reference group, with two indicators: *Age\_36\_50* (1 = 36–50, else 0) and *Age\_51plus* (1 = 51+, else 0). Degree was coded as *Degree\_DNPPhD* (1 = DNP/PhD, 0 = BSN/MSN). Years teaching was coded as *Years\_6plus* (1 = 6–15 plus years, 0 = <5 years ). Quick crosstabs confirmed the coding worked as intended. This satisfies the requirement that independent variables be continuous or nominal (see Laerd Statistics). A standard multiple regression tested whether age group, degree level, and years of teaching predicted attitudes toward CAM. The Durbin–Watson = 1.693 indicated acceptable independence of errors, which is close to 2 and within the usual range (see Laerd Statistics, 2013). The assumption of independence of observations was met. I checked the studentized residuals vs. unstandardized predicted values plot (SRE\_1 vs PRE\_1) (see Figure 7). The points formed a random cloud around 0 with no curve. That tells me the model is essentially linear. The assumption of a linear relationship between the dependent variable and each independent variable was met (see Laerd Statistics). That same residuals-versus-predicted plot did not show a funnel shape. The spread looked even across the x-axis. The data

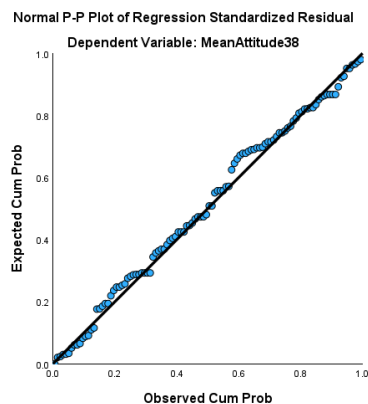
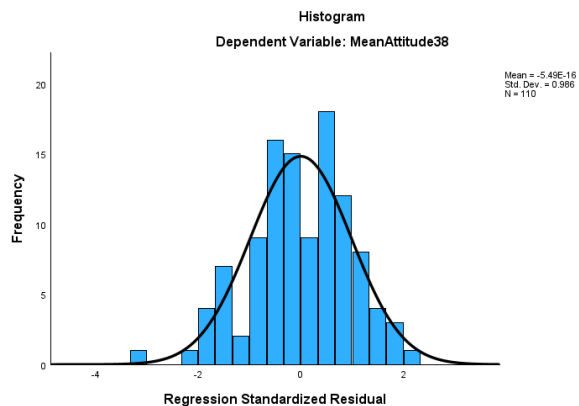
showed homoscedasticity of residuals (equal error variances). Collinearity statistics were in the safe zone: Tolerance = .319–.764, VIF = 1.309–3.138, and the max condition index = 7.254 (see Laerd Statistics). There were no concerns with collinearity noted.

Standardized residuals ranged from -3.226 to 2.006; one case (Case 31) exceeded  $|3|$ , but maximum Cook's D was .118, and leverage was .113, which is below .2, which is considered safe (Laerd Statistics). No observation was considered influential, and all cases were retained. The histogram of standardized residuals looked roughly bell-shaped and the Normal P–P plot tracked the diagonal (see Figure 8 and 9). The standardized residuals had  $M \approx 0$  and  $SD \approx .98$ . The residuals (errors) are approximately normally distributed.

### Figure 7

*Residual scatterplot for Attitude Regression (RQ2)*



**Figure 8***P-P Plot Attitude Régression RQ2***Figure 9***Histogram Attitude RQ2*

Results indicated no significant differences in mean attitude scores across age groups,  $F(1,108) = 0.146$ ,  $p = .703$ . Attitude scores did not differ significantly by degree level,  $F(1,109) = 0.473$ ,  $p = .493$ , or by years of nursing experience,  $F(1,109) = 0.381$ ,  $p = .539$ . All p-values were above the 0.05 threshold, meaning there were no statistically

significant univariate associations between the independent variables and attitudes toward CAM principles (Fields, 2013). All three predictor variables were retained for inclusion in the linear regression analysis (see Table 4).

**Table 4**

*One-Way ANOVA Results for Attitudes Scores by Predictor Variables*

Predictor Variable	df (between, within)	<i>F</i>	<i>p</i>
Age Level	(1,108)	0.146	.703
Degree Level	(1,109)	0.473	.493
Years Teaching	(1,109)	0.381	.539

RQ3: What is the relationship between knowledge, attitude, and the integration of CAM principles into the nursing curriculum? The dependent variable (extent of CAM integration) was changed from five groups into two groups (low integration and high integration). The assumptions for binomial logistic regression were checked and met. The outcome (integration of CAM) was recoded to a true dichotomy (0 = low [never/rarely], 1 = moderate/high [sometimes/often/always]); frequencies were 35 and 76, respectively (valid N = 111). The predictors (MeanKnowledge1\_17 and MeanAttitude38) are continuous, and cases are independent with mutually exclusive categories. Sample size was adequate: the smaller outcome group (n = 35) yields ~17.5 cases per predictor, which meets common rules of thumb ( $\geq 10$ –15 per predictor) (see Laerd Statistics, 2015).

I evaluated linearity in the logit with the Box–Tidwell check by adding the interaction terms Knowledge  $\times$  ln(Knowledge) and Attitude  $\times$  ln(Attitude); both were non-significant ( $p$ s = .120 and .887), indicating no violation. Multicollinearity was not a concern (the two composites were not highly correlated). Finally, diagnostics for unusual

cases showed no standardized residuals beyond 3, leverage values were small, and Cook's distances were well below 1 (0.27726). Together, these results indicated the data satisfied the key assumptions for binomial logistic regression (see Laerd Statistics, 2015).

I examined case diagnostics to identify poorly fitted or influential observations in the binary logistic regression. Using SPSS's Casewise Diagnostics with a cutoff of  $|\text{standardized residual}| > 2.0$ , no outliers were detected (SPSS reported "the casewise plot is not produced because no outliers were found") (see Laerd Statistics, 2015). Influence statistics saved to the dataset were also reviewed. The analog of Cook's distance showed small values (max  $\approx 0.277$ , mean  $\approx 0.028$ ), which are well below common concern thresholds ( $\approx 1.0$  for Cook's).

The treatment referred to the administration of the SurveyMonkey questionnaire that measured nursing faculty knowledge, attitudes, and integration of CAM principles. The treatment was implemented as outlined in Chapter 3. Participants were recruited through social media outreach via Facebook, where an invitation post with the survey link and informed consent was shared. Individuals who met the inclusion criteria could access the survey directly from the link provided.

One minor challenge encountered was the need to repost the survey link several times to encourage participation and maintain visibility on social media. This strategy was consistent with the recruitment plan and did not compromise the integrity of the study. Despite this, the overall treatment was successfully administered as intended, and the fidelity of data collection was preserved.

No adverse events with serious consequences occurred during the study. The research design involved the administration of an online SurveyMonkey questionnaire, which posed minimal risk to participants as described in Chapter 3. There was no physical, psychological, or social harm reported by participants. Informed consent was obtained before participation, and individuals could withdraw at any time without penalty. Because data collection was limited to voluntary survey responses, the risk of adverse events was extremely low, and none were observed or reported throughout the study period.

## Results

A total of 111 nursing faculty completed the survey. Valid  $n$  for specific items varied slightly due to sporadic missing data (typical range 109–111). Table 1 presents frequencies and percentages for demographic variables. Briefly, most respondents were 36–50 years old (42.0%) or 51–65 years (41.1%); the sample was predominantly female (96.4%) and White (86.6%). The highest degree was most commonly a master's (63.4%), and the primary employment setting was college/university (55.4%) or community/technical college (43.8%). Teaching experience was 6–15 years for 45.5%, <5 years for 37.5%, and  $\geq 16$  years for 16.1%. With respect to curricular practice, 56.3% reported sometimes integrating CAM, 31.3% never/almost never, and 11.7% almost every class/frequently (Table 1).

### Descriptive Statistics for Primary Variables

**Knowledge.** The CAM knowledge index comprised 17 items scored on a 4-point scale (1 = *definitely false*, 4 = *definitely true*). Items keyed “false” in the published

instrument were reverse-scored so that higher values reflect greater factual knowledge. The mean knowledge score was 2.65 ( $SD = 0.26$ ;  $n = 111$ ), with a 95% CI [2.60, 2.70].

**Attitudes.** The CAM attitudes scale comprised 21 items scored 1–5 (1 = *strongly disagree*, 5 = *strongly agree*). The mean attitude score was 3.76 ( $SD = 0.45$ ;  $n = 111$ ), 95% CI [3.68, 3.85]. (See Table 2 for descriptive statistics.)

### **Measurement reliability and planned sensitivity checks**

**Knowledge reliability.** Internal consistency for the 17-item knowledge index was low (Cronbach's  $\alpha = .48$ ). Corrected item–total correlations were small to moderate (about  $-.19$  to  $.44$ ), and “ $\alpha$  if item deleted” suggested no single deletion substantively improved  $\alpha$ ; therefore, all items were retained to preserve fidelity to the published instrument. Because Item 12 (“osteopathic practice”) appeared to be keyed anomalously, I conducted planned sensitivity analyses. Internal consistency for the knowledge scale was low and essentially unchanged across specifications: original scoring  $\alpha = .48$  (17 items), rescoring Item 12 as true  $\alpha = .48$  (17 items), and omitting Item 12  $\alpha = .48$  (16 items). The pattern of statistical significance for all hypothesis tests did not change across these specifications. Item 12 (“Osteopathic medicine practices may include dietary modifications, massage, exercise, acupuncture, minor surgery, and other interventions”) was retained in the primary knowledge scale for three reasons. First, it is part of the published instrument and contributes to content validity by representing the osteopathic domain; removing it would alter the construct coverage and reduce comparability with prior studies that used the same tool. Second, my sensitivity analyses showed that the internal consistency and all hypothesis test conclusions were essentially unchanged

whether Item 12 was rescored or omitted (original 17-item  $\alpha = .48$ ; rescored  $\alpha = .48$ ; omitted  $\alpha = .48$ ). For these reasons, I followed the developer's key in the analyses.

**Attitude reliability.** Internal consistency for the 21-item attitudes scale was excellent ( $\alpha = .89$ ; standardized  $\alpha = .90$ ). One item (Q18: "I believe that most health educators are knowledgeable of CAM") showed a negative item-total correlation and would raise  $\alpha$  slightly if removed (to  $\sim .90$ ). Consistent with scoring decision, Q18 was excluded from the composite used in hypothesis testing; descriptive frequencies for Q18 are reported, but it was not included in the mean attitude score.

### **Assumption checks**

The analytic sample comprised 111 faculty. The knowledge scale averaged  $M = 2.65$ ,  $SD = 0.26$  (possible range 1–4), and the attitude scale averaged  $M = 3.76$ ,  $SD = 0.45$  (higher scores indicate more favorable views).

Before hypothesis testing, assumptions were examined. For both linear regressions, independence of errors was supported (Durbin-Watson = 2.003 for knowledge, 1.693 for attitude). Standardized residuals were centered near 0 and generally within 3 (max = 2.99 for knowledge; one case at -3.23 for attitude). For the knowledge regression (RQ1), residual-plots and predicted-value summaries suggested approximately normal, homoscedastic residuals, independence was adequate (Durbin-Watson = 2.003), and multicollinearity was not problematic (tolerance .319–.764, VIF 1.309–3.138). Cook's distance values were small (max .086), indicating no influential outliers. For the attitude regression (RQ2), residual diagnostics again suggested approximate normality and homoscedasticity (Durbin-Watson = 1.693); one case showed a large, standardized

residual (-3.226), but Cook's distance remained modest (max .118). For the logistic model (RQ3), calibration was adequate (Hosmer–Lemeshow  $\chi^2(8) = 7.98$ ,  $p = .435$ ), and the analog of Cook's influence was small (max .277), indicating no influential outliers (See Laerd Statistics, 2015).

**RQ1 (Knowledge).** Multiple regression tested whether age group, highest degree, and years of teaching predicted knowledge. The model was not significant,  $F(4, 105) = 0.17$ ,  $p = .952$ ,  $R^2 = .007$ . Unstandardized coefficients (95% CIs) were: Age 36–50 vs. 20–35,  $B = -.058$  [-.233, .118],  $t = -0.65$ ,  $p = .515$ ; Age 51+ vs. 20–35,  $B = -.055$  [-.234, .124],  $t = -0.61$ ,  $p = .546$ ; Degree (DNP/PhD vs. BSN/MSN),  $B = .014$  [-.106, .135],  $t = 0.24$ ,  $p = .813$ ; Years ( $\geq 6$  vs.  $\leq 5$ ),  $B = .034$  [-.090, .158],  $t = 0.55$ ,  $p = .587$ .

**RQ2 (Attitude).** A parallel regression with attitude as the outcome was also not significant,  $R = .145$ ,  $R^2 = .021$ . Coefficients (95% CIs) were: Age 36–50,  $B = .101$  [-.197, .400],  $t = 0.67$ ,  $p = .502$ ; Age 51+,  $B = .134$  [-.170, .439],  $t = 0.87$ ,  $p = .384$ ; Degree,  $B = -.115$  [-.320, .089],  $t = -1.12$ ,  $p = .267$ ; Years,  $B = .069$  [-.142, .280],  $t = 0.65$ ,  $p = .517$ .

**RQ3 (Integration of CAM).** Binary logistic regression predicted integration (0 = never/rarely; 1 = sometimes/often/always) from knowledge, attitude, and two covariates (KT, AT). The model improved fit over the constant-only model,  $\chi^2(4) = 14.28$ ,  $p = .006$ , with  $-2LL = 124.10$ , Cox & Snell  $R^2 = .121$ , Nagelkerke  $R^2 = .169$ ; however, no individual predictor was significant: knowledge  $B = -53.64$ ,  $SE = 35.53$ ,  $Wald = 2.28$ ,  $p = .131$ ,  $OR \approx 0.00$ , 95% CI for OR [ $\sim 0.00$ , 8,807,220.24]; attitude  $B = -0.41$ ,  $SE = 12.72$ ,  $Wald < 0.01$ ,  $p = .974$ ,  $OR = 0.66$ , 95% CI [ $\sim 0.00$ , 44,392,339,644]; KT  $B = 28.13$ ,  $SE =$

18.10, Wald = 2.41,  $p = .120$ , OR  $\approx 1.64 \times 10^{12}$ , 95% CI [.001,  $4.21 \times 10^{27}$ ]; AT B = 0.79, SE = 5.58, Wald = 0.02,  $p = .887$ , OR = 2.21, 95% CI [ $\sim 0.00$ , 124,515.32].

### **Post-hoc/sensitivity Analyses**

Because Item 12 on the knowledge test (osteopathic practices) may be keyed contrary to common descriptions, sensitivity tests were conducted. Re-scoring Item 12 as “true” yielded  $\alpha = .479$  for the 17-item scale, omitting Item 12 yielded  $\alpha = .481$  for 16 items. These values were nearly identical to the primary scoring and did not change the significance or direction of results for RQ1–RQ3. Because the omnibus tests for the linear models were nonsignificant (RQ1:  $F(4,105)=0.17, p=.952$ ; RQF ( $F(4,105)=0.56, p=.690$ ), no multiple-comparison post-hoc procedures (e.g., Tukey/Games–Howell) were indicated or performed. For the logistic model (RQ3), no planned subgroup contrasts were specified; post-estimation diagnostics (Hosmer–Lemeshow and influence indices) did not suggest the need for additional post-hoc comparisons.

### **Additional/Exploratory Tests**

I conducted pre-specified sensitivity analyses of the knowledge composite given the Item-12 keying anomaly: rescoring Item 12 and, separately, omitting Item 12. Internal consistency remained essentially unchanged ( $\alpha \approx .48$  in all cases), and all inferential conclusions for RQ1–RQ3 were materially unchanged.

I reported the statistical results addressing each research question regarding nursing faculty demographics, knowledge, attitudes, and the integration of complementary and alternative medicine (CAM) principles in prelicensure curricula. Analyses included descriptive statistics, multiple regression, and binary logistic

regression, accompanied by assumption checks and case diagnostics. Across models, the relatively limited variance in the mean CAM knowledge score and small effect sizes constrained overall model significance and the strength of inferences.

For RQ1, multiple regression tested whether age, degree level, and years of teaching experience predicted faculty knowledge of CAM. The model was not statistically significant, and none of the demographic predictors reached significance. Assumption checks showed no concerning multicollinearity, and influence diagnostics (e.g., analog of Cook's distance) did not identify problematic cases, supporting the stability of the null findings.

For RQ2, Multiple regression tested whether age group, degree level, and years of teaching predicted faculty attitudes toward CAM. The overall model was not statistically significant, and none of the predictors reached significance.

For RQ3, binary logistic regression examined whether knowledge and attitudes were associated with the integration of CAM principles when the integration outcome was dichotomized. The overall model fit was limited, with small, positive—but not statistically significant—associations between attitudes and integration after accounting for knowledge. Knowledge itself did not emerge as a significant predictor of integration in the dichotomized framework. Casewise and residual diagnostics did not reveal influential outliers or lack of fit that would overturn these conclusions.

In Chapter 5, I present an interpretation of the key findings above to the literature. I will also present limitations related to generalizability, validity/reliability, and design decisions (e.g., outcome dichotomization and limited variance), followed by

recommendations for future research grounded in these strengths and constraints. I will also discuss implications, including potential contributions to positive social change in nursing education, theoretical and methodological considerations, and practical recommendations for curriculum and faculty development. Finally, I will provide the study's key take-home message.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purposes of this quantitative, correlational study were to examine the relationships among nursing faculty demographics (age, degree level, and years of teaching experience), knowledge, attitudes, and the integration of complementary and alternative medicine (CAM) principles into prelicensure nursing curricula. I addressed a gap in the literature regarding how nursing faculty characteristics and perspectives influence the extent to which CAM content is introduced in nursing education. As the demand for holistic, patient-centered care continues to increase, understanding faculty knowledge and attitudes toward CAM is essential for preparing nursing graduates to meet diverse patient needs. By exploring these relationships, the study sought to provide evidence that could inform curriculum development, faculty preparation, and integration of CAM principles into nursing programs.

This investigation is important because the integration of CAM in nursing curricula has implications not only for faculty practice but also for how future nurses are trained to approach patient care in a holistic manner. Identifying the extent to which knowledge and attitudes influence curriculum integration may inform strategies that enhance educational content, promote professional readiness, and ultimately contribute to improved patient outcomes. These findings therefore hold potential significance at the individual, organizational, and societal levels, aligning with the broader aim of fostering positive social change within nursing education and healthcare delivery.

The findings for the research questions and analysis revealed that age, degree level, and years of teaching experience did not significantly predict nursing faculty knowledge of CAM. Regression analysis demonstrated that demographic variables did not significantly predict faculty attitudes toward CAM. Across both models, all predictors were nonsignificant, suggesting that faculty knowledge and attitudes toward CAM were relatively consistent across demographic groups.

I used binary logistic regression to examine the extent to which knowledge and attitudes predicted the integration of CAM principles into nursing curricula, which was not significant. The results suggest that while nursing faculty may hold positive perspectives toward CAM, neither demographic characteristics nor self-reported knowledge levels meaningfully predicted attitudes or curriculum integration. These findings highlight the possibility that external factors, such as institutional policies, accreditation standards, or resource availability, may play a more prominent role in shaping CAM integration within nursing education.

### **Interpretation of Findings**

The findings of this study both confirm and diverge from the body of literature reviewed in Chapter 2. Overall, nursing faculty in this sample reported moderate knowledge and generally favorable attitudes toward CAM, which is consistent with prior research demonstrating that nurses and nursing students typically hold positive perceptions of CAM but believe they lack adequate education (Admi et al., 2017; Avino, 2011; Booth-Laforce et al., 2010; Fenton & Morris, 2004; Kreitzer et al., 2002; Richardson, 2003). More recent studies of nurses and nursing students also echoed this

trend, highlighting limited knowledge of CAM terminology and practices despite favorable attitudes (Balouchi et al., 2018; Chang & Chang, 2015; Hall et al., 2017; Rojas-Cooley & Grant, 2009; Trail-Mahan et al., 2013). Thus, this study confirmed the positive attitudinal orientation but also reaffirmed the ongoing knowledge gap among nursing faculty.

However, the results disconfirmed earlier assumptions that demographic variables influence knowledge and attitudes toward CAM. For example, studies suggested that age, degree level, or professional experience might shape knowledge or attitudes (Neiburg et al., 2011; Cornman, 2006), yet this study found no significant relationships. Nursing faculty perspectives on CAM may be more uniform across demographic categories than previously assumed. Because demographic characteristics were not significant predictors, it remains unclear what factors influence CAM integration. Variables such as faculty development resources, administrative support, or curriculum design may be relevant and warrant further investigation, but they were beyond the scope of this study. Earlier literature noted that some nursing programs incorporated CAM concepts through elective courses, guest speakers, or grant-funded initiatives (Richardson, 2003; Booth et al., 2010; Halcon et al., 2001). My findings revealed no significant relationship between faculty knowledge or attitudes and integration outcomes. My findings extend the literature by suggesting that positive attitudes and moderate knowledge are not sufficient drivers of curricular integration. Earlier studies identified barriers to CAM integration such as limited evidence, lack of credentialed providers, reimbursement issues, and inadequate faculty preparation (Halcon et al., 2003). More recent research confirms that these

barriers persist and emphasize the need to strengthen CAM education in nursing programs through structured curriculum content, experiential learning opportunities, and training in evidence-based practice (Zhao et al., 2022).

This study was guided by the CAM Healthcare Model (Fouladbakhsh & Stommel, 2007), which builds on Andersen's Behavioral Model of Health Services. The CAM Healthcare Model emphasizes predisposing factors (such as demographics and attitudes), enabling factors (such as access to resources and institutional support), and need factors (such as perceived health benefits or risks) as determinants of CAM use. The model incorporates a "push-pull" framework in which factors such as dissatisfaction with conventional care may push individuals or organizations away from CAM, whereas cultural values, beliefs, or perceived naturalness may pull them toward CAM adoption.

The findings of this study align with portions of the CAM Healthcare Model but also suggest boundaries to its explanatory power in the context of nursing education. Faculty in this study demonstrated favorable attitudes toward CAM, consistent with the model's characterization of attitudes as predisposing factors that could serve as a "pull" toward CAM integration. However, knowledge levels were only moderate and showed limited variability, which may have weakened their ability to function as strong enabling factors for curricular change.

Demographic factors such as age, degree level, and years of teaching did not significantly predict knowledge or attitudes. Within the CAM Healthcare Model, these demographic variables function as predisposing factors, but the findings indicate that they did not meaningfully shape faculty perspectives in this sample. This suggests that

individual characteristics may play a smaller role in educational decision-making than broader institutional or structural influences.

Similarly, the lack of a significant relationship among knowledge, attitudes, and curriculum integration suggests that factors beyond individual perceptions may affect whether CAM content is incorporated into nursing courses. Although faculty expressed openness toward CAM, integration may require organizational support, faculty development opportunities, and a clear curricular rationale. While this study did not examine institutional or structural influences directly, the CAM Healthcare Model notes that enabling factors, such as institutional resources, administrative support, and program structures, are often necessary for adoption of new practices. Future research could examine institutional or system-level factors to better understand how CAM content is adopted into nursing curricula.

Thus, the findings support the relevance of the CAM Healthcare Model in framing faculty attitudes as predisposing factors. While this study did not examine organizational or structural influences directly, the lack of a relationship between individual characteristics and integration suggests that factors beyond personal attitudes or knowledge may contribute to curricular decisions. The CAM Healthcare Model provides a useful lens for interpreting these results by acknowledging that additional enabling factors may be required for adoption of new practices.

### **Limitations of the Study**

Several limitations must be acknowledged when interpreting the findings of this study. These limitations affect the extent to which the results can be generalized and the strength of the conclusions regarding validity and reliability.

### **Sample and Participation**

As noted in Chapter 1, a limitation of the study was the use of a convenience sample. Although follow-up emails and an extended data-collection window were used to encourage participation, the study ultimately relied on voluntary responses from 111 nursing faculty members. Because participation was self-selected rather than randomly sampled, the sample may not be representative of the larger population of U.S. nursing faculty. Convenience sampling can introduce self-selection bias, as individuals with a preexisting interest in CAM or greater willingness to complete surveys may be more likely to participate. As a result, the findings cannot be generalized to all nursing faculty or nursing programs nationwide.

### **Timing of Data Collection**

The study was also affected by the timing of survey administration. Because some nursing schools may not have core classes during the summer, faculty availability for participation could vary. Although efforts were made to distribute the survey during the academic year, differences in faculty schedules across institutions may have influenced response rates.

### **Geographic and Institutional Representation**

I did not stratify responses by program type, geographic region, or institutional characteristics. As a result, faculty working in diverse educational contexts (e.g., ADN vs. BSN programs, public vs. private institutions, rural vs. urban schools) may have been underrepresented, limiting generalizability across the landscape of U.S. nursing education.

### **Cultural and Conceptual Bias**

Another limitation relates to the potential for cultural or definitional bias. Although the survey instrument drew upon the National Center for Complementary and Integrative Health's definitions of CAM to provide consistency, it was not possible to include all possible modalities. Faculty interpretations of CAM terms may have varied, which could affect how questions were understood and answered.

### **Measurement Limitations**

I used self-reported survey data, which introduces risks of recall error, response bias, or socially desirable responding. While internal consistency of the instrument was acceptable, reliability for some subscales was moderate, which may have reduced precision. Additionally, the study only inquired whether CAM was integrated into curricula, rather than the extent, depth, or quality of that integration, which limited the level of detail that could be analyzed.

### **Variance in Key Variables**

An important limitation was the restricted variability in knowledge and attitude scores. Responses clustered around moderate knowledge and favorable attitudes, limiting

the ability of regression analyses to detect associations. This homogeneity constrains internal validity and may explain the absence of significant findings across models.

### **Design Limitations**

As noted in Chapter 1, the cross-sectional, non-experimental, correlational design prevented inferences about causation. While relationships among demographics, knowledge, attitudes, and integration were examined, causality cannot be established. This design captured only a single point in time and did not reflect potential changes in knowledge, attitudes, or curricular practices that could occur longitudinally.

These limitations suggest that caution is warranted when generalizing the findings beyond the study sample. Although the results contribute to understanding relationships among demographics, knowledge, attitudes, and integration of CAM in prelicensure nursing curricula, the study should be viewed as exploratory. Future research with larger, stratified samples, a mixed methods approach, and longitudinal designs may help address these limitations and provide deeper insight into the contextual factors influencing CAM integration in nursing education.

### **Recommendations**

The results of this study provide a foundation for future research exploring nursing faculty knowledge, attitudes, and integration of complementary and alternative medicine (CAM) principles into prelicensure nursing curricula. Although the findings did not identify statistically significant relationships among demographics, knowledge, attitudes, and integration, several recommendations arise based on the study's strengths, limitations, and prior literature.

Future research should include larger, more diverse, and stratified samples of nursing faculty to improve generalizability. Stratification by program type (associate degree, baccalaureate, diploma), institutional setting (public, private, urban, rural), and geographic region would allow for more nuanced analysis of contextual influences. Such approaches would address the limitations of convenience sampling and limited representativeness in the current study.

I measured whether CAM principles were integrated, but did not assess the extent, quality, or methods of integration. Future studies should investigate how CAM content is included within curricula, including the number of courses, whether it is elective or required, the types of CAM modalities taught, and the balance between didactic and experiential learning. This would build on older research (e.g., Richardson, 2003; Halcon et al., 2001; Booth et al., 2010) and provide updated insight into contemporary curricular practices.

Given the moderate knowledge levels and positive attitudes reported by faculty, qualitative or mixed-methods research could explore underlying reasons why positive perspectives do not necessarily translate into curricular integration. Faculty interviews or focus groups could provide a richer context for understanding barriers, such as institutional policies, accreditation requirements, or a lack of training opportunities. Combining qualitative insights with quantitative measures would extend the current findings and help identify organizational or structural factors that influence CAM adoption.

Because this study suggested that individual-level variables (demographics, knowledge, attitudes) may not fully explain integration, future research should examine institutional and policy-level influences. This could include the role of accreditation standards, professional organization guidelines (e.g., NCSBN, NLN, WHO), or administrative support in shaping CAM curriculum decisions. Such research would align with the CAM Healthcare Model's emphasis on enabling factors and help clarify system-level determinants of integration.

Cross-sectional data limited the ability to capture changes over time. Longitudinal studies could examine whether faculty knowledge, attitudes, or curricular integration evolve in response to professional development, institutional initiatives, or broader shifts in nursing education. Tracking changes across academic years may reveal temporal patterns that cross-sectional designs cannot detect.

The literature and findings from this study consistently highlight faculty desire for greater CAM education. Future research could evaluate the impact of faculty development programs, continuing education, or professional training opportunities on knowledge, attitudes, and integration. Such studies could test whether targeted educational interventions improve faculty readiness and lead to measurable increases in CAM curricular content.

In summary, recommendations for future research include expanding faculty samples, examining the extent of CAM curricular integration, using mixed methods designs, exploring institutional influences, incorporating longitudinal approaches, and evaluating faculty development interventions. These recommendations remain within the

boundaries of the current study and literature while offering pathways to extend understanding of how CAM knowledge, attitudes, and contextual factors influence nursing education.

### **Implications**

The findings of this study have potential implications for positive social change at multiple levels. At the individual level, increased awareness of nursing faculty knowledge and attitudes toward CAM may guide targeted professional development, ensuring that faculty are better prepared to address patient questions and integrate holistic approaches into care discussions. At the family and community level, well-prepared nurses can more effectively educate patients and their families on safe and evidence-based CAM practices, which may improve health literacy and decision-making. At the organizational level, the results highlight the importance of institutional support and curricular priorities in shaping integration. Nursing schools that respond to these findings may create faculty development programs or curricular initiatives that strengthen student preparation for patient-centered, culturally responsive care. At the societal and policy level, the study supports broader conversations about aligning nursing curricula with the expectations of professional organizations (e.g., NCSBN, NLN, WHO) that already recognize the role of CAM in health care.

Methodologically, this study underscored the challenges of limited variability in survey-based research, particularly when knowledge and attitudes cluster around similar levels. Future studies can build on this by employing stratified or purposive sampling, as well as mixed methods approaches that incorporate qualitative interviews to capture

deeper contextual insights. Theoretically, the findings reinforce aspects of the CAM Healthcare Model by confirming that faculty attitudes function as potential “pull” factors toward integration, while also highlighting the importance of enabling factors, such as institutional support, that extend beyond individual demographics (Fouladbakhsh & Stommel, 2007). Empirically, the study adds updated data to a literature base that, until now, has relied heavily on older U.S. studies with small samples. This contribution provides a contemporary benchmark against which future research can be compared.

Several practice-oriented implications emerge from the findings. First, nursing programs should consider faculty development opportunities to strengthen CAM knowledge, addressing the persistent gap identified both in this study and the literature. Second, programs could incorporate guest lecturers, workshops, or interdisciplinary collaboration with credentialed CAM providers to enrich the curriculum, aligning with recommendations identified in earlier studies. Third, curricular committees may benefit from reviewing current content to determine whether CAM concepts are represented in both didactic and experiential learning. Finally, aligning CAM education with existing professional standards, such as NCSBN test plans and NLN recommendations, may ensure that programs prepare graduates to meet expectations of safe, holistic, and culturally competent care.

### **Conclusion**

I examined the relationships among nursing faculty demographics, knowledge, attitudes, and the integration of complementary and alternative medicine (CAM) principles into prelicensure nursing curricula. While the results did not identify

statistically significant associations between demographics, knowledge, attitudes, and curricular integration, the findings provided valuable insight into the current state of faculty perspectives on CAM. Faculty in this sample demonstrated generally favorable attitudes and moderate knowledge levels, consistent with previous literature. However, these individual factors alone did not appear to influence whether CAM content was included in nursing curricula.

The key essence of this study is that positive faculty attitudes and moderate knowledge are present but not sufficient to ensure integration of CAM into nursing education. Instead, the findings suggest that organizational, curricular, and policy-level supports may be more critical determinants of integration. By updating the limited U.S.-based literature on this topic, this study contributes contemporary evidence to guide nursing education leaders, curriculum committees, and professional organizations in considering how graduates to address CAM safely and effectively in practice.

Ultimately, the study highlights that advancing CAM education in nursing is less about who the faculty are and more about the systems and structures that support what and how they teach. The findings underscore the importance of aligning faculty development and curricular design with professional standards and societal expectations, ensuring that future nurses are prepared for holistic, culturally responsive care. This study adds to the growing call for nursing education to embrace evidence-based approaches that integrate both conventional and complementary modalities, promoting positive social change at individual, organizational, and societal levels.

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## Appendix A: Permission to Use CAM

**From:** Ping Johnson <>

**Sent:** Sunday, July 21, 2024 7:27 PM

**To:** Patricia Balistreri <>

**Subject:** Re: [EXTERNAL] Re: Survey Tool Permission to use and Guidelines on scoring

Hi Patricia,

Feel free to use the instrument and scoring key that I sent to you in 2019.

Best wishes,

Dr. Johnson

From Ping Johnson Date Mon 11/11/2019 8:41 AM To Patricia Balistreri 2 attachments  
(98 KB) SurveyKey.pdf; SurveyFinal.pdf

Hi Patricia,

Thank you for reaching out to me. Yes, you may use the instrument. Attached please find the survey instrument and the key. Let me know if you have any questions.

Good luck with your research!



**Ping Hu Johnson, PhD**

*Professor*

Department of Health Promotion and Physical Education

590 Cobb Ave NW

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p:

e:

## Appendix B: Invitation To Participate

## Walden University Research Participants Needed!



### Calling all Prelicensure Nursing Faculty

- **Study Name:** Nursing Faculty Demographics, Attitude, Knowledge, and Integration of Complementary and Alternative Medicine in Nursing Curriculum
  - **Purpose:** Explore the association between nursing faculty's demographics, knowledge, attitude, and their integration of CAM into nursing curriculum.
  - **Principle Investigator:** Patricia Balistreri, MSN, RN. [REDACTED]
  - **To participate, please contact Patricia via email.**
- **Inclusion criteria:**
    - Teach in a prelicensure nursing program (ex PN, ADN, BSN)
- Procedure:**
- Participation in this study involves:
    - Completion of an informed consent and a participant information sheet
    - Complete a Survey Monkey
  - Scan the QR Code to access the survey.

## Appendix C: Email Seeking Participants

**Study-**Nursing Faculty demographics, knowledge, attitude, and integration of complementary and Alternative Medicine (CAM)

There is a new study exploring the relationships between nursing faculty's demographics (age, degree, & years of teaching) knowledge, attitude, and integration of complementary and alternative medicine (CAM) in the courses they teach. For this study, you are invited to complete a survey and share your demographics, knowledge, attitude, and your integration of CAM in the courses you teach.

**About the study:**

- Complete a 15-30 min survey
- To protect your privacy, the published study will not share any names or details that identify you

**Volunteers must meet these requirements:**

- Must be a nursing instructor that teaches in a prelicensure nursing program
  - Associate degree nursing/ diploma
  - Bachelor's degree of nursing
  - direct entry Master degree of nursing

This study is part of a doctoral study for Patricia Balistreri, a Ph.D. student at Walden University.

If you are interested in volunteering please click this link:

Please email if you have any questions. You are welcome to forward this to other who might be interested.