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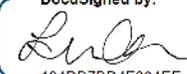
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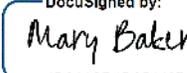
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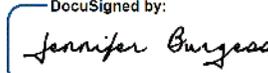
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The Attitudes of Nurse Practitioner Students Toward
Complementary and Alternative Integrative Medicine

A Thesis

Presented to the faculty of the School of Nursing
California State University, San Marcos

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the requirements for the degree of

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Abstract

In light of the popularity of complementary and alternative/integrative medicine (CAM/IM) by Americans, the baseline attitudes of nurse practitioner (NP) students must be understood. As of the report of these research findings, the attitudes of graduate NP students toward CAM/IM have not been reported in the peer reviewed research literature. The purpose of the research was to answer the question “What are the attitudes of nurse practitioner students toward CAM/IM?” Participants (n=57) for the research were recruited from one southern California university. Participants completed a previously used questionnaire, the integrative medicine attitude questionnaire (IMAQ) (Schneider et al., 2003). The data were analyzed using descriptive statistics, the frequency, mean, and standard deviation were calculated. Overall, the participants demonstrated a positive attitude toward CAM/IM. Stronger research designs that utilize larger samples and that include evaluation of faculty attitudes are recommended for future research.

Key words: complementary and alternative, integrative medicine, nurse practitioner attitudes

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Chapter One: Introduction

Chapter one introduces the terms complementary and alternative medicine (CAM), integrative medicine (IM), and the role of the nurse practitioner (NP). The theoretical model which guided the research is discussed. Finally, the background and significance of the problem, the purpose of the research, and the research question are discussed.

Americans have a vested interest in non-conventional medicine, commonly referred to as complementary and alternative medicine or integrative medicine. The National Center for Complementary and Alternative Medicine defines complementary and alternative medicine as a “A group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine” (NIH, 2017). The integration of conventional and complementary approaches in a coordinated way for which evidence has shown safety and effectiveness is referred to as “integrative medicine” (NIH, 2018). For the purpose of this paper, complementary and alternative medicine and integrative medicine are collectively referred to as CAM/IM.

Interest in CAM/IM has remained constant since 2002 with more than 30% of adults reporting the use of a CAM/IM modality over a 12-month period (NIH, 2018). The amount of out of pocket expenditures for CAM/IM in 2012 alone equaled 30.2 billion dollars (Nahin, Barnes, & Stussman, 2016).

A nurse practitioner provides holistic care for patients in times of disease and health (AANP, 2016). Every year millions of Americans seek the expertise of an NP. As a primary care provider, the NP is a valuable source of health information for the patient. American’s health care needs are diversifying outside the conventional medicine provided by NPs; they are

increasingly seeking CAM/IM treatment modalities. While both conventional medicine and CAM/IM provide care that is holistic: encompassing mind, body, and spirit (AANP, 2016 & NIH, 2018), conventional medicine and CAM/IM have historically operated independently of one another, failing to provide collaborative care. Collaboration is imperative, both for the prevention of adverse effects and to provide holistic care.

Lewin's Model of Change (1951) is the theoretical model which guided the development of the study. The model identifies knowledge of attitude as an integral part of the first step in the change process. A positive attitude toward CAM/IM indicates a willingness to use these approaches in clinical practice and identifies a possible need for CAM/IM education. Currently, no educational requirements of CAM/IM exist in the NP curriculum. As of the report of these research findings, no literature exists regarding the attitudes of nurse practitioner students toward complementary, alternative, and integrative medicine. This study was designed to investigate the attitudes of NP students toward CAM/IM, fill a gap in the literature, and address one of the first steps in the change process.

Background and Significance

A significant percentage of Americans, 33.2%, utilized CAM/IM modalities in 2012. The number of Americans using CAM/IM has remained stable over the last two decades with 32.3% of Americans using CAM/IM in 2002 and 35.5% in 2007 (NIH, 2018). Health insurance does not cover the majority of unconventional medicine services and products, in 2007 Americans spent \$33.9 billion out of pocket on the purchase of CAM products and visits to practitioners. Americans' out of pocket expenses for CAM equaled the combined out of pocket expense for conventional physician services and prescription drug use (Nahin, Barnes, Stussman, & Bloom, 2009). Both the percent of Americans using CAM/IM and the amount of money spent

on CAM/IM illustrate the importance Americans place on unconventional medicine. The popularity of CAM/IM as a compliment to conventional healthcare makes it important for healthcare providers to understand CAM/IM modalities, the patient's affinity for CAM/IM, and any interdependencies with conventional healthcare.

The primary care provider (PCP) is a logical place for patients to go to for health-related questions and to address any health concerns. The NP comprises a growing percentage of total PCPs, from 2008-2016 the percentage of NPs in the primary care setting rose from 17.6% to 25.2% in rural settings and from 15.9% to 23% in nonrural settings (Barnes, Richards, McHugh, & Martsof, 2018). The role of the nurse practitioner is to diagnose and treat health conditions using a holistic approach, with an added emphasis on disease prevention, health management, health education, and counseling (AANP, 2016). It is vital for the NP to be knowledgeable about CAM/IM modalities to be a competent resource of health education, health referral, to identify potential interactions, and to meet the holistic needs of the patient.

A failure of communication regarding CAM/IM exists between the patient and their PCP. A few reasons for this lack of communication have been identified in the literature. First, clinicians report a lack of knowledge about CAM and are uncomfortable discussing it with patients (Shelley, Sussman, Williams, & Crabtree, 2009). Second, without prompting from the PCP, patients rarely inform the PCP about the use of CAM/IM or obtain information on CAM/IM modalities. In a study by Shelley et al. (2009) only 58% of CAM/IM users disclosed information of CAM/IM use to a health care provider and only 15% of patients 50 to 64 years old discussed it with a nurse or primary care provider. The two main reasons patients provide for lack of disclosure to a primary care provider are failure of the provider to ask about CAM/IM and lack of knowledge that disclosure is warranted. In addition, patients reported that the attitude

of the clinician regarding CAM/IM is important to facilitate open communication. Due to the patients' reluctance to initiate the conversation, the clinician must inquire about the CAM modalities (Shelley et al., 2009). The combination of lack of knowledge by the provider and lack of communication between patient and provider, places the patient at an increased risk of adverse reactions and decreases overall quality of care.

The attitude of NP students may influence a change in clinical practice as well as integration of a fundamental knowledge of CAM/IM into conventional care and formal CAM/IM education requirements in the NP curriculum. Current NP curriculum requirements do not specify CAM/IM as part of the mandatory educational requirement. According to Lewin's Model of Change (1951), the first step in the change process involves identifying the attitudes toward the change. Understanding the attitudes of nurse practitioner students is necessary if a need for change is identified. Numerous studies in the literature report nursing students, medical students, dietetic students, medical internists, and osteopathic students' attitudes toward CAM (Avino, 2011; Flaherty, Fitzgibbon, & Cantillon, 2015; Kanadiya, Klein, & Shubrook, 2012; Novotny & Novik, 2015; Trail-Mahan, Mao, & Bawel-Brinkley, 2013; & Wahner-Roedler et al., 2013). No research exists regarding the attitude of NP students toward CAM/IM. This research was designed to study the attitudes of NP students toward CAM/IM and to fill a gap in the literature.

Problem

In light of the popularity of CAM/IM by Americans, the baseline attitudes of NP students must be understood. As of the report of these research findings, NP students' attitudes toward CAM/IM have not been reported in the peer reviewed research literature. Given the large percentage of Americans seeking CAM/IM modalities, the lack of disclosure on the use CAM/IM to the PCP, and the absence of educational requirements of CAM/IM in the NP

curriculum, nurse practitioners may be ill prepared to incorporate patients' use of CAM/IM into clinical practice.

Purpose

In view of the increasing use of CAM/IM and the growing number of NPs, it is important to understand the attitudes of NP students toward CAM/IM. Identifying the attitudes of NP students is the first step in understanding the willingness of the use of CAM/IM interventions in clinical practice and will bring awareness to a potential problem. Awareness of a problem and knowledge of attitude is the first step of the change process thus the purpose of the research is to understand the attitudes of graduate NP students toward CAM/IM.

Research Question

What are the attitudes of nurse practitioner students toward complementary and alternative integrative medicine?

Research Variable

The single variable is the attitude toward CAM/IM of graduate nurse practitioner students enrolled in the family nurse practitioner (FNP) and psychiatric and mental health nurse practitioner (PMHNP) programs at California State University San Marcos (CSUSM). Demographic variables were not collected to maintain participant anonymity.

Chapter Two: Literature Review

Introduction

Chapter two presents a review of the literature. Next, the major variables are individually defined. Chapter two ends with a review of the theoretical framework used to guide this study.

At the time of this research, a review of the literature revealed a lack of research regarding the attitude of nurse practitioner students toward CAM/IM. The attitude of medical students, medical interns, nursing students, physician assistant students, dietician students, and general college students were reported in the literature. However, no literature was found to have studied the attitudes of nurse practitioner students toward CAM/IM.

Three databases were utilized for the literature search; they were CINAHL, PubMed, and Google Scholar. Key words used to formulate the search included complementary and alternative medicine, integrative medicine, attitude toward, perception of, nurse, student, and nurse practitioner. The search was limited to peer reviewed articles in English and resulted in 168 articles. The research was further narrowed down by focusing on research performed within the United States from 2009-2018. Research performed outside of the United States was from the study due to international differences affecting the attitude of participants toward CAM/IM. The elimination of nonrelevant articles resulted in 35 articles and the accompanying references, which identified 7 articles relevant to the purpose of the study. One of the research articles originated outside of the United States, the researcher chose to include it due to its relevance to the current research

Major Variables Defined

Attitudes or perceptions. Perception is the view of an individual that is a powerful driving force for action. Perception is constructed of past experiences and sociocultural

influences combined with one's own method of processing sensory information (McDonald, 2012). Attitude is defined by Merriam-Webster (2016) as "a feeling or way of thinking that affects a person's behavior." The use of the words attitude and perception are interchangeable for the purpose of the study.

Attitudes of nursing students. In a descriptive study of undergraduate nursing faculty (n=117) and undergraduate nursing students (n=578) in one state in a Mid-Atlantic region, Avino (2011) found that both faculty and students had positive attitudes toward CAM/IM. Interestingly, 74% of nursing faculty felt that they had insufficient education or training to advise patients on the use of CAM/IM. The faculty and students did not show interest in providing CAM/IM services but rather to advise about the use of CAM/IM. A descriptive research investigating the knowledge and attitude of registered nurses (n=153), Trail-Mahan, Mao, & Bawel-Brinkley (2013) found that registered nurses believed patients had the right to have integration of conventional and CAM/IM therapies and that patients should disclose the use of CAM/IM therapies to providers.

Attitudes of dietetic students. A study which looked at the attitudes of dietetic students were included in the review of literature. Part of the role of the NP is disease prevention and treatment, therefore, the NP provides counseling on the dietary intake of patients. A descriptive study (n=90) by Novotny and Novik (2015) found that over 90% of dietetic students at a Midwestern University had a favorable attitude toward CAM/IM. Of the 90 respondents, 91.1% felt that CAM/IM was not a threat to public health. The respondents reported limited undergraduate CAM/IM education and had a strong desire for further CAM/IM education.

Attitudes of medical students. Abbott et al. (2011) studied medical student (n=1770) attitudes toward CAM/IM and found attitudes ranging from uncertainty to enthusiasm. Overall,

the students acknowledged the importance of CAM/IM and agreed physicians who were knowledgeable about CAM/IM would benefit their patients more than physicians who lack CAM/IM knowledge. The medical students expressed the importance of CAM/IM and had an overall positive attitude toward many of the core principles of CAM/IM.

Flaherty, Fitzgibbon, & Cantillon (2015) explored the attitude of medical students (n=308) to the teaching of CAM/IM in basic medical education. The descriptive study was undertaken in Ireland after the General Medical Council encouraged, albeit not mandated, the integration of CAM/IM teaching into medical education. The tool used to measure attitudes was the Integrative Medicine Attitude Questionnaire (IMAQ). Desirable attributes in a physician were knowledge of CAM/IM, the willingness to exploit the placebo effect, and knowledge of herbal medicine and supplements to function as a credible resource for patients and to be able to warn patients about the lack of rigorous testing for these products. The participants expressed a positive attitude toward holistic care and the inclusion of integrative medicine in medical school.

Attitudes of medical internists. Wahner-Roedler et al. (2013) replicated a study done in 2004 of physicians' attitudes toward CAM/IM among internists at a single institution. Overall, the attitudes of interns were more positive in 2012 (n=233) than in 2004 (n=188). Three statements that showed a statistically significant improvement were: 1) "Physician knowledge of CAM practices leads to better patient outcome" 2) "CAM therapy has an impact on symptoms, conditions, and/or diseases" and 3) "Some CAM therapies hold promise for treatment of symptoms, conditions, and/or diseases".

Attitudes of osteopathic medical students. A descriptive study by Kanadiya, Klein, and Shubrook (2012) identified factors that affect osteopathic medical student (n=635) attitudes toward CAM/IM. Differences in attitudes were found among the students studied, the reason for

these differences was not identified in the study. The attitudes of female students toward CAM/IM were more positive than male students. The attitudes of older students were more positive than younger students and students reporting personal use of CAM/IM modalities had a more positive attitude than students not using CAM/IM. Osteopathic medical students recommend CAM/IM to nonpatients more often than to patients. Osteopathic students agreed that a patient's mental attitude influences his or her physical health. Although the students may be hesitant to endorse CAM/IM there was consensus that patients' treatment should encompass his or her mental, physical, and spiritual health.

Demographic variables. The Master of Science program at California State University, San Marcos had a total of 77 students enrolled in the nurse practitioner program at the time the study was conducted. To maintain anonymity no demographic information was collected.

Complementary and alternative integrative medicine. The National Center for Complementary and Integrative Health (NIH, 2018) defines complementary medicine as a "non-mainstream practice used together with conventional medicine". Herbs, vitamins, minerals, probiotics, mind and body practices such as yoga, meditation, chiropractic manipulation, and acupuncture are all examples of complementary medicine. Ayurvedic medicine, traditional Chinese medicine, and naturopathy are also considered complementary approaches to health care, however, when used alone they are considered alternative medicine.

Alternative medicine, defined as "the use of non-mainstream medicine in place of conventional medicine" (NIH, 2018), is not commonly used. The terms conventional and alternative are often used interchangeably, however the two terms do have different meanings. Complementary medicine is used with traditional medicine and alternative medicine is used without conventional medicine.

The joining of conventional medical treatment with complementary and alternative medicine that have been shown to be safe and effective is referred to as integrative medicine. An example of integrative medicine is the addition of mindfulness meditation to pain management programs for veterans (NIH, 2018).

Theoretical Framework

Lewin's Model of Change (1951) guided the development of this research proposal. Lewin's model provides a theoretical framework for understanding the change that must transpire in order to integrate a basic understanding of CAM/IM practices with conventional health practitioners. The first of Lewin's stages, the Unfreeze Stage, involves understanding the necessity of change. In the unfreeze stage, evaluation of the attitudes toward CAM/IM occurs. It is in this first stage that the development of this study was based. This stage includes assessment of the need and readiness to integrate CAM with conventional medicine. This stage also assesses the quality of CAM teachings in nurse practitioner programs, at the time this study was conducted CAM/IM teaching was not mandated in the NP curriculum.



Figure 1. Change design based on Lewin's Model of Change. This model has been modified to illustrate the importance of the dependent variable, attitude, in the change process.

The second stage of Lewin's Model of Change (1951), the Change Stage, is the stage in which the actual change takes place. The change stage requires time for transition leading to the acceptance of the change. The third stage, the Freeze Stage, ensues when stability has once again been established. Before change can happen, whether in medical practice or in an educational program, an assessment of attitude must occur.

Summary

While studies concerning the attitude of many medical professionals exist in the literature and despite the continued interest of Americans in CAM/IM, at the time of this research no studies were found regarding the attitude of nurse practitioner students toward CAM/IM. Overall, the attitude of nursing students, nurse faculty, registered nurses, dietetic students, medical students, internists, and osteopathic students toward CAM/IM were positive. Lewin's Model of Change (1951) guided the current study, understanding the attitudes of nurse practitioner students is the first step in the change process, if a need for change is identified.

Chapter Three: Methodology

Chapter three includes a description of the study design and why it was chosen, the research question, the importance of the research question, and how the study aims to answer it. The population and sample, the data collection process, and the safeguarding of information are addressed. A discussion of data analysis, coding, and scoring follow. Finally, bias and/or ethical considerations are described.

Research Question

The research question for this study is “What are the attitudes of nurse practitioner students towards complementary and alternative integrative medicine?”

Purpose

The purpose of the research is to understand the attitude of nurse practitioner students toward complementary and alternative integrative medicine. Taking into consideration the increasing use of CAM/IM and the growing number of NPs, it is vital to the profession of nursing to understand the attitudes of NP students toward CAM/IM.

Significance

Identifying the attitudes of NP students is the first step in understanding the willingness of the use of CAM/IM interventions in clinical practice, potentially recognizing a deficiency in the education of nurse practitioners. Awareness of a problem and knowledge of attitude is the first step of the change process.

Identification of Setting

The research took place at California State University San Marcos School of Nursing in San Marcos, California. The California State University system is a public university system

composed of 23 campuses in California. CSUSM is located 35 miles north of San Diego in southern California.

The NP track has two subdivisions: Family Nurse Practitioner (FNP) Specialization and Psychiatric and Mental Health Nurse Practitioner (PMHNP) Specialization. Students enrolled in the program attend school part-time for three years consisting of eight semesters. The questionnaires were distributed in classrooms within the school of nursing, one for each of the three cohorts: 9, 10, and 11. All classrooms were well lit, climate controlled, and had ample seating.

Research Design

A cross-sectional descriptive design was utilized for this study. The students were provided with an electronic version or the choice of paper version and an electronic version of the self-report integrative medicine attitude questionnaire (IMAQ) (Schneider, Meek, & Bell, 2003). A link to the electronic version via SurveyMonkey was posted to Graduate Student Central and made available to all NP students in the respective cohorts. Survey Monkey is a secure electronic survey administration and analysis tool (Survey Monkey, 2018). The electronic version provided accessibility for those students not present on the day of distribution and those students who were enrolled in a class which did not meet on campus.

Population and Sample

The target population for the study included FNP and PMHNP students enrolled at CSUSM. At the time the research was conducted there were 59 FNP and 18 PMHNP students for a total of 77 students enrolled in the nurse practitioner track. Cohort 9 had 26 students, cohort 10 had 24 students, and cohort 11 had 27 students. The sample size calculation was based on an accessible population size of 77, a confidence level of 95% and a confidence interval of 5. The

Sample Size Calculator (Creative Research Systems, 2012) was used to calculate sample size, a minimum sample size of 64 participants were indicated. Due to a total population of 77 students, a census sample was sought to allow for loss factors.

The criteria for inclusion in the proposed study were FNP students and PMHNP students currently attending CSUSM. Graduate students not currently enrolled at CSUSM, graduate students currently enrolled at CSUSM in a program other than the Master of Science, FNP track or PMHNP track, and all undergraduate students were excluded.

Measurement Methods

A previously designed questionnaire, the integrative medicine attitude questionnaire (Schneider et al., 2003), was utilized for the purpose of the study. The IMAQ (Appendix A) was designed to measure the attitudes of physicians and medical students toward CAM/IM (Schneider et al., 2003). The questionnaire was modified to fit the population of the study, the NP student. The author of the IMAQ was contacted for permission and authorization for modification specific to the research population was granted (Appendix B).

The IMAQ is composed of two subscales: openness and relationship. The openness subscale has a combination of items that appraise openness to new CAM/IM ideas and paradigms. The relationship subscale has a combination of items that appraise the value of the health professional's introspective relationships and the interactions between patients and providers as they relate to CAM/IM practices (Schneider et al., 2003).

The IMAQ is a 29-item self-report instrument designed to measure differences in attitude toward CAM/IM. Responses were rated on a 7-point Likert scale from 1-absolutely disagree to 7-absolutely agree. Reverse coding occurred on 13 of the items which were reverse worded.

The IMAQ has demonstrated reliability and construct validity. The IMAQ had an alpha level of .92 on the total scale and .91 on fact on the openness subscale. The relationship subscale had a reliability of .72, this subscale contained the fewest items. To test the validity the authors chose a population clearly open to CAM/IM, AHMA conference attendees and a group of general internists, the AHMA consistently scored higher on the IMAQ. Construct discriminant validity was supported (Schneider et al., 2003).

Data Collection Process

After obtaining exemption approval from CSUSM's Institutional Review Board, the IMAQ was distributed to participants. The questionnaires were distributed in three different classrooms, one for each of the three cohorts: 9, 10 and 11. The participants completed a paper questionnaire or an electronic version via SurveyMonkey. The electronic version of the IMAQ was made available to all students outside of the classroom via Graduate Student Central. To maintain participant anonymity no demographic information was collected and informed consent was not indicated. The data were collected and entered into SPSS 24, from both the paper and electronic versions.

Coding and Scoring

The IMAQ contained 29 statements on a 7-point Likert scale. The 7-point Likert scale was scored from absolutely disagree, 1, to absolutely agree, 7. The following numbered statements were reverse-scored: 1, 2, 4, 6, 7, 8, 10, 11, 13, 17, 18, 25, 27. The statements are further divided into 2 subscales: openness and relationship. Relationship statements are numbered 14, 15, 20-24, and 29. Statements related to openness are numbered 1-13, 16-19, and 25-28.

Data Management

Data were entered into a software data base, IBM SPSS 24. After the data obtained from the IMAQ was entered into SPSS 24, the data were cleaned to ensure that the variable had valid and usable values and that no data were missing. Next, descriptive statistics were used to describe and examine the variable, the frequency, mean, and standard deviation were calculated.

Data Analysis

Data were analyzed using descriptive statistics and SPSS 24. Prior to computation, the responses to the statements that were reverse worded were assigned the opposite number of points than those that were not reverse worded. The minimum and maximum value were available which provide the range of responses given by the population surveyed. Frequency distribution tables were constructed with mean scores and standard deviations. Please refer to tables 1 and 2 in Chapter Four.

Bias

Social desirability bias may have occurred if participants responded statements in a way that they deemed socially acceptable. In an attempt to limit social desirability bias demographic data was not collected, which ensured participant anonymity.

An additional source of bias was the principal investigator as a fellow nurse practitioner student, however, the principal investigator was unknown to the students prior to the distribution of questionnaires.

Ethical Considerations

Approval for exemption status from the CSUSM Institutional Review Board was obtained prior to dissemination of questionnaires. Completion and return of the questionnaire was considered consent to participate. All participants were over the age of 18, no incentives were offered for participation, participants were informed that partaking was voluntary,

participation did not affect academia, and termination of the questionnaire at any time was acceptable. The paper questionnaires were placed in a single envelope, no markings or other identifiable labels were placed on the questionnaires. The electronic questionnaires were void of any identifiable information. Records were entered into a password protected laptop which belonged to the principal investigator.

Summary

To begin to understand the likelihood of NPs use of CAM/IM in clinical practice, the NP student's attitude toward CAM/IM must first be identified. This study aimed to identify the attitude of the NP student toward CAM/IM. A cross-sectional descriptive design was utilized. A previously designed questionnaire, the IMAQ, was distributed to NP students at a southern California university. Univariate data analysis using SPSS 24 was utilized. The results provide insight into attitudes of NP students toward CAM/IM, identifying the willingness of NP students to use CAM/IM approaches in clinical practice and it is the first step in identifying whether a change in clinical practice and education should be considered.

Chapter Four: Results

Introduction

Chapter four provides the results from the research question “What are the attitudes of nurse practitioner students toward complementary and alternative integrative medicine?” Seventy-four percent (n=57) of eligible nurse practitioner students participated in the study. A descriptive analysis of the data was completed for frequency, standard deviation, and mean.

Sample

A total sample size of 57 participants completed the questionnaire. This sample size was less than desired sample size of 64 increased the margin of error from 5% to 6.7% (Creative Research Systems, 2012). Participant demographic information was not collected and anonymity was maintained.

Data Collection and Preparation

Data collection occurred over a period of eight days. The participants were offered the questionnaire in electronic format only or both paper and electronic format. Twenty-two of the participants opted for a paper questionnaire, the data from the paper questionnaires was entered into SurveyMonkey and double checked for accuracy. The data were then exported from SurveyMonkey to an excel spreadsheet and imported into SPSS 24 (2018). The data imported into SPSS 24 was crosschecked for accuracy with the data from the excel spreadsheet. Data analysis was performed after accuracy was confirmed.

The reverse worded IMAQ statements were given a reverse score so that participants absolutely agreeing with a “positive” statement or absolutely disagreeing with a “negative” statement were given a score of “7”. Conversely, a score of “1” was given to those participants absolutely agreeing with a “negative” statement or “absolutely” disagreeing with a positive

statement (Schneider et al., 2003). The questionnaire was further divided into two subscales: openness and relationship (Table 30) (Table 31).

Results

The results for the research question “What are the attitudes of nurse practitioner students toward complementary and alternative medicine?” are discussed in Chapter Five. Refer to Appendix 3, tables 1-29 for the overall frequency and percentage of each of the 29 items of the IMAQ. The total score for the IMAQ was 151.47 and the standard deviation was 13.63. Table 30 displays the mean and standard deviation of the 21 items in the openness subscale. The total score of the openness subscale was 102.7, the standard deviation was 13.63 and the median was 104. Table 2 displays the mean and standard deviation for each of the 8 items in the relationship subscale. The total relationship score was 48.77, the standard deviation was 5.402, and the median was 49.

Table 30

Openness subscale

Question	N	Mean	SD
1* A patient is healed when the underlying pathological processes are corrected or controlled.	57	2.96	1.309
2* The nurse practitioner's role is primarily to promote the health and healing of the physical body.	57	2.60	1.361
3 Patients whose nurse practitioners are knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, do better than those whose nurse practitioner are only familiar with conventional medicine	57	5.63	1.219
4* Nurse practitioners should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug.	56	3.25	1.632
5 It is appropriate for nurse practitioners to use intuition ("gut feelings") as a major factor in determining appropriate therapies for patients.	57	3.93	1.646
6* The spiritual beliefs and practices of nurse practitioners play no important role in healing.	57	5.54	1.440
7* The spiritual beliefs and practices of patients play no important role in healing.	57	6.11	1.385
8* It is irresponsible for nurse practitioners to recommend acupuncture to patients with conditions like chemotherapy-related nausea and vomiting or headache.	57	5.82	1.501
9 End of life care should be valued as an opportunity for nurse practitioners to help patients heal profoundly.	56	5.86	1.394
10* It is not desirable for a nurse practitioner to take therapeutic advantage of the placebo effect.	57	4.14	1.737
11* Healing is not possible when a disease is incurable.	57	5.95	1.187
12 Nurse practitioners knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, generate improved patient satisfaction.	56	5.63	1.199
*Reverse worded statements were reverse scored			

Question	N	Mean	SD
13* Therapeutic touch has been completely discredited as a healing modality.	57	5.16	1.750
16 Chiropractic is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain).	57	5.04	1.463
17* The nurse practitioner's role is primarily to treat disease, not to address personal change and growth of patients.	57	6.18	1.104
18* Massage therapy often makes patients "feel" better temporarily, but does not lead to objective improvement in long-term outcomes for patients.	57	5.05	1.274
19 The innate healing capacity of patients often determines the outcome of the case regardless of treatment interventions.	57	4.58	1.322
25* Nurse practitioners should avoid recommending botanical medicines based on observations of long-term use in other cultures and systems of healing, because such evidence is not based on large randomized controlled trials.	57	3.67	1.618
26 Osteopathic manipulative therapy is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain).	56	5.07	1.158
27* Information obtained by research methods other than randomized controlled trials has little value to nurse practitioners.	57	5.26	1.494
28 It is ethical for nurse practitioners to recommend therapies to patients that involve the use of subtle energy fields in and around the body for medical purposes (i.e. Reiki, Healing touch, Therapeutic touch, etc.)	57	5.28	1.449
*Reverse worded statements were reverse scored			

Table 31

Relationship subscale

Question	N	Mean	SD
14 Nurse practitioners who model a balanced lifestyle (i.e. Attending to their own health, social, family and spiritual needs, as well as interests beyond medicine) generate improved patient satisfaction.	57	5.93	1.178
15 Quality of life measures are of equal importance as disease specific outcomes in research.	57	6.07	.842
20 A strong relationship between patient and nurse practitioner is an extremely valuable therapeutic intervention that leads to improved outcomes.	57	6.46	.734
21 Nurse practitioners who strive to understand themselves generate improved patient satisfaction.	57	6.32	.869
22 Instilling hope in patients is a nurse practitioner's duty.	57	5.23	1.512
23 Nurse practitioners should be prepared to answer patient's questions regarding the safety, efficacy, and proper usage of commonly used botanical medicines such as Saw Palmetto, St. John's Wort, Valerian, etc.	57	6.05	1.301
24 Counseling on nutrition should be a major role of the nurse practitioner towards the prevention of chronic disease.	57	6.39	.840
29 Nurse practitioners who strive to understand themselves provide better care than those who do not.	57	6.33	.852
*Reverse worded statements were reverse scored			

Summary

Participant responses to the questionnaire were described using descriptive statistics; frequency, mean, median, and standard deviation. The tables in Appendix 3 discuss the frequency, mean, and standard deviation for each of the 29 statements. The item scores ranged from somewhat disagree to agree, to some extent, 82.7% of the 29 statements reflected a positive attitude toward CAM/IM. The overall score indicates the participants have a positive attitude toward the core concepts of CAM/IM.

Chapter Five: Discussion

Introduction

Chapter Five provides a discussion of the findings presented in Chapter Four. This study explored the attitudes of graduate nurse practitioner students toward CAM/IM. The popularity of CAM/IM by Americans has been well documented in the literature; however, no studies at the time of this report have looked at the attitude of NPs toward CAM/IM. This study describes the attitudes of NP students towards CAM/IM including the openness of ideas and the relationship between patient and provider and the NPs introspective relationships as it relates to CAM/IM.

Major Findings

Participants of this study answered the research question “What are the attitudes of NP students toward CAM/IM?” Respondents reported an overall positive attitude toward both openness and relationships on the IMAQ. The total IMAQ score was 151.42 and SD 13.63. Previous research reported total IMAQ scores ranging from 146.71 to 160.85 (Kanadiya et al., 2012, Kligler et al., 2009, and Schneider et al., 2003). The participants in the previous studies were osteopathic medicine students, medical students enrolled in an integrative family medicine program, and general internists. The results of this study fall within the range of scores previously identified in the literature as demonstrating positive attitudes towards CAM/IM.

Openness subscale. Participants showed a wide range of attitudes on the questionnaire statements, which looked at the openness or receptivity of participants to new ideas and paradigms. As of the writing of the report, the author of the IMAQ has not normed the scores of the openness subscale.

Flaherty et al. (2015) researched the attitudes of medical students and reported a median score of 90 in the openness subscale and a positive attitude toward CAM/IM. Participants in the

current study had a median score of 104, possibly indicating a more positive attitude toward receptivity of new ideas and the paradigms of CAM/IM.

Findings of the current study suggest a favorable attitude toward integration CAM/IM knowledge with 86% of respondents agreeing that NPs possessing a knowledge of conventional medicine and CAM/IM benefit more than NPs possessing a knowledge of conventional medicine alone and had improved patient satisfaction. Attitudes were least favorable about botanical medicines (herbs) and dietary supplements. The statement “Nurse practitioners should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug” resulted in a variety of attitudes. Over 53% of respondents to some degree agreed with the statement, 24.6% neither agreed nor disagreed, and 21.4% disagreed. Similar attitudes were expressed for the statement, “Nurse practitioners should avoid recommending botanical medicines based on observations of long-term use in other cultures and systems of healing, because such evidence is not based on large randomized controlled trials.” in which 42.1% of respondents agreed and 31.6% of respondents disagreed.

Relationship subscale. The relationship subscale consists of eight statements concerned with the relationship between provider and patient and the introspective relationship of the provider. The author of the IMAQ has not normed the scores of the relationship subscale. The research by Flaherty et al. (2015) of the attitudes of medical students reported a median score of 43 which is lower than the median score of this study, 49.

Findings of the current study suggest favorable attitudes toward the introspective relationship and the relationship between provider and patient. Ninety-four percent of respondents believe that counseling about nutrition should be a major role of the NP towards

prevention of chronic disease. To some extent, over 96% of respondents agreed to the statements, “Quality of life measures are of equal importance as disease specific outcomes in research” and “Nurse practitioners who strive to understand themselves provide better care than those who do not.

Limitations

The most significant limiting factor in this study was achieved sample size, which was less than the minimum recommended sample size. A second limitation was that the population studied represents the attitudes of two NP specialties: FNP and PMHNP at one southern California university.

Generalizability

The results produced from this research are generalizable to psychiatric and mental health nurse practitioner students and family nurse practitioner students. Graduate students of nurse practitioner programs in specialties other than NP and PMHNP were not studied, therefore, the data cannot be generalizable to other specialties. The participants of the study were enrolled in a single public university, the results of the study are specific to the population at the location of the university

Implications for Nursing Practice

This descriptive study attempted to fill a gap in the literature looking at the attitude of nurse practitioner students toward CAM/IM. The study suggests that nurse practitioner students have a positive attitude toward CAM/IM, which is similar to the attitudes of other medical professionals toward CAM/IM.

Recommendations for Future Research

According to Lewin's Theory of Change (1951) assessing attitude is part of the first step of the change process, the Unfreeze Stage. As of this writing, no other studies have been published about the attitudes of nurse practitioner students toward CAM/IM. Ideally, a study which combines the research of attitudes toward and knowledge about CAM/IM would fulfill two of the recommended items in the first stage of Lewin's Theory of Change (1951). Additionally, it is recommended that studies be performed with a larger sample of nurse practitioner students from a wider range of nurse practitioner specialties throughout the country. Finally, the attitudes of faculty that teach in nurse practitioner programs should be considered for future research as faculty are an integral part of the change process.

Summary

The results of the study answered the research question "What are the attitudes of nurse practitioner students toward complementary and alternative integrative medicine?" The study results suggest that graduate NP students have overall positive attitudes towards core CAM/IM concepts. The study has begun to fill a gap in the research literature; however, research with stronger study designs are recommended.

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Appendix A

Integrative Medicine Attitude Questionnaire (IMAQ)

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

1) A patient is healed when the underlying pathological processes are corrected or controlled.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

2) The Nurse Practitioner's role is primarily to promote the health and healing of the physical body.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

3) Patients whose Nurse Practitioners are knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, do better than those whose Nurse Practitioners are only familiar with conventional medicine.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

4) Nurse Practitioners should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

5) It is appropriate for Nurse Practitioners to use intuition ("gut feelings") as a major factor in determining appropriate therapies for patients.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

6) The spiritual beliefs and practices of Nurse Practitioners play no important role in healing.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

7) The spiritual beliefs and practices of patients play no important role in healing.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

8) It is irresponsible for Nurse Practitioners to recommend acupuncture to patients with conditions like chemotherapy-related nausea and vomiting or headache.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

21) Nurse Practitioners who strive to understand themselves generate improved patient satisfaction.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

22) Instilling hope in patients is a Nurse Practitioner's duty.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

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

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

29) Nurse Practitioners who strive to understand themselves provide better care than those who do not.

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

Appendix B

Victoria Harvey (Harve034@cougars.csusm.edu)
May 4, 2016

Mr. Schneider

I am writing to obtain permission to use your instrument, the IMAQ, for a thesis project. I am currently a student in a Family Nurse Practitioner Program at California State University at San Marcos. The survey will have slight modification to fit the population in the survey, graduate nursing students and nurse practitioners. If you authorize the use of your instrument, please include coding instructions and psychometric information including reliability and validity.

Thank you
Vicki Harvey

Response:
Craig D. Schneider <SCHNEC@mmc.org>
5/4/16
to me
Hi Vicki,

You are welcome to use the IMAQ.

Everything I had on it was published in the BMC 2003 article.

Good luck,

Craig

Vicki Harvey

Response:
Craig D. Schneider <SCHNEC@mmc.org>
5/4/16
to me
Hi Vicki,

You are welcome to use the IMAQ.

Everything I had on it was published in the BMC 2003 article.

Good luck,

Craig

Appendix C

Table 1

A patient is healed when the underlying pathological processes are corrected or controlled

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	3	5.3	5.3	5.3
	3	5	8.8	8.8	14.0
	4	9	15.8	15.8	29.8
	5	15	26.3	26.3	56.1
	6	20	35.1	35.1	91.2
	7	5	8.8	8.8	100.0
	Total	57	100.0	100.0	

Table 2

The NP's role is primarily to promote the health and healing of the physical body

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	3	5.3	5.3	5.3
	3	1	1.8	1.8	7.0
	4	10	17.5	17.5	24.6
	5	13	22.8	22.8	47.4
	6	16	28.1	28.1	75.4
	7	14	24.6	24.6	100.0
	Total	57	100.0	100.0	

Table 3

Patients whose NPs are knowledgeable of multiple medical systems and complementary and alternative practices, in addition to conventional medicine, do better than those whose nurse

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1.8	1.8	1.8
	3	1	1.8	1.8	3.5
	4	6	10.5	10.5	14.0
	5	17	29.8	29.8	43.9
	6	16	28.1	28.1	71.9
	7	16	28.1	28.1	100.0
	Total	57	100.0	100.0	

Table 4

NPs should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1.8	1.8	1.8
	2	5	8.8	8.9	10.7
	3	6	10.5	10.7	21.4
	4	14	24.6	25.0	46.4
	5	9	15.8	16.1	62.5
	6	11	19.3	19.6	82.1
	7	10	17.5	17.9	100.0
	Total	56	98.2	100.0	
Missing	System	1	1.8		
Total		57	100.0		

Table 5

It is appropriate for NPs to use intuition as a major factor in determining appropriate therapies for patients

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	8.8	8.8	8.8
	2	8	14.0	14.0	22.8
	3	9	15.8	15.8	38.6
	4	11	19.3	19.3	57.9
	5	15	26.3	26.3	84.2
	6	6	10.5	10.5	94.7
	7	3	5.3	5.3	100.0
Total	57	100.0	100.0		

Table 6

The spiritual beliefs and practices of NPs play no important role in healing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	28.1	28.1	28.1
	2	21	36.8	36.8	64.9
	3	7	12.3	12.3	77.2
	4	7	12.3	12.3	89.5
	5	4	7.0	7.0	96.5
	6	1	1.8	1.8	98.2
	7	1	1.8	1.8	100.0
Total	57	100.0	100.0		

Table 7

The spiritual beliefs and practices of patients play no important role in healing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	28	49.1	49.1	49.1
	2	21	36.8	36.8	86.0
	3	3	5.3	5.3	91.2
	4	1	1.8	1.8	93.0
	6	3	5.3	5.3	98.2
	7	1	1.8	1.8	100.0
	Total	57	100.0	100.0	

Table 8

It is irresponsible for NPs to recommend acupuncture to patients with conditions like chemotherapy-related nausea and vomiting or headache

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	26	45.6	45.6	45.6
	2	16	28.1	28.1	73.7
	3	2	3.5	3.5	77.2
	4	8	14.0	14.0	91.2
	5	3	5.3	5.3	96.5
	6	1	1.8	1.8	98.2
	7	1	1.8	1.8	100.0
Total	57	100.0	100.0		

Table 9

End of life care should be valued as an opportunity for NPs to help patients heal profoundly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	3.5	3.6	3.6
	3	1	1.8	1.8	5.4
	4	4	7.0	7.1	12.5
	5	10	17.5	17.9	30.4
	6	16	28.1	28.6	58.9
	7	23	40.4	41.1	100.0
	Total	56	98.2	100.0	
	Missing System	1	1.8		
Total	57	100.0			

Table 10

It is not desirable for a NP to take therapeutic advantage of the placebo effect

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	8.8	8.8	8.8
	2	9	15.8	15.8	24.6
	3	8	14.0	14.0	38.6
	4	20	35.1	35.1	73.7
	5	3	5.3	5.3	78.9
	6	6	10.5	10.5	89.5
	7	6	10.5	10.5	100.0
	Total	57	100.0	100.0	

Table 11

Healing is not possible when a disease is incurable

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	22	38.6	38.6	38.6
	2	19	33.3	33.3	71.9
	3	11	19.3	19.3	91.2
	4	3	5.3	5.3	96.5
	5	1	1.8	1.8	98.2
	7	1	1.8	1.8	100.0
	Total	57	100.0	100.0	

Table 12

NPs knowledgeable of multiple medical systems and complementary and alternative practices, in addition to conventional medicine, generate improved patient satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1.8	1.8	1.8
	2	1	1.8	1.8	3.6
	4	5	8.8	8.9	12.5
	5	14	24.6	25.0	37.5
	6	23	40.4	41.1	78.6
	7	12	21.1	21.4	100.0
	Total	56	98.2	100.0	
Missing System	1	1.8			
Total	57	100.0			

Table 13

Therapeutic touch has been completely discredited as a healing modality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	29.8	29.8	29.8
	2	13	22.8	22.8	52.6
	3	9	15.8	15.8	68.4
	4	4	7.0	7.0	75.4
	5	9	15.8	15.8	91.2
	6	4	7.0	7.0	98.2
	7	1	1.8	1.8	100.0
	Total	57	100.0	100.0	

Table 14

NPs who model a balanced lifestyle generate improved patient satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	1.8	1.8	1.8
	3	1	1.8	1.8	3.5
	4	5	8.8	8.8	12.3
	5	10	17.5	17.5	29.8
	6	17	29.8	29.8	59.6
	7	23	40.4	40.4	100.0
	Total	57	100.0	100.0	

Table 15

Quality of life measures are of equal importance as disease specific outcomes in research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	2	3.5	3.5	3.5
	5	12	21.1	21.1	24.6
	6	23	40.4	40.4	64.9
	7	20	35.1	35.1	100.0
	Total	57	100.0	100.0	

Table 16

Chiropractic is a valuable method for resolving a wide variety of musculoskeletal problems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	3.5	3.5	3.5
	2	2	3.5	3.5	7.0
	3	2	3.5	3.5	10.5
	4	12	21.1	21.1	31.6
	5	16	28.1	28.1	59.6
	6	14	24.6	24.6	84.2
	7	9	15.8	15.8	100.0
	Total	57	100.0	100.0	

Table 17

The NP's role is primarily to treat disease, not to address personal change and growth of patients

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	29	50.9	50.9	50.9
	2	18	31.6	31.6	82.5
	3	3	5.3	5.3	87.7
	4	5	8.8	8.8	96.5
	5	2	3.5	3.5	100.0
	Total	57	100.0	100.0	

Table 18

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

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	15.8	15.8	15.8
	2	13	22.8	22.8	38.6
	3	14	24.6	24.6	63.2
	4	14	24.6	24.6	87.7
	5	7	12.3	12.3	100.0
	Total	57	100.0	100.0	

Table 19

The innate healing capacity of patients often determines the outcome of the case regardless of treatment interventions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	3.5	3.5	3.5
	2	3	5.3	5.3	8.8
	3	4	7.0	7.0	15.8
	4	14	24.6	24.6	40.4
	5	21	36.8	36.8	77.2
	6	11	19.3	19.3	96.5
	7	2	3.5	3.5	100.0
	Total	57	100.0	100.0	

Table 20

A strong relationship between patient and NP is an extremely valuable therapeutic intervention that leads to improved outcomes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	1	1.8	1.8	1.8
	5	5	8.8	8.8	10.5
	6	18	31.6	31.6	42.1
	7	33	57.9	57.9	100.0
	Total	57	100.0	100.0	

Table 21

NPs who strive to understand themselves generate improved patient satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	3	5.3	5.3	5.3
	5	6	10.5	10.5	15.8
	6	18	31.6	31.6	47.4
	7	30	52.6	52.6	100.0
	Total	57	100.0	100.0	

Table 22

Instilling hope in patients is a NP's duty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	3.5	3.5	3.5
	3	4	7.0	7.0	10.5
	4	13	22.8	22.8	33.3
	5	10	17.5	17.5	50.9
	6	14	24.6	24.6	75.4
	7	14	24.6	24.6	100.0
	Total	57	100.0	100.0	

Table 23

NPs should be prepared to answer patient's questions regarding the safety, efficacy, and proper usage of commonly used botanical medicines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2	3.5	3.5	3.5
	3	1	1.8	1.8	5.3
	4	3	5.3	5.3	10.5
	5	11	19.3	19.3	29.8
	6	9	15.8	15.8	45.6
	7	31	54.4	54.4	100.0
	Total	57	100.0	100.0	

Table 24

Counseling on nutrition should be a major role of the NP towards the prevention of chronic disease

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	3	5.3	5.3	5.3
	5	4	7.0	7.0	12.3
	6	18	31.6	31.6	43.9
	7	32	56.1	56.1	100.0
	Total	57	100.0	100.0	

Table 25

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

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	3.5	3.5	3.5
	2	5	8.8	8.8	12.3
	3	11	19.3	19.3	31.6
	4	15	26.3	26.3	57.9
	5	9	15.8	15.8	73.7
	6	8	14.0	14.0	87.7
	7	7	12.3	12.3	100.0
Total	57	100.0	100.0		

Table 26

Osteopathic manipulative therapy is a valuable method for resolving a wide variety of musculoskeletal problems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	1.8	1.8	1.8
	4	18	31.6	32.1	33.9
	5	18	31.6	32.1	66.1
	6	12	21.1	21.4	87.5
	7	7	12.3	12.5	100.0
	Total	56	98.2	100.0	
Missing System	1	1.8			
Total	57	100.0			

Table 27

Information obtained by research methods other than randomized controlled trials has little value to NPs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	14	24.6	24.6	24.6
	2	15	26.3	26.3	50.9
	3	11	19.3	19.3	70.2
	4	10	17.5	17.5	87.7
	5	3	5.3	5.3	93.0
	6	4	7.0	7.0	100.0
Total	57	100.0	100.0		

Table 28

It is ethical for NPs to recommend therapies to patients that involve the use of subtle energy fields in and around the body for medical purposes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	3.5	3.5	3.5
	2	1	1.8	1.8	5.3
	3	2	3.5	3.5	8.8
	4	10	17.5	17.5	26.3
	5	12	21.1	21.1	47.4
	6	19	33.3	33.3	80.7
	7	11	19.3	19.3	100.0
Total	57	100.0	100.0		

Table 29

NPs who strive to understand themselves provide better care than those who do not

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	2	3.5	3.5	3.5
	5	8	14.0	14.0	17.5
	6	16	28.1	28.1	45.6
	7	31	54.4	54.4	100.0
Total	57	100.0	100.0		