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Innovative Access to Integrative Health Education for Advanced Practice Nurses:
A Pilot Project

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Doctor of Nursing Practice Final Scholarly Project

In Partial Fulfillment of the Requirements for the Degree

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Executive Summary

Background: As the public continues to embrace complementary and integrative approaches to health there is a pressing need for nurse practitioners to increase their knowledge of these modalities, building on the foundation of nursing's historical philosophy of holism.

Purpose: The purpose of this pilot project is to explore the effectiveness of a learning module in increasing knowledge of integrative modalities for nurse practitioners. The resource was made accessible on a social media site or by Quick Response (QR) code to a smart phone. An interactive learning platform (www.npqrlearn.org) provided access the evidence-based module titled *Introduction to Holistic Nursing and Integrative Health*. The content for the module was compiled from resources that are evidence-based, authored by experts. A pre-test/post-test design was used to determine the effectiveness of the module. This pilot project also uses a descriptive survey to explore nurse practitioners' perceptions of the value of the modular resource in increasing knowledge of integrative care modalities, and the potential for additional modules. These results will inform the intent to develop the resource for future utilization by nurse practitioners and nurse practitioner students. *Results:* Six responses were received from the learning management system meeting the inclusion criteria, indicating the pre-test, module, post-test, and survey had been completed. A comparison of the pre-test/post-test data demonstrated improved scores on all items, showing statistical significance. Due to small sample size (n=6), the results would not be able to be generalized and further evaluation is needed to determine if the module increases nurse practitioner knowledge. *Discussion:* Findings suggest that education in integrative health modalities may increase nurse practitioner knowledge related to safe, credible patient care.

Keywords: integrative, complementary, nurse practitioner, education

Innovative Access to an Integrative Care Resource for Advanced Practice Nurses:
A Pilot Project

As the public continues to embrace complementary and integrative approaches to health a pressing need emerges for nurse practitioners to increase their knowledge of these modalities, continuing to build on the foundation of nursing's historical philosophy of holism. The American Holistic Nurses Association (AHNA) defines holistic nursing as "all nursing practice that has healing the whole person as its goal" (AHNA, 2016). The discipline of nursing is rooted in the philosophy of holism, and returning to a truly holistic pedagogy for all of nursing could be transformative for patient care as well as for the nurse's experience of caring. Holistic nursing describes who nurses are at their core, how they relate to patients and each other, and how they perceive health and healing (Brykczynski, 2012; Mariano, 2007). While holistic nursing is certainly not limited to a set of complementary modalities, the discipline of nursing "historically includes practices that are now considered 'complementary'" (Halcón, Chlan, Kreitzer, & Leonard, 2003, p. 388). It is the philosophy of holism from which whole person care (mindbodyspirit) develops.

Even though complementary therapies are defined as "a group of diverse medical and healthcare systems, practices, and products that are not generally considered part of conventional medicine" (NCCIH, 2012), there is a growing body of evidence to suggest that these therapies are being more fully integrated into conventional health care (Koithan, 2014). Integrative health care is a holistic approach designed with the goal of combining the best of evidence-based conventional health care and evidence-based complementary therapies, seeking to treat the patient as a whole (NCCIH, 2015). The terms 'complementary' and 'integrative' are often found used interchangeably; however, integrative health care refers to whole person care in the

most comprehensive way. These terms will be used interchangeably throughout this paper. Integrative health care emphasizes the role of therapeutic provider/patient relationship, patient-centered care and patient empowerment in order to improve patient outcomes (Maizes, Niemiec & Rakel, 2012) and provides another tool in the toolbox of the nurse practitioner seeking to practice utilizing a philosophy of holism.

The American Holistic Nurses Association (AHNA) was formed in January of 1981 and currently has more than 4500 members (AHNA, 2017). Holistic nursing was first recognized as a nursing specialty by the American Nurses Association in November 2006 (Mariano, 2016). The American Holistic Nurses Credentialing Corporation (AHNCC) offers certification at four levels – non baccalaureate, baccalaureate, advanced (with MSN) and APHN which includes ANY of the four roles as long as candidate meets the educational eligibility requirements (AHNCC, 2016). However, there are a limited number of graduate programs for nurse practitioners which embrace a holistic, integrative approach. The University of Minnesota offers The Integrative Health and Healing DNP. Drexel University College of Nursing and Health Professions offers the Certificate of Advanced Study in Complementary and Integrative Therapies. New York University College of Nursing developed the Holistic Nurse Practitioner degree. There are others, such as Florida Atlantic and the University of Colorado. The small number of these nurse practitioner programs can be contrasted to the multitude of medical schools and physician-led academic health centers teaching integrative health (Comarow, 2008). There is a board specialty in integrative medicine for physicians (American Board of Physician Specialties, 2016). While it is important to remember that teaching integrative health modalities is not evidence of a philosophy of holism, it is evident that the discipline of nursing will be

challenged to maintain its relevance by more fully developing programs to educate providers in integrative health while continuing the commitment to being true to its holistic roots.

The American Association of Nurse Practitioners (AANP) states, “For more than 45 years, NPs have provided patient-centered health care to a broad range of populations” (AANP, n.d.). As the role of the nurse practitioner continues to expand, their graduate education and experience has the potential to equip them to accept the responsibility of partnering with patients in integrative, whole-person care (Matteliano & Street, 2012). Nurse practitioners are strategically situated to be a reliable, knowledgeable, trustworthy source of information and guidance in holistic, integrative health. Burman, Stephans, Jansa, and Steiner (2002) concluded that “although NPs diagnostic decision-making process is similar to that of physicians, their approach to patient-centered, context-based, diagnostic reasoning and care planning is decidedly holistic, consistent with nursing theory and philosophy” (p. 63). In this role, the nurse practitioner has the potential to embrace a holistic focus and develop a practice that incorporates therapies or modalities that integrate conventional and complementary health care in a manner like no other provider.

Clinical Problem

The National Center for Complementary and Alternative Medicine (NCCAM) had its name changed by Congress in 2015 to the National Center for Complementary and Integrative Health (NCCIH) (<https://nccih.nih.gov/about/offices/od/nccam-new-name>), recognizing the shift to a more interdisciplinary model of healthcare. The NCCIH has recently narrowed the classification of the domains of complementary therapies to (1) natural products, (2) mind and body practices, and (3) other complementary health approaches (NCCIH, 2015). However, many classic resources continue to define the domains by the five more comprehensive

descriptions: (1) alternative medical systems (e.g., Ayurveda, Chinese medicine, homeopathy, or naturopathy), (2) biologically based therapies (e.g., herbs and aromatherapy), (3) energy therapies (e.g., Healing Touch, Reiki, Therapeutic Touch, and acupuncture), (4) manipulative and body based methods (e.g., chiropractic, reflexology, and massage), and (5) mind/body interventions (e.g., yoga, meditation, guided imagery) (Burman, 2002; Chang & Chang, 2015; Helms, 2006; Trail-Mahan, Mao & Bawel-Brinkley, 2013).

According to the report compiled from the 2012 National Center for Health Statistics data, 33.2% of the adult population in the United States incorporated complementary therapies into their health care (Clarke, Black, Stussman, Barnes & Narhin, 2015). These individuals are making use of therapies that may have been practiced for hundreds or thousands of years and combining them with conventional therapies with the goal of benefitting from the best of both philosophies in order to promote health and healing. A significant concern among patients who use complementary health therapies is the lack of knowledge that health care providers possess related to those strategies (Halm & Katseres, 2015). The challenge for many health care providers is the lack of a basic, foundational understanding of the most common complementary health therapies (Chang & Chang, 2015). Education on complementary and integrative health for has been limited to self-teaching and some specialized training in specific modalities (Chang & Chang, 2015) yet Nottingham (2006) states that, “regardless of personal beliefs and attitudes about complementary and integrative health, nurse practitioners must be prepared to address their patients’ use of various kinds of therapies” (p. 242). Access to relevant, foundational practice development in holistic health care that integrates existing knowledge in complementary and integrative modalities will assist nurse practitioners as they continue to partner with their patients and advocate for safe, credible, informed care. The educational resource would need to

provide basic information in a concise, accessible format that is mindful of the time challenges of health care professionals.

Background and Significance

Patients may hesitate to share information concerning personal use of complementary health modalities with health care providers based on the fear of disapproval, although this reluctance seems to be improving (Eisenberg, 1993; Eisenberg, 1998; NCCIH, 2010). Patients can also be mistrustful of conventional medicine and have concerns about medication side effects, efficacy, and cost (Kreitzer, 2015). The hesitation to communicate with a health care provider has the potential to become a serious patient safety issue (Elder, et al., 2015). For example, garlic is commonly used in the treatment of hypertension and hyperlipidemia but could interfere with the metabolism of anticoagulants, antihypertensives, opioids, and other drugs (Woodbury, Soong, Fishman & Garcia, 2015). Another example, red yeast rice, is often used as a cholesterol lowering agent but has potential side effects of allergic reaction, inflammation and gastrointestinal disturbance (Woodbury, et al., 2015). Lastly, the use of amino acids such as arginine, taken for muscle gain, diabetic neuropathy, depression, and sleep regulation, carries risks of hyperkalemia, hypoglycemia, hypertension and heart attack (Woodbury, et al., 2015).

Along with communication, the issue of credibility is also crucial to nurse practitioner practice (Desborough, 2012). Patients may not feel confident in a nurse practitioner's clinical judgment and skills when the nurse practitioner has no frame of reference from which to discuss various complementary therapies. Nurse practitioners must practice active listening and not be dismissive when a patient is ready to discuss the complementary health modality they may have chosen. Being aware of patient preferences and competently responsive helps the patient

develop trust and increases the nurse practitioner's credibility with patients (Matteliano & Street, 2012).

Nurse and nurse practitioner licensing and certification, as well as potential employment opportunities, may begin to play a more substantial role in nursing education in complementary health. This is evidenced by the latest survey of State and Territorial Boards of Nursing which found that 47% permitted complementary practices, 21% stated no formal position, and 13% had plans to address the practices in their nurse practice act or associated statutes or rules that regulate nursing practice (Sparber, 2001). An update to this survey is significantly overdue. In addition, the NCLEX-RN and American Nurses Credentialing Center (ANCC) have both incorporated questions regarding complementary therapies on their licensing and certification examinations. (NCSBN, 2016; ANCC, 2016; AHNA, 2014). Regarding employment opportunities, it has also been noted that in 2008, all 18 hospitals on U.S. News' list of "America's Best Hospitals" provided some form of complementary health care (Comarow, 2008).

Nurse practitioner education with a holistic theoretical foundation which includes an integrative health approach, can allow providers the ability to guide their patients in a safe and appropriate way. For most nurse practitioners, there has been a gap in their graduate education related to providing holistic care for patients, including the use of integrative health modalities. Nurse practitioner education is "not merely learning facts and clinical guidelines, performing tasks, or following routines" (Brykczynski, 2012, p. 555). Increased understanding of the most common integrative therapies will help providers become a trusted resource for guidance, minimizing safety concerns (Geisler, Cheung, Steinhagen, Neubeck & Brueggeman, 2015). The evidence shows that developing a foundational knowledge of the most commonly used

integrative health therapies will increase the safety profile of implementing these strategies (Nottingham, 2006). Continuing education may provide an opportunity to narrow the gap between patient expectation and nurse practitioner knowledge. The challenge will be to consider the increasing demand on nurse practitioners' time and resources and to develop access to continuing education that will increase the nurse practitioner's confidence in meeting patients' integrative health needs. This continuing education will need to deliver the most up-to-date content and make it relevant to the nurse practitioner's practice. This educational tool will need to take into consideration the excellent resources that are currently available and seek to compile them and make those established resources more accessible. Since many learners in the 21st century are "media-savvy and device-dependent" (Gradel & Edson, 2012, p. 46), Quick Response (QR) codes, easy-to-use links to online content, may help meet the need for mobility and accessibility (Waaters, 2012). When the QR code leads to an engaging, interactive learning resource developed in a learning management system, the innovative use of technology has the potential to be an effective link between patient and nurse practitioner.

Purpose

The purpose of this pilot project is to explore nurse practitioners' responses to a module, *Introduction to Holistic Nursing and Integrative Health*, that is accessible on a social media site or by QR code to smart phones and the module's potential for increasing nurse practitioner knowledge in integrative modalities. The project also explores nurse practitioners' perceptions of the value of the resource in increasing their knowledge of integrative health modalities.

Review of the Literature

The literature review began with electronic searches designed to identify previously published studies that addressed the role of the nurse practitioner and integrative healthcare. A

PICOT question was used to guide the search: In nurse practitioners, what is the effect of integrative health education on nurse practitioner knowledge and perception of competence compared with limited integrative health education. Relevant studies were obtained from the following databases: CINAHL, Medline, and ERIC. To maximize the sensitivity of the search, Boolean operators were used to combine the following terms: ‘integrative medicine’ (OR) ‘integrative health’ (OR) ‘complementary medicine’ (OR) ‘alternative medicine’ (OR) ‘CAM’ (AND) ‘nurse practitioner’; ‘nurse practitioner’ (AND) ‘education’; ‘nurse practitioner’ (AND) ‘clinical practice’; ‘nurse practitioner’ (AND) ‘complementary’; ‘nurse practitioner’ (AND) ‘integrative’. After identifying relevant terms in abstracts, a total of 32 articles were collected. The search was limited to articles in English, and the search results were from the United States. The references of all of these articles were reviewed in order to capture any other articles that may not have appeared in the electronic search. The method yielded three more relevant articles. A summary table and an evaluation table were designed to organize and assess the studies found. Many of the studies centered on the use of complementary health modalities by nurses, as well as the development of complementary health modality education for undergraduate nurses, which provided relevant background information. The search of the literature finds that most research surrounding nurses, nurse practitioners, physicians, and physician assistants regarding complementary health modalities was done in the late 1990s and early 2000s. After a comprehensive search, seven articles were identified that are related to nurse practitioners and complementary or integrative health (Brykczynski, 2012; Burman, 2002; Geisler, Cheung, Steinhagen, Neubeck & Brueggeman, 2015; Halcón, Chlan, Kreitzer & Leonard, 2003; Hayes & Alexander, 2000; Kim, Erlen, Kim & Sok, 2006; and Sohn & Loveland, 2002). These seven articles were specifically related to nurse practitioners and integrative health.

The search of the literature revealed that core curricula for holistic nursing were revised and updated to guide academic undergraduate and graduate programs with a holistic focus and may also serve as a guide for those nurses and nurse practitioners planning to sit for a certification examination in holistic nursing (Helming, Barrere, Avino & Shields, 2014). By 2003 there were more than a dozen Complementary Health and Healing texts used by nursing programs in nursing curricula (Richardson, 2003). A handbook for holistic nursing practice was written and recently updated (Dossey & Keegan, 2016), and a comprehensive text for integrative nursing was also recently published (Kreitzer & Koithan, 2014). There are textbooks that provide guidance in complementary modalities regarding safety and efficacy (Borins, 2014; Fontaine, 2014; Micozzi, 2014; Synovitz & Larson, 2012). Websites have also been developed that provide education and training in holistic nursing and integrative therapies and can be accessed from <http://www.ahncc.org/resources/professional-development-activities/>. A subscription to www.naturalmedicine.com also provides evidence-based information on herbal medication and supplements. In spite of these resources, the research has shown that while many nursing programs may cover complementary or integrative health in a cursory way, there is a gap in the level of provider education and the needs of patients (Burman, 2002; Chang & Chang, 2015).

Evidence shows that patients learn most of what they know about integrative modalities from family and friends, the Internet, and health food stores (Burman, 2002). Predictors for use included: “more education; poorer health status; history of a transformational experience that altered an individual’s worldview; and identification with a cultural group committed to environmentalism, feminism, and with interests in spirituality and personal growth psychology” (Hayes & Alexander, 2000, p. 50). According to the most recent evaluations, nurse

practitioners' education in complementary health is also informal (Chang & Chang, 2015; Geisler et al., 2015; Spencer, et al., 2016). Nurse practitioners may have little or no personal or professional experience with complementary therapies (Booth-LaForce, et al., 2010; Halcón, Chlan, Kreitzer, & Leonard, 2003; Kim, Erlen, Kim & Sok, 2006). Resources regarding the efficacy and safety of specific complementary resources are available and nurse practitioners would benefit from having the information disseminated in a concise, accessible way (Borins, 2014; Kreitzer & Koithan, 2014). *Nurse Practitioner Core Competencies*, developed by the National Organization for Nurse Practitioner Faculty mentions "complementary and alternative therapies" as a curriculum need for independent practice (NONPF, 2014). Fenton, Halcón, and Napolitano (2015) have advocated that holistic core competencies be integrated into the American Association of Colleges of Nursing (AACN) *Essentials of Baccalaureate, Masters' and Doctoral Education for Advanced Nursing Practice* (AACN, 2016).

Even though the nurse practitioner's skill at negotiating cultural differences sets them apart as "unique and distinctive compared to other healthcare professionals" (Matteliano, 2012, p.425), the search of the literature identifies a gap in nurse practitioner knowledge regarding complementary and integrative health, and the preparation of nurse practitioners to safely and effectively provide guidance for their patients regarding the use of these health care modalities. One of the challenges to incorporating education on complementary therapies into nursing and nurse practitioner programs is a lack of prepared faculty (Booth-LaForce, et al., 2010; Burman, 2002; Long, et al., 2014). This gap resulted in professional organizations and federal commissions advocating for increased complementary health education for healthcare professionals (AHNA, 2016; Hospice and Palliative Nurses Association, 2015; Institute of

Medicine of the National Academies, 2005; Oncology Nursing Society, 2007; White House Commission on Complementary and Alternative Medicine Policy, 2002).

A significant communication gap exists between patients and health care providers related to lack of disclosure by patients, and lack of assessment of patients' complementary health utilization by providers (Spencer, et al., 2016). Patients fear disapproval from their health care providers; therefore, they do not discuss the complementary modalities (Chang & Chang, 2015). Only three studies were identified that have asked nurse practitioners whether they discuss complementary therapies with patients (Chang & Chang, 2015; Geisler et al., 2015; Spencer, et al., 2016). As stated previously, a lack of communication may lead to unexpected issues when patients combine complementary therapies with conventional therapies (Burman, 2002; Chang & Chang, 2015).

Theoretical Framework

Jean Watson's Theory of Human Caring/Caring Science is the theoretical framework guiding the development of this capstone project. Watson's classic Theory of Human Caring/Caring Science in nursing is foundational to the premise that nurses should be prepared to meet the needs of their patients in a sensitive, inclusive, and culturally appropriate manner. The theory advocates for nurses to *be* with their patients, and to sincerely *hear* their needs. Watson's theory advocates for the therapeutic benefit of the *presence* of nurses, and advocates for nurses to be better prepared to meet the holistic needs of their patients.

Hills and Watson (2011) state that a Caring Science education "is a revolution for whole person teaching, learning, and knowing. It invites joy, a liberated human spirit, and passionate interest back into our lives and learning. It moves us toward a transformative consciousness of whole person learning..." (p.1). Watson (2008) has stated that while she did not conceptualize

her writing as theory when she initially wrote *The Philosophy and Science of Caring* in 1979, the theory evolved into one of the most comprehensively developed explanatory grand theories of caring in the history of nursing. The theory focuses on building authentic, caring relationships between nurses and patients, and providing holistic care. Watson acknowledges that nurses “are torn between the human caring model of nursing that attracted them to the profession and the task-oriented biomedical model and institutional demands that consume their practice time” (Watson & Foster, 2003, p. 361). According to Watson, the Core Principles/Practices of the theory are referred to as the Caritas Process and include: practice of loving-kindness and equanimity; authentic presence; enabling deep belief of other (patient, colleague, family, etc.); cultivation of one’s own spiritual practice toward wholeness of mind/body/spirit --- beyond ego; “being” the caring-healing environment; and allowing miracles (openness to the unexpected and inexplicable life events) (Watson, 2008, p. 34). The Theory of Human Caring/Caring Science embraces a movement of “healing---beyond conventional...body physical medicine in favor of the wholeness of being-becoming, with acknowledgement of notions such as consciousness, intentionality...transcendence, spirit, and unity of connectedness with universal energy and life source” (Watson, 2007, p. 13). This worldview seeks to give an alternative view to the objectivism, positivism, and reductionism of science (Watson, 2008).

At a time in nursing history when evidence-based practice is considered the gold standard for nursing care, Watson’s Theory of Human Caring continues to stand as a reminder of the foundational origins of caring in nursing. While Vandenhouten, Kubsch, Peterson, Murdock and Lehrer (2012) have stated that “the explosion of technology produced nurses who tended to be task and routine oriented” (p. 326), Watson brought nursing back to its roots. Not only does the theory return to the roots of nursing, it also offers new insights about the topic of caring, creating

an explosion of knowledge by advocating for the scientific development of caring. The Theory of Human Caring/Caring Science has been foundational in the development of holistic nursing education (Hills & Watson, 2011), and creates the space within which to discuss the importance of providing whole person care as a nurse practitioner. This care includes, but is not limited to, care using integrative modalities.

Methods

Providing an accessible resource for the development of knowledge in integrative modalities in the form of an online introductory learning module has been the goal of this project. A pre-test, post-test design was used to determine the effectiveness of an integrative health learning module (Appendix B). A descriptive survey (Appendix C) was used to examine demographic characteristics and evaluate the nurse practitioners' perceptions of the introductory module of integrative healthcare modalities, and the potential for future online modules. The effectiveness of the learning module needed to be determined, therefore, it was imperative to measure the self-efficacy of the learners regarding knowledge of integrative health modalities (Melnik & Fineout-Overholt, 2015). Access to the evidence-based learning module titled *Introduction to Holistic Nursing and Integrative Health* on a social media site (Facebook), or through QR code was provided on an interactive learning management system (Appendix A). This meant that once the site or QR code was used to access the module, the participant also had access to the content, the tests and the survey. Having a learning management system on which the module can reside provides the opportunity to continue to develop comprehensive holistic, integrative learning opportunities for nurse practitioners by continuing to reference and disseminate evidence-based resources.

Target Population and Sample

The target population was nurse practitioners delivering direct patient care. Mailing lists for emails were requested from the American Association of Nurse Practitioners (AANP), the American Holistic Nurses Association (AHNA) and the National Organization of Nurse Practitioner Faculties (NONPF). AANP and AHNA declined the request based on the stated policy of protecting the privacy of their members, and NONPF did not respond. After a request was sent to post the invitation to participate in the module on the AANP Facebook page, AANP responded that the request could be posted on the AANP LinkedIn page, a professional social media site. However, the response came after the learning management system free trial ended. The request for participation was posted on Facebook with the marketing strategy of sending links to all sites with Nurse Practitioner in the page title. Also, 100 postcards were handed out to nurse practitioners at the Ohio Association of Advanced Practice Nurses annual conference that included the QR code to the project (Appendix E). The post and postcards included:

- informed consent information
- access to the site that lead to the interactive education module (Introduction to Holistic Nursing and Integrative Health) by link or QR code
- a request for the NP's participation in a pre-test, post-test, and post-module survey
- the option at the end of the survey to submit contact information, separate from the survey, to be eligible for 1 continuing education credit (from Otterbein University) for completing the module.

Implementation

The pre-test, learning module, post-test, and the evaluation survey were previewed by two advanced practice nurses, and two of the DNP faculty in order to verify its face validity. The learning module and attached evaluation survey were then posted and collected on the learning

management system, with requests submitted to a convenience sample of nurse practitioners in direct patient care. A free three-week trial of the learning management system was used to collect data. Facebook statistics show that the request for participation was seen by over 3000 nurse practitioners over that three week period. There were 33 encounters with the module, and seven responses were received. One response was incomplete and therefore not included in data analysis.

The data were analyzed using Excel 2016. A paired *t*-test was conducted to determine whether there was a significant difference between pre- and post -test scores that evaluated the self-reported knowledge of integrative health information. A significance level of $p < 0.05$ was used in the analysis. The pre-test and post-test questions were identical. Additionally, descriptive data was collected in the form of a survey. It was anticipated that the results of the pre-test and post-test, and the survey would indicate whether the pilot project purpose of educating nurse practitioners was successful, and whether to continue to develop other modules that would eventually provide a more comprehensive education in integrative health modalities.

Results

In order to address the need for increased education in integrative health, the educational module was designed with the purpose of providing an accessible, relevant resource for nurse practitioners. The effectiveness of the program was evaluated through a pre-test/post-test and survey to measure the knowledge level and perception of nurse practitioner participants.

Participant Demographics and Qualitative Data

Six responses were received from the learning management system meeting the inclusion criteria which required that the pre-test, module, post-test, and survey be completed. The survey data show that the majority of nurse practitioners who completed the module were more than 50

years old (57%). Most of them were women (86%). The majority were family nurse practitioners (75%). The survey shows a variety of practice settings, from acute, to community, to academic settings. A broad representation of years of practice, from less than one year to greater than 30 years was evident. Every participant stated that they were a member of a professional nursing organization. When asked if the introductory module was helpful in increasing basic knowledge of complementary and integrative health modalities, all participants answered in the affirmative. When asked if there was interest in other modules with more in-depth content related to complementary and integrative health strategies, all participants answered in the affirmative.

Quantitative Data

It is hypothesized that participation in the learning module will increase nurse practitioner knowledge. Using a paired *t*-test with a significance level of $p < .05$, in a small sample ($n = 6$) test scores increased after the module from $M = 80$ to $M = 100$, $t(5) = 5.48$, $p = .0014$ (see Figure 1). The comprehensive results (Appendix F) indicate a significant improvement in the nurse practitioners' knowledge. Even though the *p*-value is significant, the small sample size limits the ability to generalize the results.

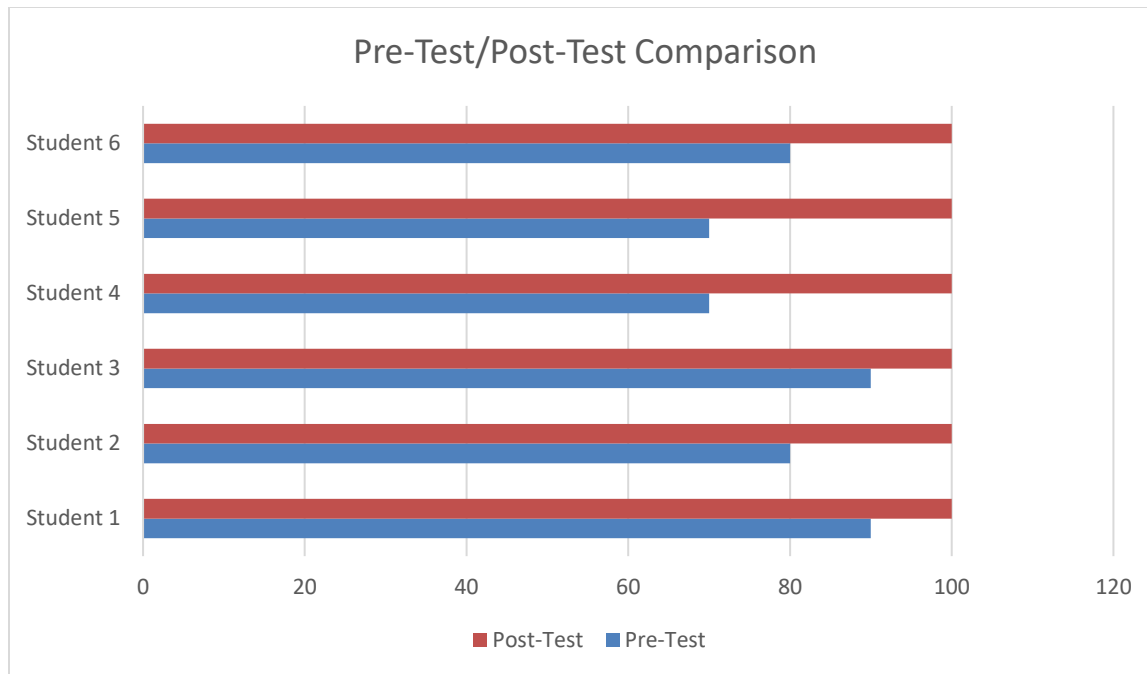


Figure 1

Discussion

Grounded in the theoretical perspective of Human Caring/Caring Science, nurse practitioners can be key advocates for whole person care. While supporting the mindbodyspirit of patients, and building on the foundation of nursing's philosophy of holistic care, improving nurse practitioner knowledge in integrative health modalities has the potential to increase patient healing, safety, and satisfaction. The project focus is on designing and providing a relevant, accessible resource for nurse practitioners that may create a basic understanding of the needs of the almost 40% of patients who use complementary health therapies. Implications for this project suggest that further studies are needed with larger sample sizes to determine the potential for generalizing the results and to determine whether there could be sustained change over time.

Benefits of the Present Study

The benefits of the single group pre-test, post-test design include having access to multiple data points, and having the ability to capture information about the knowledge change.

Surveys can facilitate rapid data collection, and flexibility (Melnyk & Finout-Overholt, 2015).

The goal was that since the learning module and the evaluation survey could be accessed by nurse practitioners through the social media site that there would be increased visibility and involvement. The goal of increased accessibility of the learning module provided by the QR code on postcards was to allow nurse practitioners to learn in a convenient, engaging manner, and then to provide feedback about the learning activity with the survey.

Limitations of the Present Study

The limitations of a single group pre-test, post-test design include the challenge of instrument creation and program delivery. The decision to create an interactive module required the use of a learning management system to deliver the module. The learning management system proved to be cumbersome, and somewhat complex, limiting accessibility. Therefore, even though the invitation to participate was seen by numerous nurse practitioners, a small number chose to attempt the module, and even fewer were able to complete it, leading to a small sample size (n=6). This could have been related to a hesitation to participate in a module on a social media site, and could have been complicated by the complexity of module access. An early concern that participants would not make the time commitment to continue through the post-test turned out to be an even more comprehensive lack of participation.

The limitations of the use of a survey include low response rates. There are frequent requests for nurses and nurse practitioners to participate in surveys, and their time is limited, so enticing nurse practitioners to respond was a challenge. Another limitation related to survey research surrounds gathering information that is “fairly superficial” (Melnyk & Finout-Overholt, 2015, p. 453). The survey prepared for the project sought to glean information about the efficacy and accessibility of the learning module.

Lessons Learned

- Learning Management Systems can be costly, complex tools and require expert knowledge and skill in order to develop effective learning programs.
- Social media offers opportunities as well as challenges when used for professional interactions. Some nurse practitioners may be hesitant to participate from social media sites.
- Advanced practice nurses need learning programs that are sensitive to time constraints.
- It is possible that nurse practitioners do not realize that so many of their patients are using some form of complementary health, and that learning to integrate those approaches into conventional health care can increase patient safety and satisfaction.

Conclusion and Future Prospects

When almost 40% of patients in the United States use complementary health modalities, health care providers must acquire a foundational knowledge of those approaches in order to partner with patients to provide safe, credible care. Nurse practitioners are perfectly situated to develop that knowledge and skill and to provide holistic care and guidance in integrative modalities. There is significant potential to develop a resource that can disseminate the best evidence regarding integrative health in a way that is relevant, easily accessible, and built on the nursing philosophy of whole person care.

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Appendix A

Introduction

My name is Melinda McGaughy. I am a doctoral student at Otterbein University, and I have developed a capstone project in partial fulfillment for the doctor of nursing practice degree.

You are invited to be a participant in a practice improvement project that involves creating learning modules for certified nurse practitioners in direct patient care. These modules are designed to increase knowledge in holistic, integrative health modalities in order to increase patient safety and satisfaction. I am evaluating the accessibility and efficacy of the introductory learning module.

Your completion of the pre-test, learning module, post-test and survey conveys consent to participate in this practice improvement project. There will be no future requirements of the participants. There are minimal risks associated with participating in the learning module and evaluation survey.

The learning module and survey participation are anonymous, but if a participant is interested in receiving 1CE as a thank you, they will have the opportunity to send their contact information, separate from the anonymous participation in the learning module and survey.

Your participation will greatly benefit future nursing research and evidence-based practice.

If you have questions concerning the learning module or survey, presently or in the future, I will be happy to answer/address those concerns. You can contact me by email at melinda.mcgauhy@otterbein.edu or by phone at 740-398-1198.



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Appendix B

PRE-TEST/POST-TEST

1. According to the National Center for Complementary and Integrative Health, what is the most appropriate definition of complementary health practices?
 - a. A non-mainstream practice used together with conventional medicine.
 - b. Therapies performed without a conventional health care provider's participation
 - c. Therapies that have no evidence-base, but are widely used by the public
 - d. Ancient therapies with strong anecdotal evidence of efficacy
2. What is the estimated percentage of people in the United States using some form of complementary or integrative health modality?
 - a. 10%
 - b. 20%
 - c. 30%
 - d. 40%
3. What is the estimated amount in dollars spent per year on complementary or integrative health strategies?
 - a. Thousands
 - b. Hundreds of thousands
 - c. Millions
 - d. Billions
4. What are the most stated reasons for increased use of complementary and integrative therapies?
 - a. Mistrust of health care providers
 - b. Cost of conventional medicine/disillusioned with outcomes
 - c. Generational use of complementary therapies
 - d. Current generation accustomed to experimental therapies
5. Which of the following represents the most common representation of the categories of complementary and integrative health therapies?
 - a. Mind-Body-Spirit/Energy/Body-based/Biologically-based/Whole healing systems
 - b. Mind-Body-Spirit/Herbal medications/Energy
 - c. Mind-Body-Spirit/Whole healing systems/Energy
 - d. Mind-Body-Spirit/Biologically-based/Energy
6. Meditation is a modality that can be performed with either an Eastern or Western focus:
 - a. True
 - b. False
7. Yoga and Tai Chi can be considered a Mind-Body-Spirit therapy, and an Energy therapy:
 - a. True
 - b. False

8. Which of the following is a complementary therapy that is now covered by most insurance:
 - a. Yoga
 - b. Chiropractic
 - c. Vitamins
 - d. Herbals

9. Which resource provides a comprehensive look at complementary health safety:
 - a. National Center for Complementary and Integrative Health
 - b. The Food and Drug Administration
 - c. The World Health Organization
 - d. The American Holistic Medical Association

10. All of the following are barriers to implementing complementary modalities into practice EXCEPT:
 - a. Lack of education for health care providers
 - b. Lack of available evidence related to complementary health strategies
 - c. Limited time to address complementary health strategies in healthcare visit
 - d. Perception of medical community related to complementary health modalities

Appendix C

SURVEY

Age

- 20-30
- 31-40
- 41-50

Gender

- Male
- Female

Specialty

- Adult NP
- Family NP
- Pediatric NP
- Acute Care NP
- Women's Health NP
- Midwife

Practice setting

- Acute
- Subacute
- Community
- Academic
-

Years of practice

- <1
- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years
- >30 years

Did you find this introductory module helpful in increasing your basic knowledge of complementary and integrative health modalities?

- Yes
- No

Would you be interested in other modules with more in depth content related to complementary and integrative health strategies?

- Yes
- No

Appendix D

Timeline and Budget

The QR code was developed and the learning platform website was purchased. Development of the site was labor intensive. The learning module was ready to deploy to the social media site and be accessed by QR code on October 21, 2016. The module was available for participation until November 15, 2016.

The project required the purchase of a website resource that would administer the learning module when accessed by the QR code. The cost is \$151.85 for one year of web hosting by Web Hosting Hub of website www.npqrlearn.org. The eLearning specialist to code the content for the website charges \$50/hour and there was an estimated 40 hours of work, for a total of \$2000. The learning management system (Litmos) had a free three-week trial. Stock photos were utilized, therefore eliminating the need for purchasing them. A marketing fee of \$50 was paid to Facebook to increase exposure to the invitation. Recruitment inducements would involve provision of 1CE from Otterbein University. Sigma Theta Tau Epsilon Chapter awarded a \$500 grant for the project.

Appendix E

Project Introduction

My name is Melinda McGaughy. I am a doctoral student in the Department of Nursing at Otterbein University, and I have developed a capstone project in partial fulfillment for the doctor of nursing practice degree.

Otterbein supports protection for human subjects participating in research. You are invited to be a voluntary participant in a practice improvement project that has involved creating learning modules for certified nurse practitioners in direct patient care. These modules are designed to increase knowledge in holistic, integrative health modalities in order to increase patient safety and satisfaction. I am evaluating the accessibility and efficacy of the introductory learning module.

Your completion of the pre-test, learning module, post-test and survey conveys consent to participate in this practice improvement project. There will be no future requirements of the participants, and you do not have to answer any question you do not want to answer. There are minimal risks associated with participating in the learning module and evaluation survey and you are free to withdraw at any time without penalty.

The learning module, tests and survey participation are anonymous, but if a participant is interested in receiving 1 CE as a thank you, they will have the opportunity to send their contact information, separate from the anonymous participation in the capstone project.

Your participation will greatly benefit future nursing research and evidence-based practice.

If you have questions concerning the learning module or survey, presently or in the future, I will be happy to answer/address those concerns. You can contact me by email at melinda.mcgauhy@otterbein.edu or by phone at 740-398-1198.

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Innovative Technology Access to an Integrative Care
Resource for Advanced Practice Nurses: A Pilot Project

Otterbein University
Melinda McGaughy, MS, RN, APRN, FNP-BC

Appendix F

Data Analysis

Participant	Pre-Test	Post-Test		t-Test: Paired Two Sample for Means	Post-Test	Pre-Test
1	70	100		Mean	100	80
2	70	100		Variance	0	80
3	80	100		Observations	6	6
4	80	100		Hypothesized Mean Difference	0	
5	90	100		df	5	
6	90	100		t Stat	5.48	
Mean	80	100		<i>p</i> (T<=t) one-tail	0.0014	
Std. Dev.	8.94	0		t Critical one-tail	2.02	
				<i>p</i> (T<=t) two-tail	0.00	
<i>p</i> < .05				t Critical two-tail	2.57	